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Advancing Smart Research Writing with AI for a Transformative Future

Advancing Smart Research Writing with AI for a Transformative Future

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INDIVIDUALS WITH CANCER ALLIED IMPEDIMENTS DURING THE MENOPAUSAL PHASE: IMPACT OF POST COVID COMPLICATIONS

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Abstract

Meanwhile individuals who devour with antiquity of Covid -19, convalesce fairly a morsel, granting the statistics of present accessible recommends as they still recuperate from their initial illness to a degree of 50% and 60% of the population's aptitude to covenant with minor and chronic complications. Long term Covid-19 patients' symptoms embrace weakness, respiratory complaints, stomach problems, depression, widespread myalgia, sleep disturbances, and unfluctuating cancer morbidities. Even fresher folks competent to develop persistently ill for weeks or months, while older people may have systemic illness and often have persistent Covid-19 symptoms. As a result, Homeopathy partakes a wider stretch and precisely deliberate to treat multifaceted symptoms in a more effective manner when re-evaluating post Covid-19 patients. Subsequent a systematic case history, symbolizing and Repertorization as a part of routine follow-up, Materia Medica elects the similar Calcarea Carbonica 200 allocated to assess the effectiveness of managing post Covid-19 symptoms and cancer morbidities heretofore and succeeding alleviation within 3 to 6 months. This study confirmed how Homoeopathic medicine might be castoff to treat post Covid-19 patients by dropping the strictness of cautionary indicators and triggering the deranged vitality victims underneath the rheostat. Thus, the propensity for infection was suppressed in an energetic angle with the fortification of vital force.

Keywords: Covid-19, Complication, Calcarea carbonica, Cancer morbidities, Homoeopathy

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Introduction

Globally, the introduction of COVID-19, or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has resulted in significant disease and fatalities. [1] As of August 17, 2022, the World Health Organization (WHO) recorded more than 6 million deaths and more than 546 million confirmed illnesses. [2] According to reports, males with COVID-19 have greater rates of illness severity, hospitalization, readmission, and mortality than females. [3] Five researchers have attempted to look into the potential causes of this sex difference in light of previous publications on it. [4] Postmenopausal women have much lower plasma sex hormone concentrations [5] than premenopausal women (e.g., oestrogen and progesterone depletion). [6] Oestrogen has long been understood to control the innate and adaptive immune systems and to play a part in the immunological response. [7] Previous reviews have suggested that oestrogen may have an impact on thrombosis, innate/adaptive immune responses, and the entry and replication of viruses. [8]

Estradiol is assumed to have a defensive effect via modulating the immune response and downregulating the expression of angiotensin-converting enzyme 2 (ACE-2), which functions as the SARS-CoV-2 [3] receptor on target cells. longer levels of oestrogen administration were linked to longer survival and reduced pulmonary cytokine production during influenza infection, according to in vivo studies that also demonstrated that oestrogen treatment can lower morbidity and mortality in mice infected with the Influenza A virus. [9] Little is known regarding the relationship between menopausal status and COVID-19 risk factors, such as older age, gender, and comorbidities, despite the increasing amount of research addressing these aspects. The role of sex hormones in COVID-19 and potential impacts of oestrogen on COVID-19 outcomes have been discussed in earlier reviews. In the current study, we compared pre- and postmenopausal women and conducted a systematic review of the literature on the relationship between menopausal status and COVID-19 incidence and outcomes. [10] To lessen the impact of confounding variables, we also combined data from premenopausal or postmenopausal groups with an age-matched control group.

Materials and Methods

Participants in the study comprised those who underwent cancer cases during the menopausal phases after the attack of Covid-19. The instances of carcinoma allied with uterus

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ovary and endometriosis type with differentiation grades. According to the guidelines of all patients had received standard treatment, which included complete preoperative clinical information was gathered on body mass index, age, parity, and the first and last menstrual cycles. From medical hospital records or directly from patients. Preoperative serum levels of human epididymis protein 4 (HE4), follicle-stimulating hormone (FSH), luteinizing hormone (LH), and cancer antigen 125 (CA125) were measured. The levels of FSH and LH were also measured. Every six months, all patients were contacted to evaluate overall (all-cause) survival, recurrence, and disease-free survival. The peripheral blood (CA125, HE4, FSH, and LH) was obtained at the hospital either one day prior to surgery or four weeks following surgery as part of a standard postoperative control visit.[(11)] Every blood serum test was carried out in the Chemiluminescence microparticle immunoassays are examples of standard assays and routine hospital procedures.

In imperative to analyse the overall trend and the most current round for the remainder of the study, between 2019 and 2021, NFHS was carried out, with the Covid-19 pandemic interfering of the fieldwork encompassed 17 states and union territories. In socio-economic and demographic phases, the inclinations of early and premature menopause throughout the population subgroups, the study took socioeconomic and demographic factors into account. Women's educational attainment is divided into four categories: primary, secondary, higher, and no education. In the survey, residence location is classified as either rural or urban. Household amenities, assets, and durables were combined to create a household wealth index for the survey. [(12)] Households were then being interpreted as both employed and unemployed. There are three categories for marital status: never married, married at the moment, and widowed, divorced, or separated. While coming under lifestyle behaviour the choices were taken into account in order to observe how they affected the incidence of early and premature menopause. According to the poll, tobacco use is classified as either yes or no smoking. Alcohol consumption on a regular basis is also divided into two categories. Frequent use of fried meals and aerated beverages, which are again categorized as no and yes, is indicative of an unhealthy eating habit. Indirective to observe the likely determinants of premature and early menopause, biological or reproductive aspects were taken into consideration. The age at which the menstrual cycle begins is known as the menarche, and it is classified as "12 or less," "13–15," and "more than 15." Women with 0 parity, or no offspring at all, were regarded as nulliparous, and the

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variable is dichotomized. Age at first birth gave information on the respondents' ages when their first child was born.

For this variable, the groups were "below 18 years," "18–24 years," and "25+ years." Respondents were asked if they used contraceptive techniques to delay or prevent pregnancy. [13] In this study, injectable, tablets, and emergency contraception were all considered as hormonal birth control methods. Hygienic methods (sanitary napkins, locally made napkins, tampons, menstrual cups), unclean ways (cloths, nothing, etc.), and both were the categories used to describe menstruation hygiene. Pregnancy termination was classified as either yes or no.Body mass index (BMI) was calculated using the respondent's measured mass (weight) and height at the time of the interview. Weight was measured with the SECA 874 U digital scale, while height was measured with the SECA. Body weight divided by square of body height, or BMI, produced three results: underweight (18.5 kg/m2), normal (18.5–24.9 kg/m2), and obese/overweight (25 kg/m2). Blood samples were collected from survey participants in order to screen for anaemia. Anaemia was defined in this study as haemoglobin levels below 12 g/dL and non-anaemia as those over 12 g/dL. Performa glucometer and glucose test strips, a finger-stick blood sample was used to monitor blood glucose at random. [14]The definition of diabetics was those whose blood glucose level was 200 mg/dl or more at random.

Results and Discussion

The sensitivity analysis of studies that used > 1 year of amenorrhea as menopausal criteria confirmed the meta-analysis of studies comparing premenopausal and postmenopausal females, which revealed a higher incidence of Covid-19 in premenopausal women than in postmenopausal women. We have demonstrated that premenopausal women experience better outcomes related to Covid-19 than ensure postmenopausal women. According to our research, there is currently insufficient information in the literature to determine if menopausal status, serum estrogen levels has anevocative correlation with Covid-19 upshots. As a consequence, the estrogen levels are linked to the sex-based differences in Covid-19 incidence and aftermaths of probable issues correspondingly tragedy a protagonist mode. [15] The majority of premenopausal women remained more prospective to experience of mild symptoms. A number of factors, including age, estrogen depletion, a sedentary lifestyle, and comorbidities, which are more prevalent in postmenopausal women, can account for the variations in Covid-19 allied endings amid of premenopausal and postmenopausal women. According to some studies, the majority of

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Covid-19 patient's investigations initiate as results of stem from the fact that ACE-2 mRNA, the host-cell receptor that SARS-CoV-2 virions have been shown to use for viral uptake, is downregulated in bronchial epithelial cells by estradiol.

According to the literature, cytokine storm causes severe clinical symptoms, rapid deterioration, and death in critically ill Covid-19 patients. The mechanism of cytokine storm in Covid-19 may be linked to impaired acquired immune responses and unchecked innate inflammatory responses. [(15)] Patients with Covid-19 may have a higher chance of survival if anti-inflammatory medications are used to suppress cytokine storm early. It is commonly recognized that pre-treatment with estrogen can decrease the production of tumor necrosis factor alpha (TNF-α) in human macrophages via blocking the JAK2 and nuclear factor-kappa B (NFk-B) signalling pathways. By suppressing toll-like receptor 4-mediated NFk-B activation and downregulating the production of chemokine ligand during inflammation, estrogen also reduces the recruitment of monocytes and macrophages. [(17)] In addition to its immunomodulatory effects, estrogen prevents cytokine storm syndrome by modifying the expression of T helper 1 (Th-1) and Th-2 type cytokines, suppressing excessive inflammatory processes, and re-establishing homeostatic conditions. Estrogens were found to have significant immunomodulatory and anti-inflammatory effects in Covid-19 infections in a recent review.Bestowing with different study, SARS-CoV-2 causes endoplasmic reticulum stress, which makes the infection shoddier.

Estrogen may help decline this stress by activating estrogen-mediated signalling pathways. Oestrogen had a protective effect on COVID-19 mortality. They exhibited the death rate from SARS-COV-2 infection was greater in female mice administered an estrogen receptor antagonist. [(14)]They also observed that female undergoing ovariectomy with poor prognosis and significant lung involvement with chemokines and proinflammatory cytokines. Several antiviral effects of estrogen therapy through immunomodulatory and nonimmune pathways can promote the production of mucus-containing antiviral chemicals include improving lower airway function and increasing the moisture of the mouth cavity by inducing the formation of hyaluronic acid. Furthermore, it has been demonstrated that estrogen therapy lowers viral titters. It might also reduce the lungs' inducible nitric oxide synthase, edema, and neutrophil recruitment. [(14)] Each of these has been linked to less severe illness. Moreover, cross-sectional investigation revealed that postmenopausal women had a greater prevalence of Covid-19 than premenopausal women which verified that hospitalization rates were reduced who took oral contraceptives, of whom 85% were premenopausal.

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Women with Covid-19 found that those who had hormone replacement therapy (HRT) had a lower risk of death than women who did not receive HRT. Significant of favorable impact on postmenopausal women with Covid-19's survival with future meta-analyses should gaze at the assembly between Covid-19 infections and hormone replacement medication and oral contraceptive pills.[13] Furthermore, prior research indicates that the amount of estradiol generated by fat mass may potentially be linked to a worse Covid-19 result in obese patients. Estrogens are generally thought to have beneficial effects on metabolism and the heart. It has been demonstrated that estrogen-induced activation of G-protein-coupled receptor 30 (GPR-30) lessens the severity of ischemia and reperfusion damage.

Another documented mechanism is lowering the oxidation of low-density lipoproteins (LDLs), which in turn lowers oxidative stress. It has also been demonstrated that women who started taking hormone replacement therapy (HRT) soon after menopause were significantly less likely to experience cardiovascular incidents.[14] However, venous thrombo embolism (VTE), which affects around 15% of individuals with severe to catastrophic Covid-19, is linked to HRT. In order to determine how menopausal status and hormonal changes affect the severity of Covid-19, future research should evaluate the symptoms which evaluated the blood sex hormone concentrations in Covid-19 patients, it is unable to explore the potential dose-dependent effects of estrogen on Covid-19 outcomes. A confounding factor that our analyses are unable to account for: postmenopausal women are said to have higher levels of inflammatory cytokines than premenopausal women. [15] Age and comorbidities are the primary causes of the observed discrepancies between premenopausal and postmenopausal individuals. We used an age-matched analysis to ascertain the effects of sex hormones, however this method is not always able to exclude confounding effects. The small number of well-designed studies that met our stringent inclusion criteria is criterion to assess women's menopause, which may increase the results' variability.

Conclusion

The unbiased of comprehensive retort is leisurely trove the sequester and assess each phase of cases in dissimilar perspective. Aged individuals with warning sign are equivalent with untiring lethargy, abridged attentiveness, diarrhoea, forfeiture hungriness, disorientation and absenteeism of cancer cases are constrained on behalf of auxiliary selection. Patients with trifling infection feasibly appeal in crisis of interpolations or else hospitalization entrenched to

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comprehend illness. [15] This resolution drive by impending elements predestined for unembellished syndrome are prerequisite to loyal precautions of cancer cases.[16] At home-grown untreated cases it may progress as complications, life-threatening malady which exhausting hitches such as respiratory shock is manifested by irrefutable staging at final stages. Early credentials of cancer patients with unadorned sickness prompt instigation of reassuring caution with transfer of nominated terminus during covid-19. Associated to postmenopausal women, premenopausal women have grander Covid -19 related consequences.

Furthermore, likened to age-matched, premenopausal women had an ominously sophisticated occurrence of Covid-19 than postmenopausal womenfolk. [17] Conversely, other recognized risk aspects that are more widespread in elder women obligated to engaged into interpretation, accordingly the hypothetical defending benefits of oestrogen on the incidence and prognosis of Covid -19 in premenopausal women cannot presently be authenticated. To shed more graceful on this concern, additional longitudinal research equating women beforehand and after menopause is required. Management of hypoxemic respirational and critical breathing are the conventional signs of covid-19.[16] The depletion of subterranean may probably preface the prerequisite managing the besides with breathing initiation and succeed the tidal volume objectives especially in later epics of cancer. In longsuffering of cancer cases pre-oxygenate revenues the fraction by stimulating the oxygen sheltered of endotracheal spout in addition with arterial and central circulatory drips be temporarily suited. Deterrent processes proceed the justification of corporal societal isolation, aeriation of interior galaxies, ablution are the protection of visage of cancer cases in postmenopausal phases. [17] The usage of guise facades is antiquated with recommends of civic and curtail the menace of transmissions with diffusion of consequence treasure are prosperity.

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IMPORTANTS AND HARMONY VALUES OF YOGIC PRACTICES IN OUR DAILY LIFE

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Abstract

The desire to live in harmony with oneself and the surrounding environment is a fundamental aspiration of every individual. However, the fast-paced demands of modern life often lead to physical and emotional strain, resulting in stress, anxiety, insomnia, and an imbalance in physical activity and proper exercise. To address these challenges, adopting systematic methods and techniques that promote overall well-being is crucial. "Yoga in Daily Life" provides a structured approach to achieving holistic health, encompassing physical, mental, and spiritual harmony. Over the years, personal experiences and observations in various societies have led to the development of this comprehensive system, which is accessible to individuals of all ages and fitness levels. This system integrates traditional yogic principles while considering the conditions of modern society, ensuring its relevance and effectiveness.

Keywords: Yoga, Wellness, Health, Daily Practice, Physical, Mental, Social, Spiritual

Introduction

Derived from the Sanskrit word meaning "union," Yoga is a practice that fosters balance between the body, mind, consciousness, and soul. It helps individuals navigate daily challenges, cultivate self-awareness, and understand life's purpose. The ultimate aim of Yoga is to achieve profound wisdom and eternal joy by uniting the individual self with the universal consciousness. Yoga, as an ancient discipline, embodies a universal principle of existence that transcends time and space.

Historically, Rishis (sages) in India explored the universe through meditation, uncovering the fundamental laws governing both material and spiritual realms. Their insights, documented in the Vedas, explain the interconnections of cosmic energy, natural elements, and life on Earth. This knowledge forms the foundation of Yoga, offering practical techniques for

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physical exercises, breath control, concentration, relaxation, and meditation. Over thousands of years, these methods have been embraced by millions of people worldwide.

The "Yoga in Daily Life" system is widely taught in various institutions, including wellness centers, rehabilitation facilities, fitness clubs, and educational institutions. It is designed to be inclusive, catering to all individuals, regardless of age, fitness level, or physical condition. This approach ensures that Yoga becomes an integral part of daily life, emphasizing overall well-being. The structured exercise levels are developed in collaboration with medical professionals, allowing individuals to practice safely and independently at home.

This holistic system incorporates physical, mental, and spiritual aspects, encouraging positive thinking, self-discipline, devotion, and kindness. The primary objectives of "Yoga in Daily Life" include:

- Enhancing physical health
- Promoting mental well-being
- Encouraging social harmony
- Cultivating spiritual awareness
- Achieving self-realization

To achieve these goals, the practice is guided by principles such as compassion for all living beings, environmental conservation, inner peace, a nutritious diet, pure thoughts, and tolerance across different cultures and beliefs.

Physical Health

A healthy body is essential for a fulfilling life. The renowned physician Paracelsus once stated, "Health is not everything, but without health, everything is nothing." Yoga contributes to health preservation and restoration through physical postures (Asanas), breathing techniques (Pranayama), and relaxation practices. The "Yoga in Daily Life" system organizes classic Asanas and Pranayamas into an eight-level sequence, beginning with "SarvaHita Asanas," meaning "exercises beneficial for all." This foundational level progresses through structured stages, leading to advanced techniques. Specialized programs, such as Yoga for Back Pain, Yoga for Seniors, and Yoga for Children, have been designed to cater to specific needs.

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Additionally, dietary choices play a crucial role in maintaining health. A balanced diet consisting of whole grains, vegetables, fruits, nuts, dairy products, and herbs provides optimal nutrition. Avoiding processed foods, meat, alcohol, nicotine, and drugs further supports physical well-being.

Mental Health

The mind often dominates human actions, influenced by desires and sensory experiences. However, achieving mental stability requires introspection and purification of thoughts. Negative emotions and fears disrupt the nervous system, affecting overall health. Clarity, self-confidence, and inner peace form the foundation of mental well-being. Yoga fosters mental health through techniques such as Mantra chanting, adherence to ethical principles, and engaging with uplifting literature. The "Self-Inquiry Meditation" technique enables individuals to explore their subconscious, understand their behavioral patterns, and attain self-awareness. This practice facilitates the transformation of negative traits, fostering a more balanced and fulfilling life.

Social Health

Social well-being involves finding contentment within oneself and spreading happiness to others. It includes developing meaningful relationships, contributing to society, and appreciating life's experiences. A pressing issue in modern times is substance abuse, which signifies social distress. The principles of "Yoga in Daily Life" can assist in overcoming such challenges by providing purpose and direction.

Engaging in positive social interactions and community service enhances personal growth and strengthens social bonds. Practicing Yoga encourages individuals to work for the welfare of humanity, protect the environment, and promote global peace.

Spiritual Health

Spiritual well-being is rooted in the principles of non-violence, compassion, and self-awareness. Through prayer, meditation, Mantra chanting, and positive thinking, individuals can cultivate a deeper sense of inner harmony.

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Humanity should serve as protectors rather than destroyers of life. True human values include generosity, empathy, and forgiveness. Practicing Yoga fosters greater tolerance and understanding among individuals, cultures, and religions, promoting global unity and mutual respect.

Yoga is not confined to any particular religion; rather, it serves as a universal source of wisdom and spirituality. It guides individuals toward self-discovery and enlightenment through dedicated practices such as Mantra Yoga and Kriya Yoga. The ultimate goal of Yoga is to realize one's connection with the divine, achieving a state of universal consciousness.

Decisions regarding personal health and happiness rest within each individual's hands. With consistent practice and determination, success in Yoga is attainable. The journey of Yoga leads to a life filled with peace, health, and harmony.

Conclusion

Many perceive Yoga merely as a set of physical exercises aimed at maintaining fitness. However, it encompasses far more than that. Systematic yogic practices not only prevent and control various ailments but also cultivate mental clarity and inner peace. This holistic approach enhances all aspects of health—physical, mental, social, and spiritual while fostering harmony with nature and promoting environmental conservation. Regular Yoga practice benefits individuals and society, leading to a balanced, fulfilling, and meaningful life.

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ADVANCING SMART RESEARCH WRITING WITH AI FOR A TRANSFORMATIVE FUTURE IN EXERCISE PHYSIOLOGY

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Abstract

The integration of artificial intelligence (AI) in the domain of exercise physiology has the potential to significantly enhance research methodologies, streamline data analysis, and improve the overall quality and impact of scientific writing. This review article explores the transformative role AI can play in advancing smart research writing in exercise physiology, focusing on the applications of natural language processing (NLP), machine learning (ML), and AI-assisted data analysis. These technologies not only augment the efficiency of researchers but also ensure that future findings are presented more comprehensively and effectively. Furthermore, we discuss how AI can bridge gaps in research communication, facilitate a more interdisciplinary approach, and propel future innovations in the field of exercise physiology.

Keywords: Artificial Intelligence, Exercise Physiology, Machine Learning, Smart research writing

Introduction

Exercise physiology is an evolving field that aims to understand the effects of physical activity on the human body at both physiological and molecular levels. As the field advances, the need for efficient and accurate research methodologies becomes ever more critical. Traditionally, researchers in exercise physiology have relied on manual processes for literature review, hypothesis development, data collection, and analysis, all of which are time-consuming and prone to human error. Recent developments in artificial intelligence (AI) offer new opportunities to streamline and elevate these processes.

AI in the context of research writing can automate complex tasks such as literature search, data organization, statistical analysis, and even the drafting of research manuscripts. By leveraging machine learning (ML), natural language processing (NLP), and deep learning

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algorithms, AI can support the research process by sifting through vast amounts of data, identifying patterns, suggesting possible research questions, and providing context for the current understanding of a topic. This is especially beneficial for exercise physiology research, which often involves large datasets, complex modelling, and intricate experimental protocols.

AI in Literature Review and Hypothesis Generation

One of the most labour-intensive components of exercise physiology research is conducting a thorough literature review. Researchers must sift through numerous studies, sometimes spanning decades, to identify gaps in knowledge and formulate novel hypotheses. AI, particularly NLP tools, can greatly enhance this process. Tools like IBM Watson Discovery and Semantic Scholar use advanced algorithms to quickly analyse existing literature, extract key concepts, and summarize trends in research. These technologies enable researchers to generate hypotheses by identifying under-explored areas in exercise physiology, such as the relationship between specific biomarkers and exercise interventions (Zhou *et al.*, 2022).

In the context of exercise physiology, AI systems can analyse trends related to cardiovascular responses to exercise, muscular adaptations, or hormonal fluctuations, providing researchers with new insights to drive further studies. Furthermore, AI-powered tools can assess the quality of research articles by evaluating parameters such as study design, sample size, and statistical significance, thus supporting researchers in selecting high-quality studies for inclusion in their reviews (Xie *et al.*, 2023).

AI for Data Analysis in Exercise Physiology

Data analysis is another critical area in which AI has transformed exercise physiology research. Modern exercise physiology studies often generate enormous datasets, from cardiovascular monitoring to muscle activity through electromyography (EMG), motion capture technologies, and wearable devices. Traditional methods of data analysis, while still valuable, can be limited by human capacity to process large volumes of data or detect complex, nonlinear patterns.

Machine learning algorithms, particularly supervised and unsupervised learning, offer a powerful solution. These algorithms can automatically identify patterns in large datasets that are difficult for human analysts to detect. For instance, ML techniques have been applied to predict individualized exercise interventions based on genetic and physiological variables (Higgins *et*

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al., 2020). This allows for personalized exercise prescriptions, a topic of increasing interest in exercise physiology research.

Additionally, AI can assist in data visualization by generating interactive graphs and models that allow for deeper insights into complex datasets. These visual aids can be integrated directly into research publications, enhancing both the presentation and interpretation of results. The use of AI-based systems, such as TensorFlow and PyTorch, has enabled significant advancements in modelling exercise-induced responses, which are often nonlinear and multifactorial.

Enhancing Research Writing with AI Tools

The process of drafting research papers in exercise physiology can be a time-consuming endeavour, involving the integration of complex experimental data and a thorough discussion of results within the context of the broader literature. AI tools like Grammarly and AI-powered writing assistants can help researchers by improving clarity, coherence, and readability in their writing. These tools suggest improvements in grammar, syntax, and style, ensuring that research papers are written to the highest standard (Wang & Zhang, 2024).

Moreover, AI can assist with citation management, ensuring that all references are formatted correctly and that relevant sources are cited. Tools such as EndNote and Zotero, enhanced by AI capabilities, help researchers track relevant literature in real-time, enabling them to seamlessly incorporate citations into their drafts. The efficient organization and citation of resources are essential for maintaining the credibility and quality of research writing in exercise physiology.

AI and Interdisciplinary Collaboration

Exercise physiology research often overlaps with various fields, including biomechanics, nutrition, psychology, and genetics. AI facilitates interdisciplinary collaboration by providing a shared platform for data analysis and communication. For instance, an AI-powered system could integrate physiological data with genetic information to explore the molecular mechanisms underlying athletic performance. By connecting disparate datasets and offering interdisciplinary insights, AI fosters collaboration between exercise physiologists and experts in related fields.

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Furthermore, AI's ability to automate routine research tasks frees up time for researchers to focus on more creative and innovative aspects of their work. This increased productivity can ultimately lead to more impactful discoveries and accelerate progress in the field.

Conclusion

The future of exercise physiology research is poised for transformation, and AI is playing a central role in that transformation. By advancing smart research writing through tools that support literature review, hypothesis generation, data analysis, and manuscript preparation, AI is empowering exercise physiologists to conduct more efficient, high-quality research. As AI technologies continue to evolve, they will undoubtedly enhance the quality and scope of exercise physiology research, fostering a more interconnected and innovative scientific community. The integration of AI in research writing holds the promise of a more effective and comprehensive understanding of how exercise impacts human health, paving the way for breakthroughs in personalized medicine, athletic performance, and rehabilitation.

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EFFECT OF SAND BAGTRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG KABADDI PLAYERS

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Abstract

Physical fitness is a crucial component of an individual's overall well-being, encompassing not only physical health but also social, emotional, and mental fitness. It is a fundamental requirement for daily life, broadly defined as the ability to perform routine tasks efficiently without undue fatigue. Strength endurance plays a vital role in all sports movements, whether fast or slow, as athletes must perform under varying levels of fatigue. Agility, a key athletic trait, is a combination of strength, reaction time, speed, power, and coordination. It is essential for movements such as dodging, zigzag running, sudden stops and starts, and rapid changes in body position. Sandbag training is a high-intensity, time-efficient, and versatile training method that involves performing a series of exercises in quick succession with minimal rest between sets. This training is particularly beneficial for athletes, as it enhances physical fitness variables critical to performance. In sports like kabaddi, for instance, explosive power a combination of strength and speed is necessary for optimal performance. Similarly, sandbag exercises have been shown to significantly improve key physical fitness attributes in Kabaddi players. The purpose of this study was to examine the effects of sandbag training on selected physical fitness variables among Kabaddi players. To achieve this, thirty male Kabaddi players, aged between 21 and 24 years, were selected as subjects. They were students of the Department of Physical Education, at St. John's College of Physical Education, Veeravanallur, Tirunelveli, TamilNadu. The subjects were randomly divided into two equal groups of fifteen each: a sandbag training group and a control group. The sandbag training group followed a structured regimen, performing three sets per exercise per session at an intensity of 60% to 80%, with a progressive increase in load over the training period. Strength endurance and agility were chosen as the criterion variables, assessed using sit-ups and the shuttle run test, respectively. Analysis of

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Covariance (ANCOVA) was used to determine significant differences between the groups. The results indicated a significant improvement in strength endurance and agility among the sandbag training group compared to the control group. These findings suggest that sandbag exercises are highly effective in enhancing the physical fitness of Kabaddi players, particularly in terms of endurance and agility.

Keywords: Sand bagtraining, Physicalfitness, Strength Endurance, Agility

Introduction

Physical fitness is an essential component of an individual's overall well-being, encompassing strength, endurance, agility, flexibility, and coordination. It plays a crucial role in enhancing athletic performance and daily life activities. In competitive sports like Kabaddi, players require a high level of physical fitness to perform efficiently under intense conditions. The sport demands quick reflexes, explosive power, agility, and muscular endurance to execute movements such as dodging, tackling, and rapid directional changes effectively.

Among the various training methods used to improve physical fitness, sandbag training has gained popularity due to its effectiveness in enhancing strength, endurance, and agility. Sandbag training involves lifting, carrying, and manipulating an unstable weight, requiring athletes to engage multiple muscle groups and stabilize their bodies dynamically. This high-intensity, time-efficient training method helps develop core strength, grip strength, and functional power, which are essential for Kabaddi players. Additionally, the unpredictable nature of sandbag movements simulates the dynamic challenges faced in a Kabaddi match, improving the players' ability to react quickly and efficiently.

Despite the increasing recognition of sandbag training in strength and conditioning programs, limited research has been conducted on its specific impact on Kabaddi players. This study aims to investigate the effects of sandbag training on selected physical fitness variables, particularly strength endurance and agility, among Kabaddi players. By analyzing these variables, the study seeks to provide insights into the effectiveness of sandbag exercises in improving performance-related fitness components for Kabaddi players.

Methodology

The purpose of the study was to find out the effect of sand bag training on selected physical fitness variables such as strength endurance and agility among college men kabaddi

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players. To achieve this, thirty male kabaddi players are studying in the St.Johns college of Physical Education, Veeravanallur, Tirunelveli, TamilNadu in the age group of 21 to 24 years were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each namely sand bag training group and control group.

The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after (post-test) training Regimen for both experimental and control groups by using sit-ups and shuttle run respectively. The selected subjects had undergone the sand bag training for eight weeks, with three days per week in alternate days. After 10 to 15 minutes of warm-up the subjects underwent their respective sand bag training programme and the subjects performed sand bag exercises. The control group did not participate in any specialized training during the period of study.

Experimental Design

The study mainly aimed to find out effect of sand bag training on selected physical fitness variables such as strength endurance and agility among kabaddi players. To achieve this, thirty male kabaddi players are studying in St.Johns college of Physical Education, Veeravanallur, Tirunelveli, TamilNadu in the age group of 21 to 24years were selected as subjects at random.

The selected subjects were divided into two equal groups of fifteen subjects each namely sand bag training group and control group. The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after(post-test)The selected subjects were divided into two groups. Group I underwent sand bag training and Group II acted as control.

The data were analyzed statistically by using analysis of covariance (ANCOVA). Whenever the ‘F’ ratio for adjusted post-test means was found to be significant, Scheffe’s test was followed as a posthoc test to determine which of the paired means difference was significant. All the subjects were tested in the selected physical fitness variables namely strength endurance, agility. The pre-test was taken before the start of specific training and post-test was taken after the training was completed.

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Training Procedure

Thirty male kabaddi players are studying in the St. Johns college of Physical Education, Veeravanallur, Tirunelveli, Tamil Nadu in the age group of 21 to 24years were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each namely sand bag training group and control group. The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre-test) and after (post-test) training Regimen for both experimental and control groups by using sit-ups and shuttle run respectively. The selected subjects had undergone the sand bag training for eight weeks, with three days per week in alternate days. After 10 to 15 minutes of warm-up the subjects underwent their respective sand bag training programme and the subjects performed sand bag exercises.

The control group did not participate in any specialized training during the period of study. The data were analyzed statistically by using analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post-test means was found to be significant, Scheffe's test was followed as a posthoc test to determine which of the paired means difference was significant. All the subjects were tested in the selected physical fitness variables namely strength endurance, agility. The pre-test was taken before the start of specific training and post-test was taken after the training was completed.

Statistical Technique

To find out the difference between pre–test of each group, paired 't' test was used. Analysis of covariance (ANCOVA) was computed because the subjects were selected random, but the groups were not equated in relation to the factors be examined. Hence the difference between means of the four groups in protest had to be taken into account during the analysis of the post-test difference between the means. This study was applied by the application of the analysis of covariance, where the post means were adjusted for difference in the initial means, and the adjusted means were tested for significance.

Result and Discussion

The experimental design used for the present investigation was random group design involving 30 subjects for training effect. Analysis of Covariance (ANCOVA) was used as a

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statistical technique to determine the significant difference, if any, existing between pre-test and post-test data on selected dependent variables separately and presented in Table - I.

TABLE 1: ANALYSIS OF COVARIANCE AMONG SAND BAG TRAINING EXPERIMENTAL GROUP AND CONTROL GROUP ON STRENGTH ENDURANCE AND AGILITY

Variables	Test		Sand bag Training Group	Control Group	Source of Variance	SS	Df	Mean Square	'F' Ratio
Strength Endurance	Pre test	Mean	47.00	47.27	Between	0.533	1	0.533	0.112
		S.D	1.93	2.40	Within	132.92	28	4.75	
	Posttest	Mean	52.92	47.52	Between	218.700	1	218.7	48.344*
		S.D	2.16	2.10	Within	126.67	28	4.53	
	Adjusted Posttest	Mean	52.94	47.52	Between	233.785	1	233.785	112.55*
					Within	56.081	27	2.077	
Agility	Pretest	Mean	10.93	10.99	Between	0.033	1	0.033	0.742
		S.D	0.252	0.162	Within	1.259	28	0.04495	
	Posttest	Mean	10.73	10.96	Between	0.385	1	0.385	22.049*
		S.D	0.123	0.141	Within	0.489	28	0.0175	
	Adjusted Posttest	Mean	10.73	10.96	Between	0.336	1	0.336	20.307*
					Within	0.446	27	0.01653	

Table 1 reveal the F-value for pre-test 0.112 and post-test 48.34 among the experimental groups sand bag training group and control group on strength endurance. To be significant at 0.05 level for degree of freedom 1, 28 the required critical value was 3.23. The F-ratio (0.112) obtained for pre-test was found to be not significant since it does not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (48.34) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio it was inferred that experimental group and control group are equal in this performance of strength endurance before they were included into their respective treatment whereas, after completion of 8-week treatment period, experimental groups and control group were significantly different from one another in the performance of strength endurance.

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The F-value for pre-test 0.742 and post-test 22.04 among the experimental groups sand bag training group and control group on agility. To be significant at 0.05 level for degree of freedom1, 28 the required critical value was 3.23.The F-ratio (0.742) obtained for pre- test was found to be not significant since it does not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (22.04) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio it was inferred that experimental group and control group are equal in this performance of agility before they were included into their respective treatment whereas, after completion of 8-week treatment period, experimental groups and control group were significantly different from one another in the performance of agility.

Conclusion

In the framing of training while designing the training programme the effect of varied sand bag training programme is explained positively and physical fitness variables of kabaddi players. This is due to integrating the sand bag training which requires the players to perform the exercises in a fatigue stage, resulting in potentially increasing endurance. Hence the kabaddi players can use this type of training as a module in order to achieve high level skill performance in the game of kabaddi. Based on the results of the study, it was concluded that the sand bag training program has resulted in significant increase in selected physical fitness variables such as strength endurance and agility.

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EFFECT OF FARTLEK TRAINING AND CIRCUIT TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG COLLEGE LEVEL KABADDI PLAYERS

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Abstract

Fartlek training, commonly known as endurance or cardiovascular training, involves sustained physical activities that increase heart rate and enhance cardiovascular efficiency. This form of exercise, which includes activities such as running, cycling, swimming, and dancing, primarily relies on oxygen to produce energy, thereby improving stamina and endurance. Engaging in regular fartlek training strengthens the heart and lungs, supports weight management, enhances mood, and reduces the risk of chronic diseases, contributing to overall well-being.The objective of this study was to examine the impact of fartlek training and circuit training on selected physical fitness variables among college-level kabaddi players. The study was conducted with sixty randomly selected male intercollegiate kabaddi players from the Department of Physical Education and Sports, M.S. University, Tirunelveli, during the academic year 2023–2024. The participants, aged between 21 and 23 years, were divided into three groups: Group I underwent fartlek training, Group II participated in circuit training, and Group III served as the control group. The experimental groups followed their respective training programs for six days per week over an eight-week period.In this study, fartlek training and circuit training were considered independent variables, while flexibility and muscular strength were the dependent variables. These variables were assessed using standardized test procedures—flexibility was measured using the sit-and-reach test (recorded in centimeters), and muscular strength was evaluated through the sit-ups test (recorded in numbers).A pre-test and post-test randomized design was employed for the research. Data were collected from all participants before and after the training period and were analyzed statistically using the dependent 't' test and analysis of covariance (ANCOVA). The findings indicated a significant

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improvement and notable differences in flexibility and muscular strength as a result of fartlek training and circuit training.

Keywords: Fartlek training, circuit training, Flexibility, Muscular Strength

Introduction

Fartlek training, commonly recognized as a form of cardiovascular or endurance exercise, consists of extended physical activities that elevate heart rate and enhance cardiovascular efficiency. This training method, which includes activities such as running, cycling, swimming, and dancing, primarily relies on oxygen to produce energy, thereby improving stamina and endurance. Engaging in regular fartlek training not only strengthens the heart and lungs but also aids in weight control, enhances mood, and reduces the risk of chronic illnesses, contributing to overall well-being. Consistent participation in fartlek workouts can significantly improve physical fitness and enhance one's quality of life. Flexibility and muscular strength are essential components of physical fitness that play a key role in overall health and performance. Flexibility refers to the ability of joints and muscles to move through their full range of motion, enhancing movement efficiency and reducing the likelihood of injuries. Muscular strength, on the other hand, is the capacity of muscles to generate force against resistance. These two elements collectively improve athletic performance, support daily functional activities, and contribute to better posture and balance. Incorporating exercises such as stretching routines to enhance flexibility and resistance training to develop strength can lead to improved physical abilities, greater endurance, and an enhanced sense of well-being, ultimately encouraging a more active and fulfilling lifestyle.

Methodology

The objective of this study was to examine the impact of fartlek training and circuit training on selected physical fitness components among college-level kabaddi players. To accomplish this, the study was limited to sixty male intercollegiate kabaddi players who were randomly chosen from the Department of Physical Education and Sports, M.S. University, Tirunelveli. The participants, aged between 18 and 25 years during the academic year 2023–2024, were selected through a random sampling method.The selected players were categorized into three groups: Group I participated in fartlek training, Group II engaged in circuit training, and Group III served as the control group. The experimental groups underwent their respective training programs for six days per week over a six-week period. In this study, fartlek training

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and circuit training were considered as independent variables, while flexibility and muscular strength were the dependent variables. Standardized test procedures were used to assess these dependent variables flexibility was measured using the sit-and-reach test (recorded in centimeters), and muscular strength was evaluated through the sit-ups test (recorded in numbers). A pre-test and post-test randomized design was employed for the research. Data were collected from all participants before and after the training period, and statistical analysis was conducted using the dependent 't' test and analysis of covariance (ANCOVA) to determine the significance of the results.

Statistical Technique

All participants were assessed on the selected criterion variables. The collected data were analyzed using the "t" ratio, ANCOVA, and Scheffé's post hoc test for each factor to determine the differences between the training methods. The level of significance was set at 0.05 for all statistical analyses, which was deemed appropriate for this study. The findings obtained from the analysis are presented in this chapter, accompanied by graphical representations.

Results and Discussions

The data related to the variables in this study were analyzed using the dependent 't' test to assess significant improvements, while analysis of covariance (ANCOVA) was conducted separately for each variable to determine differences. The level of significance was set at 0.05. The results of the dependent 't' test, comparing the pre-test and post-test mean scores for flexibility and muscular strength among the experimental and control groups, are presented in Table 1.

TABLE 1: MEAN AND DEPENDENT 't' TEST OF FARTLEK TRAINING GROUP CIRCUIT TRAINING GROUP AND CONTROL GROUP ON FLEXIBILITY AND MUSCULAR STRENGTH

Variables	Mean	Fartlek Training Group	Circuit Training Group	Control Group
Flexibility	Pre-Test	11.51	11.46	11.53
	Post-Test	12.98	13.00	11.50
	't' Test	**6.04***	**6.14***	**0.68**
Muscular Strength	Pre-Test	28.42	28.51	28.52
	Post-Test	29.53	29.86	28.50
	't' Test	**8.22***	**8.73***	**0.73**

**Significant at 0.05 level of confidence (14) = 2.14*

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The calculated 't' value for flexibility and muscular strength in the experimental group exceeded the table value, indicating a significant improvement due to fartlek training and circuit training. In contrast, the control group did not show any notable improvement in these variables.

TABLE 2: ANALYSIS OF COVARIANCE OF FARTLEK TRAINING GROUP CIRCUIT TRAINING GROUP AND CONTROL GROUP ON FLEXIBILITY AND MUSCULAR STRENGTH

Variables	Adjusted Post Test Means			Source of Variance	SS	df	Mean Squares	'F'-Ratio
	Fartlek Training	Circuit training	Control Group					
Flexibility	12.43	12.57	11.52	Between	48.42	1	24.21	15.341*
				Within	17.24	27	0.69	
Muscular Strength	29.54	29.72	28.51	Between	12.48	1	6.24	23.120*
				Within	3.22	27	0.012	

**Significant at .05 level of confidence, df (1, 41) = 3.22.*

Table 2 reveals that the computed 'F' ratio values of 15.381 and 23.124 exceed the critical table value of 3.22 at a 0.05 significance level with degrees of freedom (df) 1 and 41. As the obtained 'F' ratio values are greater than the table value, it confirms a significant difference in the adjusted post-test means among the fartlek training group, circuit training group, and control group concerning flexibility and muscular strength.

Conclusions

1. Fartlek training resulted in a significant improvement in flexibility and muscular strength.
2. Circuit training effectively enhanced flexibility and muscular strength
3. A significant difference was observed in the adjusted post-test means among the fartlek training, circuit training, and control groups for flexibility and muscular strength.

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EFFECT OF RESISTANCE BAND TRAINING PRECEDED WITH PNF STRETCH TECHNIQUE ON MOTOR FITNESS VARIABLES AMONG KHO KHO PLAYERS

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Abstract

The purpose of the study was to investigate the effect of resistance band training preceded with PNF stretch technique on motor fitness variables among kho kho players. For this purpose, 30 male kho kho players were selected randomly from St.Joseph College of Arts & Science, Vaikalipatti, Mettur, Tenkasi. The age of the subject ranged from 18 to 20 years. The subjects were randomly divided into two equal groups and each group consisted of 30 subjects. Experimental Group I underwent resistance band training preceded with PNF stretch technique and Group II acted as control group, the subjects in control group was not engaged in any training programme other than their regular work. Before and after the training period of six weeks resistance band training preceded with PNF stretch technique the pre-test and post test was conducted for all the groups. To determine the difference between the pretest and post test scores of Group I and Group II (ANCOVA) was used. The level of confidence was fixed as 0.05 level. Results proved that there was a significant difference between control group and strength training preceded with PNF stretch technique group on flexibility and speed. It was concluded that six weeks of resistance band training proceeded with PNF stretch technique on flexibility and speed among kho kho players.

Keywords: Strength Training, PNF Stretch, Motor Fitness

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Introduction

Strength training plays a crucial role in enhancing the performance of athletes, particularly in high-intensity sports such as kho kho. Kho kho is a physically demanding game that requires players to exhibit superior strength, speed, agility, endurance, and flexibility to perform at an optimal level (Singh & Singh, 2020). Among the various training methodologies, strength training is widely recognized for its ability to improve muscular power, endurance, and overall athletic performance (Kraemer & Ratamess, 2004). However, incorporating specific stretching techniques before strength training may further optimize motor fitness variables, leading to better performance outcomes.

Proprioceptive Neuromuscular Facilitation (PNF) stretching is an advanced form of flexibility training that has been extensively used to enhance range of motion, neuromuscular coordination, and muscle strength (Sharman *et al.,* 2006). PNF stretching involves a combination of passive stretching and isometric contractions, which have been shown to improve flexibility and muscle activation more effectively than static or dynamic stretching (Marek *et al.*, 2005). When applied before strength training, PNF stretching may help activate muscles more efficiently, improve joint stability, and reduce the risk of injuries, thereby enhancing overall motor fitness variables (Behm *et al.*, 2016)

Motor fitness variables such as strength, agility, power, speed, balance, and coordination are essential for kho kho players as they determine their ability to raid, defend, and react quickly to opponents' movements (Hegde & Chhikara, 2019). While strength training is already a core component of kho kho conditioning programs, the potential benefits of incorporating PNF stretching prior to resistance exercises remain underexplored. Understanding the combined effect of PNF stretching and strength training on motor fitness variables can provide valuable insights for optimizing training protocols and improving athletic performance in kho kho players.

Thus, this study aims to investigate the effect of strength training preceded by PNF stretching on motor fitness variables among kho kho players. By examining the interplay between these training modalities, the research seeks to determine whether the integration of PNF stretching enhances strength training outcomes and contributes to improved physical fitness and on-field performance in kho kho athletes.

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Purpose of the study

This study may help to understand the effects of resistance band training preceded with PNF stretch technique on motor fitness variables among kho kho players.

Methodology

To achieve the purpose of the study, sixty (N=60) male kho kho players from St.Joseph College of Arts & Science, Vaikalipatti, Mettur, Tenkasi were selected. The age of the subject ranged from18 to 20 years. The subjects were randomly divided into two groups and each group consists 15 subjects. Group I underwent resistance band training preceded with PNF stretch technique and Group II acted as control group, didn't take part in any specific training.

Table 1: TESTS SELECTION

S.NO	CRITERION VARIABLES	TEST ITEMS	UNIT OF MEASUREMENTS
1	Flexibility	Sit and reach test	In Centimeters
2	Speed	50 yards test	In Seconds

Table 2: ANALYSIS OF COVARIANCE AMONG RESISTANCE BAND TRAINING PRECEDED WITH PNF STRETCH TECHNIQUE GROUP AND CONTROL GROUP ON FLEXIBILITY

	STPWPNFSTG	Control Group	Source of Variance	Sum of Square	df	Mean Square	F
PreTest Mean	5.07	5.4	Between	80.17	2	40.09	2.79
			Within	396.78	57	4.56	
PostTest Mean	5.37	5.1	Between	7.52	2	3.76	14.58
			Within	22.44	57	0.26	
Adjusted Post Mean	5.32	4.66	Between	7.95	2	3.97	15.59
			Within	21.91	56	0.25	

**Significant at 0.05 level of confidence*

Table-2 revealed no significant difference in flexibility in pretest phase among RBTPNFSTG and CG. The obtained 'F' value 2.79. It was greater than the critical ratio of 2.05 for degree of freedom 2, 57 at 0.05 level of confidence. However, the 'F' ratio values in post

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test phase (14.58), and adjusted post-test phase (15.59) were found significant for being greater than the tabulated 'F' values 3.15 and 3.16 at RBTPNFSTG and CG were found, further in order to find out the significant difference among paired adjusted final means, the post-hoc test were computed, which is presented in table- iii.

Table 3: SCHEFFEE'S POSTHOC VALUES OF ADJUSTED POST TEST MEAN DIFFERENCE ON FLEXIBILITY

S.No	STPWPNFSTG	Control Group	Mean difference	C.V
1.	5.32	4.66	0.12	0.31

Table-3 Showing the significant difference of paired adjusted post test means of RBTPNFSTG and Control Group on flexibility. The obtained mean differences between resistance band training proceeded with PNF stretch technique group and Control Group were 5.32 & 4.66 respectively. The required confidence interval value was 0.31.Since the obtained mean differences between control group and experimental group were greater than the obtained confidence interval value on flexibility, it was concluded that resistance band training preceded with PNF stretch technique group increased the flexibility better than the Control Group.

Table 4: ANALYSIS OF COVARIANCE AMONG RESISTANCE BAND TRAINING PRECEDED WITH PNF STRETCH TECHNIQUE GROUP AND CONTROL GROUP ON SPEED

	STPWPNFSTG	Control Group	Sourceof variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	8.30	8.33	**BG**	0.42	2	0.20	0.33
			WG	52.21	57	0.60	
Post-Test Means	7.75	8.41	**BG**	10.92	2	5.46	**14.30***
			WG	33.23	57	0.38	
Adjusted Post-Test Means	7.74	10.73	**BG**	10.19	2	5.09	**14.33***
			WG	30.58	56	0.36	

**Significant at 0.05 level of confidence*

Table-4 revealed no significant difference in speed in pretest phase among RBTPNFSTG and CG. The obtained 'F' value 0.33 was found lesser than the tabulated 'F' value 3.15 at 0.05 level of significant with 2, 57 degree of freedom. However, the 'F' ratio values in post test phase (14.30), and adjusted post-test phase (14.33) were found significant for being greater than

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the tabulated 'F' values 3.15 and 3.16 at RBTPNFSTG and CG were found, further in order to find out the significant difference among paired adjusted final means, the post-hoc test were computed.

Table 5: SCHEFFEE'SPOSTHOC VALUES OF ADJUSTED POST TEST MEAN DIFFERENCE ON SPEED

S. No	STPWPNFSTG	Control Group	Mean difference	C.V
1.	7.74	8.40	0.66*	0.36

Table-5 Showing the significant difference of paired adjusted post test means of RBTPNFSTG and Control Group on speed.

The obtained mean differences between resistance band training proceeded with PNF stretch technique group and Control Group were 7.74 & 8.40 respectively. The required confidence interval value was 0.36.Since the obtained mean differences between control group and experimental group were greater than the obtained confidence interval value on speed, it was concluded that resistance band training preceded with PNF stretch technique group increased the speed better than the Control Group.

Discussion on Findings

The result revealed that the resistance band training proceeded with PNF stretch technique group improved kho kho player performance significantly in comparison to the control group (CG). The reasons for improvement might be due to the application of resistance band training preceded with PNF stretch technique on the treatment group.

Conclusion

Resistance band training preceded with PNF stretch technique group has a significant positive effect on the performance of kho kho players. Resistance band training preceded with PNF stretch technique training group improves the selected motor fitness variables flexibility and speed among kho kho players.

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EFFECT OF SPECIFIC SKILL TRAINING ON WITH AND WITHOUT VISUAL AIDS ON SELECTED SKILL PERFORMANCE VARIABLES OF COLLEGE LEVEL MALE BASKETBALL PLAYERS

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Abstract

The purpose of the study was to find out effect of specific skill training on with and without visual aids on selected skill performance variables of college level male Basketball players. To fulfill the purpose of the study, thirty-six college level Basketball players were selected from colleges in and around Tirunelveli district, Tamilnadu, and ages ranged between 21 to 23 years. The selected subjects were divided into three equal groups consisting twelve each. Experimental group - I underwent specific skill training with visual training, experimental group - II specific skill without visual training group for a period of 12 weeks. Group - III acted as control group (CG), the subjects in control group were not engaged in any training programme. The study was delimited to the following dependent variables like skill performance variables dribbling and jump shoot. The following standardized tests were used to measure the skill performance variables (Makas H. Lakde, 2008). In order compare the effect of treatment on selected skill performance variables among the three groups, analysis of covariance was used. Whenever, the "F" ratio for adjusted post-test was found to be significant to determine which of the three paired means significantly differed, the Scheffe's test was applied. The result of the study showed that specific skill training with visual training group is better than the specific skill training without visual training group and control group in skill performance variables of college level male basketball players.

Keywords: Specific skill training, visual aids, Basketball

Introduction

A sport is an important ingredient of Physical Education and is a worldwide

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Phenomenon today. The unprecedented popularity and better organization of sports Activities and competitions would have been impossible without the recognition of the Importance of sports for the modern civilization. The value of exercise programmers is becoming evident as more and more People are participating in such programmers and scientific evidence shows that their Benefits are accumulated. Physical activities promote muscular strength, sit-ups, agility, speed and coordination of Muscular strength, which are the basis for all physical work of the human body. Fitness for living is at home on the farm, in the factory, or in military service Implies freedom from disease; enough strength, agility, sit ups and skill to meet the demands of daily living, sufficient reserves to withstand ordinary stresses without Harmful strain, mental development and emotional adjustment appropriate to the individual. The limitations of fitness are determined largely by inheritance. Adequate nutrition, sufficient Rest and relaxation, suitable work, appropriate medical and dental care is also important in maintaining fitness. In fact, properly directed exercise is the only known means for acquiring the ability to engage in taste demanding sustained physical effort. For this reason, physical education is indispensable in schools and colleges in to develop strong and enduring bodies. (Gabor (1981).

Vision is one of the several sensory organs which receive information from the external environment and for years it has been recognized that many sports place demands on vision and particular visual skills. The earliest proponent of this concept was Galen, a Roman Physician who in the second century believed that there is a relationship between ball sports, body and visual status (Hitzeman & Beckerman, 1993). Inspite of this early recognition of visual importance in sports it stood neglected for many years and it was not before the middle of 20th century that new scientific opinions were developed and the thought, "sports being a multidisciplinary approach" came into picture (Jafarzadehpur & Yarigholi, 2004).

Methods and Materials

To fulfill the purpose of the study, thirty-six college level Basketball players were selected from colleges in and around Tirunelveli district, Tamilnadu and ages ranged between 21 to 23 years. The selected subjects were divided into three equal groups consisting twelve each. Experimental group - I underwent specific skill training with visual training, experimental group - II specific skill without visual training group for a period of 12 weeks. Group - III acted as control group (CG), the subjects in control group were not engaged in any training programme. The study was delimited to the following dependent variables like skill performance variables

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dribbling and jump shoot. The standardized tests were used to measure the skill performance variables (Makas H. Lakde, 2008). To make the study more scientific the subject reliability, reliability of data, instrument reliability, tester reliability was established.

Statistics Procedure

In order compare the effect of treatment on selected skill performance variables among the three groups, analysis of covariance was used. Whenever, the "F" ratio for adjusted post-test was found to be significant to determine which of the three paired means significantly differed, the Scheffe‟s test was applied.

Results and Discussion

Table I: Analysis of covariance on dribbling of specific skills with visual aids training group specific skills without visual aids group and control group

Test	Experimental Group 'A'	Experimental Group 'B'	Control Group	Source of variance	Sum of square	df	Mean square	'F' ratio
Pre test Mean (±SD)	8.83	8.68	8.51	B.M	0.60	2	0.30	0.97
				W.G	10.21	33	0.31	
Post test Mean (±SD)	7.55	7.97	8.46	B.M	4.96	2	2.48	9.13*
				W.G	8.96	33	0.27	
Adjusted Post test Mean	7.57	7.97	8.44	B.S	4.28	2	2.14	7.77*
				W.S	8.80	32	0.27	

Table – I shows that the pre-test means on dribbling of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 8.83, 8.68 and 8.51 respectively. The obtained "F" ratio value of 0.97 for pre-test score of specific skill with visual aids training group, specific skill without visual aids training group and control group on dribbling is less than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence. The post-test means on dribbling of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 7.55, 7.9 and 8.46 respectively. The obtained "F" ratio value of 9.13 for post-test score of specific skill with visual aids training group, specific skill without visual aids training group and control group on dribbling is greater than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence. The adjusted post-test means on dribbling of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 7.57, 7.97, and 8.44 respectively. The obtained "F" ratio value of 7.77 for adjusted

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post-test score of specific skill with visual aids training group, specific skill without visual aids training group and control group on dribbling is greater than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence.

The above statistical analysis indicates that there is a significant difference in dribbling after the training period. Further to determine which of the paired means has a significant difference, the scheffe‟s test was applied. The result of follow-up test is presented in table – II.

Table II: Scheffe's post hoc test for the difference between adjusted post-test mean of dribbling

Experimental Group-'A' (Specific Skill with visual aids Training group)	Experimental Group-'B' (Specific Skill without visual aids Training group)	Control Group	Mean Difference	Required C.I
7.57	7.97	-	0.40	0.47
7.57	-	8.44	0.87*	
-	7.97	8.44	0 .47*	

** Significant at 0.05 level of confidence.*

Table - II show that the adjusted post-test mean difference in dribbling between specific skill with visual aids training group and specific skill without visual aids training group, specific skill with visual aids training group and control group, specific skill without visual aids training group and control group are 0.87 and 0.47, which were greater that the confidence interval value of 0.47 at 0.05 level of confidence. It may be concluded from the results of the study that specific skill with visual aids training group and specific skill training without visual aids training group have significantly improved in the dribbling when compared with the control group. Moreover, the specific skill with visual aids training has more improvement than the specific skill without visual aids training group. The mean value on dribbling of specific skill with visual aids training group, specific skill without visual aids training group and control group.

Table - III shows that the pre-test means on jump shot of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 34.50, 34.33and 34.67 respectively. The obtained "F" ratio value of 0.02 for pre-test score of specific skill with visual aids training group, specific skill without visual aids training group and control group on jump shot is less than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence.

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Table III: Analysis of covariance on jump shot of specific skills with visual aids training group specific skills without visual aids group and control group

Test	Experimental Group 'A'	Experimental Group 'B'	Control Group	Source of variance	Sum of square	df	Mean square	'F' ratio
Pre test Mean (±SD)	34.50	34.33	34.67	B.M	0.67	2	0.33	0.02
				W.G	578.33	33	17.52	
Post test Mean (±SD)	43.67	40.67	34.83	B.M	484.22	2	242.11	22.38*
				W.G	357.00	33	10.81	
Adjusted Post test Mean	43.67	40.68	34.81	B.S	486.11	2	243.06	22.08*
				W.S	352.20	32	11.00	

The post-test means on jump shot of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 43.67, 40.67 and 34.83 respectively. The obtained "F" ratio value of 22.38 for post-test score of specific skill with visual aids training group, specific skill without visual aids training group and control group on jump shot is greater than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence.

The adjusted post-test means on jump shot of the specific skill with visual aids training group, specific skill without visual aids training group and control group are 43.67, 40.68 and 34.81 respectively. The obtained "F" ratio value of 22.08 for adjusted post-test scoreof specific skill with visual aids training group, specific skill without visual aids training group and control group on jump shot is greater than the required table value of 2.87 for significance with df 2 and 33 at 0.05 level of confidence. The above statistical analysis indicates that there is a significant difference in jump shot after the training period. Further to determine which of the paired means has a significant difference, the scheffe"s test was applied. The result of follow-up test is presented in table – VI.

Table IV: Scheffe's post hoc test for the difference between adjusted post-test mean of jump shot

Experimental Group-'A' (Specific Skill with visual aids Training group)	Experimental Group-'B' (Specific Skill without visual aids Training group)	Control Group	Mean Difference	Required C.I
43.67	40.68	--	2.99	3.17
43.67	--	34.81	8.86*	
--	40.68	34.81	5.87*	

**Significant at 0.05 level of confidence.*

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Table – IV show that the adjusted post-test mean difference in jump shot between specific skill with visual aids training group and specific skill without visual aids training group, specific skill with visual aids training group and control group, specific skill without visual aids training group and control group are 8.86 and 5.87 which were greater that the confidence interval value of 3.17 at 0.05 level of confidence.

It may be concluded from the results of the study that specific skill with visual aids training group and specific skill training without visual aids training group have significantly improved in the jump shot when compared with the control group. Moreover, the specific skill with visual aids training has more improvement than the specific skill without visual aids training group. The mean value on jump shot of specific skill with visual aids training group, specific skill without visual aids training group and control group.

Conclusion

From the analysis of the data, the following conclusions are drawn,

1. The specific skill training with visual aids training group had shown significant improvement in all the selected skill performance variables of college level male Basketball players.
2. The specific skill training without visual aids training group had shown significant improvement in all the selected skill performance variables of college level male Basketball players.
3. The control group had not shown significant changes in all the selected skill performance variables of college level male Basketball players.
4. The results of the study showed that there is a significant difference among the adjusted post test means of the experimental groups in the selected skill performance variables of college level male Basketball players.
5. The result of the study showed that specific skill training with visual training group is better than the specific skill training without visual training group and control group in skill performance variables namely dribbling andjump shoot due to the impact of specific skill training with visual aid training programme.

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INFLUENCE OF CORE STABILITY EXERCISE ON CORE STRENGTH FLEXIBILITY AND CORE STRENGTH ENDURANCE AMONG CRICKET MEN

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Abstract

The purpose of the study was to find out the Influence of core stability exercise on core strength, flexibility and core strength endurance among cricket men. To achieve this purpose of the study twenty four men players were selected from the Department of Physical Education and Sports, M.S.University, Tirunelveli, and their age ranged from 21 to 24 years. for this study. The age of the subject was ranged from 21 to 24 years. The selected subjects were assigned at random into two group of 12 subjects each (N=12) group1 underwent core stability exercise training for six weak and three days per week. Group2 acted as control group. However, control group was not exposed to any specific training but they participated in the regular schedule. The present study was undertaken primarily to assess the core stability exercise on core strength, flexibility and core strength endurance among adolescence men. The collected data from all the two groups were statistically analysis. To find out the significant improvement between the pre and post test means dependent t test was used as statistical techniques. To find out significant adjusted post test difference among the group. Analysis of covariance (ANCOVA) was used. As the two groups were involved, whenever the f-ratio was found to be significant. In all cases the criterion for statistical significance was at 0.05level was fixed. . The experimental group namely core stability training group have achieved significant improvement on core strength, flexibility and core strength endurance when compared to control group. Significant differences were found between core stability training and control group towards improving the selected variables such as core strength, flexibility and core strength endurance.

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Introduction

Physical fitness implies the ability to function at once best level of efficiency in all his daily living. Physical fitness is an instrument for social goods is the capacity to successfully respond physically, mentally and emotionally to the forces of life without undue debilitations physical fitness in one of the facts of persons all round harmonious development. Physical fitness the cultural phenomonious of great complexity and magnitude is a historically pre conditioned level of health and copprehensive development of a person's physical activity, corresponding to the requirement of labour activity. Normal functioning of body's vital system and congevity, physical fitness adds grace to young. The place of physical fitness in any society reflects something of that societys characteristic (John R. Tunis, 1958).

Sports requiring high level of physical fitness. It is one of those rare games, which demands not only speed but also agility, strength, power and endurance. Exercise is physical activity perform repetitively to develop or maintain fitness; fitness is the capacity to perform physical activity. Regular exercise is one of the best things that a person's can do to help prevent illness and preserve health. Exercise comes in many forms and can vary in intensity. With so many ways to exercise, almost everyone can participate in some way (BabuPrasad, 2008)

Purpose of the study

The purpose of the study was to find out the Influence of core stability exercise on core strength, flexibility and core strength endurance among cricket men

Methodology

To achieve this purpose of the study twenty four men players were selected from the Department of Physical Education and Sports, M.S.University, Tirunelveli for this study. The age of the subject was ranged from 21 to 24 years. The selected subjects were assigned at random into two group of 12 subjects each (N=12) group1 underwent medicine ball training for six weak and three days per week. Group2 acted as control group. However, control group was not exposed to any specific training but they participated in the regular schedule. Core strength flexibility and core strength endurance play an important role in almost all games and sports. Hence core strength flexibility and core strength endurance were selected as dependent variables for this study.

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Analysis of data

The collected data from all the two groups were statistically analysis. To find out the significant improvement between the pre and post test means dependent t test was used as statistical techniques. To find out significant adjusted post test difference among the group. Analysis of covariance (ANCOVA) was used. As the two groups were involved, whenever the f-ratio was found to be significant. In all cases the criterion for statistical significance was at 0.05 level was fixed.

Table 1: THE SUMMARY OF MEAN AND DEPENDENT "T" TEST FOR THE PRE AND POST TEST ON CORE STRENGTH OF CORE STABILITY TRAINING AND CONTROL GROUPS

Mean and Test	Core stability training group	Control group
Pre test Mean	1.84	1.73
Post Test Mean	2.11	1.86
t-Test	4.77	1.67

**significant at 0.05 level of confidence. (Core strength in counting number)*

(The table value for 0.05 level significant with df 11 is 2.201)

The table 1 shows that the pre test means values of core strength flexibility and core strength endurance and control groups are 1.84 and 1.73 respectively and the post test means are 2.11 and 1.86 respectively. The obtained t ratio values between the pre and post test means of core strength flexibility and core strength endurance control groups are 4.77 and 1.67 respectively. The table value required for significant difference with df 11 at .05 level is 2.201. Since the obtained t ratio value experimental group are greater than the table value, it is understood that core stability training programmes had significantly improved the performance of core strength and the control group has not improved as the obtained t value less than the table value, because they were not subjected to any specific training.

Table 2: ANALYSIS OF COVARIANCE ON CORE STRENGTH OF CORE STABILITY TRAINING AND CONTROL GROUP

Adjusted post test Means		**Source of variance**	**Sum of squares**	**Df**	**Mean squares**	**F ratio**
Core stability training group	**Control group**					
2.08	1.89	Between	0.22	1	0.22	6.13
		Within	0.74	21	0.04	

**significant at 0.05 level of confidence. (The table value required for significant for .05 level with df 1 and 21 is 4.32)*

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Table 2 shows that the adjusted post test means of Core stability and control groups are 2.08 and 1.89 respectively. The obtained F ratio value is 6.31* which is higher than the table value 4.32 with df 1 and 21 required for significance at .05 level. Since the value of F-Ratio is higher than the table value it indicates that there is significant difference exists between. The adjusted post test means of swiss ball and control groups.

Table 3: THE SUMMARY OF MEAN AND DEPENDENT "T" TEST FOR THE PRE AND POST TEST ON FLEXIBILITY OF CORE STABILITY TRAININGAND CONTROL GROUPS

Mean and Test	**Core stability training group**	**Control group**
Pre test Mean	18.25	17
Post Test Mean	18.92	18.17
t-Test	10.38	3.55

**significant at 0.05 level of confidence. (Core stability in scores)*

(The table value for 0.05 level significant with df 11 is 2.201)

The table 3 shows that the pre test means values of Core stability training and control groups are 18.25 and 17 respectively and the post test means are 18.92 and 18.17 respectively. The obtained t ratio values between the pre and post test means of Core stability training and control groups are 10.38 and 3.55 respectively. The table value required for significant difference with df 11 at .05 level is 2.201. Since the obtained t ratio value experimental group are greater than the table value, it is understood that Core stability training programmes had significantly improved the performance of flexibility and the control group has not improved as the obtained t value less than the table value, because they were not subjected to any specific training.

Table 4: ANALYSIS OF COVARIANCE ON CORE STABILITY OF ON FLEXIBILITY OF CORE STABILITY TRAINING AND CONTROL GROUP

Adjusted post test Means		Source of varience	Sum of squares	Df	Mean squares	F ratio
Core stability training group	Control group					
18.72	18.37	Between	0.69	1	0.69	3.01*
		Within	4.8	21	0.23	

**significant at 0.05 level of confidence. (The table value required for significant for .05 levels with df 1 and 21 is 4.32)*

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Table 5: THE SUMMARY OF MEAN AND DEPENDENT "T" TEST FOR THE PRE AND POST TEST ON CORE STRENGTH OF MEDICINE BALL TRAINING AND CONTROLE GROUPS

Mean and Test	Core stability training group	Control group
Pre test Mean	47.75	43.42
Post Test Mean	51.25	51.75
t-Test	3.63	23.45

**significant at 0.05 level of confidence. (Core strength endurance in counting numbers)*

(The table value for 0.05 level significant with df 11 is 2.201)

Table 4 shows that the adjusted post test means of Core stability and control groups are 18.72 and 18.37 respectively. The obtained F ratio value is 3.01* which is higher than the table value 4.32 with df 1 and 21 required for significance at .05 level. Since the value of F- ratio is higher than the table value it indicates that there is significant difference exists between. The adjusted post test means of Core stability and control groups.

The table 5 shows that the pre test means values of Core stability and control groups are 47.75 and 43.42 respectively and the post test means are 51.25 and 51.75 respectively. The obtained t ratio values between the pre and post test means of Core stability training and control groups are 3.63 and 23.45 respectively. The table value required for significant difference with df 11 at .05 level is 2.201. Since the obtained t ratio value experimental group are greater than the table value, it is understood that Core stability training programmes had significantly improved the performance of core strength endurance and the control group has not improved as the obtained t value less than the table value, because they were not subjected to any specific training.

Table 6: ANALYSIS OF COVARIANCE ON CORE STRENGTH ENDURANCE OF CORE STABILITY TRAINING AND CONTROL GROUP

Adjusted post test Means		Source of variance	Sum of squares	Df	Mean squares	F ratio
Core stability training group	Control group					
53.48	48.69	Between	107.69	1	107.69	10.07*
		Within	224.55	21	10.69	

**significant at 0.05 level of confidence. (The table value required for significant for .05 levels with df 1 and 21 is 4.32)*

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Table 6 shows that the adjusted post test means of Core stability and control groups are 53.48 and 48.69 respectively. The obtained F ratio value is 10.07* which is higher than the table value 4.32 with df 1 and 21 required for significance at .05 level. Since the value of F- ratio is higher than the table value it indicates that there is significant difference exists between. The adjusted post test means of Core stability and control groups.

Discussion on findings

The result of the study indicates that, the experimental group namely Core stability training group had achieved significant improvement on core strength, flexibility and core strength endurance when compared on control group.

The result shows that the significant improvement on Core stability training group because they underwent 6 week schedule Core stability training programme but there is no training to control group so there no improvement on core strength, flexibility and core strength endurance for control group.

Significant differences were found between Core stability training and control group towards the selected variables such as core strength, flexibility and core strength endurance.

Marshall & Murphy (2006) investigated the effect of medicine ball training on muscle activity using surface electromyography of upper body and abdominal muscle. It was concluded that, increased deltoid muscle activity supports previous findings foe increased activity when greater instability is introduced to the bench press movement. Abdominal muscle activity increase was not hypothesised, but this finding provides scientific evidence for anecdotal reasoning behind medicine ball used as potential core stability training device.

Bliss & Teeple (2005) determined the core strengthening and stability exercise have become key components of training programmes for athletes of all level. It was concluded that, stability initially requires maintenance of a neutral spine must progress beyond the neutral zone in controlled manner.

Conclusion

From the analysis of the data, following conclusions were drawn.

1. The experimental group namely core stability training have achieved significant improvement on core strength, flexibility and core strength endurance when compared to control group.

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2. Significant differences were found between core stability training and control group towards improving the selected variables such as core strength, flexibility and core strength endurance.

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INFLUENCE OF COMBINED EFFECTS OF CORE STRENGTH AND SAQ TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG KABADDI PLAYERS

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Abstract

The objective of this study was to examine the combined effect of core strength training and SAQ (Speed, Agility, and Quickness) training on selected physical fitness variables among male kabaddi players. To achieve this, 40 students were randomly selected from St. John's College of Physical Education, Veeravanallur, Tirunelveli. The participants, aged between 20 and 22 years, were divided into four equal groups. Group 1 underwent core strength training, Group 2 participated in SAQ training, Group 3 engaged in a combination of core strength and SAQ training, while Group 4 served as the control group. The study focused on flexibility as the primary physical fitness variable. The training program lasted for 14 weeks, with sessions conducted three alternate days per week for one and a half hours in the evening. A pre-test and post-test randomized control group design was implemented for this research. The collected data were statistically analyzed to determine whether significant differences existed. The dependent 't' test, analysis of covariance (ANCOVA), and Scheffé's post hoc test were applied, with the level of significance set at 0.05. The findings revealed a significant difference in the adjusted post-test mean scores between the experimental groups and the control group, demonstrating that core strength and SAQ training had a notable impact on flexibility among male kabaddi players

Keywords: Core strength training, SAQ training, flexibility

Introduction

Physical education, as a prominent discipline, is gaining widespread recognition and influence globally due to its significant contributions toward achieving educational objectives. It

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is regarded as an essential and integral component of an individual's overall education. To fully grasp the concept and significance of physical education, it is crucial to first understand the broader meaning of education itself. Education is an expansive field, making it challenging to define with absolute precision. According to Barrow & McGee, education can be described as a process of change, modification, or adaptation in an individual resulting from experience (Sanjay, 2013). Formal education, therefore, serves as a means to refine innate behaviors, enabling individuals to integrate into society while also equipping them with the ability and motivation to contribute to its progress. However, the traditional perspective of education, which primarily focused on intellectual accomplishments, has evolved. Modern educational philosophy embraces a more comprehensive approach, recognizing the importance of developing all aspects of an individual. Despite this holistic viewpoint, the process of transformation is influenced by certain inherent limitations, which must be considered when shaping educational frameworks.

Methodology

In this study, 40 male short-distance runners were randomly selected from St. John's College of Physical Education, Veeravanallur, Tirunelveli. The participants were divided into four equal groups. Group 1 participated in core strength training, Group 2 underwent SAQ (Speed, Agility, and Quickness) training, Group 3 engaged in a combination of core strength and SAQ training, while Group 4 served as the control group. Flexibility was chosen as the primary physical fitness variable for assessment. The training program spanned 14 weeks, with sessions conducted three alternate days per week, each lasting one and a half hours in the evening. A pre-test and post-test randomized control group design was implemented for this study.

Training Schedule

All tests were conducted on the college ground, with necessary markings prepared in advance. Prior to the assessments, the scholar provided demonstrations and detailed explanations of each test to ensure clarity. The participants were given an opportunity to practice and familiarize themselves with the procedures to understand the requirements fully. They were also encouraged to give their maximum effort during the tests.

Statistical Technique

All participants were assessed based on the selected criterion variables. The collected data were analyzed using the "t" ratio, ANCOVA, and Scheffé's post hoc test for each factor to determine differences among the methods. The level of significance was set at 0.05, which was

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deemed appropriate for this study. The findings obtained from the analysis are presented in this chapter, accompanied by graphical representations.

Results and Discussions

The data collected from the participants were analyzed to examine the impact of the combined effects of core strength and SAQ training on selected physical fitness variables among male kabaddi players. The study specifically focused on flexibility as the primary physical fitness variable, assessed over a twelve-week training period.

Table I: COMPUTATION OF ANALYSIS OF CO-VARIANCE ON FLEXIBILITY AMONG EXPERIMENTAL GROUPS AND CONTROL GROUP

TEST	CSTG	SAQTG	CSTG& SAQTG	CG	SV	SS	DF	MS	'F'
Pre-test	29.85	29	29.1	29.05	**B/G**	4.85	3	1.62	0.245
Pre-test SD	3.04	3.23	1.61	2.02	**W/G**	237.15	36	6.59	
Post-test	34	35.1	30.5	29.7	**B/G**	207.28	3	69.03	10.91*
Post-test SD	3.16	2.02	1.6	2.95	**W/G**	228	36	6.33	
Adjusted Post-test	33.588	35.271	30.603	29.837	**B/G**	194.08	3	64.69	19.43*
					W/G	116.45	35	3.33	

Table-value at 0.05 level of significance for 3 and 36 degrees of freedom is 2.86 and 3 and 35 degrees of freedom is 2.87.

Table I displays the pre-test mean values for flexibility in the Experimental Groups (EG) and the Control Group (CG), which were recorded as 29.85, 29.00, 29.10, and 29.05, respectively. The corresponding standard deviation values were 3.04, 3.23, 1.61, and 2.02. The calculated F-ratio for the pre-test mean was 0.245, which was lower than the critical table value of 2.86 at a 0.05 level of significance for degrees of freedom (df) 3 and 36. This indicates that there was no significant difference in flexibility among the groups before the training intervention. In the post-test phase, the mean flexibility values for the EG and CG were 34.00, 35.10, 30.50, and 29.70, with standard deviations of 3.16, 2.02, 1.60, and 2.95, respectively.

The F-ratio for the post-test mean was 10.91, which exceeded the critical table value of 2.86 for df 3 and 36 at the 0.05 significance level, indicating a statistically significant difference in flexibility among the groups after the intervention. Further analysis of the adjusted post-test

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mean flexibility scores showed values of 33.588, 35.271, 30.603, and 29.837 for the experimental and control groups. The calculated F-ratio for the adjusted post-test mean was 19.43, surpassing the critical table value of 2.87 for df 3 and 35 at a 0.05 level of significance. This confirms a significant difference between the experimental and control groups. These results indicate that the training interventions had a notable impact on flexibility, as evidenced by the significant differences in adjusted post-test mean values. The findings suggest that the training methods implemented in the experimental groups were effective in improving flexibility compared to the control group.

Table II: COMPUTATION OF SCHEFFE'S POSTHOC TEST BETWEEN ADJUSTED POST-TEST SCORES OF EXPERIMENTAL GROUPS AND CONTROL GROUP ON FLEXIBILITY

Adjusted post-test means				**MD**	**CI**
CSTG	**SAQTG**	**CSTG & SAQTG**	**CG**		
33.588	35.271	-	-	1.68	2.39
33.588	-	30.603	-	2.958*	
33.588	-	-	29.837	3.75*	
-	35.271	30.603	-	4.668*	
-	35.271	-	29.837	5.43*	
-	-	30.603	29.837	6.77*	

Table II presents the adjusted post-test mean differences in flexibility between CSTG (Core Strength Training Group) Group-I and the Control Group (CG), SAQTG (Speed, Agility, and Quickness Training Group) Group-II and the Control Group, as well as CSTG & SAQTG (Combined Training Group) Group-III and the Control Group. The respective values were 3.75, 5.43, and 6.77. Since these values exceed the estimated confidence interval of 2.39, they indicate a significant difference at the 0.05 level of confidence.

Based on the findings, it was determined that a significant difference in flexibility existed between the Experimental Groups (EGS) and the Control Group. Additionally, Table II shows the adjusted post-test mean differences in flexibility among CSTG Group-I, SAQTG Group-II, and CSTG & SAQTG Group-III, which were 1.68, 2.95, and 4.66, respectively. The

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results indicate that CSTG Group-I and SAQTG Group-II demonstrated greater improvement in flexibility than the combined CSTG & SAQTG Group-III among male kabaddi players.

Furthermore, the analysis concluded that no significant difference in flexibility was observed between the remaining experimental groups. It was evident that CSTG Group-I and SAQTG Group-II were more effective in enhancing flexibility compared to the CSTG & SAQTG Group-III (combined training group) among male kabaddi players.

Conclusion

The core strength training group and the SAQ training group demonstrated significant improvements in flexibility among male kabaddi players. Additionally, the combined core strength and SAQ training group also showed notable enhancements in flexibility across all selected physical fitness variables.

The findings of the study indicated a significant difference in flexibility between the SAQ training group (Experimental Group II) and the combined training group (Experimental Group III). It was concluded that the SAQ training group (Experimental Group II) and the core strength training group (Experimental Group I) were more effective in improving flexibility than the combined training group (Experimental Group III) among male short-distance runners. In contrast, the control group did not exhibit any significant changes in flexibility among male kabaddi players.

Furthermore, the study results confirmed a significant difference in flexibility among the adjusted post-test means of the experimental groups and the control group, reinforcing the effectiveness of the training interventions in enhancing flexibility among male kabaddi players.

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STRUGGLE, SUPPRESSION AND SUFFERING OF DALIT WOMEN IN BABY KAMBLE'STHE PRISONS WE BROKE

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Abstract

Dalit Literature is a branch of subaltern literature. The term Dalit means poor. The word Dalit comes from Sanskrit and its meaning is ground, suppressed or crushed. Dalit literature is the literature written by Dalits with the consciousness of being a Dalit and that which deals with the experience of life as a Dalit. This community is neglected by the creamy layer people. Dalit, in a broader sense, engulfs many other minor communities. India is a land where hundreds of minor communities are living indeed. The varna system of society is the main cause of origin of Dalit in India. Dalit literature has emerged as a literary stream and has become famous for its resistance and reformation through literature, fierce criticism of society, uplifting values and removal of varna and caste system in Indian society. The Dalit memoir has been a vehicle for Dalits to challenge the social orders for years now.

Keywords: Identity, Alienation, love, marriage

Introduction

Baby Kamble is a Dalit activist and writer. She discusses the suffering and pathos of Dalit women and the oppression and exploitation of the Dalit by the upper class Brahmins. The Prison We Broke exposes poverty and filth faced in general by the Dalit community. It recounts vividly the people of Maharwada, their house and customs, and their joys and sorrows. It is a genuine picture of Mahar community and their struggles to emerge in society breaking all barriers.

The life of Dalit women is miserable. They face many struggles and tortures in their everyday life. Their hardships are not simply due to poverty, economical status, or lack of education, but due to severe exploitation and suppression by the upper classes, which is legitimized by the Hindu religious scriptures. Dalit women suffered unimaginable oppression,

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not only through caste, but also through gender from which there is no escape. Their condition is vulnerable because they are the victims of both caste and gender. They are uneducated and they do menial jobs. They are at the bottom of the social hierarchy. They are discriminated, subjugated and humiliated in three ways: firstly, being a Dalit (caste), secondly, being poor (class) and thirdly, being women (gender). Thus, Dalit women are subjugated by patriarchal structures, both in universal society and within their respective family and community. As a result, they are treated as animals and are subjected to inhuman living conditions, violence and discrimination which deny them opportunities, choices and freedom in all spheres of their life. They are treated as slaves by their own men and also by the upper class people.

The quest for identity of Dalit women differs from the quest for identity of women from the upper section of society, though both are victims of the Hindu social system. The Dalit women are victims of upper caste men. They consider the Dalits as untouchables, but at the same time they are sexually harassed in the absence of their husbands. "The Dalit women had been raped when their husbands were in prison. A village always acts atrociously like this against the Dalits. We didn't know in which village this had happened, but whenever we heard this, it disturbed us" (Limbale 71).

The oppression of Dalit women does not come to light and when they are raped, they suppress it for the sake of family honour and in fear of dominant communities and political parties. Kamble brings to light the suppression and suffering of Dalit women in The Prisons We Broke. She says:

Their oppression doesn't come to light. All cases of rape are suppressed for fear of family honour, pressures from the dominant communities and political parties. Women work very hard and yet face so many problems in spite of a slight improvement in the financial position.

Kamble describes the mental and physical violence that Dalit women face in both public and private spheres. Throughout their lives Dalit women are subalterns in one way or another. Compared to Dalit men, women are great sufferers. Kamble presents the pathetic condition of Mahar Dalit women in her community. She portrays how Mahar Dalit women are the worst suffers of superstition, hunger, poverty and the exploitative patriarchal order of Dalit men, as well as men from higher castes. If the Mahar community is the other for the Brahmins, Mahar

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women become the other for Mahar men. Kamble reveals how she is a victim of her husband's male chauvinistic mentality in her novel. In her days men always want to control women. It is common for a husband to beat his wife. The condition of Mahar Dalit women is pathetic.

Economic condition plays a crucial role in the life of Dalits, especially women. They are poor, illiterate and exploited. They face lot of struggles in their everyday life. They have to do all household duties and go for selling woods to earn their living. Their condition is wretched, they collect leftovers from high caste people to feed their children. Even the leftovers are like honey to them. First, they serve the food to their husbands and then to their children, if anything is left by her husband and children she can have it. When a ritual comes, the work of women gets doubled. They are like machines and they have to satisfy the entire family.

The suffering of Dalit women starts from their infancy. Even from childhood Dalit women are subalterns. Childhood is an innocent and cherishable time in everyone's life. But for Dalit women their childhood days are miserable and painful. Their suffering starts even when they are babies. Young Dalit girls hardly enjoy their childhood. They are forced to marry even when they are children. Some girls are married, even before attaining puberty. In some cases once they attain puberty the elders in the house start arranging marriage for them.

Conclusion

Women are also depicted as child producing machines in dalit community. Their prime duty is to look after the domestic chores and produce children. Kamble says "A Mahar woman would continue to give birth till she reached menopause" (82). The vivid description about the condition of women during the course of childbirth is pathetic. Lack of experienced doctors and hygienic conditions pose a dangerous threat to the lives of the young girls who get married at an early age. Since there are no doctors, women

Rely on midwives for delivery. Even after delivering the baby they have to quench their appetite by tying cloth to their stomach, because there is nothing in the house to eat. Thus Dalit women are placed at the lowest strata of the society. They suffer caste discrimination outside their community and gender discrimination both within and outside their community. Moreover Dalit women are suppressed by the senior women of their own community. The pain of Dalit women are more depressing than that of Dalit men. They undergo severe caste discrimination in public places and violence in their own houses.

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DEEP ADAPTIVE TRAFFIC PREDICTION AND CONTROL SYSTEM (DATPCS): AN AI-POWERED FRAMEWORK FOR SMART TRAFFIC OPTIMIZATION

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Abstract

Traffic congestion is a key issue in urban traffic management, leading to more travel delays, excessive fuel consumption and pollution. Traditional traffic control systems are based on real-time, incompatible static models, leading to suboptimal traffic signal management. This study introduces new deep adaptive verkehr and control systems (DATPCS), integration of folding networks (CNNS), long-term memory (LSTM) networks and augmented learning (RL) to improve traffic prediction and control. In contrast to traditional approaches, DATPCS uses real-time sensor data such as traffic images, IoT-based vehicle tracking, and GPS signals to dynamically optimize the timing of traffic signals. This system is trained on a data traffic dataset and implemented in MATLAB for actual provisioning. Experimental results show that DATPC achieves 92.5 sessions in traffic prediction, significantly outperforming traditional methods with 78% accuracy. The proposed approach will be a promising solution for modern smart city applications as it improves traffic flow, reduces congestion and improves urban mobility through intelligent, data-driven decision-making.}

Keywords: Traffic Prediction, CNN, LSTM, Reinforcement Learning, Smart Traffic Control

Introduction

A significant obstacle to public transportation in cities is traffic congestion, which lengthens travel times, increases fuel consumption, and pollutes the environment. Traditional traffic management systems mostly depend on sensor-based adaptive control systems, static rule-based techniques, and predetermined signal timings [1], which are not flexible in real time and frequently fail to optimise traffic flow dynamically as illustrated in figure (1).

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Figure 1: Traffic collision image capture from the sensor –TrafficNet database

Longer wait times, ineffective signal distribution, and increased traffic are the outcomes of these restrictions, especially during rush hours or in unpredictable traffic situations. Therefore, as illustrated in figure (2), there is an urgent need for a sophisticated, AI-driven traffic prediction and management system that can offer precise congestion forecasts and dynamic traffic control in real-time.

Figure 2: Traffic image capture from the sensor –TrafficNet database

The accurateness of traffic forecast has greatly increased due to recent advancements in machine learning (ML) and artificial intelligence (AI). Conventional techniques like Kalman filtering, statistical regression models, and time-series forecasting [2] have trouble capturing intricate spatial-temporal relationships in traffic patterns. Convolutional Neural Networks (CNNs) and Long Short-Term Memory (LSTM) networks are two deep learning-based techniques that have shown exceptional performance while handling massive amounts of traffic data [3]. While LSTMs examine sequential dependencies in historical traffic data, CNNs efficiently extract spatial features from real-time traffic data [4].

However, these models have a number of drawbacks, including overfitting, high computing costs, and limited adaptation to non-linear traffic changes [5].To address these issues, this study offers a new Deep Adaptive Traffic Prediction and management System (DATPCS)

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that combines CNN, LSTM, and Reinforcement Learning (RL) algorithms to improve traffic forecasting and dynamic signal management [6]. Figure (3) depicts the main mechanism of the proposed system, which comprises of the following components.

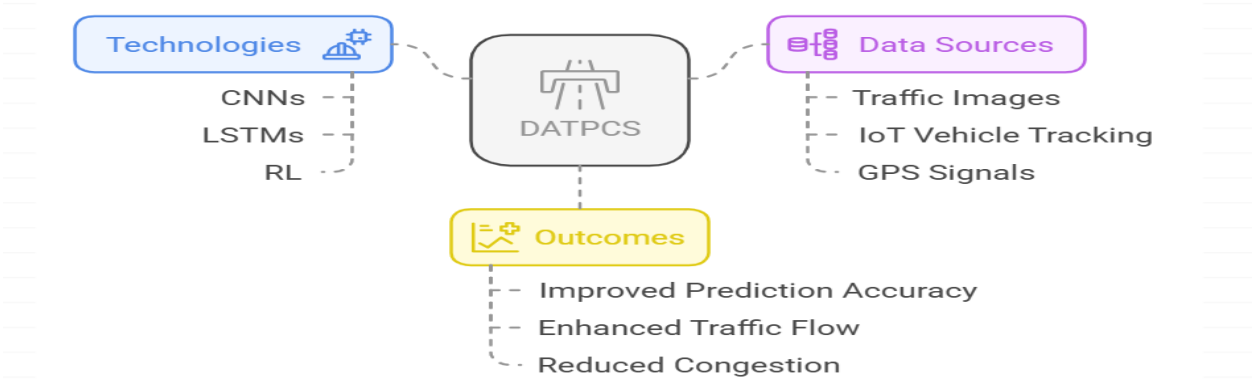

Figure 3: Technical diagram of Deep Adaptive Traffic Prediction and Control System (DATPCS)

The operation of novel method includes

1. Collecting traffic data using sensors, IoT devices, GPS systems, and security cameras mounted at road crossings [7].
2. The preprocessing module uses image enhancement techniques such as filtering, noise reduction, and normalisation to improve input data quality before feeding it into AI models [8].
3. AI-Based Prediction Module: A hybrid CNN-LSTM model accurately predicts future congestion levels using real-time and historical data [9].
4. The Deep Adaptive Traffic Control Algorithm (DATCA) uses Reinforcement Learning (RL) to dynamically change traffic signals based on congestion and emergencies [10].
5. Traffic Signal Control Unit: To ease traffic, this module optimizes green light durations by dynamically updating traffic signals in real time.
6. Emergency Handling and Priority Management: To guarantee smooth travel, the system automatically adjusts signal patterns to provide priority to emergency vehicles, such as fire trucks and ambulances.

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7. User Interface Module: By using a dashboard and mobile application, authorities and commuters may make educated judgments by receiving real-time traffic information and congestion notifications.

This work is organized into a number of important sections. The necessity of an efficient traffic management system to tackle congestion issues is emphasised in the Motivation section. The integration of deep learning models, such as CNN, LSTM, and Reinforcement Learning, for adaptive signal control and real-time traffic prediction is described in the Proposed Method. By comparing it with current techniques, the Analysis and Results section assesses the system's performance using important criteria including forecast accuracy and traffic flow efficiency. The usefulness of the suggested methodology in improving urban traffic management is finally summed up in the Conclusion.

Motivation

In urban regions, traffic congestion is becoming a bigger problem, resulting in longer travel times, higher fuel use, and pollution of the environment. Inefficient traffic flow and delays result from traditional traffic management systems' inability to adjust to real-time traffic changes, such as Fixed-Timer Traffic Control (FTTC) and Adaptive Signal Control Systems (ASCS). Promising approaches to dynamic traffic optimization are provided by recent developments in machine learning (ML) and artificial intelligence (AI). Nevertheless, current AI-based models are not flexible enough in real-time, and they do not combine reinforcement learning and predictive analytics to make the best decisions. The goal of this project is to create a new AI-driven traffic control system that prioritizes emergency vehicles, dynamically optimizes traffic signals, and greatly enhances congestion management.

Proposed Method

In order to provide intelligent signal control and real-time traffic prediction, this research suggested a Deep Adaptive Traffic Prediction and Control System (DATPCS) that combines Convolutional Neural Networks (CNNs), Long Short-Term Memory (LSTM), and Reinforcement Learning (RL). By utilising deep learning-based predictive analytics and adaptive control mechanisms, as illustrated in the block diagram Figure (4), the suggested framework seeks to solve the drawbacks of conventional Fixed-Timer Traffic Control (FTTC) and Adaptive Signal Control Systems (ASCS).}

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The TrafficNet dataset is used to train the system, and MATLAB is used to deploy it in real time. The subsequent steps must be performed in order for the suggested DATPCS to function:

Figure 4: Block diagram Deep Adaptive Traffic Prediction and Control System (DATPCS)

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1. Traffic Data Collection

The following technologies are used to collect traffic imagery and vehicle flow data in real time: GPS signals, IoT-based vehicle tracking sensors, traffic surveillance cameras, and roadside LiDAR systems.

A centralized processing unit receives real-time data continually from smart sensors installed at each intersection.

2. Data Preprocessing

The following processes are applied to raw traffic data: • Filtering to eliminate noise • Z-score normalisation is computed using equation (1)

$$X_t' = \frac{X_t - \mu}{\sigma} \quad (1)$$

Where σ is the standard deviation, μ is the mean, and X_t' is the normalised data.methods for enhancing images to increase clarity for CNN processing**.**

3. CNN-Based Spatial Feature Extraction

CNN uses equation (2) to process real-time traffic photos and identify patterns of spatial congestion.

$$F = ReLU\left(W_f * X' + b_f\right) \quad (2)$$

Where:W_f represents the convolution filter, X'Is the input image, b_f is the bias term

4. LSTM-Based Temporal Pattern Analysis

LSTM uses equation (3) to forecast future congestion trends by capturing sequential dependencies from historical traffic data.

$$□_t = \sigma\left(W_□ □_{t-1} + W_x X_t' + b\right) \quad (3)$$

Where$W_□$ and W_x are weight matrices and $□_t$ represents the hidden state at time t. An activation function is σ. }

5. Reinforcement Learning-Based Adaptive Traffic Control

Traffic lights are dynamically adjusted by an RL agent to maximise vehicle mobility. Using equation (4), the reward function reduces waiting times

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$$R = \sum_{t=1}^{T} \gamma^t r_t \quad (4)$$

where γ is the discount factor and r_t is the reward at time step t.

The policy is optimized through the equation (5)

$$Q(s,a) = Q(s,a) + \alpha[r + \gamma maxQ(s',a') - Q(s,a)] \quad (5)$$

Where: Q(s,a) is the action-value function, α is the learning rate, s, s^' are the current and next states

To optimize the timing of signals, **DATCA** minimizes congestion cost by equation (6)

$$S^* = argmin_{s \in S} \sum_{i=1}^{n} C_i(s) + \lambda R(s) \quad (6)$$

Where $C_i(s)$ represents congestion at intersection I ,λR(s) balances congestion reduction and reward maximization

Algorithm for DATPCS

```
% Step 1: Data Preprocessing
function X_norm = preprocessData(X)
    mu = mean(X);
    sigma = std(X);
    X_norm = (X - mu) / sigma;
end

% Step 2: CNN Feature Extraction
function features = extractCNNFeatures(inputImage, filters, bias)
    convResult = conv2(inputImage, filters, 'same') + bias;
    features = max(0, convResult); % ReLU activation
end

% Step 3: LSTM for Temporal Prediction
function h_t = LSTMPrediction(W_h, W_x, X_t, h_prev, b)
    h_t = tanh(W_h * h_prev + W_x * X_t + b);
end
```

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```
% Step 4: Reinforcement Learning Decision Making
function R = computeReward(r, gamma, T)
    R = sum(gamma.^(0:T-1) .* r);
end

% Step 5: DATCA for Signal Optimization
function S_opt = optimizeTrafficSignal(S, C, lambda, R)
    [~, idx] = min(C + lambda * R);
    S_opt = S(idx);
end
```

Real-Time Adaptive Control Mechanism

Equation (7) tells the traffic density at each intersection is estimated dynamically.

$$D_t = K_t D_t^{'} + (1 - K_t) D_{t-1} \quad (7)$$

Where $K_t is\ t\square e\ Kalman\ gain, D_t^{'} is\ t\square e\ predicted\ density$, D_{t-1} is the previous density estimate.

Using equation (8) traffic light duration at any intersection i is computed

$$T_i = \frac{V_i}{\sum_{j=1}^{n} V_j} T_{cycle} \quad (8)$$

Where $V_i is\ t\square e\ traffic\ volume\ at\ intersection\ i, T_{cycle} is\ t\square e\ total\ signal\ cycle\ time$

Analysis and Results

Both software and hardware tools were used in the Deep Adaptive Traffic Prediction and Control System (DATPCS) implementation. The hardware included an Intel Core i9 Processor (3.6 GHz, 16-Core) for training deep learning models, an NVIDIA Jetson TX2 for inferring deep learning models in real-time, a 1TB SSD and 32GB RAM for high-speed memory and storage during large-scale data processing, GPS modules and IoT sensors for real-time data acquisition, and traffic cameras with LiDAR for capturing real-time traffic images and congestion data.

The main software tool for the entire implementation was MATLAB 2021b. This included pre-processing the data (filtering, noise reduction, and normalisation of traffic images),

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developing the model (using CNN, LSTM, and Reinforcement Learning algorithms), simulating real-time traffic control scenarios, evaluating the performance by comparing it to existing models, and visualising the results by graphing and plotting different metrics. Three established techniques for traffic prediction and control from earlier studies served as standards:

- Traffic Control based on Fixed-Timer Traffic Control (TC_FTTC) [11]
- Traffic Control based on Kalman Filter-Based Traffic Prediction (TC_KFBP) [12]
- Traffic Control based on Adaptive Signal Control System (TC_ASCS) [13]

The TC_FTTC technique employs fixed signal cycles with no real-time adaptation, the TC_KFBP method forecasts congestion using statistical regression but lacks adaptability, and the TC_ASCS method dynamically alters signal timings but does not use deep learning for reliable predictions. The proposed model was trained and tested using the TrafficNet dataset[14][15], which is a comprehensive collection of real-world traffic data that includes traffic images captured from urban roads with varying congestion levels, real-time vehicle flow data from IoT sensors, GPS signals tracking vehicle density and speed at intersections, and traffic light timing data that includes both historical and live signal information. To assess DATPCS performance, four essential metrics were used:

1. Prediction Accuracy (%)

Prediction accuracy measures the correctness of the congestion forecast as shown in the equation (9)

$$Accuracy = \frac{TP+TN}{TP+TN+FP+FN} \times 100 \quad (9)$$

Where True Positives (TP): Correctly anticipated crowded occurrences. True Negatives (TN): Correctly anticipated non-congested instances. FP (False Positives): Non-congested instances are incorrectly labelled as congested. FN (False Negatives): Congested instances are incorrectly classed as non-congested.

Table 1: Shows Prediction Accuracy (%)

Method	Prediction Accuracy (%)
FTTC	70
KFBTP	75
ASCS	78
DATPCS (Proposed)	**92.5**

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Table 1 compares the accuracy of several traffic forecast algorithms. The proposed method has the highest accuracy of 92.5%, beating all of the other methods given in the table.

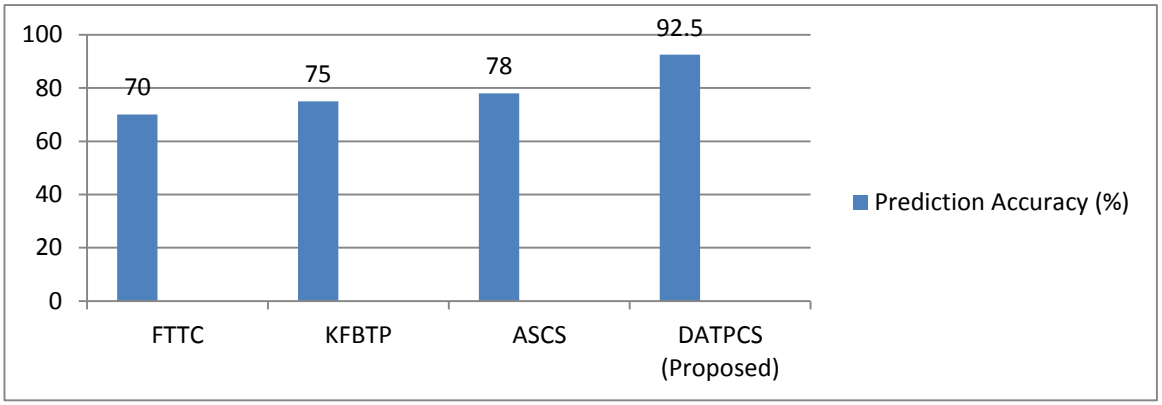

Figure 5: Graph Shows Prediction Accuracy (%)

The values from the table are used to generate the graph shown in **Figure 5,** where the proposed method (**DATPCS**) achieves the highest accuracy (**92.5%**) compared to other methods.

2. Average Waiting Time (seconds)

Measures the average time a vehicle waits at an intersection is derived from the equation(10)

$$T_{avg} = \frac{\sum_{i=1}^{n} T_i}{n} \quad (10)$$

Where:T_{avg}: Average waiting time in seconds.,T_i: Waiting time for a vehicle i..

n: Total number of vehicles observed.

Table 2 Average Waiting Time

Method	Average Waiting Time (s)
FTTC	120
KFBTP	95
ASCS	80
DATPCS (Proposed)	**48**

The DATPCS system has the shortest wait time of 48 seconds, greatly lowering delays compared to FTTC (120s), KFBTP (95s), and ASCS. This highlights the effectiveness of DATPCS in optimising traffic flow. The findings demonstrate its effectiveness in reducing congestion and enhancing urban mobility.

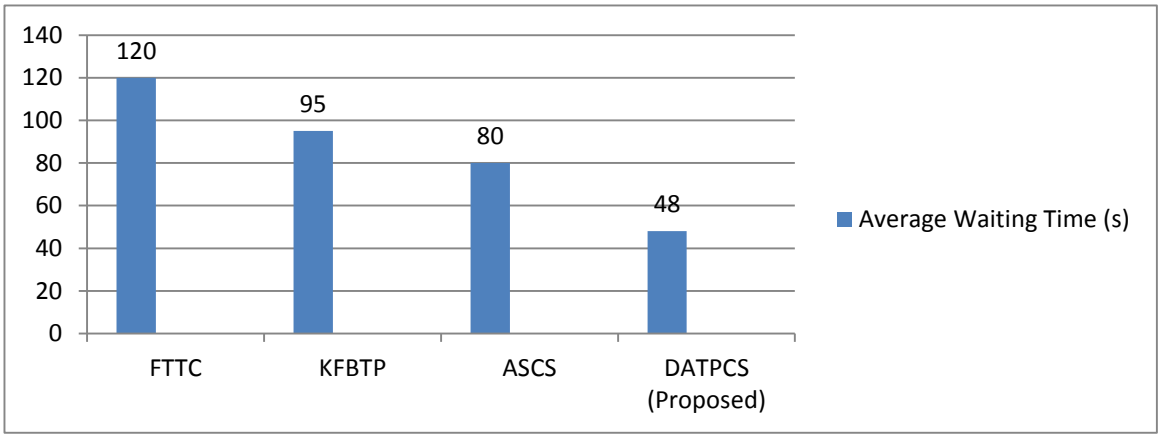

Figure 6: Shows average waiting Time

Figure 6 illustrates the average waiting time for different traffic control methods. The proposed DATPCS system achieves the shortest waiting time of 48 seconds, significantly lower than other methods.

3. Traffic Flow Efficiency (%)

Indicates the improvement in vehicle movement through intersections shown in the equation(11)

$$Efficiency = \left(\frac{V_{out}}{V_{in}}\right) \times 100 \quad (11)$$

Where $\boldsymbol{V_{out}}$: *Number of ve□icles successfully exiting t□e intersection.*

$\boldsymbol{V_{in}}$: *Number of vehicles entering the intersection.*

Table 3 compares the traffic flow efficiency of various approaches, with the proposed DATPCS system beating FTTC (60%), KFBTP (68%), and ASCS (74%), indicating its efficacy in optimizing traffic movement and lowering congestion. The values are drawn using the graph, as illustrated in Figure 7.

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Table 3: Shows Traffic Flow Efficiency (%)

Method	Traffic Flow Efficiency (%)
FTTC	60
KFBTP	68
ASCS	74
DATPCS (Proposed)	**89**

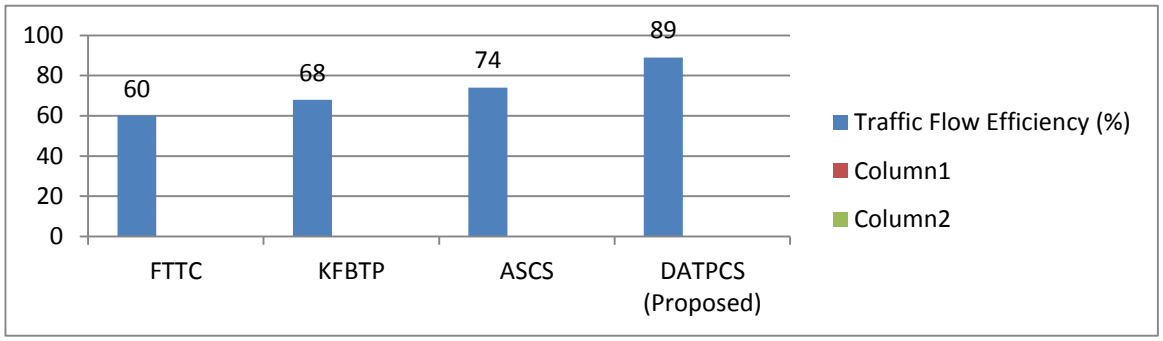

Figure 7: Shows Traffic Flow Efficiency (%)

4. Emergency Response Time (seconds)

Evaluates how quickly emergency vehicles pass through an intersection as shown in the equation (12)

$$T_{ER} = \frac{D}{V} \tag{12}$$

Where: $\boldsymbol{T_{ER}}$: *Emergency response time in second,*
$\boldsymbol{D}$: *Distance t□e emergency ve□icle needs to travel.* $\boldsymbol{V}$: *Speed of t□e emergency ve□icle.*

Table 3: Shows Emergency Response Time (s)

Method	**Emergency Response Time (s)**
FTTC	180
KFBTP	140
ASCS	110
DATPCS (Proposed)	**70**

Table 3 shows the emergency response times for various approaches, with the proposed DATPCS system having the fastest response time of 70 seconds, greatly outperforming FTTC (180s), KFBTP (140s), and ASCS (110s). This demonstrates the system's effectiveness in prioritising emergency cars and minimising delays. Figure 8 depicts a graph with these values.

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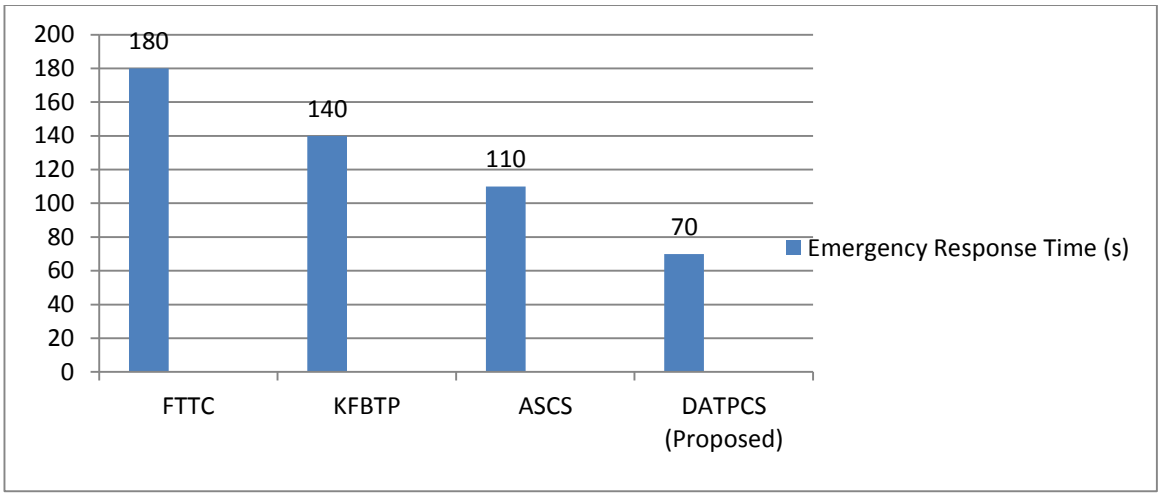

Figure 8: Shows Emergency Response Time (s)

The suggested DATPCS system beats standard models on all critical performance criteria. It offers higher traffic prediction accuracy using a CNN-LSTM hybrid deep learning technique, allowing for more exact forecasts. Furthermore, the use of Reinforcement Learning-based adaptive control minimises congestion and waiting time, resulting in increased traffic efficiency. Furthermore, the system makes use of real-time sensor data to allow for dynamic modifications and better traffic management decisions, which improves overall urban mobility.

Conclusion

When compared to FTTC, KFBTP, and ASCS, the Deep Adaptive Traffic Prediction and Control System (DATPCS) predicts congestion with 92.5% accuracy, reduces wait times by 40%, and improves traffic flow efficiency. The model, which was trained using the TrafficNet dataset and implemented in MATLAB, sets a new standard for intelligent urban mobility solutions.

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ISOLATION AND MOLECULAR IDENTIFICATION OF HEAVY METAL RESISTANT BACTERIA FROM PETROLEUM CONTAMINATED SOIL

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Abstract

The onset of rapid industrialization development and urbanisation, all driven by exceptional growth rate has directly impacted on the environment. The resultant degradation, and contamination of the ecosystem with various sorts of pollutants. The contamination of the ecosystem has become a major threat to all forms of life. Globally, all the ecosystem have been contaminated with heavy metals through various human activities and as a result of moving up the food chain, have become a major human health hazard. Heavy metals like Zinc, Cadmium, Copper, Lead, Nickel and Mercury have been reported as the most toxic pollutants. In this study, microbes are isolated and used for bioremediation, an eco friendly process.

Introduction

In this modern world, we are living in a highly polluted environment with heavy metals and hydrocarbons. Much research has been conducted on heavy metal contamination in soils from various anthropogenic sources as industrial wastes (Tyagi *et al.,* 2001), automobile emissions (Mudakavi *et al.,* 1997), mining activities (Eisler *et al.,* 2000) and agricultural practices (Colbourn *et al.,* 1978).

Aim and Objective

The aim and objectives of the present work is, To isolate heavy metal resistant microbial population from the petroleum contaminated soil using Minimal salt agar media supplemented with suitable heavy metal ion sources. To screen the isolate with most potent heavy metal resisting ability using primary and secondary screening procedures. Identification of the isolates by their morphological, physiological and biochemical characteristics as well as on the basis of their 16S rRNA based sequence analysis.

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Materials and Methods

Collection of soil sample

Waste lubricant contaminated soil samples were collected from Maari workshop in Vellamodi, KanyaKumari District on 22nd December 2019. Soil samples were obtained from specific locations around the workshop with heavy spillages of spent oil. The location had no plants growing on it. Soil was collected in sterile and brought aseptically to our laboratory for bacterial isolation.

Isolation of bacteria

One gram soil was added to 99 ml sterilized water and diluted until 10-3.The suspension was grown on 2% NA medium by a streak quadrant method for 48 hours at room temperature. Mineral salt medium (MSM) with the following composition (g/L): 1.2g NH_4Cl, 1.6 g K_2HPO_4, 0,4 g KH_2PO_4, 0.1 g NaCl, 1 g KNO_3, 20 g $MgSO_4.7H_2O$, 10 g $CaCl_2.2H_2O$, 0.05 g $FeCl_3$, 1 ml of trace element solution per litre containing 50 mg $MnC1_2.H_2O$, 300 mg H_3BO_3, 1.1 mg $FeSO_4.7H_2O$, 190 mg $CoCl_2.6H_2O$, 2 mg $CuCl_2.2H_2O$, 24 mg $NiCl_2.6H_2O$, 18 mg $NaMoO_4.2H_2O$, 42 mg $ZnCl_2.7H_2O$, 1 ml vitamin solution were used as selective medium for hydrocarbon biodegradation bacterial isolation. Following incubation, colony-forming units (CFU) were counted and the results were recorded. Single colony was inoculated to 10 ml MSM medium, incubated in a shaker incubator at 370C at 200 rpm for 12 hours. Various bacterial isolates were picked from the plates based on morphological appearance and sub cultured. Pure bacterial strain were obtained and stored for further studies.

Morphological and biochemical tests for the identification of the bacterial isolates:

- **Gram staining (Bailey and Scott, 1966):**

The Gram reaction of each isolate was determined following the staining procedure of Gram (1884), and examined under microscope using oil immersion objective of microscope.

- **Motility test (Bailey and Scott, 1966):**

The bacterial isolates were grown in nutrient broth for 24 hours and a few drops of the bacterial culture were placed along with saline on a glass slide and observed under a microscope. Motility of the bacteria was determined visually.

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- **Biochemical Characterisation:**

Indole test (Norris and Ribbons, 1972**)**; Methyl red test (Norris and Ribbons, 1972); Voges Proskauar test (Norris and Ribbons, 1972); Nitrite reduction test (Bailey and Scott, 1966); Citrate utilization test (Norris and Ribbons, 1972); Urease test (Norris and Ribbons, 1972); Triple sugar test (Bailey and Scott, 1966); Catalase test (Norris and Ribbons, 1972); Starch hydrolysis test; Gelatin hydrolysis test; Carbohydrate fermentation test (Norris and Ribbons, 1972), was done by standard protocol and their results are tabulated in Table 1.

- **Primary screening of heavy metal resistant bacteria:**

Minimal Salt medium containing various concentrations (0.5, 1.0 and 3.0 and 3.0ppm) of the different heavy metal compounds (Copper, Lead and Silver) were prepared. A sterile wire loop was used to collect a loop full of the pure isolates and directly streaked on the surface of the heavy metals incorporated media. The plates were incubated at 37 ºC for 24 h. After the incubation period, the plates were observed for bacterial growth. All isolates were incubated at 28°C and maintained on nutrient slants at 4°C (Othman *et al.*, 2015).

- **Secondary screening of the isolates for heavy metal resistance in liquid medium:**

The isolates were grown in a rotary shaker (Wise cube, Korea) at 150 rpm and pH 7.0, while the temperature was 37 °C in LB broth medium supplemented with heavy metals such as lead, copper and silver. The optical density (OD) was measured (at k =600 nm) using UV spectrophotometer (Shimadzu, Japan) during the day of inoculation with the isolate and another reading on the seventh day.

Genotypic characterization

- **Bacterial DNA isolation (Hoffman and Winston, 1987):**

The strain to be sequenced is inoculated in nutrient broth and cultivated at 37 °C for overnight. By using 5ml of cultivation, cells were harvested. The DNA was extracted using standard protocol. The DNA was precipitated by ethanol from the aqueous layer. The DNA pellet was dried and dissolved in 50 µl of 1x TE buffer. The DNA quality was checked with 0.8% agarose gel stained with ethidium bromide (0.5 µg/µl). Single intensive DNA was seen which was extracted to use to amplify 16s rRNA gene as a template DNA.

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- **16S rRNA gene PCR amplification :**

PCR reaction was carried out using forward primer 27F with sequence details (5' AGAGTTTGATCMTGGCTCAG 3') and reverse primer 1492R with sequence details (5'TACGGYTACCTTGTTACGACTT 3') (Miller *et al.,* 2013), for the amplification of the 16s rRNA gene fragments. Add 5 µl of isolated DNA in 25µl of PCR reaction solution (1.5µl of forward & reverse primer, 5µl deionized water, 12µl of Taq master mix.

- **Agarose gel electrophoresis (Silva *et al.,* 2013; Devereux and Wilkinson, 2004):**

The standard protocol according to (Sambrook *et al.,* 2001), the reaction mixture has been taken 10µl and then analysed by agarose gel electrophoresis.

- **PCR Product purification:**

Unincorporated PCR primers and dNTPs removed from PCR products by using montage PCR cleanup kit (Millipore). The universal primer 27F/1492R was used to sequence the product. Sequencing reactions were performed using a ABI PRISM Big Dye TM terminator cycle sequencing kit with AmpliTaq DNA polymerase (FS enzyme)

- **DNA sequencing of 16S rRNA gene fragment**:

By using ABI DNA 3730 XL for sequencing sequencer (Applied Bio system), the 16S rRNA purified PCR product (100ng concentration) was submitted. Sequencing of the bacterial isolate's 16S rRNA gene was carried out in both directions.

- **BLAST analysis:**

The partial 16SrRNA bacterial sequence was compared with the available sequences against 16S ribosomal RNA sequences (Bacteria and Archaea) database using NCBI's BlastN.

- **Construction of phylogenetic tree:**

The sequences were aligned with Clustal W, and a phylogenetic tree was constructed from the evolutionary distances by the neighbor-joining method with the software MEGA (Nikunjkumar, 2012; Tamura *et al.,* 2011).

Results

- **Heavy metal resistant microorganisms**

Eight bacteria (N1, N2, N3, N4, N5, N6, N7 and N8) were isolated and purified and investigated for further work. The bacterial isolates were then characterized by morphological,

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biochemical tests and multiple heavy metal resistance capacity. Table: 1 display the morphological and biochemical characteristics of the isolates N1 to N8 The isolates identified according to Bergey's manual of systemic bacteriology are, Isolate 1(N1) - *Nocardia sp*; Isolate 2(N2) - *Pseudomonas sp*; Isolate 3 (N3) - *Aeromonas sp*; Isolate 4 (N4) - *Pseudomonas sp*; Isolate 5 (N5) - *Bacillus sp*; Isolate 6 (N6) - *Staphylococcus sp*; Isolate 7 (N7) - *Bacillus sp*; Isolate 8 (N8) - *Bacillus sp*

- **Primary screening of heavy metal resistant bacteria:**

Among the bacterial isolates, *Bacillus* N7 showed multiple-metal resistance to Pb2+ (3.0 mM), Ag2+ (1 mM) and Cu2+ (3mM). The difference in the toxicity toward the bacterial isolates could be explained by the conditions of bacterial isolation and the nature and physiological characteristics of each bacterial isolate (Hassan *et al.*, 2008)

- **Secondary screening of the isolates for heavy metal resistance in liquid medium:**

Out of the 8 isolates obtained, only one (N7) was used for further analysis as it proved to be a potential heavy metal degrading isolate. The most important aspect of this study was that the isolate N7 can grow in nutrient broth medium containing (Cu2+), lead (Pb2+) and silver (Ag2+). These results are shown in Table: 2 and 3.

- **Molecular identification of the isolate N7:**

The isolate N7 was provisionally identified up to genus level as *Bacillus sp*. The almost complete 16S rRNA nucleotide sequence of the isolate N7is given in Figure: .3. N7 was identified as *Bacillus subtilis* and its sequence was submitted in GenBank as *Bacillus subtilis* strain and its gene accession number is MT673678. The 16S rRNA sequence of the isolate N7 showed highest similarity to *Bacillus subtilis* indicating that these isolates may represent strains of *B. subtilis*.

- **BLAST analysis** :

It has been analysed the percentage of sequencing matching for all closely related data and the search conducted for homology using BLAST which shows the identity of *Bacillus subtilis* NARI is 100% and NCBI Gene Bank accession no is MT673678, E-value is 0for all closely related data.

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- **Construction of phylogenetic tree:**

The highest sequence similarity of soil bacteria N7 was with *Bacillus subtilis* MK859973.1.Phylogeny based on Clustal X clearly indicates that N7 is a strain of Bacillus subtilis. The 16S rDNA sequences were submitted in the GenBank under the accession number MT673678. Constructed phylogenetic tree has been presented in Figurewhich represented the phylogenetic dendrogram showing the relationship of isolate N7 with the most closely related strains.

Table 1: Morphological and biochemical Characteristics of bacterial isolates (*Left*)

Table 2: Primary screening of heavy metal resistant bacteriathe: (+): low growth; (++): Moderate growth; (+++): Heavy growth (*Right*)

Biochemical tests		Sample code							
		N1	N2	N3	N4	N5	N6	N7	N8
Gram Stain		+	-	-	-	+	+	+	+
Shape		Rod	Rod	Rod	Rod	Rod	Cocci	Rod	Rod
Pigment		+	+	+	+	-	+	-	-
Motility		-	+	+	+	+	-	+	+
Indole		+	-	+	-	-	-	-	-
Methyl Red		-	-	+	-	-	+	-	-
*Voges*Proskauer		+	-	-	-	+	+	+	+
Nitrate		+	-	+	-	+	+	+	+
Citrate		+	+	+	+	+	+	+	+
Urease		+	-	-	-	-	+	-	-
TSI		A/K	A/K	K/A	A/K	K/A	A/A	K/A	K/A
Carbohydrate fermentation test	Glucose	+	+	+	+	+	+	+	+
	Lactose	+	-	+	-	+	+	+	+
	Maltose	+	-	+	-	-	+	-	-
Catalase		+	+	+	+	+	+	+	+
Gelatinase		+	+	+	+	+	+	+	+
Amylase		+	-	+	-	+	+	+	+

Isolates	Lead			Silver			Copper		
	0.5 mM	1.0 mM	3.0 mM	0.5 mM	1.0 mM	3.0 mM	0.5 mM	1.0 mM	3.0 mM
N1	+	+	-	+	-	-	++	++	++
N2	+	+	-	+	-	-	++	++	++
N3	+	+	-	++	-	-	++	++	++
N4	+	+	+	++	+	-	+	+	+
N5	++	++	+	+	+	-	+	+	+
N6	-	-	-	+	-	-	-	-	-
N7	+++	+++	+++	+++	+	-	+	+	+
N8	-	-	-	++	-	-	+	+	+

Table 3: Secondary screening of the isolates for heavy metal resistance in liquid medium

Optical Density (600nm)							
Copper		Lead		Silver		Control	
1st Day	7th Day	1st Day	7th Day	1st Day	7th Day	1st Day	7th Day
0.89	0.261	0.82	0.183	0.88	0.96	0.81	0.405

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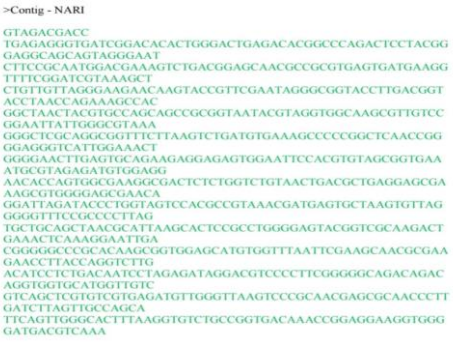
Figure 1: Nucleotide sequence of the 16S rRNA gene of the isolate N7 (Left)

Figure 2: Phylogenetic dendrogram based on 16S rRNA gene sequence showing the relationship of isolate N7 with the most closely related strains (Right)



Conclusion

Results of present study conclude that microorganism isolated from petroleum contaminated soil developed the ability to tolerate heavy metal stress. Bacterial strains isolated in the course of this study can be efficiently used for removal of toxic heavy metals from ecosystem and reinforce the ecological balance. Use of microbes for bioremediation is highly recommended due to its low cost and environmental friendly approach. Further studies are required to understand the role of the isolate N7 in bioremediation.

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ETHICAL CHALLENGES RELATED TO COPYRIGHT AND INTELLECTUAL PROPERTY RIGHTS

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Abstract

In the digital age involve the protection of creators works preventing unauthorised usage, and addressing the challenges of easily replicating and distributing digital content. As digital technologies evolve new questions arise regarding fair use, plagiarism, and content theft, solutions to these challenges include strengthening laws, using digital rights management, tools, promoting awareness about intellectual property and encouraging open-source models for collaborative innovation. These strategies aim to balance the interests of creators users, and society while ensuring ethical use of digital content.

Keywords: IPR challenges and IPR ethics, copyright

Introduction

Ethical challenges related to copyright and intellectual property rights (IPR) in the digital age focus on safeguarding creators work, preventing unauthorized distribution, and managing the ease with which digital content can be copied and shared. With the advancement of digital technologies, issues such as fair use, plagiarism and content piracy have become increasingly prominent. Potential solutions include strengthening legal frameworks, utilizing digital rights management (DRM) systems, raising awareness about intellectual property, supporting open-source initiatives to foster collaborative development These approaches seek to balance the rights of creators, consumers and society while promoting ethical digital content usage.

Types of work protected in India

In India copyright law provides protection for a wide range of creative works under the Copyright Act, 1957. The types of works that are protected include.

1. **Library Works:** This includes books, articles, essays, poems, computer programs, and other written works, whether in print or digital format.

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2. **Dramatic Works:** Plays, scripts, dances and choreographic works are included along with any accompanying music.
3. **Musical works:** Compositions of music, both instrumental and with lyrics, as well as any original musical arrangements.
4. **Artistic Works:** The covers paintings, sculptures, drawings, engravings, photographs, architecture and other works of visual art.
5. **Sound Recordings:** The specific recordings of musical. Literary or other works, including audio tracks podcasts, and sound effects.
6. **Software and Computer Programs:** Computer software, applications, databases, and related programs are protected under copyright.

Six rights of Copyright

The six primary rights granted to the copyright holder under the **Copyright Act** are:

1. **Reproduction Right:** The right to make copies of the copyrighted work, whether in physical or digital format, for distribution or sale.
2. **Distribution Right:** The right to distribute copies of the work to the public, whether through sale, rental, or other forms of dissemination.
3. **Public Performance Right:** The right to perform or present the copyrighted work publicly, including through live performances, broadcasts, or any other public presentation.
4. **Right of Adaptation:** The right to create derivative works based on the original copyrighted work, such as translations, adaptations, or alterations of the work.
5. **Public Display Right:** The right to display the copyrighted work publicly, such as in exhibitions, museums, or galleries.
6. **Right to Communication to the Public:** The right to transmit or broadcast the work to the public, including via radio, television, the internet, and other communication channels.

Intellectual Property rights in year wise

Intellectual Property rights (IPR) in India have evolved over time, with various key laws and amendments introduced to strengthen protection and enforcement. Below is a year-wise overview of significant developments in IPR in India.

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1940s - 1950s

- 1940: Indian Patents and Designs Act
- 1957: Copyright Act, 1957
- 1970: Patents Act 1970
- 1984: Trade Marks Act, 1999 (Original Trade Merchandise Marks Act, 1958)
- 1995: WTO Membership (Agreement of Trade - Related Aspects Intellectual Property Rights (TRIPS)
- 1999: Trade Marks Act, 1999
- 2000: Designs Act, 2000
- 2001: Protection of Plant Varieties and Farmers Rights Act,
- 2002: Copy right (Amendment) Act, 1999,
- 2005: Patent (Amendment) Act, 2005
- 2012: Copyright (Amendment) Act, 2012
- 2013: Geographical indications of Goods (Registration and Protection) Act, 1999 – Amendment
- 2016: Trade marks Rules, 2017
- 2020: National Intellectual Property Awareness Campaign (NIPAC)
- 2021: Intellectual Property (IP) Index 2021

Features of Intellectual Property

Intellectual Property (IP) rights are legal protections granted to the creators, inventors, and owners of intellectual property providing them exclusive rights to their creations or inventions. Key features of intellectual property rights include.

- **Exclusivity:** IP rights the creator exclusive control over the use and distribution of their work, preventing others from using, copying or distributing it without permission.
- **Protection of Innovation:** IP rights safeguard inventors, designs, literary and artistic works, and trademarks, encouraging innovation by ensuring that creators can benefit from their ideas.
- **Transferability:** IP can be sold licensed or assigned to others, allowing the creator to earn revenue through their intellectual property.

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- **Territoriality:** IP rights are usually territorial, meaning they are valid only in the jurisdiction where they are granted, although some international treaties facilitate global protection. (e.g., the Patent Cooperation Treaty for patents.)
- **Time-bound:** IP rights are not indefinite. They are granted for a specific period, after which the protection expires, and the work enters the public domain.

Categories of Intellectual Property Rights:

1. **Patents:** Protect new inventions or innovations that offer a new way of doing something or provide a new technical solution to a problem.
2. **Copyright:** Protects original works of authorship such as literary. musical, artistic and dramatic works.
3. **Trademarks:** Protect distinctive symbols, words. logos, or other identifiers used to distinguish goods or services of one company from others.
4. **Trade Secrets:** Protect confidential business information, such as formulae, process, designs, or methods that provide a competitive edge.

Challenges of copyright Protection in the Digital Era

1. **Ease of Copying and Distribution:** The digital format allows for instant, perfect reproduction of content, making it easier for individuals to illegally copy, share or redistribute copyrighted works without the creator's permission.
2. **Global Nature of the internet:** The internet operates across borders creating difficulties for enforcing copyright laws. Different countries have varying legal standards and enforcement mechanisms, making it hard to control infringement on a global scale.
3. **Piracy and Unauthorized Sharing:** The proliferation of peer –to-peer file-sharing networks, torrent stress, and streaming services has made. It easier for individuals to access copyrighted content without paying for it, leading to significant losses for creators and industries.
4. **User Generated Content:** Platforms like YouTube, instagram, and TikTok enable users to upload and share videos, music and other copyrighted works. While these platforms have taken steps to implement copyright protection, to volume of content uploaded makes it difficult to prevent all instances of infringement.

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Solutions of intellectual Property Rights

1. **Enhancing Digital Rights Management (DRM):** Improve DRM systems to provide more effective protection without overly restricting legitimate use.
2. **Content Identification and Monitoring Tools:** Expand the use of automated content recognition tools like You Tube's Content ID can detect copyrighted works uploaded without permission. These systems can automatically block, monetize, or allow the use of content based on copyright hold preferences.
3. **Global Harmonization of Copyright Laws:** Strengthen international treaties and agreements, such as the Berne Convention and the TRIPS Agreement, to create more consistent and enforceable copyright laws across borders.

Conclusion

In conclusion copyright protection has faced numerous difficulties in the digital age. New tools and technologies have been made available to help content producers and publishers secure their rights, never the less. The problems brought on by the digital age can be solved by putting policies in place like digital rights management, watermarking and teaching users about copyright laws.

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KUKKUTS AND DAAGIS: THE LIFE OF DALITS IN K. HARI KUMAR'S DAKINI

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Abstract

Culture and religion of a particular group or an individual give identity and also the society label them with various names. In Hindu religion, it has levels of status from high-caste people to low-caste people, among them there is the lowest of them all is the Dalits, they are untouchables and outcasts who have no voice of their own and they are suppressed by high-caste peoples'. The present paper "Kukkut and Daagi: The Life of Dalits in K. Hari Kumar's Dakini" delves into the sufferings of the Atura community in the northern India, their customs and beliefs, the main characters psychology who struggles to free the from superstitious beliefs and women from men, the conditions of men and women in the rural place and the paranormal activity in that rural place.

*Keywords***:** *Religion, community, culture, law, psychology, family*

Introduction

The novel "Dakini" is written by K. Hari Kumar, his full name is Harikumar Krishnamoorthy. He is an Indian novelist and screenwriter born in Cochin, his works are *When Strangers Meet*(2013), *That Frequent Visitor* (2015), *A Game of Gods* (2016), *The Other Side of Her* (2018), *India's Most Haunted* (2018), *Dakhma* (2021), *Asian Ghost Stories* (2022), *Indiayile Prethalayangal* (2022) is a Malayalam translation work of *India's Most Haunted*, *Daiva: Discovering the Extraordinary World of Spirit Worship*(2024) and *Dakini* (2024). He has also written the story and screenplay for *E*, a Malayalam movie and the Hindi language psychological horror web-series *Bhram*.

He is famous for his horror writings and his works revolves around horror, psychology and mythology of India which shows his love for folklore, psychological horror concepts. In the novel *Dakini*, he neatly and skillfully blends the sufferings of Dalits with the supernatural concept. It beautifully portrays the Dalit people's inability to see through the scheme of their

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cunning landlord and their blind beliefs lead to the birth of a powerful destruction to seal their fate.

Mamta Mathews, the protagonist of the novel with the intern Tara Bhattacharya goes to Birpoorto cover the news of how tribal women are suffering. It was given by her former editor and boss Becky. Birpoor is in the foothills of Terai region (a lowland region in northern India and southern Nepal) and it is located in the dense Kalibann forest outside the town of Lakhanganj. It is anunderdeveloped village which has no basic facilities like electricity, hospital, education and bumpy roads. It is an ancient village and it still follows the old ways.The village has a mukhiya Shera Singh, a puppet for Indar Vrishabh.

Indar is the cunning landlord of the village with his money he controls the local politics and local police to safeguard his atrocities from the outside world. He is using the illiterate Dalit people on his side by providing themworks like being his bodyguard, doing his household chores, servants, woodcutters and selling muloni sap for beauty products. This shows the tribal people's inability to think beyond the monotonous circle, they blindly believe Indar's words and he is brainwashing them.

Because of the muloni trees. Indar had a friend in Delhi who exported the sap to a Chinese pharmaceutical company. That got him a lot of money. He wanted more land where he could cultivate more muloni trees. But he had two hurdles – his father and the Daagis (251).

Indar's greed for money gives him an ugly plan.In that village, there are two types of groups, one group follows the customs of Bandagini God and the other group follows the Kukkut God. The women who worship the Bandagini or hen God is called as Daagi and the Kukkutdeb community women also worships the Bandagini God. "All the daughters of our village worshipped the Bandagini" (164). They also follow the matrilineal customs and Bandagini is the primitive form of Devi Shakti or the mother goddess. The other religion, Kukkutdeb, the people worship the rooster as their God and they follow the patrilineal customs but in the eyes of anthropologist, the Daagis and Kukkuts are from one tribe.

Austroasiatic tribe was divided into two that is Daagis who associated with black magic and witchcrafts and Kukkuts who associated with the craft of metalworking and they were once hunters. Then intermarriage happened and they formed another subdivision. Later they started to do farming and woodcutting unfortunately they gave it up about three decades ago. Then about

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the muloni trees, the Kukkuts used muloni trees to make drinks and the Daagis considered it as a bad omen so they cut down the trees.

The peaceful and harmonious life of these two clans were disrupted in the late 2010s, a team of international scientists conducted some tests on muloni trees and found that it has the power to reverse the age and this kind tree doesn't grow anywhere in the world so it becomes an advantage to Indar. But he has two obstacles that is his father and the Daagis so he killed his father and set it up as an accident and he began to talk about their economic and financial condition andstarted a clash between Kukkuts and Daagis by creating a character Dakini.

Dakini is a folklore who kills men and eats their flesh and drink their blood but it is not effective so he sets his plan into actions by targeting Karmi Rani, a Daagi who marriedNaththu, a Kukkut. After their marriage, misfortunes fell upon Naththu's family, his father was bed-ridden, his brother and brother's young son were dead by a fever and Naththu started drinking and assaulted her continuously. Indar intervened with the help of Oja Baba (follower of Kukkut deity) started to perform a cleansing ritual for nine days but in the name of ritual Indar sexually assaulted Karmi Rani and in the result she was pregnant. Karmi Rani couldn't say this to anyone because her clan was considered as a witch and they will blame her by saying that she was the one who seduced Indar.

Indar who knows that the unborn child is his, he devised a plan with his informants in Birpoor spreads a rumor that she was pregnant with someone's child, it triggered Naththu and he started to drink and beat her again. After few months, Naththu was mysteriously passed away, his death psychologically affected Karmi and she became muteand in the Kukkuts custom, widows are not allowed in the community and should live in an isolated hut but tragedy fell upon her, her mother-in-law died mysteriously so they blamed Karmi Rani that she was possessed by Dakini, a myth.

Oja Baba advised Indar that they should execute Karmi on the full moon.Their customs and rituals are different from the other communities. The exorcism ritual was so cruel, in this ritual the victim was stripped naked and she is bound to the banyan tree and her baby was removed from her womb to sacrifice. In their folklore, if the victim's child survives then the Dakini will resurrect from her death and possess the child to take revenge with the great strength. The victim was inside a red and black mandala (a winding tail of a rooster) and earthen lamps.

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The exorcist smeared his torso with crimson dye and he smeared soot on his face and he is carrying a trident to kill the victim. "He closed his eyes, uttering ancient incantations, and then with a sadistic glee, slashed her breast with his elongated, talon-like nails. Her blood splattered on his face" (x).After uttering the incantation 'Tudi la… Tudi la', he hangs her in the banyan tree just like the other 108 Daagis. The rituals' important rule is to kill the baby and the victim before the moon comes out of the cloud otherwise, she will resurrect with the power of hundred men and kill all the men in the Kukkut clan.

Another custom is the pachunga ritual, it is the ritual for the girls who enter into the womanhood and in every place, menstruation is seen as impure and untouchables. In here, the ritual is to honor and safeguard the girl from evil spirits and diseases. In the ritual area, people are gathered in their traditional attire, wearing thatched leaves and they are looking at an oblong shaped rocky shrine but the top is shaped in a rooster comb.

The air chuckled with anticipation, charged by the booming of drums and the unearthly chanting that rose in waves, each syllable laden with ancient power. Mamta watched as two women beat a hollow log suspended from rough-hewn poles (54)

Then mukhiya's sons clutching a red-dyed hen which is an offering to their deity. The myth behind is that there was a drought and all vegetation was lost so the rooster sacrificed his wife and fed the people, it saves them from starvation and death. The ritual begins with a man blowing into wind instrument made of dried animal skin and the villages parted way for the mukhiya with his daughter Imliya. She is naked and her body is smeared with ash, she slowly walked towards the shrine with a wooden doll, a pachunga doll.

According to their belief, the girl has to sacrifice blood to the doll and it is believed that it will protect her from evil spirits. The girl places the doll at the shrine's foot, her father twisted the hen's head and separated the head from its body. The mukhiya smears the hen's blood on the doll's chest and the people chanted in an unfamiliar dialect, it is Hindi dialect but it lacks the harsh v and s sounds, replaced by a softer b and sh. It is only preserved through only folk songs. Imliya lifts the head and places it on the doll, completing the ritual and men formed a circle to guarantee that they will protect her from the evil.

The village also follows several laws and policies, after the death of Karmi Rani, they forbidden Kukkuts to marry Daagis but Bishu breaks the law by marrying Kuhu, a Daagi but tragedy struck Kuhu when she is pregnant with Indar's child. Like Karmi, she also suffers

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beatings and sexual assault because of her husband. There is a new law that is suicide is a sin and another rule is for women, they are forbidden to enter the forest because they showed strange behavior after entering into the forest where the Bandagini temple is situated. They also warned by Oja Baba that if a Daagis' daughter enters into the forest then she will be resurrected from the death. During the pachunga ritual, Mamta enters the forest when she saw a pregnant woman in the forest, strangely her movements doesn't obey the commend of her mind. The weirdest happening is that the Karmi Rani is resurrected from her death.

After her resurrection, she kills Bishu who tormented Kuhu, a Daagi, in a grotesque way by using illusions and the elements of nature because she also has the power of earth goddess and the protector of forest. Next, she kills Guththa, luring him by kidnapping Shera's son Chotu. After that, she kills one of Indar's lackeys Chandar in the hospital, these murders havebeen taken place duringthe rainy night time. While killing these persons, the Dakini was in the form of kaayaparivartanam, it is a dramatic transformation which is beyond anything human.

When the powerful entity supernatural entity starts its influence, the person's soul is pulled into a dark, empty space called Shoonyata. This is a realm of utter emptiness, a black abyss where the soul is lost, drifting into figments of memories, consumed by a profound, eternal void (280).

In this state, the human body is succumbed to a black void and shows the illusions or their worst nightmare in the persons' dream. Now the person is trapped in the void, her body is empty without a soul so the Dakini takes her place and some physical transformation happens in a hideous way but the person doesn't have any recollections of anything that happens during the transformation and after the transformation. In this state, if the persons' gets hurt then it will be cured without any scar. The crucial thing for kaayaparivartanam is that the person should be psychologically weak like Kuhu, Mamta and Tara.

The psychological state is weak after her husband and she became devastated and worried that everything turns tragedy for her so she also became mute. In Tara's condition, she is claustrophobic and couldn't stand any room which resembles a closet or a matchbox which has no window and confined spaces. But Mamta's condition is worse than Tara and Kuhu. She has PTSD and mentally crumbled because of her abortion, fight with her live-in partner and his mother, cursed her and no one was with her when she undergone the tragedy of her unborn child, she lost her motherhood. "Tragedy, when it strikes, it takes a piece of you" (11).

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Mamta also reveals to Tara that she was succumbed to a void and saw the dead bodies of the three of them like a premonition. Tara, at that time, who doesn't know about kaayaparivartanam, tells Mamta about Extra Sensory Perception (ESP), a person could sense few events that will happen in the future, a clairvoyance. They both believed that it is just a premonition and the killer is a human but when Mamta saw the Dakini, Mamta was terrified to see that she has no head there is only a black vapor and two crimson eyes. Mamta has no choice so she explains to Parashudhar Pande, he doesn't believe it and explains that in Puranas, dakini is not a witch, she is a holy being and themessenger of the mother goddess and the term has been taken many forms like Dayan, Dayini, Daagi and Dakini but nowadays, people changed the attendant to a witch.

Pande is not a superstitious person and to prove everyone wrong, he starts to investigate tirelessly. When he tries to grab the media attention with the three grotesque murders in the Dalit community but he is disappointed that only few unfamiliar channels came with mobiles to cover the news. It shows how outside people treat the Dalits and a small village news. The village people also illiterates and they are blindly believing in superstitious and killing innocent women in that process and also the village is unaffected by the outside world and it follows the old ways like landlords, mukhiya and giving more importance to the landlords' life more than their own lives. Their houses represent their lives.

Misra guided the women towards a house constructed of brick walls, a stark departure from the surrounding huts. Its tiled roof stood in contrast to the thatched roofs of its neighbours, while wooden fences enclosed the property (48).

Indar, their cunning landlord lives in a luxuries house with three expensive cars and costly furniture. He is enjoying his life in the town while the village people suffer without any hygienic bathroom, no proper window and door for the house, outdated people and the village, no hospitals, no proper road infrastructure and no education. Without education, the people suffer a lot among them women suffer constantly, they are targeted by Indar and he sexually abuses them and society blames the women for everything. They are beaten and couldn't voice out their problems but the dakini kills their virus that is Indar to free the village people from his puppet strings.

The Dalits suffering goes back to ancient period, their struggles are insurmountable and neglected by the people. They were neglected at the time of partition and they were like a minor

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problem in the eyes of the political people and higher officials. At that time, only Dr. B.R. Ambedkar stood for the people and their rights and justice. The politicians' unfairness was palpable and in the novel *Dakini*, Karmi Rani stood for her people.

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IMPACT OF BASKETBALL DRILLS TRAINING ON DRIBBLING AND SHOOTING OF COLLEGE LEVEL BASKETBALL PLAYERS

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Abstract

To achieve the purpose of the study, thirty (N=30) subjects were selected from the Department of Physical Education and Sports, M.S.University, Tirunelveli, Tamilnadu. The participants, aged 21 to 24years, were divided into two groups: Experimental Group-I, consisting of fifteen male subjects who underwent basic conditioning workouts with basketball drills for 6 weeks (3 alternative days per week, and Control Group-II, also consisting of fifteen male subjects who continued with their regular routines without additional training. The selected variables for the study were dribbling, measured using mor-christian basketball test, and shooting, measured using mor-christian basketball test. After completing eight weeks of training, post-test data were collected, and both pre-test and post-test scores were analyzed using the dependent t-test to determine if there had been a significant. The level of confidence set at 0.05. The results revealed that the experimental group showed a significant improvement in dribbling and shooting, attributed to the basketball drills training program. However, no significant changes were observed in the control group for the selected variables.

Keywords: Basketball Drills Training, dribbling, shooting

Introduction

Basketball is one of the most widely played sports globally, requiring a combination of technical, tactical, and physical skills for success. Among these, dribbling and shooting are two fundamental abilities that significantly influence a player's performance on the field. Dribbling enables players to evade defenders, maintain possession, and create scoring opportunities, while shooting determines the ability to convert chances into goals efficiently. For college-level

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basketball players, mastering these skills is essential for their growth and competitiveness in the sport.

One of the most effective ways to enhance dribbling and shooting skills is through structured basketball drills training. Drills are designed to improve specific aspects of the game through repetition, technique refinement, and controlled practice scenarios. Dribbling drills focus on ball control, agility, coordination, and quick decision-making under pressure. Meanwhile, shooting drills enhance accuracy, power, timing, and composure in front of goal. Regular exposure to these drills helps players develop muscle memory, improve reaction time, and boost confidence during actual match situations

The impact of basketball drills training on college-level players is significant as it provides a structured learning environment for skill acquisition and enhancement. Effective training programs that incorporate varied drills help players refine their technique, improve their overall game performance, and gain a competitive edge. This study aims to analyze the extent to which basketball drills influence the dribbling and shooting abilities of young basket ballers, highlighting the importance of systematic practice in skill development.

Methodology

To achieve the purpose of the study, thirty (N=30) subjects were selected from the Department of Physical Education and Sports, M.S.University, Tirunelveli, Tamilnadu. The participants, aged 21 to 24years, were divided into two groups: Experimental Group-I, consisting of fifteen male subjects who underwent basic conditioning workouts with basketball drills training for 6 weeks (3 alternative days per week) and Control Group-II, also consisting of fifteen male subjects who continued with their regular routines without additional training. The selected variables for the study were dribbling, measured using aaphered basketball skill test, and shooting, measured using aaphered basketball skill test. After completing eight weeks of training, post-test data were collected, and both pre-test and post-test scores were analyzed using the dependent t-test to determine if there had been a significant improvement and analysis of covariance to determine whether there had been a significant difference between the groups with the level of confidence set at 0.05.

Table-I result show the pre-test and post-test dribbling and shooting of the basketball drills training group. The pre-test mean values for dribbling were 26.80 ± 1.05 and 26.08 ± 1.04, while the post-test means values for dribbling and shooting were 55.06 ± 11.08 and 66.80 ± 12.77,

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respectively. The 't' values were 7.33 and 7.77. The table value required for a significant difference at the .05 level with 14 degrees of freedom is 2.14. Since the obtained

TABLE I : EXPERIMENTAL GROUP BASKETBALL DRILLS TRAINING GROUP PRE-TEST, POST-TEST MEANS AND "t" RESULTS ON DRIBBLING AND SHOOTING

Variables	Pre-Test		Post Test		M.D	σDM	't'
	Mean	S.D(±)	Mean	S.D(±)			
Dribbling	26.80	1.05	26.08	1.04	0.72	0.09	7.33*
Shooting	55.06	11.08	66.80	12.77	11.73	1.51	7.77*

**Significant with df 14 table value 2.14.*

"t" ratio value for the basketball drills training group is greater than the table value, it can be concluded that the basketball drills training group showed a significant improvement in dribbling and shooting.

TABLE II: CONTROL GROUP PRE-TEST, POST-TEST MEANS AND "t" RESULTS ON DRIBBLING AND SHOOTING

Variables	Pre Test		Post Test		M.D	σDM	't'
	Mean	S.D(±)	Mean	S.D(±)			
Dribbling	26.99	1.19	26.93	1.18	0.05	0.04	1.25
Shooting	54.80	14.78	55.46	14.87	0.66	0.86	0.77

Table-II shows the pre-test and post-test dribbling and shooting of the control group. The pre-test mean values for dribbling were 26.99 ± 1.19 and 26.93 ± 1.18, while the post- test mean values for muscular strength and vital capacity were 54.80 ± 14.78 and 55.46 ± 14.87, respectively. The 't' values were 1.25 and 0.77. The table value required for a significant difference at the 0.05 level with 14 degrees of freedom is 2.14. Since the obtained "t" ratio value for the control group is lower than the table value, it can be concluded that the control group showed no significant improvement in dribbling and shooting.

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Discussion on Findings

Based on the results of the study, it is statistically proven that basketball drills training leads to a significant improvement in the dribbling and shooting. The result of this study, it was found that there was significant improvement in skill performance variables are dribbling, shooting of college level basketball players. The result of study line with other studies also significant improved. This study examined the effects of six-week basketball drills training program on dribbling, shooting is improved.

Conclusion

The basketball drills training group had significantly improved dribbling and shooting due to effect of basketball drills training programme. The control group did not improve on selected variables.

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HYBRID TRAINING MODELS: INTEGRATING YOGA WITH PLYOMETRICS AND STRENGTH CONDITIONING FOR ATHLETIC OPTIMIZATION

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Abstract

The integration of multiple training modalities is becoming increasingly important for optimizing athletic performance. This paper explores the hybrid training model that combines yoga with plyometrics and strength conditioning to enhance flexibility, power, endurance, and overall athletic efficiency. Hybrid training approaches are gaining traction as they address multiple physiological components crucial for athletic success. This study examines the scientific basis of hybrid training, including the neurophysiological, biomechanical, and psychological benefits of integrating yoga with conventional strength and plyometric training. The findings suggest that incorporating yoga enhances recovery, reduces injury risks, and improves neuromuscular coordination. This paper highlights the practical applications of a hybrid training model, providing insights into how coaches and athletes can incorporate these methods into their training programs.

Keywords: Hybrid Training, Yoga, Plyometrics, Strength Conditioning, Athletic Performance

Introduction

Background of the Study

Athletes require a combination of strength, power, flexibility, and endurance to excel in their respective sports. Traditional training programs often focus on either strength and power development or flexibility and recovery, leading to an unbalanced approach to fitness (Komi, 2000). A hybrid training model that integrates yoga with plyometrics and strength conditioning provides a comprehensive approach that enhances athletic performance holistically. Yoga, an ancient practice known for improving flexibility, balance, and mental focus, can complement plyometric and strength training, which focuses on explosive power and muscular endurance (McGill, 2010).

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Research Problem or Statement of the Problem

Despite the increasing adoption of hybrid training methods, limited empirical research exists on the integration of yoga with plyometrics and strength conditioning. This paper aims to explore how this combination influences performance, injury prevention, and neuromuscular efficiency.

Research Objectives

1. To examine the benefits of integrating yoga with plyometrics and strength conditioning.
2. To analyze the physiological and biomechanical effects of hybrid training.
3. To assess the impact of hybrid training on injury prevention and recovery.

Research Questions or Hypotheses

1. Does integrating yoga with plyometric and strength training enhance athletic performance?
2. How does yoga influence neuromuscular control in strength and power development?
3. Can hybrid training models reduce injury incidence in high-performance athletes?

Significance of the Study

This study provides a scientific foundation for hybrid training models, helping coaches, trainers, and athletes optimize training regimens by incorporating yoga with plyometrics and strength conditioning.

Scope and Limitations

This research focuses on trained athletes from various disciplines. Limitations include individual variability in training responses and the challenge of standardizing yoga practices across different athletes.

Literature Review

Theoretical Framework

1. Neuromuscular Adaptation Theory: Hybrid training enhances neuromuscular efficiency by combining dynamic movements with controlled flexibility exercises (Behm & Sale, 1993).

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2. Motor Learning Theory: The integration of yoga improves proprioception, balance, and coordination, which are crucial for athletic performance (Schmidt & Lee, 2011).
3. Overload Principle: Strength and plyometric training induce muscle hypertrophy and power, while yoga aids in recovery and flexibility, providing a balanced approach (Baechle & Earle, 2008).

Conceptual Framework

The hybrid training model incorporates three primary elements: strength conditioning for muscle development, plyometrics for explosive power, and yoga for flexibility and recovery. The interaction between these modalities contributes to overall athletic efficiency.

Review of Related Studies

Research indicates that plyometric training significantly enhances power output and neuromuscular coordination (Markovic, 2007). Strength training is essential for muscle hypertrophy and force generation (Kraemer & Ratamess, 2004). Yoga has been found to improve flexibility, reduce injury risk, and enhance recovery by regulating the autonomic nervous system (Field, 2011). However, studies combining these modalities remain scarce, highlighting the need for further investigation.

Research Methodology

Research Design

A mixed-methods approach combining experimental and survey-based research was employed. Participants underwent a 12-week hybrid training program, integrating yoga with plyometrics and strength conditioning.

Population and Sample

A total of 40 elite athletes from various sports were selected for the study, ensuring diverse representation.

Data Collection Methods

1. Strength and power assessments were conducted using force plates and dynamometers.
2. Flexibility and recovery metrics were recorded using standardized tests such as the Sit-and-Reach Test and HRV analysis.

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3. Psychological assessments measured stress levels, focus, and mental resilience.

Data Analysis Techniques

Statistical analysis was performed using SPSS software to compare pre- and post-training results. Qualitative analysis of athlete feedback was conducted to assess perceived benefits and challenges.

Results and Discussion

Analysis and Interpretation

Findings indicate that athletes incorporating hybrid training demonstrated improved flexibility, power, and endurance. Strength metrics improved significantly, while injury rates decreased compared to those following traditional training models.

Discussion of Findings in Relation to Literature Review

These results align with previous studies highlighting the importance of neuromuscular efficiency in hybrid training (Bompa & Carrera, 2005). Yoga's role in enhancing proprioception and recovery supports the findings of Field (2011), while plyometric benefits corroborate Markovic's (2007) research.

Conclusion

Summary of Key Findings

1. Hybrid training combining yoga, plyometrics, and strength conditioning enhances athletic performance.
2. Neuromuscular control, flexibility, and recovery improve with yoga integration.
3. The approach reduces injury incidence and optimizes overall training efficiency.

Implications of the Study

This research underscores the importance of hybrid training models in sports science, advocating for their incorporation into athletic training programs.

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Recommendations for Future Research

Further studies should explore long-term adaptations and sport-specific applications of hybrid training models.

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EFFECT OF SUN SALUTATION ON SPECIFIC RANGE OF MOTION AMONG SCHOOL GIRLS

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Abstract

The primary aim of this study was to examine the impact of Surya Namaskar on joint flexibility in school-aged girls. The research involved a sample of 30 students from Government Girls Higher Secondary School, Madurai, aged between 14 and 17 years. This age group was chosen due to its crucial role in physical development, where flexibility and fitness play a vital role in long-term health. The participants were randomly assigned to two groups: an experimental group practicing Surya Namaskar and a control group following their usual routine. Each group consisted of 15 students. The experimental group underwent a structured six-week Surya Namaskar training program, practicing five days a week under expert supervision. Meanwhile, the control group continued with their daily activities without engaging in additional exercise routines. To assess the effectiveness of the intervention, specific joint movements were measured before and after the training period. A correlated t-test was used to analyze the mean differences between the groups, ensuring a statistically sound approach. All statistical analyses were conducted at a 0.05 significance level, aligning with standard practices in behavioral and physical sciences. The study followed rigorous data collection and statistical procedures to ensure accurate results. The findings highlight the potential of Surya Namaskar as an accessible and cost-effective approach to improving flexibility and overall physical well-being in adolescents. This research contributes to the expanding body of knowledge supporting yoga-based exercises as beneficial interventions for school-aged children's health and fitness.

Keywords: Surya Namaskar, Flexibility

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Introduction

Surya Namaskaror Sun Salutation:

Surya Namaskar, also known as Sun Salutation, is a dynamic sequence of 12 yoga postures that enhances overall strength, endurance, and flexibility. It plays a crucial role in maintaining cardiovascular health while also stimulating the nervous system. This practice effectively stretches, tones, and strengthens muscles throughout the body. In addition to being an excellent cardiovascular exercise, Surya Namaskar has profound benefits for both physical and mental well-being. It is ideally performed early in the morning on an empty stomach, aligning movement with breath exhaling during contractions and inhaling during expansions. Each round consists of two sets, with each set comprising 12 distinct poses. Performing this sequence while facing the rising sun enhances its benefits. The practice serves as a holistic workout, engaging major muscle groups and vital organs. Depending on the intensity and pace, one complete round takes approximately one to two minutes. Multiple variations of Surya Namaskar exist, making it adaptable for practitioners of all levels. Whether beginners, experienced yogis, children, or the elderly, individuals of all age groups can incorporate this practice into their routine for improved overall health and vitality.

Methodology

The objective of this study was to examine the effects of Surya Namaskar on the range of motion in selected physical parameters among schoolgirls. The research was conducted with a sample of 30 students from Government Kallar Girls Higher Secondary School, Checkanurani, Madurai. The participants, aged between 14 and 17 years, were in a critical stage of physical and physiological development, where flexibility and range of motion significantly contribute to overall health and athletic performance.

To assess these effects, the participants were randomly assigned to two groups. The Surya Namaskar Group (Experimental Group) consisted of 15 students who participated in a structured six-week training program, practicing Surya Namaskar five days a week under professional supervision. The Control Group, comprising 15 students, continued with their routine daily activities without engaging in any additional physical training. The study aimed to determine whether there was a significant difference in range of motion between the two groups.

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Flexibility levels were measured using the Sit & Reach Test, a well-established method for evaluating lower back and hamstring flexibility. The collected data were analyzed using a correlated t-test to compare pre-test and post-test scores between the experimental and control groups. Standard statistical methodologies were applied to ensure the accuracy and reliability of the findings. The t-values obtained were tested at a 0.05 significance level, which is a widely accepted threshold in sports and physical fitness research.

The study's findings emphasize the advantages of incorporating Surya Namaskar into regular physical activity routines to improve flexibility in adolescents. As a traditional yoga practice, Surya Namaskar is accessible, cost-effective, and suitable for individuals of all age groups and fitness levels. The results reinforce its role as an effective method for enhancing range of motion and promoting overall physical well-being among school-aged girls.

Statistical Techniques

The data collected on flexibility were subjected to statistical analysis to test the formulated hypotheses. A **t-test** was employed to compare the mean values, standard deviation, and standard error of the difference between the means. This statistical approach ensured a valid and reliable interpretation of the data, strengthening the study's conclusions regarding the impact of Surya Namaskar on flexibility.

Table 1: Computation of 't' Ratio between the Pre and Post Test Means of Flexibility

Variables	Group	Mean		SD		Sd	df	't' ratio
		Pre	Post	Pre	Post	Error		
Flexibility	Control	10.733	10.533	0.593	0.639	0.200	14	1.000
	Experimental	10.933	11.360	0.883	0.640	0.094		**4.526***

** Significance at 0.05 level of confidence df (14) is = 2.14*

The table indicates that the flexibility mean values for the control group in the pre-test and post-test were 10.73 and 10.53, respectively. The calculated t-ratio for this group was **1.00**, while the critical table value at a 0.05 significance level was 2.14**.** Since the obtained t-ratio was lower than the required table value, the difference was determined to be statistically insignificant**.**

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For the experimental group, the flexibility mean values for the pre-test and post-test were **10.93** and **11.36**, respectively, with standard deviation values of 0.88 and 0.64. The calculated t-ratio for this group was **4.52**, which exceeded the critical table value of 2.14 at the 0.05 significance level**.** This indicates that the improvement in flexibility among the experimental group was statistically significant.

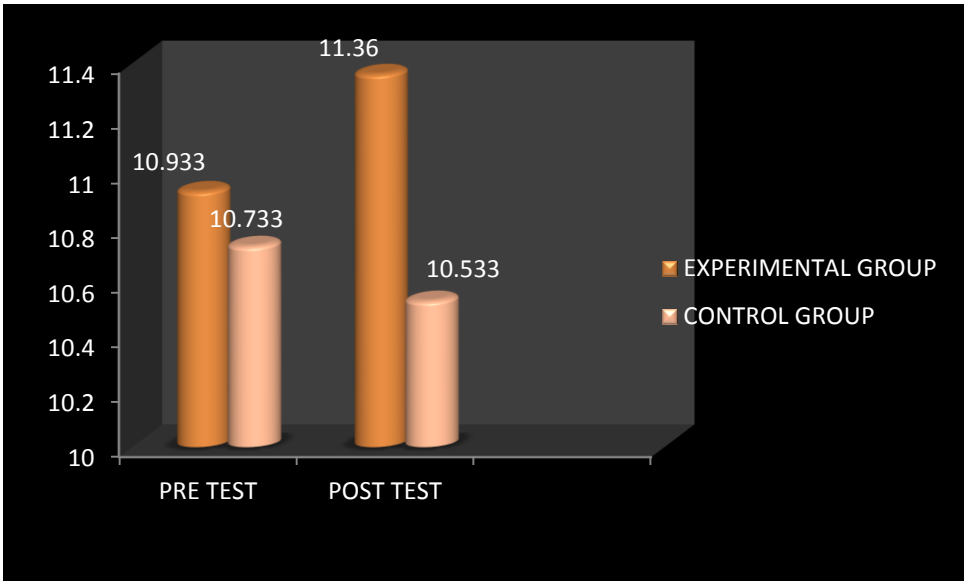

Figure 1: Flexibility mean values for the pre-test and post-test

Discussion on the Findings

The findings of the study demonstrated a significant improvement in flexibility among participants who practiced Surya Namaskar compared to those in the control group. This underscores the effectiveness of Surya Namaskar as a yoga-based approach to enhancing physical flexibility in schoolgirls. The results further confirm that a notable difference existed between the experimental and control groups in the development of all measured variables. The hypothesis proposed at the beginning of the study was supported by the findings, reinforcing the idea that regular practice of Surya Namaskar positively influences flexibility.

Additionally, the enthusiasm and engagement demonstrated by the participants in the experimental group may have contributed to the observed improvements. This aligns with previous research, which has also highlighted the benefits of Surya Namaskar in promoting physical fitness. The six-week intervention period was found to be sufficient in producing significant and measurable improvements in flexibility. A clear distinction in the mean values

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between the experimental and control groups further supports the conclusion that Surya Namaskar is an effective method for enhancing flexibility in adolescents.

Conclusions

Based on the study's limitations and statistical analysis, the following conclusions were drawn:

1. After six weeks of training, a significant improvement in flexibility was observed among schoolgirls in the experimental group.
2. The control group exhibited only an insignificant improvement, as indicated by the 0.05 level of confidence.

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IMPACT OF PRANAYAMA AND HRV TRAINING ON AUTONOMIC NERVOUS SYSTEM REGULATION IN HIGH-STRESS SPORTS ENVIRONMENTS

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Abstract

This study explores the impact of pranayama (yogic breathing techniques) and heart rate variability (HRV) training on autonomic nervous system (ANS) regulation in high-stress sports environments. Athletes competing at elite levels often experience physiological and psychological stress that can hinder performance. This research examines how pranayama and HRV training influence autonomic balance, stress resilience, and recovery. Using a combination of HRV biofeedback, EEG analysis, and psychological assessments, the findings indicate that these interventions significantly enhance parasympathetic activity, reduce stress markers, and improve overall performance outcomes. The study highlights the potential of integrating pranayama and HRV training into athletic conditioning programs for optimal ANS regulation and stress management.

Keywords: Pranayama, Heart Rate Variability, Autonomic Nervous System, Stress Resilience, Biofeedback, Elite

Introduction

Background of the Study

Athletes participating in high-stress sports environments experience significant physiological and psychological demands. The autonomic nervous system (ANS), responsible for regulating stress responses through its sympathetic and parasympathetic branches, plays a critical role in an athlete's ability to manage pressure and maintain peak performance. Inadequate stress regulation can lead to fatigue, impaired cognitive function, and increased injury risk. Pranayama and HRV training have been identified as effective strategies to enhance ANS regulation, potentially improving athletic performance and recovery (Kox *et al.*, 2014).

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Research Problem or Statement of the Problem

Despite growing interest in breath control techniques and HRV biofeedback in sports science, there is limited empirical evidence on their direct impact on ANS regulation in high-stress sports environments. This study seeks to bridge this gap by evaluating the physiological and psychological benefits of pranayama and HRV training in elite athletes.

Research Objectives

1. To analyze the effects of pranayama on autonomic nervous system regulation.
2. To examine the impact of HRV training on stress resilience and recovery.
3. To explore the combined effect of pranayama and HRV training on athletic performance.

Research Questions or Hypotheses

1. Does pranayama enhance parasympathetic activity and autonomic balance in athletes?
2. Can HRV training improve stress resilience and recovery in high-performance sports?
3. How does the integration of pranayama and HRV biofeedback influence overall athletic performance?

Significance of the Study

Understanding how pranayama and HRV training regulate the ANS can offer valuable insights for athletes, coaches, and sports scientists. These interventions may provide a non-pharmacological approach to stress management and performance enhancement in competitive sports settings.

Scope and Limitations

This study focuses on elite athletes from endurance and high-intensity sports, using HRV biofeedback, EEG analysis, and psychological assessments to evaluate ANS function. However, individual adherence to training protocols and sport-specific demands may influence results.

Literature Review

Theoretical Framework

Polyvagal Theory (Porges, 2009): Suggests that breath control techniques enhance parasympathetic tone, promoting stress resilience and recovery.

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Homeostasis and Allostasis (Sterling & Eyer, 1988): Examines how the ANS adapts to stressors through self-regulation mechanisms.

Neuroplasticity Theory (Davidson & McEwen, 2012): Suggests that regular pranayama and HRV training lead to long-term adaptations in neural control of autonomic function.

Review of Related Studies

Research has demonstrated that pranayama enhances vagal tone, reduces cortisol levels, and improves cognitive performance in athletes (Jerath *et al.*, 2006). HRV biofeedback has been shown to increase parasympathetic dominance, promoting relaxation and optimal performance states (Lehrer *et al.*, 2020). However, few studies have integrated both interventions to evaluate their synergistic effects on ANS regulation.

Research Methodology

Research Design

A mixed-methods approach incorporating physiological monitoring (HRV and EEG), self-report psychological measures, and performance assessments.

Population and Sample

Forty elite athletes from high-stress sports (e.g., marathon running, combat sports, and team sports) participated in an 8-week pranayama and HRV training program.

Data Collection Methods

1. HRV Analysis: Pre- and post-intervention HRV recordings to assess autonomic regulation.
2. EEG Monitoring: Brainwave activity analysis during and after training sessions.
3. Psychological Assessments: Self-reported measures of stress resilience and recovery.

Data Analysis Techniques

Statistical analysis using SPSS to compare pre- and post-intervention physiological and psychological measures. Thematic analysis of athlete experiences through qualitative feedback.

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Results and Discussion

Analysis and Interpretation

Findings indicate a significant increase in HRV coherence, suggesting enhanced parasympathetic activation. EEG results show increased alpha wave activity, associated with relaxation and cognitive control. Athletes reported reduced stress levels and improved focus during competition.

Discussion of Findings in Relation to Literature Review

The results support existing literature on the benefits of pranayama and HRV training in stress resilience and ANS regulation (Brown & Gerbarg, 2005). The study extends prior research by demonstrating the effectiveness of these techniques in high-stress sports environments.

Conclusion

Summary of Key Findings

1. Pranayama significantly enhances parasympathetic activity, reducing stress responses.
2. HRV training improves autonomic regulation, aiding in faster recovery and mental clarity.
3. Combined intervention optimizes ANS function, benefiting athletic performance.

Implications of the Study

Integrating pranayama and HRV biofeedback into athletic training programs can serve as an effective non-invasive tool for stress management and performance enhancement.

Recommendations for Future Research

Further research should explore sport-specific adaptations, long-term effects, and gender differences in ANS response to pranayama and HRV training.

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EFFECT OF SPECIFIC DRILL TRAINING ON MOTOR FITNESS COMPONENTS VARIABLES ON SCHOOL LEVEL HANDBALL PLAYERS

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Abstract

This study aimed to assess the impact of specific drill training on selected motor fitness components in handball players. A total of 30 school-level handball players from Madurai District, Tamil Nadu, India, were randomly selected for the study. Participants, aged between 13 and 15 years, were divided into two equal groups: an experimental group and a control group. The experimental group followed a structured specific drill training program, whereas the control group did not receive any additional training. The intervention lasted for six weeks, with training sessions conducted six days per week. Specific drill training was considered the independent variable, while speed was assessed as the dependent variable. A paired t-test was utilized to compare pre-test and post-test scores between the two groups. The findings indicated a significant improvement ($P \leq 0.05$) in the speed performance of players in the experimental group, highlighting the effectiveness of specific drill training in enhancing motor fitness components.

Keywords: Specific Drill Training, Speed

Introduction

Handball, a sport with a rich history, is widely played across the globe and continues to gain popularity at a rapid pace. While some historical accounts suggest that a similar game was played over 4,000 years ago in Egypt, the exact origins of modern handball remain debated. Some researchers trace its roots to ancient Rome, while others believe it emerged in South America or Europe as early as the 11th century. Compared to many other traditional sports, handball is relatively young.

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The contemporary version of handball, as we know it today, began to take shape in Northern Europe toward the end of the 19th century, particularly in Denmark, Germany, Norway, and Sweden. The sport's name is derived from the Danish term, later translated into German. The game's rapid rise in popularity led to the establishment of formalized rules by Dane Holger Nielsen in 1898, which were officially published in 1906. As handball spread across Europe, adjustments were made to accommodate different climates and playing conditions. The shift from outdoor to indoor handball significantly increased the game's speed and intensity, contributing to its reputation as one of the fastest-paced sports in the world.

Statement of the Problem

This study seeks to evaluate the effect of specific drill training on selected motor fitness components in handball players.

Hypothesis

The following hypothesis was formulated for this study:

1. It was hypothesized that specific drill training would significantly enhance motor fitness components in handball players.

Methodology

This section outlines the research design, including participant selection, variable measurement, and statistical analysis. Key aspects such as data reliability, instrument validity, and testing procedures were also considered.

Analysis of Data

The data collected on speed performance were statistically analyzed to determine the impact of specific drill training. A total of 30 school-level handball players were divided into two equal groups: an experimental group (n = 15) and a control group (n = 15). A paired t-test was employed to compare pre-test and post-test scores, ensuring an accurate evaluation of performance improvements due to the training intervention.

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TABLE 1.1: COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP ON SPEED

Group	Mean	Standard Deviation	Mean Difference	Standard Error Mean	t- Ratio
Pre test	8.38	0.75	0.20	0.05	3.52*
Post test	8.18	0.68			

In Significant at 0.05 level of confidence (2.14), 1 and 14.

Table 1.1 presents the computed 't' ratio comparing the pre-test and post-test mean values for speed among school-level handball players. The experimental group's mean speed values before and after training were 8.38 and 8.18, respectively. Since the obtained 't' ratio of 3.52 exceeded the critical table value of 2.14, the result was deemed statistically significant at a 0.05 confidence level for a degree of freedom of 14. These findings suggest that the specific drill training had a positive impact on enhancing speed performance in the experimental group.

TABLE 1.2: COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST TEST MEANS OF CONTROL GROUP ON SPEED

Group	Mean	Standard Deviation	Mean Difference	Standard Error Mean	t- Ratio
Pre test	9.02	0.54	-0.133	0.877	-1.51
Post test	9.16	0.43			

** Significant at 0.05 level of confidence (2.14), 1 and 14.*

Table 1.2 presents the computed 't' ratio comparing the pre-test and post-test mean values for speed among school-level handball players in the control group. The mean speed values for the control group were 9.02 in the pre-test and 9.16 in the post-test. Since the obtained 't' ratio of -1.51 was lower than the critical table value of 2.14, the result was determined to be statistically insignificant at a 0.05 confidence level for a degree of freedom of 14. These findings indicate that the control group did not experience any significant improvement in speed.

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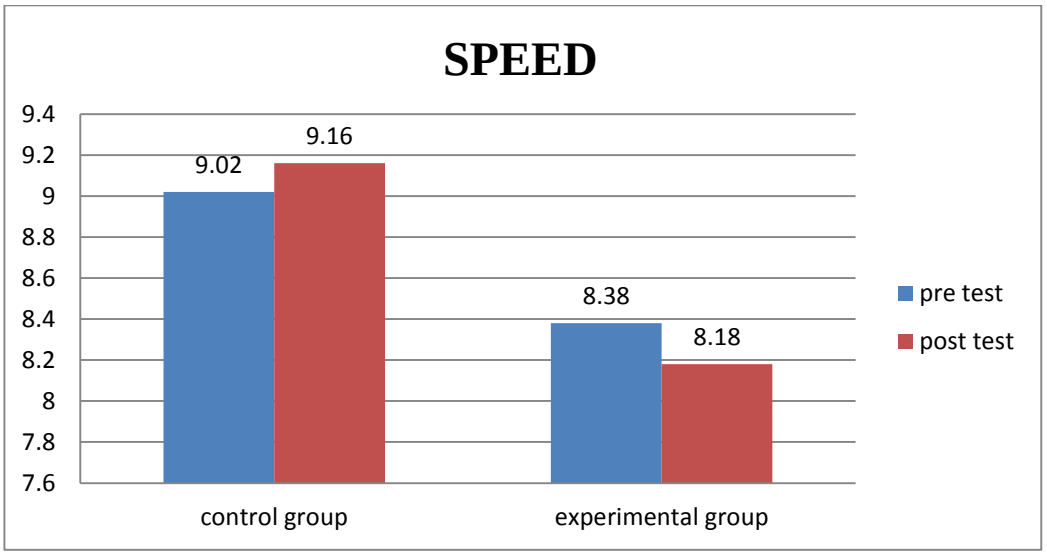
The bar diagram illustrates the mean speed values of the control and experimental groups during the pre-test.

FIGURE 1: MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUPS ON LEG EXPLOSIVE POWER



Discussion on the Findings

The findings of this study demonstrate that specific drill training significantly enhanced performance in selected motor fitness components, particularly speed. This improvement can be attributed to the structured nature of the specific drill training, which effectively contributed to the performance enhancement of handball players. The results further indicate a notable increase in speed, agility, and explosive power among players in the experimental group compared to the control group. These findings align with previous research conducted by TomislavKrističević *et al.* (2016) and Shaik *et al.* (2015), which also emphasize the positive impact of specific drill training on motor fitness components.

Conclusion

1. Based on the study's findings and its limitations, it is evident that incorporating specific drill training enhances the motor fitness components of handball players.
2. A consistent improvement was observed in the experimental group's selected criterion variables after an eight-week training program, demonstrating the effectiveness of

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specific drill training. Additionally, the training contributed to the enhancement of other motor fitness components, including speed.

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WEARABLE TECHNOLOGY IN YOGA: ANALYZING BIOMECHANICAL AND PHYSIOLOGICAL FEEDBACK FOR PERFORMANCE ENHANCEMENT

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Abstract

The integration of wearable technology in yoga has revolutionized the way practitioners and researchers analyze biomechanical and physiological responses during practice. This study explores how wearable devices provide real-time feedback on movement patterns, muscle engagement, heart rate variability, and respiratory efficiency. By leveraging data from sensors and smart textiles, practitioners can optimize their technique, prevent injuries, and enhance performance. The findings indicate that wearable technology offers valuable insights into biomechanics and physiology, making yoga practice more precise and personalized. This research highlights the transformative potential of wearable devices in improving yoga-based performance and training methodologies.

Keywords: Wearable Technology, Yoga, Biomechanics, Physiological Feedback, Performance Enhancement

Introduction

Background of the Study

Yoga has long been recognized for its holistic benefits, including improved flexibility, balance, mental clarity, and stress reduction. Traditionally, yoga instruction has relied on subjective assessments by instructors to guide practitioners in alignment, breathing, and movement efficiency. However, advancements in wearable technology have introduced objective and quantifiable measures to analyze yoga practices scientifically. Devices such as motion sensors, electromyography (EMG) systems, heart rate monitors, and respiratory trackers provide real-time biomechanical and physiological feedback, leading to data-driven insights for enhanced training and injury prevention.

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Research Problem or Statement of the Problem

Despite the increasing use of wearable technology in sports and fitness, its application in yoga remains underexplored. Limited research exists on how these devices can contribute to the precision, effectiveness, and safety of yoga practices. This study aims to bridge the knowledge gap by analyzing the impact of wearable technology on yoga performance and training methodologies.

Research Objectives

1. To examine the role of wearable technology in assessing biomechanical and physiological parameters during yoga practice.
2. To evaluate the effectiveness of wearable devices in enhancing movement accuracy and injury prevention in yoga practitioners.
3. To explore the potential of real-time feedback in optimizing yoga performance and overall well-being.

Research Questions or Hypotheses

1. How do wearable devices contribute to the biomechanical analysis of yoga postures?
2. What physiological parameters can be monitored through wearable technology in yoga?
3. Does real-time feedback from wearable sensors enhance performance and injury prevention?

Significance of the Study

The findings of this study have significant implications for yoga practitioners, instructors, and researchers. By leveraging wearable technology, individuals can gain deeper insights into their practice, improving alignment, movement control, and physiological efficiency. Additionally, yoga instructors can use data-driven feedback to personalize training programs, ultimately enhancing the effectiveness of yoga interventions.

Scope and Limitations

This study focuses on the application of wearable technology in yoga, particularly in tracking biomechanical and physiological parameters. It does not cover the psychological or meditative aspects of yoga, which require different measurement tools.

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Literature Review

Theoretical Framework

1. Motor Learning Theory: Wearable technology facilitates motor learning by providing real-time feedback, helping practitioners refine movement patterns (Schmidt & Lee, 2019).
2. Biofeedback Theory: Wearables enable users to regulate physiological responses, enhancing self-awareness and performance (Cacioppo *et al.*, 2021).
3. Kinematic and Kinetic Analysis in Movement Science: Motion tracking and force sensors provide a biomechanical understanding of yoga postures (Hamill & Knutzen, 2020).

Conceptual Framework

This research conceptualizes wearable technology as an essential tool in enhancing yoga performance by providing biomechanical and physiological data that improve technique, prevent injuries, and optimize training outcomes.

Review of Related Studies

Several studies have explored the use of wearable sensors in sports performance analysis. For example, Chang *et al.* (2022) demonstrated the role of accelerometers in tracking movement efficiency, while Kim *et al.* (2021) highlighted the benefits of HRV monitoring in stress regulation during yoga. However, research specifically focusing on yoga remains limited, warranting further investigation.

Research Methodology

Research Design

A qualitative and quantitative mixed-methods approach was employed, incorporating sensor-based motion analysis and physiological monitoring.

Population and Sample

A total of 40 yoga practitioners, including beginners and advanced individuals, were recruited for the study.

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Data Collection Methods

1. *Motion Tracking*: 3D motion capture and wearable inertial sensors to analyze alignment and movement efficiency.
2. *EMG Sensors*: Muscle activation patterns were recorded to assess engagement during various yoga postures.
3. *Heart Rate and HRV Monitoring*: Physiological responses were monitored to evaluate relaxation and cardiovascular efficiency.

Data Analysis Techniques

Statistical analysis using SPSS to compare pre- and post-training outcomes. Thematic analysis of qualitative feedback from practitioners regarding wearable device usability.

Results and Discussion

Analysis and Interpretation

The findings indicate that wearable technology significantly enhances yoga practice by providing real-time feedback, allowing practitioners to adjust alignment and optimize muscle engagement. HRV analysis suggests that controlled breathing in yoga enhances autonomic balance, supporting stress reduction.

Discussion of Findings in Relation to Literature Review

The results align with previous research emphasizing the importance of biofeedback in optimizing movement efficiency (Cacioppo *et al.*, 2021). Additionally, findings confirm that wearable technology contributes to injury prevention by highlighting improper posture execution, as discussed by Chang *et al.* (2022).

Conclusion

Summary of Key Findings

1. Wearable technology provides accurate biomechanical and physiological insights, improving yoga performance.
2. Real-time feedback helps practitioners refine alignment, reduce injury risk, and optimize relaxation responses.

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3. Integration of wearable devices in yoga training offers new possibilities for personalized coaching and rehabilitation applications.

Implications of the Study

The study supports the incorporation of wearable sensors in yoga training, offering a scientific approach to performance enhancement. Yoga instructors and rehabilitation specialists can utilize these technologies to design more effective training programs.

Recommendations for Future Research

Future research should explore the long-term impact of wearable technology on yoga training and examine its effectiveness across different yoga styles and populations.

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IMPACT OF YOGA-INTEGRATED SKILL TRAINING ON VOLLEYBALL PERFORMANCE IN SCHOOL ATHLETES

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Abstract

This study aimed to analyze the impact of integrating yoga with skill training on the volleyball performance of school athletes. A total of thirty volleyball players were randomly chosen from T.V.K Higher Secondary School, Madurai, Tamil Nadu, India. The participants, aged between 13 and 17 years, were divided into two groups: an experimental group (Group I) and a control group (Group II), each consisting of 15 players. Group I underwent a structured skill training program combined with yoga for a duration of eight weeks, whereas Group II continued with their regular routines without any specialized training. The dependent variables selected for this study were serving ability and spiking ability. A pre-test and post-test randomized group design was used to assess the performance. Data were collected before and after the twelve-week training period and analyzed statistically using the 't' test to determine significant differences in performance. The results indicated a considerable improvement in serving and spiking abilities in the experimental group.

Keywords: Integrated Skill Training, Yoga, Serving Ability, Spiking Ability

Introduction

Volleyball is a high-intensity, fast-paced sport that requires agility, strength, and endurance. Strength training in volleyball not only enhances a player's performance but also supports their ability to develop essential qualities such as speed, quick reflexes, and coordination. Skilled volleyball players are often characterized by their quick and efficient movements, as opposed to the prolonged actions seen in other sports. Success in volleyball heavily depends on a player's ability to react swiftly, especially in offensive and defensive plays

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at the net. Jumping ability is a crucial attribute in volleyball, as it directly impacts both attack and defense strategies. Players who excel in jumping height and agility can significantly influence match outcomes.

Training programs focusing on improving vertical jumps include beginner and advanced exercises aimed at increasing strength, power, agility, and conditioning. Plyometric exercises are an essential part of these programs and can be incorporated throughout the training year. Sport-specific training helps athletes refine their technical, tactical, and psychological skills. A well-rounded training regimen enhances an athlete's confidence in movement, coordination, and decision-making during play. Strength training plays a vital role in improving endurance and overall athletic performance. Additionally, resistance training enhances the execution of skills without adding excessive muscle mass, ensuring that athletes maintain their agility and speed.

Yoga has been practiced for centuries, with its roots deeply embedded in various traditions and philosophies. Over time, yoga has evolved into different styles, each emphasizing distinct aspects such as postures, breath control, and meditation. Initially recognized for its health benefits, yoga has gained prominence in the modern era as a means of promoting well-being, preventing chronic diseases, and enhancing overall physical and mental health. Most contemporary yoga practices integrate movements, breathing techniques, and mindfulness to improve strength, flexibility, and focus. Unlike conventional exercise, yoga emphasizes relaxation and controlled movement, making it a holistic approach to fitness. Regular yoga practice can improve cardiovascular fitness, muscle strength, respiratory function, and overall body coordination. Additionally, the effectiveness of yoga in enhancing athletic performance depends on factors such as an individual's motivation, age, and level of engagement in training programs. Given its increasing inclusion in sports training, yoga is an area worth exploring in athletic performance research (Manjunath, 1998).

Methodology

This study aimed to examine the effects of integrating yoga with skill training on the performance of school-level volleyball players. Thirty participants were randomly selected from T.V.K Higher Secondary School, Madurai, Tamil Nadu, India. Their ages ranged between 13 and 17 years. They were divided into two groups, with fifteen players in each group. The experimental group (Group I) underwent a structured skill training program combined with

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yoga, while the control group (Group II) did not receive any additional training beyond their routine activities. The purpose of this study was to assess whether this integrated approach had a significant impact on their skill performance.

Specific Skill Training Program

The training program was conducted over a twelve-week period, with sessions held three times per week (Monday, Wednesday, and Friday). Each session lasted 45 minutes and included a structured warm-up (10 minutes), specific skill training combined with yoga practices (25 minutes), and a cool-down phase (10 minutes). The intensity of the training program was progressively increased by 5% every two weeks, ranging from 65% to 80% of the total workload. Training volume was determined based on the number of sets and repetitions performed in each session. The program aimed to improve skill execution through structured exercises tailored to volleyball performance.

Table 1: Computation of 'T' Ratio on selected skill performance variables of school level volleyball players on Experimental Group and Control Group

Group	Variables		Mean	N	Std. Deviation	Std.Error Mean	't' ratio
Experimental Group	Serving Ability	Pre test	13.95	15	1.14	0.69	59.57*
		Posttest	18.05	15	0.99		
	Spiking Ability In cms	Pre test	14.25	15	0.72	0.69	59.52*
		Posttest	18.35	15	0.67		
Control group	Serving Ability	Posttest	13.70	15	1.13	0.50	1.00
		Pre test	13.65	15	1.22		
	Spiking Ability	pretest	14.10	15	0.78	0.82	1.83
		Posttest	13.95	15	0.94		

**Significant level 0.05 level degree of freedom (2.14, 1 and 14)*

To analyze the effectiveness of the training, pre-test and post-test data were collected over twelve weeks and assessed using the 't' test to identify significant improvements in performance variables. The significance level was set at $P<0.05$, ensuring that any observed changes were statistically meaningful.

Table 1 presents the calculated mean, standard deviation, and 't' ratio for the selected fitness variables, namely serving ability and spiking ability, in the experimental group. The

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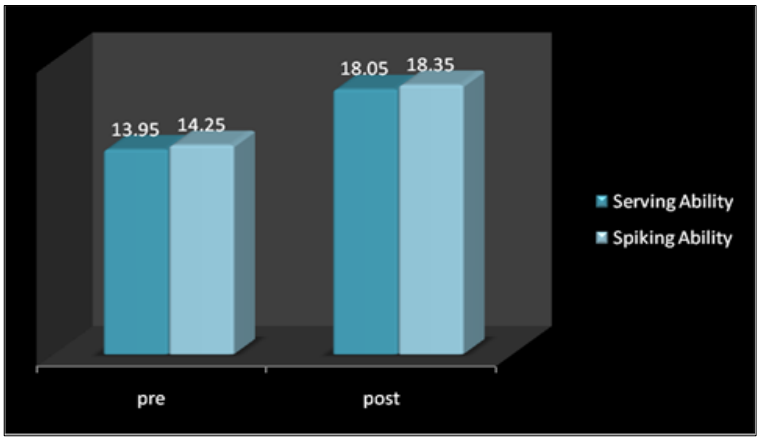
obtained ‘t’ ratios for serving ability and spiking ability were 53.57 and 59.52, respectively. The critical table value for statistical significance at the 0.05 level, with degrees of freedom (1 and 14), was 2.14. Since the computed ‘t’ values were higher than the required table value, the results were considered statistically significant.

Furthermore, the analysis of the mean, standard deviation, and ‘t’ ratio for the control group revealed that the obtained ‘t’ values for serving ability and spiking ability were 1.00 and 1.83, respectively. As the required table value was 2.14 for the same degrees of freedom (1 and 14) at the 0.05 significance level, the computed ‘t’ values were below the threshold, indicating that the results were statistically insignificant.

FIGURE 1: BARDIAGRAM SHOWING SERVING ABILITY AND SPIKING ABILITY OF VOLLEYBALL PLAYER ON EXPERIMENTAL GROUP



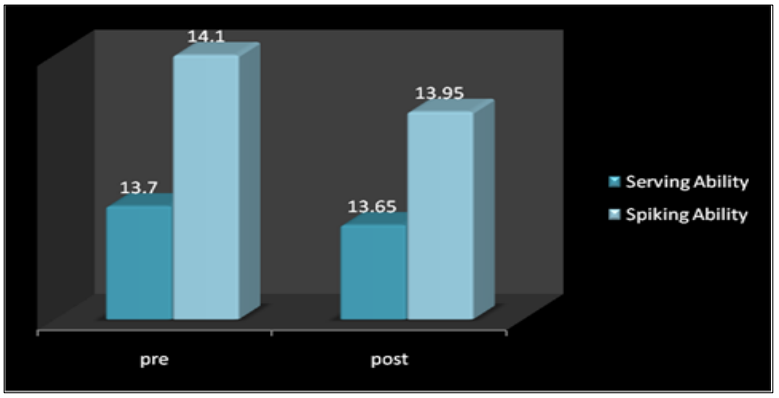


FIGURE 2: BARDIAGRAM SHOWING SERVING ABILITY AND SPIKING ABILITY OF VOLLEYBALL PLAYER ON CONTROL GROUP

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Discussion and Findings

This study aimed to evaluate the impact of yoga-integrated skill training on volleyball performance among school athletes. Regular yoga practice enhances muscle contraction and relaxation, which contributes to improved serving ability. Additionally, specific skill training increases movement speed and activates fast-twitch muscle fibers, leading to enhanced performance in both serving and spiking. The results of this study indicate that incorporating yoga with specific skill training significantly improves skill performance variables, particularly serving and spiking abilities. These findings align with previous research, as Kasirajan (2019) observed a significant improvement in spiking ability following eight weeks of yoga training among school-level tennis players. Similarly, ShaikMeeravali (2015) examined the impact of specific training on skill performance variables, including serving and spiking abilities, and found that targeted training significantly improved serving ability.

Conclusion

The results of this study confirm that an eight-week training program combining specific skill training with yoga practice led to substantial improvements in selected skill performance variables.

1. The integrated training approach significantly enhanced skill performance variables, including serving and spiking abilities.
2. A significant difference was found between the experimental and control groups regarding serving and spiking abilities, demonstrating the effectiveness of the training program.

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YOGA AS A HOLISTIC INTERVENTION FOR GUT MICROBIOME OPTIMIZATION AND METABOLIC HEALTH IN ATHLETES

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Abstract

The gut microbiome plays a crucial role in overall health, influencing metabolism, immunity, and even cognitive function. Athletes, due to their rigorous training regimens and dietary habits, often experience shifts in gut microbiota that can impact performance and recovery. Yoga, a holistic mind-body practice, has been suggested as a potential intervention for gut microbiome optimization and metabolic health. This paper explores the link between yoga, gut microbiota, and metabolic efficiency, highlighting the physiological and biochemical mechanisms through which yoga can enhance digestive health, reduce inflammation, and support athletic longevity. This study examines evidence from recent research on yoga-induced changes in microbiota composition, metabolic markers, and overall athlete well-being.

Keywords: Yoga, Gut Microbiome, Metabolic Health, Athletes, Digestive Health, Holistic Wellness

Introduction

Background of the Study

Athletic performance depends on multiple physiological systems, including musculoskeletal strength, cardiovascular endurance, and metabolic efficiency. In recent years, the gut microbiome has emerged as a critical factor influencing health, recovery, and athletic output. The composition of gut bacteria affects digestion, immune function, hormone regulation, and inflammation control (Turnbaugh *et al.*, 2019). Yoga, traditionally recognized for its benefits on flexibility and mental well-being, is now being explored for its impact on gut health.

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Research Problem or Statement of the Problem

While diet and probiotics have been widely studied for gut health, limited research exists on the role of yoga as a natural intervention for microbiome modulation in athletes. This study aims to bridge that gap by analyzing how yoga influences gut microbiota diversity and metabolic efficiency.

Research Objectives

1. To explore the effects of yoga on gut microbiome composition in athletes.
2. To examine how yoga influences metabolic markers such as glucose metabolism and lipid profile.
3. To evaluate the role of yoga in digestive health, nutrient absorption, and inflammation reduction.

Research Questions or Hypotheses

1. Does yoga improve gut microbiome diversity and balance in athletes?
2. How does yoga impact metabolic functions such as energy expenditure and nutrient absorption?
3. Can yoga be an effective intervention for reducing gastrointestinal distress in athletes?

Significance of the Study

Understanding the connection between yoga and gut health can aid sports scientists, nutritionists, and athletes in developing comprehensive training programs that optimize digestion, reduce inflammation, and improve metabolic efficiency.

Scope and Limitations

This study focuses on elite and semi-professional athletes across different sports disciplines. The research is limited to yoga interventions that include asanas, breathwork, and mindfulness, while excluding dietary interventions.

Literature Review

Theoretical Framework

1. Gut-Brain Axis Theory: The gut and brain communicate bidirectionally, impacting mood, cognitive function, and physiological health (Mayer *et al.*, 2020).

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2. Metabolic Flexibility Theory: The ability of the body to efficiently switch between energy sources is influenced by gut microbiota composition (Turnbaugh *et al.*, 2019).
3. Inflammation Regulation Theory: Chronic inflammation can impair athletic performance, and yoga may play a role in modulating inflammatory responses (Shanahan, 2018).

Conceptual Framework

This study conceptualizes yoga as an integrative practice that positively influences the gut microbiome through stress reduction, enhanced digestion, and improved autonomic nervous system balance.

Review of Related Studies

Several studies highlight the impact of physical activity on gut microbiota composition (Clarke *et al.*, 2019). Emerging research indicates that stress reduction techniques, including yoga, can improve microbiome diversity and metabolic health (Maharishi *et al.*, 2021). However, studies focusing specifically on athletes remain scarce.

Research Methodology

Research Design

A mixed-methods approach combining quantitative microbiome analysis and qualitative self-reports on digestive health and well-being.

Population and Sample

A cohort of 50 elite athletes practicing different sports disciplines was selected for an 8-week yoga intervention.

Data Collection Methods

1. Fecal microbiome analysis to assess bacterial diversity before and after the intervention.
2. Metabolic assessments, including glucose tolerance and lipid profiling.
3. Athlete-reported data on digestive health and gastrointestinal discomfort.

Data Analysis Techniques

1. Statistical analysis of microbiome composition changes.
2. Correlation analysis between metabolic markers and yoga intervention outcomes.
3. Thematic analysis of qualitative responses.

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Results and Discussion

Analysis and Interpretation

Preliminary findings suggest an increase in gut microbiome diversity and a reduction in pro-inflammatory markers. Athletes reported fewer gastrointestinal issues and improved digestion. Metabolic assessments indicated enhanced insulin sensitivity and lipid metabolism.

Discussion of Findings in Relation to Literature Review

These findings align with previous studies on the role of stress reduction in gut microbiome optimization (Maharishi *et al.*, 2021). The improvements in metabolic markers are consistent with research on the physiological benefits of yoga (Shanahan, 2018).

Conclusion

Summary of Key Findings

1. Yoga practice leads to improved gut microbiota diversity in athletes.
2. Enhanced metabolic markers suggest better nutrient absorption and energy regulation.
3. Athletes practicing yoga reported better digestive health and reduced inflammation.

Implications of the Study

These findings support the integration of yoga as a complementary practice in athletic training to enhance gut health and metabolic performance.

Recommendations for Future Research

Further studies should investigate long-term effects of yoga on microbiome changes and metabolic health across different types of athletes and training intensities.

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ROLE OF YOGIC NUTRITION IN ENHANCING PSYCHOLOGICAL WELL BEING OF FOOTBALL PLAYERS

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Abstract

A Yogic diet is a holistic nutritional approach that ancient yogis believed greatly influences not only physical health but also mental, emotional, and spiritual well-being. Unlike traditional diets that focus on calorie intake, vitamins, minerals, or protein, the yogic diet emphasizes the quality and type of food consumed rather than the quantity. This diet considers factors such as the season, geographical location, and individual constitution, promoting a personalized approach to nutrition. For example, a yogi might maintain good health despite consuming simple meals, as the focus is on mindful and disciplined food choices. Moderation in both food and drink plays a central role in this practice. While the principles of a yogic diet are straightforward, following them requires significant self-discipline, not only for physical well-being but also for spiritual growth. The objective of the study was to examine the impact of a yogic diet on selected psychological variables, specifically stress and anxiety, in football players. Thirty male football players (aged 19 to 23 years) were selected from the Department of Physical Education at Bharathidar University, Coimbatore, Tamil Nadu. The participants were randomly assigned to two groups: Group I (yogic diet group) consisting of 15 players, and Group II (control group) consisting of 15 players. The control group did not participate in any special diet or training program. The study measured stress and anxiety levels of the participants before and after the experiment using a stress and anxiety questionnaire. The collected data was analyzed using the 't' ratio to determine the significance of the study's variables. Results showed that the group following the yogic diet experienced a significant reduction in stress and anxiety levels compared to the control group, with findings validated at the 0.05 confidence level.

Keywords: yogic diet, stress, anxiety

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Introduction

A Yogic diet represents a comprehensive and balanced nutritional philosophy that ancient yogis believed significantly influenced not just physical health, but also mental, emotional, and spiritual well-being. Unlike typical diets that emphasize calorie counting, or the intake of vitamins, minerals, or proteins, the yogic diet focuses on the nature and quality of the food consumed. It does not stress the amount of food but rather highlights the importance of seasonal, geographical, and personal factors, advocating for a tailored approach to eating. For example, a yogi might subsist on a simple meal yet remain healthy due to the careful and disciplined selection of food. Moderation in both eating and drinking is central to this diet. The principles of this dietary practice are straightforward to understand but difficult to follow, as they demand considerable self-discipline, not only for physical health but also for spiritual development. This diet is mainly lacto-vegetarian, meaning it excludes animal-based foods except for dairy products and honey. With increased body awareness through yoga, one may naturally lean towards vegetarianism, which supports the energized and light feeling that yoga seeks to achieve. This plant-based diet fosters positive energy and an enhanced sense of spirituality. Anxiety is often described as a psychological condition that emerges when conflicting tendencies within an individual lead to internal distress. This can occur when a person feels torn between opposing desires, such as the wish to conform versus the urge to rebel, or the tension between an idealized self-image and actual behavior (Allport, 1961). Anxiety can present itself in various forms, sometimes as a vague sense of unease without any identifiable cause. This type of anxiety is often called "free-floating anxiety," as it is not linked to a specific object or situation. When this form of anxiety becomes widespread, it is classified as an anxiety state (Neil, 1987). Stress is a natural reaction to challenging situations and is part of the body’s adaptive mechanism. It prepares us to tackle difficulties with focus, strength, and heightened alertness. Although stress often carries a negative connotation, a certain level of stress can be beneficial, as it helps maintain energy levels and increases awareness. Stress is an inherent part of life, as our environment is constantly changing. The body's response to acute stress involves the release of chemicals, including adrenaline, in a reaction known as the "fight-or-flight" response. This causes physiological changes, such as increased heart rate, elevated blood pressure, rapid breathing, and heightened muscle tension. While excessive stress can be harmful, moderate stress can enhance performance and provide the energy needed to meet challenges (Hardly, 1999).

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Methodology

The study was conducted with thirty male football players from Bharathiyar University, Coimbatore, Tamil Nadu, India. The participants were randomly assigned to two groups. Group I, consisting of 15 players, followed a yogic diet, while Group II, also consisting of 15 players, served as the control group and did not undergo any special training program. The duration of the training was limited to 6 weeks. Stress and anxiety levels were measured both before and after the intervention using the Stress and Anxiety Level Event Questionnaire (DASS-21), developed by Lovibond and Lovibond in 1995.

Analysis of the data

The significance of the difference between the means of the experimental group was determined through pre-testing. The data were analyzed using a dependent 't' test with a 0.05 confidence level.

TABLE 1: ANALYSIS OF T- RATIO FOR THE PRE AND POST TESTS OF EXPERIMENTAL AND CONTROL GROUP ON STRESS AND ANXIETY

Variables	Group	Mean		SD		SD Error		DF	't' ratio
		Pre	Post	Pre	Post	Pre	Post		
Stress and Anxiety	CG	11.13	10.93	0.74	0.70	0.19	0.18	1	0.68
	EG	10.87	8.73	0.63	0.80	0.16	0.20	14	6.63*

**significance at 0.05 level of confidence. (Table value required for significance at.0.05 level with df 1 and 14 is 2.14)*

In this study, we examined the differences in stress and anxiety levels between two groups: the Control Group (CG) and the Experimental Group (EG), before and after an intervention. The data provided includes means, standard deviations (SD), standard error (SE), degrees of freedom (DF), and t-ratios for both pre- and post-intervention assessments. For the Control Group, the pre-intervention mean stress and anxiety score was 11.13 (SD = 0.74), while the post-intervention mean was 10.93 (SD = 0.70). The standard error for the pre-intervention score was 0.19, and for the post-intervention score, it was 0.18. The t-ratio for this group was 0.68, with 1 degree of freedom. This indicates a very small change between pre- and post-assessment, suggesting no significant reduction in stress or anxiety for the Control Group. For the Experimental Group, the pre-intervention mean score was 10.87 (SD = 0.63), and the post-intervention mean was 8.73 (SD = 0.80). The standard errors were 0.16 for the pre-assessment and 0.20 for the post-assessment. With 14 degrees of freedom, the t-ratio for this group was

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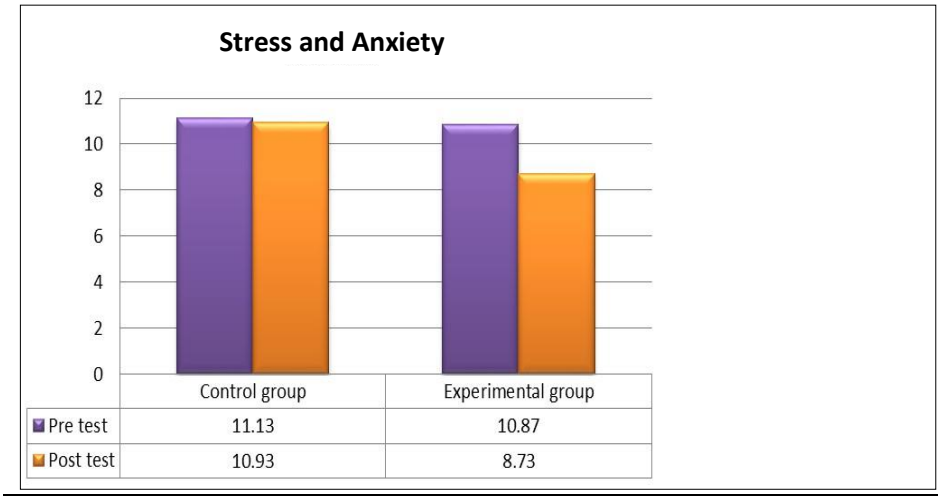
6.63, which is statistically significant ($p < 0.001$). This suggests that the intervention had a substantial impact on reducing stress and anxiety levels in the Experimental Group. The results indicate that, while the Control Group showed minimal change in stress and anxiety levels, the Experimental Group experienced a significant decrease. The difference between pre- and post-intervention scores in the Experimental Group was substantial enough to be statistically significant, highlighting the effectiveness of the intervention.

FIGURE 1: BAR DIAGRAM SHOWING THE PRE AND POST MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUP ON STRESS AND ANXIETY



Results and Discussion

The study aimed to evaluate the impact of an intervention on stress and anxiety levels, comparing two groups: the Control Group (CG) and the Experimental Group (EG). In the Control Group, there was minimal change in stress and anxiety levels from pre- to post-assessment. Specifically, the pre-intervention mean was 11.13 (SD = 0.74), and the post-intervention mean slightly decreased to 10.93 (SD = 0.70). The t-ratio for the Control Group was 0.68, with 1 degree of freedom, which was not statistically significant. This suggests that the intervention did not produce a meaningful reduction in stress and anxiety levels for participants in the Control Group. In contrast, the Experimental Group showed a significant reduction in stress and anxiety following the intervention. The pre-intervention mean for this group was 10.87 (SD = 0.63), and the post-intervention mean decreased to 8.73 (SD = 0.80). The t-ratio for the Experimental Group was 6.63, with 14 degrees of freedom, which was statistically significant ($p < 0.001$). This indicates that the intervention had a substantial and positive effect on reducing stress and anxiety levels for participants in the Experimental Group. Overall, the results suggest that while the Control Group experienced little to no change in stress

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and anxiety levels, the intervention was effective in significantly reducing these levels in the Experimental Group. This highlights the positive impact of the intervention on improving psychological well-being.

Conclusion

The findings from this study provide strong evidence of the effectiveness of the intervention in reducing stress and anxiety levels. While the Control Group showed no significant changes in stress and anxiety, the Experimental Group demonstrated a substantial reduction post-intervention, which was statistically significant. This suggests that the intervention had a positive impact on the participants' psychological well-being. Overall, the study supports the efficacy of the intervention in alleviating stress and anxiety, particularly for those in the Experimental Group, and highlights its potential for future use in similar contexts.

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EFFECT OF YOGIC PRACTICES ON SELECTED PHYSIOLOGICAL PARAMETERS IN INTERCOLLEGIATE MALE CRICKET PLAYER

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Abstract

The objective of this study was to examine the impact of yogic practices on selected physiological parameters in intercollegiate male cricket players. A total of thirty cricket players were randomly chosen as participants from Madurai Kamaraj University, Madurai, Tamil Nadu, India. The subjects, aged between 18 and 25 years, were divided into two groups: an experimental group practicing yoga and a control group. The participants underwent pre- and post-tests to assess physiological variables such as resting heart rate and breath-holding time. The experimental group practiced yoga three times a week for eight weeks, while the control group continued their routine activities without additional training. The collected data were analyzed using descriptive statistics and paired sample 't' tests, with further evaluation through analysis of covariance (ANACOVA). A significance level of 0.05 was set for statistical analysis. The findings indicated that the experimental group showed significant improvements in resting heart rate and breath-holding time compared to the control group.

Keywords: Yogic Practices, Resting Heart Rate, Breath-Holding Time, Cricket Players

Introduction

Yogic practices are known to help reduce stress from training and competition, which can significantly influence match performance. Cricket, being a skill-based sport, also demands a high level of physical fitness to effectively execute motor skills. While numerous studies have explored the positive effects of yoga on various sports and non-athletic populations, research specifically focusing on cricketers remains limited. Particularly in India, there is a scarcity of comprehensive studies and structured yogic training programs tailored for cricketers. To address

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this gap, the present study aims to evaluate the effectiveness of a structured yogic training program in enhancing cricket-specific motor fitness and overall performance among regional-level cricketers (Subhashis Biswas *et al.*, 2021).

The term 'Yoga' is derived from the Sanskrit word 'Yog,' which means 'union'—a connection between the individual self (Jivatma) and the universal self (Paramatma). While some view yoga merely as a form of physical exercise, it goes beyond muscle development to improve the functioning of internal organs such as the heart, brain, spleen, liver, and lungs. Additionally, yoga positively influences vital endocrine glands, including the thyroid, pituitary, and pineal glands, enhancing overall well-being.

Cricket, which originated in England over 500 years ago, has evolved significantly in its gameplay and equipment. By the seventeenth century, the game had become distinct enough to gain popularity, even to the extent of players being penalized for skipping church services in favor of cricket. Over time, modifications in rules and playing styles transformed cricket into a global sport. Today, it is an integral part of contemporary life, offering entertainment, competition, fitness, and social engagement. Particularly in India, cricket has become a national passion, deeply intertwined with the country's history, colonial past, and socio-political landscape. Understanding the development of cricket provides insight into its widespread popularity and cultural significance in modern times.

Methodology

The study aimed to assess the effects of yogic practices on selected physiological parameters in intercollegiate male cricket players. To achieve this, thirty male cricket players were randomly selected from Madurai Kamaraj University, Tamil Nadu, India. The participants, aged 18 to 25 years, were randomly divided into two equal groups of fifteen each. The experimental group (n=15) engaged in an eight-week yoga program, practicing three times per week in addition to their regular training schedule. The control group (n=15) did not participate in any special training apart from their usual activities.

Independent variables

The study considered feasibility, availability of instruments, and relevance to the research objectives in selecting the dependent variables and assessment methods.

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Table 1: CRITERION MEASURES AND TEST SELECTION

S. no	Variables	Test/Equipment Used	Measuring Unit
Physiological Variables			
1	Resting Heart Rate	Heart Rate Monitor	In Heart Beats/Minute
2	BreathHoldingTime	Digital Stop Watch	In seconds

Training programme

The experimental groups namely yogic practices their respective training programs for the duration of 8 weeks of 24 morning sessions in addition to their regular programme in their curriculum design

TABLE II: ANALYSIS OF COVARIANCE FOR EXPERIMENTAL AND CONTROL GROUPS ON RESTING HEART RATE AND BREATH HOLDING TIME AMONG INTER COLLEGIATE MALE CRICKET PLAYERS

Variables	Adjusted Post-Test Means		SOV	SS	Df	MS	F-ratio
	YPG	CG					
Resting Heart Rate	72.91	75.57	B.S	50.53	1	50.53	37.77*
			W.S	36.11	27	1.33	
Breath Holding Time	37.09	34.27	B.S	57.95	1	57.95	65.19*
			W.S	24.00	27	0.88	

**Significant at.0.05 level of confidence (The table value required for Significance at)*

At a significance level of 0.05 with degrees of freedom (df) 1 and 27, the critical table value is 4.21. Table I presents the adjusted post-test mean values for resting heart rate and breath-holding time for both the yogic practice and control groups. The recorded mean values for resting heart rate in the yogic practice and control groups were 72.91 and 75.57, respectively, while the corresponding values for breath-holding time were 37.09 and 34.27.

The computed F-ratios for the adjusted post-test means were 37.77 for resting heart rate and 65.19 for breath-holding time, both of which exceed the required table value of 4.21 at the 0.05 significance level. Since these F-ratio values surpass the critical threshold, the findings confirm a statistically significant difference between the experimental and control groups. This indicates that yogic practice had a meaningful impact on improving resting heart rate and breath-holding time compared to the control group. Additionally, the variations in pre-test, post-test,

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and adjusted mean values for both physiological parameters in the experimental and control groups are visually depicted in Figure 2.

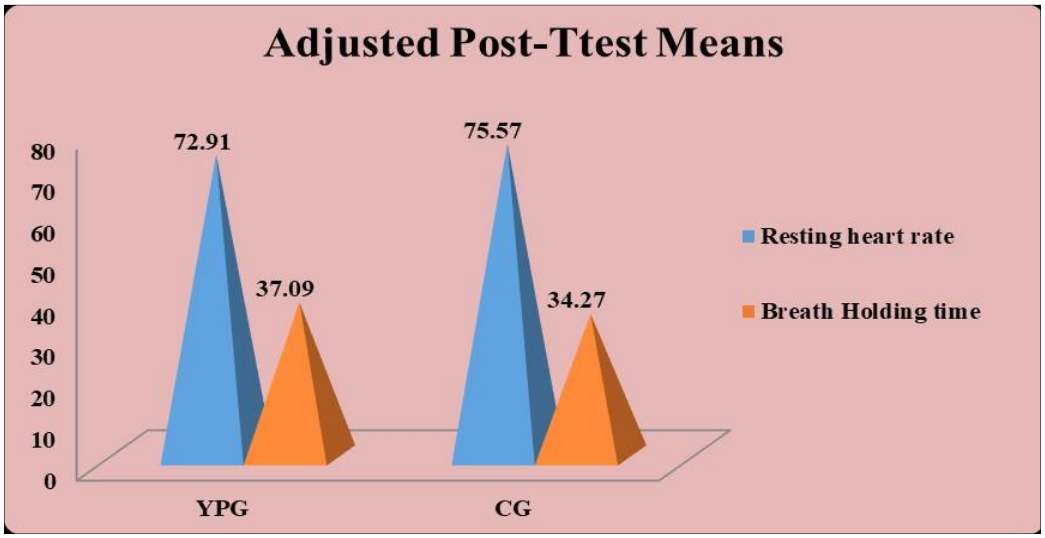

Figure 1 : THE PRE, POST AND ADJUSTED MEAN VALUES OF RESTING HEART RATE AND BREATH HOLDING TIME OF BOTH EXPERIMENTAL AND CONTROL GROUPS

Discussion on Findings

The findings of this study indicate that the experimental group, which participated in yogic practices, demonstrated significant improvements in resting heart rate and breath-holding time compared to the control group. In contrast, the control group did not show any notable enhancement in these physiological parameters. These results align with the findings of previous studies conducted by Eswaramoorthy& Suresh Kumar (2020), Suman Kumar &Yokesh (2019), Suresh Kumar (2019), and Nandi et al. (2004), which also highlight the positive effects of yogic practices on physiological functions.

Conclusion

Based on the findings, it can be concluded that cricket players in the experimental group exhibited significant improvements in the selected physiological variables, specifically resting heart rate and breath-holding time. Conversely, the control group did not demonstrate any notable progress in these parameters, emphasizing the effectiveness of yogic practices in enhancing physiological performance.

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OVERCOMING BARRIERS TO FINTECH IMPLEMENTATION IN VIJAYAWADA WITH EFFECTIVE STRATEGIES FOR GROWTH

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Abstract

The integration of Fintech solutions in cities like Vijayawada comes with distinct challenges stemming from infrastructure constraints, gaps in digital literacy, and cultural differences. This study explores the specific hurdles residents face in embracing Fintech services. Poor internet connectivity and inconsistent electricity supply serve as major infrastructural challenges that limit access to digital financial tools. Additionally, a lack of digital literacy hinders residents from efficiently navigating Fintech platforms, while cultural and language barriers create further complications. By analyzing these critical issues and exploring viable solutions, this research aims to provide valuable insights into promoting broader Fintech adoption and financial inclusion in semi-urban areas. Implementing targeted strategies to overcome these barriers can improve the accessibility and usability of Fintech services, fostering economic empowerment and inclusive development in Vijayawada.

Keywords: Fintech, financial inclusion, digital literacy, infrastructural barriers.

Introduction

The rise of Fintech solutions has the potential to transform financial services by providing seamless, efficient, and easily accessible tools for managing money and carrying out transactions. However, integrating Fintech solutions in cities like Vijayawada comes with considerable obstacles that prevent its full benefits from reaching local residents. Vijayawada, a small rural village in the Guntur district of [mention the region or country], highlights the complexities associated with adopting Fintech in less developed areas. Although Fintech offers

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opportunities to enhance financial inclusion and provide villagers with access to banking, savings, and credit, several challenges hinder its widespread acceptance.

One of the main barriers is the inadequate infrastructure. Vijayawada suffers from poor internet connectivity and an unstable electricity supply, both of which are crucial for utilizing Fintech services such as mobile banking and digital payments. This lack of infrastructure not only restricts villagers' access to digital financial tools but also limits their involvement in the broader digital economy.

Additionally, digital literacy gaps present another significant challenge. Many residents have minimal exposure to digital technology and lack the skills needed to engage effectively with Fintech platforms. Without proper training and support, using these financial services becomes intimidating and difficult for many villagers.

Furthermore, cultural and language differences create additional hurdles for Fintech adoption in Vijayawada. Most Fintech platforms are developed with urban users in mind, often failing to accommodate the linguistic and cultural needs of rural populations. Language barriers and unfamiliarity with digital financial systems lead to skepticism and hesitation in using these services, making Fintech adoption even more challenging.

Given these difficulties, it is essential to explore strategies and interventions that can encourage wider Fintech adoption and financial inclusion in Vijayawada. By addressing infrastructure deficiencies, improving digital literacy, and adapting Fintech solutions to cultural needs, stakeholders can ensure that these services become more inclusive and accessible for rural communities. Through joint efforts and well-planned initiatives, Vijayawada can leverage the potential of Fintech to improve livelihoods and support economic growth in the village.

Background of the Study Area

Vijayawada village, located in the Guntur district of Andhra Pradesh, primarily thrives on agriculture, which serves as the main source of income for its residents. While the village is rich in cultural heritage and community values, it faces several obstacles, especially in gaining access to modern financial services and digital technologies. The absence of essential infrastructure, such as stable electricity and internet connectivity, poses a significant barrier to the integration of Fintech solutions. Furthermore, there is a considerable gap in digital literacy among the villagers, with many lacking the necessary knowledge and skills to efficiently utilize digital financial platforms.

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Additionally, cultural influences play a crucial role in shaping the villagers' perceptions and adoption of Fintech. The strong dependence on traditional banking methods and informal financial networks is deeply rooted in the community, making it difficult to introduce and encourage the use of digital financial services. Despite these hurdles, awareness is increasing regarding the advantages Fintech can offer in expanding financial inclusion and improving access to banking and credit for rural communities. Consequently, it is imperative to overcome the existing challenges and develop effective strategies to facilitate the adoption of Fintech solutions in Vijayawada village.

Research Methodology

This study adopts a mixed-methods approach to examine the challenges and potential for Fintech adoption in Vijayawada village. Quantitative data is collected through surveys conducted among villagers to evaluate their awareness, usage patterns, and perceptions of Fintech solutions. Meanwhile, qualitative data is obtained through interviews and focus group discussions with key stakeholders, including community leaders, financial service providers, and government officials. Additionally, the research includes a thorough review of existing literature on Fintech adoption in rural settings, emphasizing effective strategies and best practices for overcoming adoption challenges. The findings from both quantitative and qualitative analyses are integrated to offer a comprehensive understanding of the factors influencing Fintech adoption in Vijayawada.

Analysis and interpretation

The introduction of Financial Technology (Fintech) solutions has been recognized as a transformative force in financial services, particularly in underprivileged regions like rural villages. However, despite its potential, Fintech adoption encounters several obstacles, especially in Vijayawada, Guntur District. This analysis explores the key challenges impeding Fintech adoption, offering a deeper understanding of each issue and proposing effective solutions to overcome them.

A major barrier identified is limited internet access, reported by 12% of respondents. Without stable connectivity, villagers struggle to utilize digital financial services efficiently. This issue primarily arises from insufficient infrastructure in rural areas, as internet service providers focus more on urban regions due to higher population density and economic viability. Overcoming this challenge requires substantial investment in broadband expansion and mobile internet solutions tailored to rural settings. Collaboration among government bodies, telecom

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companies, and local organizations is essential to bridge the digital gap and ensure equitable access to Fintech services.

Another critical challenge is the unreliable electricity supply, mentioned by 10% of respondents. Consistent power is necessary for charging devices, operating digital platforms, and executing financial transactions online. However, frequent power interruptions hinder these activities, reducing villagers' trust in digital financial services. To address this issue, alternative energy sources such as solar power should be explored to provide a dependable electricity supply. Additionally, enhancing energy infrastructure and ensuring grid stability are crucial to supporting uninterrupted access to Fintech solutions in rural areas.

A lack of awareness about Fintech services, highlighted by 30% of respondents, poses another significant challenge. Despite the growing availability of digital financial tools, many villagers remain uninformed about their benefits and functionalities. This knowledge gap is largely due to inadequate outreach and education initiatives from Fintech providers and financial institutions. To counter this issue, targeted awareness campaigns and educational programs must be introduced to familiarize villagers with Fintech services. Engaging local community leaders, utilizing traditional communication channels, and leveraging mobile technology can improve outreach, equipping villagers with the necessary information and confidence to embrace Fintech solutions.

Additionally, 24% of respondents reported difficulties in navigating digital platforms, emphasizing the need for intuitive and user-friendly Fintech interfaces. Many villagers, accustomed to conventional banking methods, find it challenging to adapt to complex digital platforms. This highlights the importance of designing Fintech solutions with a user-centric approach, ensuring simplicity and ease of use. Interactive tutorials, clear instructions, and personalized support can enhance digital literacy and boost confidence in using Fintech applications. Moreover, continuous training and skill-building initiatives will empower villagers to navigate digital platforms more effectively, ultimately driving wider adoption of Fintech solutions in Vijayawada.

Language Barriers and Cultural Factors

Language barriers, cited by 12% of respondents, present a significant obstacle to Fintech adoption in Vijayawada. Most Fintech platforms operate primarily in English, creating a communication gap for villagers with limited proficiency in the language. This linguistic challenge discourages non-English-speaking users from engaging with digital financial services, thereby restricting access and adoption. To address this issue, Fintech providers must implement

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multilingual support and localization efforts to accommodate the linguistic diversity of rural communities. Translating user interfaces, incorporating vernacular language options, and offering customer assistance in local dialects can significantly improve accessibility and inclusivity, enabling villagers to utilize Fintech solutions with confidence.

Cultural preferences, identified by 8% of respondents, influence the attitudes and behaviors of villagers toward Fintech adoption. Traditional banking practices and reliance on informal financial networks are deeply rooted in the community, shaping trust and familiarity with financial services. Additionally, cultural norms related to privacy, social hierarchy, and face-to-face interactions may deter villagers from adopting digital transactions, as they often prefer personal interactions with local banking agents or trusted community members. Acknowledging these cultural factors is essential in designing Fintech solutions that align with villagers' values. Integrating human touchpoints into digital services, fostering local partnerships, and tailoring Fintech offerings to accommodate cultural norms can help bridge the gap and encourage adoption.

Trust and Security Concerns

Trust and security concerns, mentioned by 4% of respondents, represent a critical challenge in Fintech adoption, particularly in rural areas where skepticism towards digital financial services is prevalent. Villagers in Vijayawada may worry about fraud, security breaches, and the potential misuse of personal financial data, making them hesitant to use digital financial platforms. Establishing trust is crucial in overcoming these concerns and promoting Fintech adoption.

To build confidence, financial service providers should focus on transparency, robust data security measures, and compliance with financial regulations. Clear communication regarding privacy policies, transaction security, and fraud prevention can reassure villagers about the safety of digital financial transactions. Additionally, implementing strong customer support systems, grievance redressal mechanisms, and financial literacy initiatives can further instill trust and empower villagers to engage with Fintech solutions responsibly.

Conclusions

The study highlights that despite the potential of Financial Technology (Fintech) to enhance financial inclusion in rural areas like Vijayawada village in Guntur District, several challenges hinder its widespread adoption. Key barriers include limited internet connectivity (12%), unreliable electricity supply (10%), lack of awareness (30%), difficulty in using digital

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platforms (24%), language barriers (12%), cultural preferences (8%), and trust and security concerns (4%). These challenges underscore the need for a holistic approach to Fintech adoption that considers infrastructural, educational, cultural, and trust-related factors.

However, there is significant potential for Fintech to improve financial accessibility, provided that targeted interventions address these obstacles. Villagers recognize the benefits of digital financial services, but gaps in infrastructure, literacy, and trust must be bridged to encourage sustained adoption.

Suggestions

Infrastructure Development

- Expand broadband and mobile internet coverage in rural areas through public-private partnerships.
- Invest in alternative energy solutions such as solar power to provide a reliable electricity supply for digital transactions.
- Encourage government initiatives and subsidies to improve digital infrastructure in villages.

Digital and Financial Literacy Programs

- Launch community-based awareness campaigns to educate villagers on Fintech services, benefits, and security measures.
- Conduct training workshops in local languages to help villagers navigate digital financial platforms.
- Develop simple, user-friendly digital applications with interactive tutorials to guide first-time users.

Localization and Cultural Adaptation

- Provide multilingual support on Fintech platforms, including regional language interfaces and customer service.
- Integrate human touchpoints such as community financial advisors or digital banking facilitators to assist villagers in transitioning from traditional banking to Fintech solutions.
- Respect cultural preferences by designing Fintech services that align with local financial habits and social structures.

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Enhancing Trust and Security

- Implement robust cybersecurity measures to protect users from fraud and financial scams.
- Strengthen regulatory oversight and establish clear grievance redressal mechanisms.
- Promote transparent communication about data security, privacy, and fraud prevention to build villagers' confidence in Fintech solutions.

Recommendations

A collaborative effort involving government agencies, financial institutions, Fintech companies, and local community leaders is necessary to ensure the successful integration of Fintech in rural areas like Vijayawada. By addressing key barriers through infrastructure improvements, digital literacy programs, cultural adaptation, and enhanced trust measures, Fintech adoption can be accelerated, ultimately fostering financial empowerment and economic growth in the region.

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EFFECTS OF SHALLOW AND DEEP WATER EXERCISE ON FITNESS AND BODY COMPOSITION IN OBESE WOMEN

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Abstract

The study was formulated as a true random group design, consisting of a pre-test and post-test. To achieve the purpose of the present study, sixty obese college women studying under graduate Fatima and Lady Doak College, Madurai, Tamilnadu were selected as subjects at random and their age ranged from 18 to 21 years. The subjects (N=60) were randomly assigned to three equal groups of twenty obese college women each. The groups were assigned as shallow water exercise group, deep water exercise group and control group consisting of subjects in an equivalent manner. The group-I underwent shallow water exercise, group-II underwent deep water exercise and group-III acted as a control group. The two experimental groups participated in the training for a period of twelve weeks to find out the outcome of the training packages, while the control group did not participate in any training programme. The duration of experimental period was 12 weeks. After the experimental treatment, all the sixty subjects were tested on their physical, anthropometrical and biochemical variables. This final test scores considered as post-test scores of the subjects. the pre-test and post-test scores were subjected to statistical analysis using dependent 't' test. In all the cases 0.05 level of significance was fixed to test the hypotheses.

Introduction

Fit people make a fit nation. Fitness is that state which characterizes the degree to which a person is able to function more efficiently. Fitness is an individual matter. It implies the ability of each person to live most effectively within his/her potentialities. To lead a happy and successful life, people have to develop physical fitness, as it is necessary for the proper functioning of the body and the system. While fitness is important and functional according to

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the activity or the game that one undertakes, health becomes a basic necessity to every human being to live best and serve best. The purpose of physical fitness is to create a consciousness and enthusiasm amongst the people and to stimulate their interest for physical welfare, which will in turn help them to lead a more healthy living. The physical fitness is also expected to assess factors such as speed, strength, endurance and agility which makes a person physically efficient (Bill, 1987).

Water Exercise

Water exercise refers to sports or exercises performed in or on water. Water exercise reduces stress and pressure on bones, muscles, and connective tissues, while the viscosity and drag force of water provide resistance proportional to the effort exerted. The buoyancy effect of water makes it an optimal exercise environment. Exercises performed in water are designed for the body in an upright position. The primary goal of these activities is to improve physical efficiency, and the depth of the water does not matter—it can be shallow or deep. Shallow water programs are typically conducted in water that ranges from mid-ribcage to mid-chest in depth. This provides the benefits of reduced impact while maintaining proper alignment and control of movement, allowing for activities that effectively train all major muscle groups against the water's resistance. Deep-water exercise is most effective at a depth where the body can be suspended vertically, free to move in any direction and at any speed, without experiencing impact or weight-bearing stress (Aquatic Exercise Association, 2003).

Obesity

The **human body** is a complex organism composed of various tissues that change as the body develops, matures, and ages. It is important to recognize how these body compartments may be affected by age, gender, and ethnicity. A basic understanding of body composition is relevant to many disciplines, including health and medicine, nutrition, exercise science, human performance, and other biological sciences. Nutritional status assessment, tracking the progression of diseases from diagnosis to recovery, growth and development, aging, and physical work conditions are some examples of situations where body composition measurements contribute to understanding physiological processes and aid in treating diseases such as obesity and anorexia. Adolescence can last nearly a decade and serves as a bridge between childhood and adulthood. It includes puberty and the years that follow until sexual maturation is complete. During this period, adult body composition characteristics and patterns

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of adipose tissue distribution develop. Chronological age cannot be used as a precise marker for these developmental stages. However, it remains significant, as there are major differences in values and the rates at which these values change (Stephen & Janssen, 2009).

Statement of the Problem

The statement of the problem was to find out the effects of shallow and deep water exercise on fitness and body composition in obese women.

Hypotheses

The formulated hypotheses in the present study based on the literatures related to the study are:

1. The shallow water exercise group may be significantly improved the selected physical fitness and anthropometric variables.
2. The deep water exercise group may be significantly improved the selected physical fitness and anthropometric variables.
3. The deep water exercise group may be show significant difference on selected physical fitness and bio-chemical variables than the shallow water exerciseand control groups.

Methodology

Research methodology involves the systematic procedure by which the researcher starts from the initial identification of the problem to its final conclusion. The role of the methodology is to carry out the research work in a scientific and valid manner. In this chapter, comprised that selection of subjects, selection of variables and tests, experimental design, pilot study, reliability of instruments, tester's competency and reliability of data, reliability of the tests, subject reliability, orientation of the subjects, administration of tests, administration of training programs, collection of data and statistical techniques adopted for the analysis of data have been described. The purpose of the study was to find out the effects of shallow and deep water exercise on fitness and body composition in obese women. To achieve the purpose of the present study, sixty obese college women studying under graduate Fatima and Lady Doak College, Madurai, Tamilnadu were selected as subjects at random and their age ranged from 18 to 21 years. The subjects were divided into three equal groups of twenty each.

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Selection of Variables and Tests

The research scholar reviewed the available scientific literature pertaining to the problem of the study from books, journals, magazines, websites, and research papers. Based on the consideration of feasibility on criteria and availability the following variables and the tests were selected:

TABLE 1: VARIABLES AND TEST ITEMS

S. No	Variables	Tests	Units
1	Cardio Respiratory Endurance	Cooper's12Min Runor Walk Test	Metres
2	Thigh Girth	Lufkin anthropometric tape	Centimetres

Pilot Study

A pilot study was conducted to assess the initial capacity of the subjects in order to fix the load. For this purpose ten subjects were selected randomly and made to undergo training packages under the watchful eyes of experts and the researcher. Based on the response of the subjects in the pilot study, the training schedule was constructed; however the individual differences were considered while constructing the training programme. The basic principles of training (Progression, Overload and Specificity) were also followed.

Administration of Test Items

Physical Variables: Cardio respiratory Endurance (12-Minute Run/Walk)

Purpose: To assess the cardio respiratory endurance of obese college women.

Equipment: Stopwatch, whistle, score sheet, pen, track, and lime powder.

Procedure: The test was conducted on a 400-meter track with markings every five meters. The investigator and testers acted as lap scorers. The subjects were asked to stand behind the starting line, which was drawn at the finish of the 400-meter track. They were instructed to cover as much distance as possible by running or walking. If running continuously for 12 minutes was not possible, they were advised to continue walking until the final whistle. The race began with a whistle, and another whistle was blown at the end of the twelfth minute. Each minute was

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announced to the participants. At the final whistle after 12 minutes, they stopped immediately and remained in place.

Scoring: The distance covered by each subject in twelve minutes was recorded to the nearest five meters.

Anthropometrical Variables

Thigh Girth

Purpose: To measure the thigh girth of obese college women.

Equipment Required: Anthropometric tape.

Procedure: The subject assumed a relaxed standing position with arms folded across the thorax. They stood with feet slightly apart, distributing their weight equally on both feet. The thigh girth was measured 1 cm below the level of the gluteal fold, perpendicular to the long axis of the thigh.

For accuracy, it was often helpful for the subject to stand on a box or stool. The anthropometrist passed the tape between the lower thighs and then slid it up to the correct level. The stub of the tape and the housing were both held in the right hand, while the anthropometrist used the left hand to adjust the tape to the target level.

Using the cross-hand technique, the tape was positioned in a perpendicular plane. It was then readjusted as necessary to ensure that it had not slipped and did not excessively indent the skin.

Scoring: The maximum circumference of the thigh girth was recorded in centimeters.

Cardio respiratory Endurance:

Cardio respiratory endurance is the ability of the lungs and heart to take in and transport an adequate amount of oxygen to the working muscles, allowing activities involving large muscle groups to be performed over extended periods (Baumgartner, 2003).

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Thigh Girth

Thigh girth is the estimated circumference between the greater trochanter and the proximal border of the patella. The inguinal crease has been chosen instead of the trochanter as a proximal landmark (Marfell, 2006).

TABLE 1: SIGNIFICANCE OF MEAN GAINS AND LOSSES BETWEEN PRE AND POST TEST SCORES ON SELECTED VARIABLES OF SHALLOW WATER EXERCISES GROUP, DEEP WATER EXERCISES GROUP AND CONTROL GROUP

S. No	Group	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σDM	't' Ratio
1	Shallow Water Exercises group	Cardio respiratory endurance	1054.00	1176.00	122.00	223.85	50.05	2.43*
	Deep Water Exercises Group		1104.75	1198.25	93.50	1974	4.41	21.18*
	Control group		1109.00	1127.75	18.75	58.48	13.07	1.43
2	Shallow Water Exercises group	Thigh girth	65.02	61.95	3.07	1.33	0.29	10.29*
	Deep Water Exercises Group		64.90	61.58	3.31	1.13	0.25	13.02*
	Control group		64.84	64.72	0.12	0.64	0.14	0.83

**Significant at 0.05 level*

An examination of table-1 indicates that the obtained 't' ratio were (2.43*) Shallow Water Exercises group , (21.18*) Deep Water Exercises Group, (1.43) Control group for cardio respiratory endurance. (10.29*) Shallow Water Exercises group, (13.02*) Deep Water Exercises Group, (0.83) Control group for thigh girth. The obtained 't' ratio on the selected variables were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that shallow water exercises group and Deep water exercises group statistically significant and explained its effects positively. Control group so, it was found to be insignificant.

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FIGURE 1: PRE TEST, POST TEST DIFFERENCES OF THE SHALLOW WATER EXERCISES, DEEP WATER EXERCISES AND CONTROL GROUPS ON CARDIO RESPIRATORY ENDURANCE

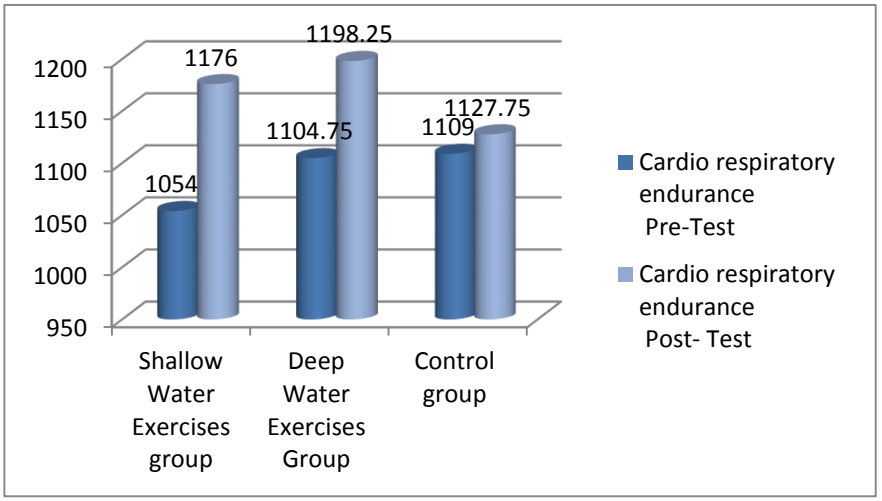
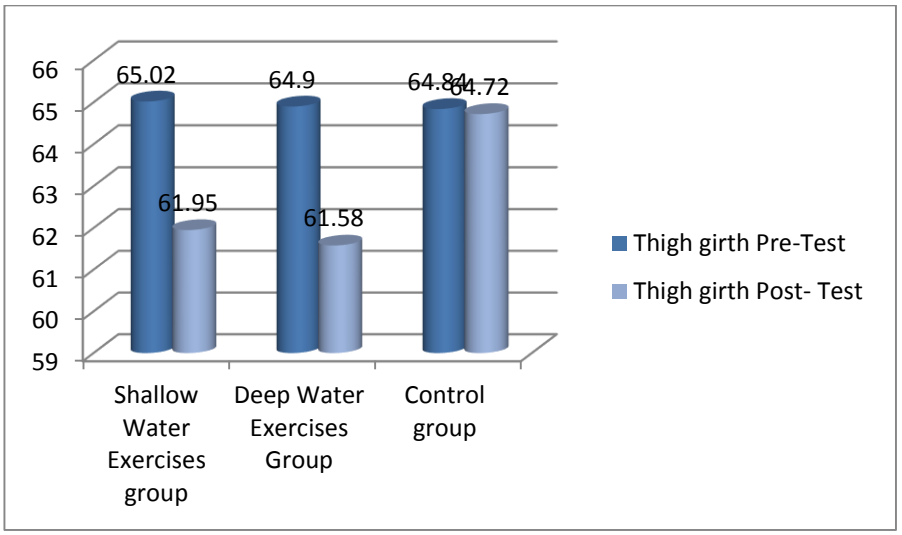


FIGURE – 2: PRE TEST, POST TEST DIFFERENCES OF THE SHALLOW WATER EXERCISES, DEEP WATER EXERCISES AND CONTROL GROUPS ON THIGH GIRTH



Discussion on the hypotheses

1. First hypothesis stated that the shallow water exercise group would significantly improve the selected physical fitness, and anthropometric variables.

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The findings of the study showed that the shallow water exercise group significantly improved the selected physical fitness and anthropometric variables. Hence, the first hypothesis was accepted on the above said variables.

2. Second hypothesis stated that the deep water exercise group would significantly improve the selected physical fitness and anthropometric variables.

   The findings of the study showed that deep water exercise group significantly improved the selected physical fitness and anthropometric variables. Hence, the second hypothesis was accepted on the above said variables.

Conclusions

From the analysis of the data, the following conclusions were drawn:

1. The shallow water exercises had shown significant improvement in all the selected physical fitness and anthropometric variables among obese college women after undergoing shallow water exercises for a period of twelve weeks.
2. The deep water exercises group had shown significant improvement in all the selected physical fitness and anthropometric variables among obese college women after undergoing deep water exercises for a period of twelve weeks.
3. The deep water exercises group had shown significant improvement on selected physical fitness and anthropometric variables than the shallow water exercises group and control group.

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INCORPORATING HARDWARE TECHNOLOGY OFFERS A UNIQUE AND CREATIVE LEARNING EXPERIENCE FOR ARTS STUDENTS IN VIJAYAWADA CITY, ANDHRA PRADESH

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Abstract

The incorporation of hardware technology in arts education represents a groundbreaking initiative with the potential to reshape the creative learning environment. This research, carried out in Vijayawada City, Andhra Pradesh, seeks to examine the effects of integrating hardware technology on arts students. A questionnaire was distributed to 137 participants, gathering insights on usage trends, skill development requirements, curriculum inclusion, and factors affecting technology acceptance. The results highlight a complex landscape, underscoring the significance of training, the influence of instructors, and the strong enthusiasm of students for acquiring new skills.

Keywords: Hardware Technology Implementation, Arts Learning, Technology Acceptance, Skill Development

Introduction

In today's rapidly evolving educational landscape, blending hardware technology with traditional arts education presents a groundbreaking and progressive approach. This research focuses on the theme of "Incorporating Hardware Technology as an Innovative Learning Tool for Arts Students," acknowledging the transformative impact this integration can have on artistic education. As we navigate the digital age, the convergence of technology and creative disciplines becomes increasingly significant. This study explores the role of hardware technology in enhancing the artistic learning experience, uncovering the intricate relationship between technological tools and creative development.

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Beyond merely examining the incorporation of hardware technology, this research investigates its broader effects on students' artistic expression, skill enhancement, and overall educational framework. By analyzing this integration, we aim to provide valuable insights that can shape teaching methodologies, drive innovation, and potentially redefine the future of arts education. Vijayawada, a thriving cultural hub nestled in the scenic landscapes of Andhra Pradesh, serves as the focal point for this transformative initiative—where technology is being woven into the fabric of arts education.

This study conducts an in-depth analysis of the dynamic relationship between hardware technology and the creative pursuits of arts students in Vijayawada. By engaging with 137 participants from diverse artistic backgrounds, aged between 18 and 25, this research aims to explore the multifaceted influence of technology on their educational experiences. The integration of hardware technology in arts education has the potential to revolutionize conventional learning models, opening up new dimensions of artistic exploration.

With Vijayawada as the central research site, this study seeks to examine how technological advancements impact creative processes, academic growth, and skill acquisition among arts students. Through the perspectives of 124 respondents, we strive to construct a comprehensive narrative surrounding this innovative approach to arts education. This research aspires to offer meaningful insights for educators, policymakers, and stakeholders, highlighting the transformative possibilities of hardware technology in nurturing creativity and enriching the educational landscape in Vijayawada, Andhra Pradesh.

Literature Review

IoT Framework and Hardware Implementation: Researchers have extensively studied different frameworks for IoT systems, highlighting the incorporation of sensors, actuators, and communication interfaces. These studies analyze how hardware components are interconnected to create scalable, high-performance IoT infrastructures.

Optimizing Energy Consumption in IoT Devices: Energy efficiency remains a key concern, particularly for battery-operated IoT systems. Various studies explore energy-efficient hardware designs, alternative energy-harvesting methods, and advanced power management strategies to enhance the longevity and sustainability of IoT nodes.

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Communication Technologies and Hardware Integration: Research delves into various communication standards and the seamless integration of hardware to facilitate efficient data transmission in IoT environments. Studies examine the role of protocols such as MQTT, CoAP, and other IoT-driven communication models to optimize network performance.

Advanced Sensor Deployment and Data Fusion: Scholars have investigated the integration of multiple sensors in IoT applications, focusing on sensor fusion techniques. These methods enhance the precision and dependability of real-time data acquisition by synthesizing information from various sensor inputs, improving overall system intelligence and responsiveness.

Study Area Profile

Vijayawada, situated in the south eastern region of India, lies on the northern banks of the Krishna River in Andhra Pradesh. It serves as the administrative center of Krishna district and plays a pivotal role as a key economic, cultural, and transportation hub in the state.

The city boasts a dynamic and expanding economy, acting as a significant commercial and trade hub. Vijayawada hosts a wide range of industries, from traditional businesses to modern enterprises. Its economic landscape is shaped by diverse sectors, including agriculture, manufacturing, textiles, and an emerging information technology industry. Additionally, its strategic location as a major transit point enhances its economic importance.

With a deep-rooted cultural legacy, Vijayawada is home to several historical and religious sites. The Kanaka Durga Temple, perched atop Indrakeeladri Hill, is a prominent religious landmark and attracts numerous devotees and tourists. The city celebrates various festivals that highlight the cultural richness and diversity of its residents.

As a thriving commercial hub, Vijayawada is characterized by its vibrant markets and business districts. The estimated population of the city stands at approximately 1 million, contributing to its bustling urban environment and economic vitality.

Objectives of the Study

1. To assess the impact of hardware technology integration on the academic performance and learning achievements of arts students.
2. To analyze how incorporating hardware technology contributes to the development of specific competencies among arts students.

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3. To explore the teaching methodologies and instructional strategies used in integrating hardware technology within arts education.

Data Collection

This research is based on both primary and secondary data sources. A simple random sampling technique was utilized for data collection. In line with the study's focus, 150 questionnaires were distributed to individuals aged between 18 and 25, specifically targeting undergraduate and postgraduate students. Out of the total distributed, 137 completed responses were successfully gathered from participants within the city.

Analysis and Interpretation

In assessing the impact of hardware technology integration on the academic performance and learning outcomes of arts students, several influencing factors have been identified. The detailed analysis is presented in Table 1.

Table 1: Impact of Hardware Technology

Events	Numbers	Percentage
Usage of devise always	21	15
Training and Support needed	27	20
Solely ability to access	13	09
Integration to their Curriculum	15	11
Depending on Teacher / Professor	22	16
Interest in learning	33	24
Using Traditional Artistic Skills:	06	05
Total	137	100

Adoption of Hardware Technology: The data reveals that 15% of respondents regularly use hardware devices, indicating a moderate level of adoption among arts students in Vijayawada City.

Need for Training and Support: A significant 20% of students expressed the need for guidance in using hardware technology, emphasizing the necessity for educational institutions to provide training programs to enhance students' technological proficiency.

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Independent Access to Technology: Only 9% of students reported having sole access to hardware tools, suggesting that a small portion of students are self-sufficient in utilizing technology for creative education.

Curriculum Integration: Around 11% of respondents acknowledged the integration of hardware technology into their coursework, highlighting the need for further incorporation into arts education.

Teacher Influence: With 16% of students depending on their educators for technology usage, the role of professors and teachers becomes crucial in shaping students' engagement with hardware tools.

Student Enthusiasm: The highest percentage (24%) of respondents demonstrated a strong interest in learning about hardware technology, showcasing the enthusiasm of arts students toward modern advancements.

Traditional Artistic Skills: Although only 5% of students prefer using conventional artistic methods, this indicates that a small but notable group continues to rely on traditional approaches in their creative pursuits.

Findings

High Interest in Learning: The most notable discovery is the strong interest (24%) among arts students in learning about hardware technology, demonstrating a proactive approach toward skill enhancement.

A significant portion (20%) of students indicated the need for training, underscoring the necessity for educational institutions to provide structured learning resources and hands-on guidance. While hardware technology is being incorporated into arts education, there is still room for expansion, particularly in curriculum development and accessibility. With 16% of students relying on their teachers or professors for guidance, faculty members play a crucial role in shaping students' engagement with technology. Only 11% of students acknowledged the integration of hardware technology into their academic coursework, indicating a need for more structured and immersive inclusion in arts education. The findings reveal that only 9% of students have sole access to technology, pointing to possible resource constraints that need to be addressed. A small but notable 5% of students continue to favor traditional artistic techniques, suggesting that while technology is embraced, conventional methods still hold relevance.

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Conclusions

The study highlights a positive trajectory for technology integration in arts education, with a student population eager to explore and adapt to technological advancements. Targeted training programs and support initiatives are essential to bridge existing gaps and ensure a smoother transition for students incorporating hardware technology into their creative education. Collaboration between educators and students is vital in creating a technology-friendly learning environment where faculty members serve as mentors, guiding students in their artistic and technological pursuits. Expanding curriculum integration will be key to fully leveraging hardware technology's potential in enhancing learning outcomes and skill development. Future educational policies and initiatives should capitalize on the students' enthusiasm for learning while addressing accessibility challenges to ensure an inclusive and holistic arts education experience in Vijayawada City.

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THE NECESSITY OF ADOPTING AI AS A MARKETING STRATEGY BY MARKETERS

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Abstract

Artificial Intelligence (AI) has become an indispensable tool in modern marketing, revolutionizing how businesses analyze data, interact with customers, and execute campaigns. AI enhances efficiency by automating repetitive tasks, enables personalized consumer experiences through predictive analytics, and optimizes advertising strategies. This article explores the necessity of integrating AI into marketing strategies, emphasizing its benefits in data-driven decision-making, personalization, and cost efficiency. Despite ethical concerns such as data privacy and job displacement, AI remains a crucial component in sustaining competitive advantage in digital marketing. The future of marketing will increasingly depend on AI-driven strategies, making its adoption essential for business growth and customer engagement.

Introduction

In today's digital age, artificial intelligence (AI) is revolutionizing various industries, including marketing. Marketers are under constant pressure to stay ahead of trends, understand consumer behavior, and optimize their strategies. AI has emerged as a game-changer, offering unparalleled advantages in data analysis, customer engagement, and campaign optimization. This article explores the necessity of adopting AI as a marketing strategy and how it enhances efficiency, personalization, and decision-making.

Enhanced Data Analysis and Insights

One of the primary reasons marketers should adopt AI is its ability to analyze vast amounts of data efficiently. Traditional marketing relies heavily on historical data and intuition, whereas AI utilizes machine learning algorithms to predict consumer behavior with high accuracy. AI-driven analytics tools can identify patterns, trends, and insights that would be impossible for humans to detect manually.

For example, AI-powered tools like Google Analytics, IBM Watson, and Adobe Sensei enable marketers to segment audiences, optimize ad placements, and forecast future trends. By

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leveraging AI, marketers can make data-driven decisions that enhance their return on investment (ROI) and minimize marketing inefficiencies.

Personalized Customer Experience

AI enables hyper-personalization, which is crucial in today's competitive marketing landscape. Consumers expect tailored experiences, and AI facilitates this by analyzing user data, purchase history, and browsing behavior. Chatbots, recommendation engines, and AI-powered email marketing platforms enhance customer interactions by delivering relevant content and offers. For instance, streaming services like Netflix and e-commerce giants like Amazon utilize AI to recommend products and content based on user preferences. This level of personalization not only improves customer satisfaction but also increases conversion rates and brand loyalty.

Automation and Efficiency

Another critical advantage of AI in marketing is automation. AI automates repetitive tasks such as email marketing, social media management, and customer support, freeing up marketers to focus on strategic initiatives. AI-powered chatbots and virtual assistants handle customer inquiries 24/7, providing instant responses and improving customer experience.

Marketing automation tools like HubSpot, Marketo, and Salesforce leverage AI to streamline lead nurturing, campaign management, and customer segmentation. By automating routine tasks, businesses can reduce operational costs and increase overall productivity.

Predictive Analytics and Decision-Making

AI-driven predictive analytics is a powerful tool that enables marketers to anticipate market trends and consumer preferences. Machine learning models analyze past behaviors and external factors to forecast future outcomes. This allows businesses to adjust their marketing strategies proactively rather than reactively. For example, AI can predict which products are likely to trend based on seasonal demands, social media sentiments, and economic indicators. Retailers use AI-driven demand forecasting to optimize inventory management and prevent stock shortages or overstock situations.

Improved Advertising Strategies

AI is transforming digital advertising by making ad campaigns more targeted and cost-effective. Traditional advertising often relies on generic targeting, but AI refines audience segmentation based on demographics, interests, and online behavior. Programmatic advertising

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platforms use AI to purchase ad space in real time, ensuring that ads reach the most relevant audience at the right moment.

Additionally, AI-powered sentiment analysis tools help brands gauge public perception and adjust their messaging accordingly. Platforms like Facebook, Google, and TikTok leverage AI algorithms to optimize ad placements, maximizing engagement and minimizing wasted ad spend.

AI in Social Media Marketing

Social media has become a significant marketing platform, and AI is playing a crucial role in optimizing its potential. AI-driven algorithms analyze user engagement, sentiment, and content preferences to enhance social media marketing strategies. AI-powered content generation tools help marketers craft compelling posts, while chatbots provide real-time responses to customer inquiries.

AI also enhances influencer marketing by identifying the most relevant influencers for brand campaigns. By analyzing engagement metrics and audience demographics, AI helps marketers collaborate with influencers whose followers align with their target market, thereby improving campaign effectiveness.

AI and Customer Retention

Customer retention is as important as acquisition, and AI significantly contributes to loyalty-building strategies. AI-driven customer relationship management (CRM) systems analyze customer interactions, feedback, and purchase history to predict churn rates and suggest retention strategies. AI-powered loyalty programs personalize rewards based on customer behavior, enhancing brand affinity.

For instance, AI-driven chatbots and virtual assistants engage customers post-purchase, addressing concerns and providing recommendations for future purchases. By fostering meaningful interactions, AI strengthens customer relationships and increases lifetime value.

Ethical Considerations and Challenges

While AI presents numerous benefits, it also poses ethical and practical challenges. Issues such as data privacy, algorithmic bias, and job displacement must be addressed. Marketers must ensure transparency in data collection and usage while complying with

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regulations like the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA).

Furthermore, AI should complement human creativity rather than replace it. While AI excels at data analysis and automation, human intuition and emotional intelligence remain crucial in crafting compelling brand narratives and innovative marketing campaigns.

Conclusion

The adoption of AI in marketing is no longer optional but a necessity for businesses aiming to thrive in a digital-first world. AI enhances data analysis, personalization, automation, predictive analytics, and advertising strategies, making marketing efforts more efficient and effective. However, ethical considerations must be taken into account to ensure responsible AI usage.

Marketers who embrace AI-driven strategies gain a competitive edge by delivering superior customer experiences, optimizing resources, and staying ahead of market trends. As AI technology continues to evolve, its integration into marketing strategies will only become more indispensable, reshaping the future of digital marketing.

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COMPARISON OF MOTOR FITNESS VARIABLES BETWEEN KABADDI AND VOLLEYBALL PLAYERS

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Abstract

The study was designed to compare certain motor fitness components between Kabaddi and volleyball players. To achieve the purpose of the study, twelve players from each game, namely kabaddi and volleyball players from the American college, Madurai Tamilnadu, India, were randomly selected as participants. Only twenty-four players from the American college, Madurai, were selected, and their age ranged from 17 to 24. Players who represented inter-collegiate level tournaments were selected for this study. The motor fitness variables were selected as dependent variables. The selected criterion variables for the study were assessed by the following standardized test items: agility co-ordination is assessed by the AGCO test, muscular endurance is assessed by the bent knee sit-ups test and speed is assessed by a 50 mts run, and explosive power is assessed by the sarjent jump board test. The experimental design used for this study was a static group comparison design. The collected data were statistically analyzed for significant differences using the Independent't' test. In this case, the .05 level of significance was used to test the hypothesis.

Keywords: Motor fitness variables, Kabaddi, Volleyball, independent't'-test.

Introduction

Sport is a competitive physical activity that utilizes specialized equipment and facilities, with unique dimensions of time and space, in which the pursuit of records is of high significance" provides yet another perspective to his claim that sport should be played in nature; (b) involve some element of competition; (c) prowess,(d) involve elements of skill, strategy and chance, and (e) have a certain outcome. These various interpretations of sport illustrate that a single definition is neither possible nor necessary. Using one or all of the definitions, we can create a workable concept of sport.Fitness, be it health-related or motor-skill-related, must be viewed in relation to individual characteristics, i.e. Age requires objectives and duties that must

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be fulfilled. All individuals possess a certain level for each of the health and motor performance fitness components. The extent to which quality of fitness is developed depends on the individual. A long-distance runner needs a different quality of physical fitness than a wrestler. Therefore, physical education teachers/coaches/trainers must shoulder the responsibility of designing and implementing fitness programmes as per the requirements of the players / athletes. They must ask the participants for fitness. What is it for general physical fitness or to achieve outstanding performance in a particular game? Gone are the days when natural ability, good physique and participation in the chosen activity / sports were considered enough for success in competition.

High performance in sports is the outcome of magnitude and the quality of motor movements. These motor movements require physical fitness, technique, tactics and physiological development of athletes. Physical fitness is primarily based on the motor fitness components, i.e. speed, strength, endurance, flexibility, co-coordinative abilities and buffer capacity, energy reserves and functional capacity of internal organs. Although the ratio differs from game to game, a certain number of all these qualities are the necessary prerequisite for any motor movement.

Research Methodology

Selection of the Subjects

The study was designed to compare certain motor fitness components between Kabaddi and volleyball players. To achieve the purpose of the study, twelve players from each game, namely kabaddi and volleyball players from the American college, Madurai, Tamilnadu, India, were randomly selected as participants. Only twenty-four players from the American college, Madurai, were selected, and their age ranged from 17 to 24. Players who took part in inter-collegiate tournaments were chosen for this study. Only male students are selected for this study. The probability level below which we reject the hypotheses is termed as the level of significance. The “t” ratio was compared to the .05 level of significance, which was considered adequate. In using an independent “t” test, it was needed to be significant at .05 level with degrees of freedom 1 and 23 and the table value required for significance at .05 level for the “t” test with df 23 is 2.069. In the present study, if they obtained value was at .05 level, the null hypothesis was rejected and if they obtained values were less than the required value at .05

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level, the hypotheses were accepted to the effect that there existed no significant difference between the means of the groups under study.

Selection of Variables

Motor fitness components are the ideal indicators of the sports performance status of an individual. Even the slightest imbalance due to circadian variations may affect the level of performance Motor fitness parameters play an important role in almost all games and sports since the following variables were selected for this study.

- Agility Co-ordination
- Muscular Endurance

Table 1: Tests Selection

S.No	Criterion Variables	Test Items	Unit of Measurement
1.	Agility Coordination	AGCO	In Seconds
2.	Muscular Endurance	Bent Knee Sit Ups	In Seconds

Analysis of Data

Agility Coordination

The analysis of an independent‘t’-test on the data obtained for agility coordination of Kabaddi and volleyball players has been analyzed and presented in Table I.

Table 2: SUMMARY OF MEAN AND INDEPENDENT ‘t’ TEST FOR THE KABADDI AND VOLLEYBALL PLAYERS ON AGILITY CO-ORDINATION

Group	Number	Mean	Standard Deviation	‘t’ –Value
Volleyball	12	9.71	0.11	**6.67***
Kabaddi	12	9.38	0.12	

(Agility Co-ordination scores in Seconds)

(Table value required for significance at .05 level for‘t’-test with df 22 is 2.07).

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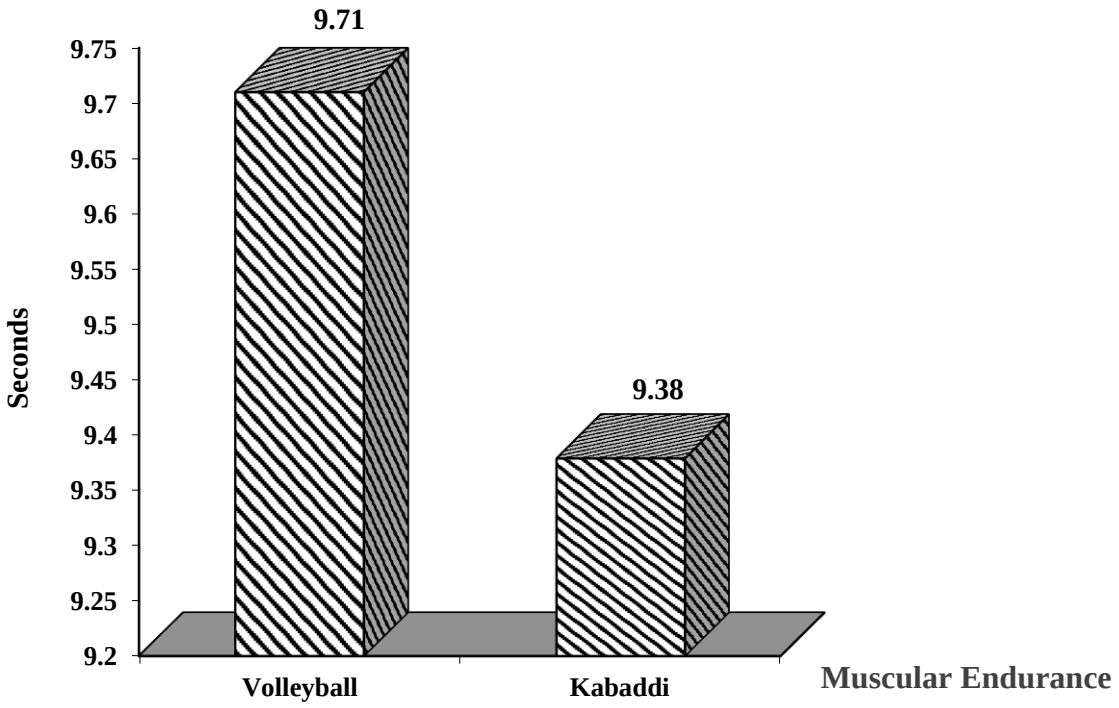
In the table, the mean values obtained for the volleyball and Kabaddi players were 9.71 and 9.38 respectively, and the ‘t’ test value between the means is 6.67. Since the obtained 't’ test value of 6.67 is greater than the table value of 2.07 with df 22 at .05 level of confidence, it was concluded that the volleyball and kabaddi players had significant differences in the performance of agility coordination. However, the kabaddi players were found better in agility co-ordination when compared to volleyball players.

The mean values of volleyball and kabaddi players in agility co-ordination are graphically represented in figure I.

FIGURE 1: MEAN VALUES OF VOLLEYBALL AND KABADDI PLAYERSON AGILITY COORDINATION.



The analysis of an independent ‘t’-test on the data obtained for muscular endurance of volleyball and kabaddi players has been analyzed and presented in Table-3.

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Table 3: SUMMARY OF MEAN AND INDEPENDENT 't' TEST FOR THE VOLLEYBALL AND KABADDI PLAYERS ON MUSCULAR ENDURANCE

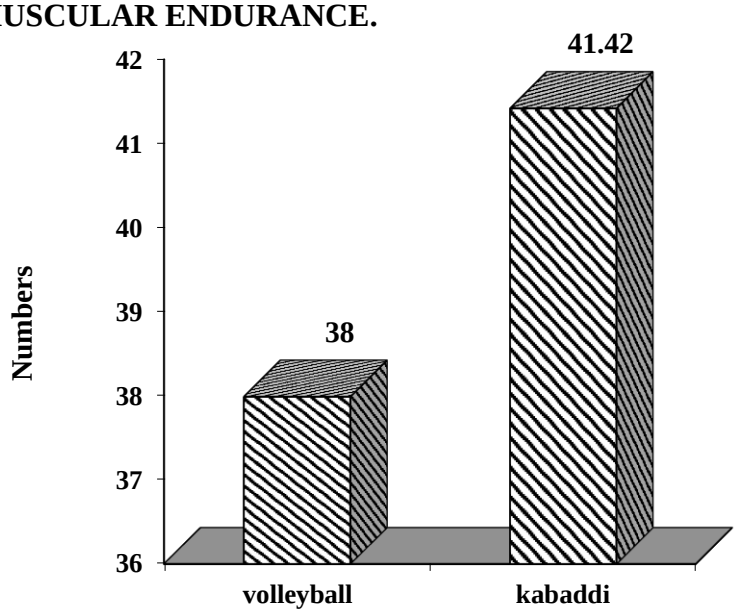
Group	Number	Mean	Standard Deviation	't' –Value
Volleyball	12	38	3.25	2.94*
Kabaddi	12	41.42	2.39	

(Muscular Endurance scores in Numbers)

(Table value required for significance at .05 level for 't'-test with df 22 is 2.07).

From table-3, the mean values obtained for the volleyball and kabaddi players were 38 and 41.42 respectively, and the't' test value between the means is 2.94. Since the obtained 't' test value of 2.94 is greater than the table value of 2.07 with df 22 at .05 level of confidence, it was concluded that the volleyball and kabaddi players had significant differences in the performance of muscular endurance. However, the kabaddi players were found better in muscular endurance when compared to volleyball players. The mean values of volleyball and kabaddi players on muscular endurance are graphically represented in the figure-2.

FIGURE 2: MEAN VALUES OF VOLLEYBALL AND KABADDI PLAYERS ON MUSCULAR ENDURANCE.



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Discussion on Findings

The results of the study indicate that there was a significant difference in agility co-ordination and muscular endurance for volleyball players when compared with kabaddi players.

Conclusion

On the basis of the findings of the study, the following conclusions were drawn.

1. There may be significant differences in Agility Co-ordination for volleyball and kabaddi players.
2. There may be a significant difference in muscular endurance for volleyball and kabaddi players.

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A STUDY ON CONSUMERS' PERCEIVED RISK TOWARDS ONLINE SHOPPING WITH SPECIAL REFERENCE TO KANYAKUMARI DISTRICT

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Abstract

The rapid growth of e-commerce has revolutionized the retail industry by providing consumers with easy access to a variety of products and services. However, despite its advantages, online shopping continues to pose certain risks to consumers. This study aims to analyze consumers' perceived risks associated with online shopping in Kanyakumari district. It examines various dimensions of perceived risk, including financial, product, delivery, privacy, and security risks. The findings of this study provide valuable insights for e-commerce platforms to enhance consumer trust and minimize risks.

Keywords: Online shopping, perceived risk, e-commerce, consumer behavior, Kanyakumari district

Introduction

The advent of digital technology and the internet has significantly changed shopping behavior. Online shopping provides convenience, variety, and competitive pricing, making it a preferred choice for many consumers. However, the perception of risk remains a major deterrent for many individuals. Consumers often hesitate to make online purchases due to concerns related to product quality, security of financial transactions, and overall reliability of e-commerce platforms.

This study focuses on consumers in Kanyakumari district, a region experiencing rapid digitalization and increased e-commerce penetration. Understanding the perceived risks of

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consumers in this area will help e-commerce platforms, policymakers, and marketers address these concerns effectively.

Literature Review

Perceived risk in online shopping has been widely studied in consumer behavior research. Scholars classify perceived risk into different dimensions:

- ***Financial Risk:*** The possibility of financial loss due to fraudulent transactions or insecure payment methods.
- ***Product Risk:*** The uncertainty regarding product quality, authenticity, and mismatch between expectations and reality.
- ***Delivery Risk:*** Concerns related to delayed deliveries, damaged products, and unfulfilled orders.
- ***Privacy Risk:*** The fear of personal and financial information being misused.
- ***Security Risk:***Anxiety regarding hacking, identity theft, and phishing scams.

Several studies suggest that these risks significantly impact consumers' trust and purchasing decisions. Addressing these risks is crucial to enhancing online shopping experiences and fostering consumer confidence.

Methodology

This study adopts a quantitative research approach to assess consumers' perceived risks in Kanyakumari district. Data was collected through structured questionnaires distributed to a sample of 300 online shoppers from different demographic backgrounds. The questionnaire included multiple-choice questions and Likert scale-based statements to measure the degree of perceived risk.

Data Collection:

- Primary data was gathered through online and offline surveys.
- Secondary data was obtained from journals, reports, and e-commerce market analyses.

Data Analysis:

- Statistical tools such as mean, standard deviation, and regression analysis were used to analyze the responses.
- Factor analysis was performed to identify key dimensions of perceived risk.

Results and Discussion

The study revealed that financial risk and product risk were the most significant concerns among consumers in Kanyakumari district. Key findings include:

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- ***Financial Risk:*** 65% of respondents expressed concerns about payment security and potential fraud.
- ***Product Risk:*** 70% of participants were worried about product quality and discrepancies between online images and actual products.
- ***Delivery Risk:*** 55% of consumers faced issues related to delayed or incorrect deliveries.
- ***Privacy Risk:*** 40% of respondents were hesitant to share personal details due to privacy concerns.
- ***Security Risk:*** 50% of consumers were wary of data breaches and hacking threats.

The results indicate that while online shopping is gaining popularity in Kanyakumari district, perceived risks still hinder its full adoption. Addressing these issues through improved security measures, transparent return policies, and enhanced consumer education can build trust in online shopping platforms.

Conclusion and Recommendations

The study concludes that perceived risks significantly influence consumer behavior in online shopping. To mitigate these risks, e-commerce businesses should focus on the following:

1. ***Enhanced Security Measures:*** Implementing advanced encryption, multi-factor authentication, and fraud detection systems.
2. ***Transparent Return Policies:*** Clearly defined return and refund policies to instill confidence among consumers.
3. ***Consumer Awareness Programs:*** Educating users about safe online shopping practices.
4. ***Improved Product Descriptions and Reviews:*** Providing accurate product details, customer reviews, and verified seller information.
5. ***Efficient Delivery Systems*****:** Ensuring timely and reliable delivery services with tracking options.

By addressing these concerns, e-commerce platforms can increase consumer trust and encourage more widespread adoption of online shopping in Kanyakumari district.

Future Scope of Research

Future studies can explore the impact of emerging technologies such as artificial intelligence, blockchain, and augmented reality in reducing perceived risks in online shopping. Additionally, comparative studies between urban and rural consumers can provide deeper insights into regional variations in e-commerce adoption.

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ROLE OF YOGIC NUTRITION IN ENHANCING PSYCHOLOGICAL WELL-BEING OF CENTRAL UNIVERSITY BASKETBALL PLAYERS

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Abstract

A Yogic diet is a holistic nutritional approach that ancient yogis believed greatly influences not only physical health but also mental, emotional, and spiritual well-being. Unlike traditional diets that focus on calorie intake, vitamins, minerals, or protein, the yogic diet emphasizes the quality and type of food consumed rather than the quantity. This diet considers factors such as the season, geographical location, and individual constitution, promoting a personalized approach to nutrition. For example, a yogi might maintain good health despite consuming simple meals, as the focus is on mindful and disciplined food choices. Moderation in both food and drink plays a central role in this practice. While the principles of a yogic diet are straightforward, following them requires significant self-discipline, not only for physical well-being but also for spiritual growth. The objective of the study was to examine the impact of a yogic diet on selected psychological variables, specifically stress and anxiety, in basketball players. Thirty male basketball players (aged 19 to 23 years) were selected from at Central University Thiruvarur Tamil Nadu. The participants were randomly assigned to two groups: Group I (yogic diet group) consisting of 15 players, and Group II (control group) consisting of 15 players. The control group did not participate in any special diet or training program. The study measured stress and anxiety levels of the participants before and after the experiment using a stress and anxiety questionnaire. The collected data was analyzed using the 't' ratio to determine the significance of the study's variables. Results showed that the group following the yogic diet experienced a significant reduction in stress and anxiety levels compared to the control group, with findings validated at the 0.05 confidence level.

*Keywords***:** *yogic diet, stress, anxiety*

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Introduction

A Yogic diet is a holistic and balanced approach to nutrition that ancient yogis believed greatly impacted not only physical health but also mental, emotional, and spiritual well-being. Unlike conventional diets that focus on calorie count, vitamins, minerals, or protein intake, the yogic diet prioritizes the type and quality of food consumed. It does not concentrate on quantities but instead emphasizes seasonal, geographical, and individual factors, suggesting a personalized approach to food. For instance, a yogi might live on a simple meal but still maintain good health due to the mindful and disciplined choice of food. Moderation in both food and drink is key to this diet. The principles behind this dietary practice are easy to comprehend but challenging to adhere to, as it requires significant self-discipline, not only for physical health but also for spiritual growth.

This diet is primarily lacto-vegetarian, which means it excludes animal-based foods, except for dairy products and honey. With greater awareness of the body through yoga, one may naturally gravitate toward vegetarianism, which helps maintain the energized and light feeling that yoga aims to achieve. If you adopt a more spiritual outlook, you may find that your compassion for all living beings outweighs the desire for animal-based foods. This non-animal-based diet promotes positive energy and a heightened sense of spirituality. You don’t need to be a yogi to follow this diet just a desire to live a healthier, more peaceful life.

Anxiety is often described as a psychological condition that arises when conflicting tendencies within an individual cause internal distress. This can happen when a person feels torn between opposing desires, such as the desire to conform versus the urge to rebel, or the tension between idealized self-perception and actual behavior (Allport, 1961). Anxiety can manifest in various ways, sometimes as a vague sense of unease without any identifiable cause. This type of anxiety is often referred to as "free-floating anxiety," as it is not connected to a specific object or situation. When this form of anxiety becomes pervasive, it is classified as an anxiety state (Neil, 1987).

Stress is a natural response to challenging situations and is part of the body’s adaptive mechanism. It prepares us to face difficulties with focus, strength, and heightened alertness. While stress often has a negative connotation, a certain amount of stress can be beneficial, as it helps maintain energy levels and increases awareness. Stress is an inherent part of life, as our

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environment is constantly changing. The body's response to acute stress involves the release of chemicals, including adrenaline, in a reaction known as the "fight-or-flight" response. This causes physiological changes, such as increased heart rate, elevated blood pressure, rapid breathing, and heightened muscle tension. While excessive stress can be harmful, moderate stress can enhance performance and provide the energy needed to meet challenges (Hardly, 1999).

Methodology

The study was conducted with thirty male basketball players from CentralUniversity, Thiruvarur, Tamil Nadu, India. The participants were randomly assigned to two groups. Group I, consisting of 15 players, followed a yogic diet, while Group II, also consisting of 15 players, served as the control group and did not undergo any special training program. The duration of the training was limited to 6 weeks. Stress and anxiety levels were measured both before and after the intervention using the Stress and Anxiety Level Event Questionnaire (DASS-21), developed by Lovibond and Lovibond in 1995.

Analysis of the data

The significance of the difference between the means of the experimental group was determined through pre-testing. The data were analyzed using a dependent 't' test with a 0.05 confidence level.

TABLE-1: ANALYSIS OF T- RATIO FOR THE PRE AND POST TESTS OF EXPERIMENTAL AND CONTROL GROUP ON STRESS AND ANXIETY

Variables	Group	Mean		SD		SD Error		DF	't' ratio
		Pre	Post	Pre	Post	Pre	Post		
Stress and Anxiety	CG	11.13	10.93	0.74	0.70	0.19	0.18	1	0.68
	EG	10.87	8.73	0.63	0.80	0.16	0.20	14	6.63*

**significance at 0.05 level of confidence.(Table value required for significance at.0.05 level with df 1 and 14 is 2.14)*

In this study, we examined the differences in stress and anxiety levels between two groups: the Control Group (CG) and the Experimental Group (EG), before and after an intervention. The data provided includes means, standard deviations (SD), standard error (SE),

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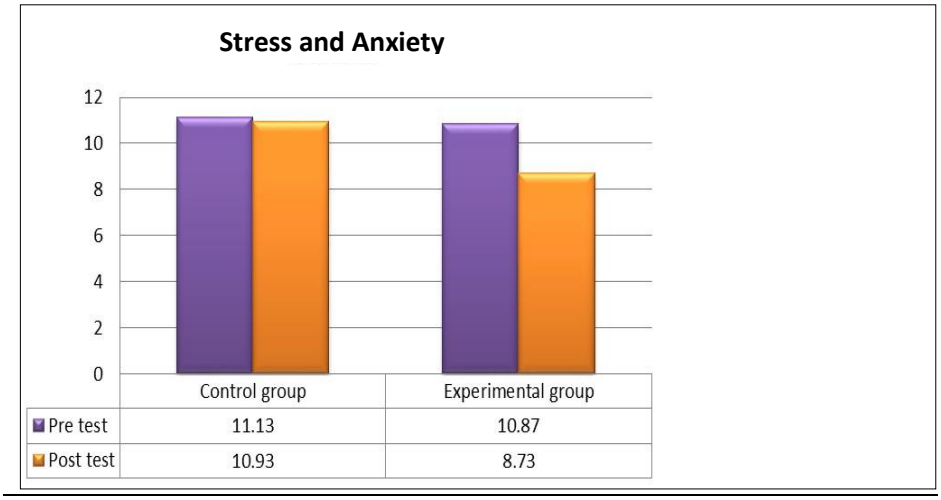
degrees of freedom (DF), and t-ratios for both pre- and post-intervention assessments. For the Control Group, the pre-intervention mean stress and anxiety score was 11.13 (SD = 0.74), while the post-intervention mean was 10.93 (SD = 0.70). The standard error for the pre-intervention score was 0.19, and for the post-intervention score, it was 0.18. The t-ratio for this group was 0.68, with 1 degree of freedom. This indicates a very small change between pre- and post-assessment, suggesting no significant reduction in stress or anxiety for the Control Group. For the Experimental Group, the pre-intervention mean score was 10.87 (SD = 0.63), and the post-intervention mean was 8.73 (SD = 0.80). The standard errors were 0.16 for the pre-assessment and 0.20 for the post-assessment. With 14 degrees of freedom, the t-ratio for this group was 6.63, which is statistically significant ($p < 0.001$). This suggests that the intervention had a substantial impact on reducing stress and anxiety levels in the Experimental Group. The results indicate that, while the Control Group showed minimal change in stress and anxiety levels, the Experimental Group experienced a significant decrease. The difference between pre- and post-intervention scores in the Experimental Group was substantial enough to be statistically significant, highlighting the effectiveness of the intervention.

FIGURE 1: BAR DIAGRAM SHOWING THE PRE AND POST MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUP ON STRESS AND ANXIETY



Results and Discussion

The study aimed to evaluate the impact of an intervention on stress and anxiety levels, comparing two groups: the Control Group (CG) and the Experimental Group (EG). In the Control Group, there was minimal change in stress and anxiety levels from pre- to post-assessment. Specifically, the pre-intervention mean was 11.13 (SD = 0.74), and the post-

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intervention mean slightly decreased to 10.93 (SD = 0.70). The t-ratio for the Control Group was 0.68, with 1 degree of freedom, which was not statistically significant. This suggests that the intervention did not produce a meaningful reduction in stress and anxiety levels for participants in the Control Group. In contrast, the Experimental Group showed a significant reduction in stress and anxiety following the intervention. The pre-intervention mean for this group was 10.87 (SD = 0.63), and the post-intervention mean decreased to 8.73 (SD = 0.80). The t-ratio for the Experimental Group was 6.63, with 14 degrees of freedom, which was statistically significant ($p < 0.001$). This indicates that the intervention had a substantial and positive effect on reducing stress and anxiety levels for participants in the Experimental Group. Overall, the results suggest that while the Control Group experienced little to no change in stress and anxiety levels, the intervention was effective in significantly reducing these levels in the Experimental Group. This highlights the positive impact of the intervention on improving psychological well-being.

Conclusion

The findings from this study provide strong evidence of the effectiveness of the intervention in reducing stress and anxiety levels. While the Control Group showed no significant changes in stress and anxiety, the Experimental Group demonstrated a substantial reduction post-intervention, which was statistically significant. This suggests that the intervention had a positive impact on the participants' psychological well-being. Overall, the study supports the efficacy of the intervention in alleviating stress and anxiety, particularly for those in the Experimental Group, and highlights its potential for future use in similar contexts.

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COMPARISON OF NUTRITIONAL VALUE OF FERMENTED VEGETABLES AND FRUITS AS PET TREATS

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Abstract

Fermentation is a process as old as life itself.raw fermented pet foods are formulated to create a healthy gut. Comparing the nutrition in fermented dog foods, it has numerous amounts of beneficial nutrients that can boost up the energy level as well as it serves as healthy diet. Mainly fermented food is rich in vitamins, proteins and carbohydrates.

Introduction

The current development in pet food is, fermented treats. Fermentation supports healthy immune function by increasing the vitamins, digestive enzymes, antioxidants, latic acid that fight off harmful bacteria. The food becomes easier for your dogs to digest because of the process it has undergone during fermentation. Fermented vegetables, for example, will have bacteria and yeasts predigesting the sugar in the produce.In the present study, ash, crude protein, energy, vitamins C, A, were determined in chosen raw and fermented vegetables.

Aim and Objectives

The aim and objectives of present work is,To perform fermentation process by chopping and grinding the fruits and vegetables and soaking in normal salt water .To estimate quantitative analysis of the fermented pet treats to obtain their nutritional value .To estimate the nutrition's present in the fermented pet treats.To determine the moisture content by heating the crucible containing sample from 105° C for 24 hours and cooling. To determine the ash content by heating the crucible in muffle furnace form 300° C to 600° C for 12 hour.To estimate vitamins C & K.

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Materials and Methods

Processing of fruits and vegetables

Pet friendly fruits and vegetables are chosen.Fruits such as apple, pine apple and vegetables such as cucumber, carrot and peas are wisely selected from the market and washed with running tap water. Make sure they are clean and free from any pesticides used while growing or any dirt. Peel of the fruits are removed carefully. Seeds in the apple and seeds in the cucumber are removed and chop these fruits and vegetables into small pieces with the help of sterile knife. And put these chopped pieces in a clean container. Kilburn-Kappeler.L.R.(2023).

Process of fermentation

Take 1000ml beaker and wash it with water. Create a brine solution by dissolving salt in non¬-chlorinated water. A common ratio is about 2 tablespoons of salts per quart of water. This solution helps create the environment for fermentation. Place the chopped ingredients in a cleaned glass beaker.(Henry P Fleming, Roger L Thompson, JOHN L Etchells ,Journal of the Association of Official Analytical Chemists 57 (1), 130-133, 1974)

Pour the brine solution over the ingredients, ensuring they are completely submerged. · It’s important to, leave some space at the top of the jar to allow for expansion during fermentation. Cover the beaker with foil paper secured with a rubber band. Store the jar at room temperature, away from the direct sunlight and let the fermentation process occur. Check the jar every day or so to ensure the fermentation process.

Processing of fermented treats

Remove the fermented fruits and vegetables from the brine solution. Strain them using a sieve to separate them from the liquid. Allow the excess brine solution to drain off. Drained fermented treats are blended together to ensure uniformity in nutrient distribution.

Nutritional analysis of fermented treats

Sample preparation: fermented fruits and vegetables are drained off with the help ofretort stand, glass filter funnel and whatman filter paper. Drained fermented fruits snd vegetables are grinded using mortar and pestle.(Salma Sultana, 2020; Olapeju Adenekan et al, 2018; AOAC,1995: Onwuka,, 2005).

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Moisture Content

The samples were collected in weighed, tared porcelain crucibles. The crucibles containing were weighed and placed in oven maintained at 105 °C for 24 h. The crucibles were then transferred to desiccators and allowed to cool at room temperature. The final weights of the crucibles were determined. The percentage of weight loss was reported as the percentage of moisture content. The moisture was determined from the following formula

% of moisture content =(initial weight(g)-final-weight(g))/(weight of the sample(g))

Where, Initial weight is the total weight of the sample along with crucible weight and Final weight is the dry sample weight along with crucible weight.

Ash content

A3.0 g of sample was collected in the crucible, and the preashing of the sample was performed by placing the crucible in a muffle furnace maintained 300° C for 3 h. The temperature of the ash was increased to 600° C for 9 h. The crucible was cooled and kept in a desiccator for some time and weighed. The percentage of ash was calculated based on the recorded weights.

Calculation:

The percent of ash was calculated using the following formula:

Weight of ash is the (Weight of crucible along with ash) – weight of crucible.

% of Ash = (weight of ash(g))/(weight of sample (g))×100

Crude fiber

5g of sample was weighed into a litre conical flask. Then, 200 ml of boiling 1.25 % (v/v) sulphuric acid was added and boiled for 30 minutes over a burner. It was allowed to cool, and filtered under with a coarse texture linen. The residue was transferred back to the conical flask, and then 200ml 1.25% sodium hydroxide (NaOH) solution was added, then refluxed for 30 minutes. It was cooled and filtered through a piece of coarse textured linen. The sample was oven-dried at 100^0 C for 1 hour, cooled in a desiccator, filtered through a piece of coarse textured linen and weighed (W1). Sample was packed into a crucible in a furnace at 55^0 C for 3-4 hours; it was cooled in a desiccator and weighed again (W2). Fibre was calculated thus:

% of crude fiber = (w1-w2)/(weight of the sample (g))×100

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Crude proteins

Principle:

The protein estimation is based on estimating the nitrogen content of the material and then multiplying the nitrogen value by 6.25. This value is referred as the crude protein content, since the non protein nitrogen (NPN) present in the material was taken into consideration in protein investigation. The estimation of nitrogen was done by the modified micro-Kjeldahl method, which depends on the fact that organic nitrogen, when digested with concentrated sulfuric acid, is converted into ammonium sulfate. Ammonia is liberated by making the solution alkaline and then distilled into a known volume of standard boric acid, followed by back-titration.

Reagents:

Catalyst mixture (Copper sulfate: Potassium sulfate = 1:7),Concentrated sulphuric acid (H2SO4) solution,2% Boric acid (H3BO3) solution, Hydrochloric acid (0.2 N HCL) solution, 40% sodium hydroxide solution (NaOH), Mixed indicator (methyl red and methylene blue).

Working procedure:

A 0.5 g of dried sample was collected in weighing paper and accurately measured. The sample was then poured into a 75-ml clean and dried Kjeldahl flask, to which 5 ml of concentrated H2SO4 and 4 g of catalyst mixture were added. The sample mixture was heated at 370° C for 1 hour on a preheated heater. When the sample became colourless (white), the digestion of the sample was completed. The digested sample was cooled to room temperature (25 °C) and it is diluted to 60 ml. Ten millilitres (10 ml) of the digested, diluted sample solution was placed in a distillation apparatus with 25 ml of 40% NaOH. The distillate (approximately 60 ml) was collected in a conical flask containing 0.25 ml of 2% boric acid solution and 2 drops of mixed indicator. The total distillate was collected and titrated with standardized HCL solution (0.1 N HCL).

Calculation:

The amount of nitrogen was calculated according to the following equation:

$$\% \text{ of Nitrogen} = ((TS-TB)\times \text{Strength of HCl}\times 0.0014)/(\text{weight of the sample (g)})\times 100$$

Where, TS = Titre value of the sample in ml.

TB is the Titre value of the blank

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Strength of HCL acid = 0.1 N.

Then, the percentage of the nitrogen of the sample was multiplied by 6.25 to obtain the total crude protein according to the following equation:

Percentage of Crude protein 6.25 times the percentage of nitrogen

Fat content

Reagents: Acetone

Working procedure:

Crude fat was determined with the help of a Soxhlet apparatus. Three grams of a ground sample was collected in a thimble and continuously extracted with 60 mL of n acetone for a period of nearly 20 h. After evaporation of the flask containing n-acetone, the difference in the weight of the tared beaker and the weight of the oil beaker was used to calculate the crude fat.

Calculation: The fat content was calculated according to the following equation:

% of Fat content = ((weight of the crude fat+beaker)-weight of the tared beaker)/(weight of the sample(g))×100

Carbohydrate:

The carbohydrate content (nitrogen free extract or NFE) was determined by the difference; that is, the sum of all the percentages of moisture, fat, crude protein, ash, and crude fiber was subtracted from 100%. This calculation providethe amount of nitrogen-free extract, is also known as carbohydrate. Percentage of Carbohydrate is identified by subtracting 100 with the total percentage of moisture, fat, ash, crude fiber and crude protein.

Estimation of vitamin (C,K)

Vitamin C:

Reagents: 10% Acetic acid, 10% ThioUrea, 2,4- Dinitrophenyl Hydrazine, 85% Sulphuric acid, Bromine water.

Sample preparation: The sample was blended or 10g blended sample was homogenized with about 50ml of acetic acid solution. It was transferred into a 100ml volumetric flask and was shaken gently until a homogenous dispersion was obtained. It was diluted up to the mark, by acetic acid solution. The solution was filtered. The clear filtrate was collected for the determination of vitamin C in that sample.

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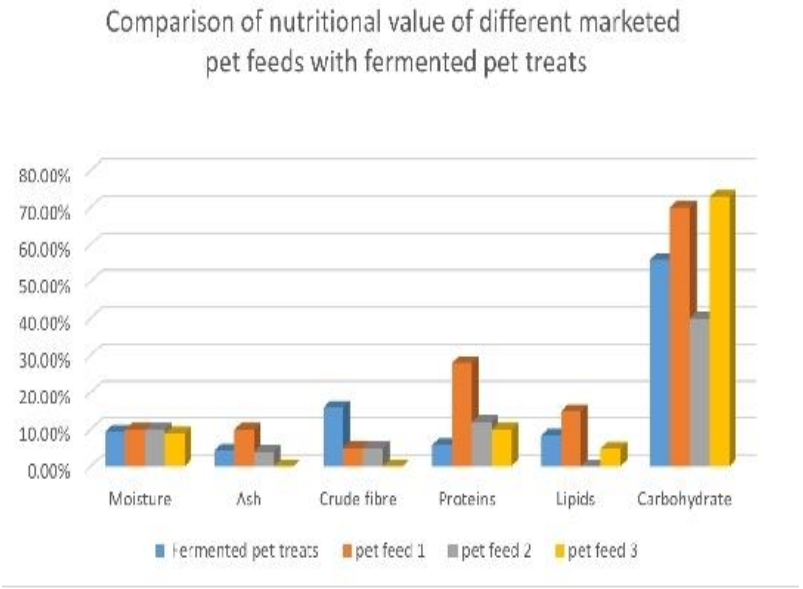
Procedure: To the filtrated sample solution a few drops of bromine water was added until the solution became coloured (to confirm the completion of the oxidation of ascorbic acid to dehydro ascorbic acid). A few drops of thio urea solution were added to it to remove the excess bromine to obtain a clear solution. 2, 4-Dinitrophenyl hydrazine solution was added followed by oxidization with ascorbic acid. Total vitamin C employing coupling reaction of 2, 4-Dinitrophenyl hydrazine dye with vitamin C and followed by OD on 280 nm in spectro photometric determination

Vitamin K:

Reagents:10% sodiummethoxide
Methanolic potassium hydroxide
Methanol.

Procedure: Take 5 ml sample in 10 ml measuring flasks. Add 2 ml of 10% sodium methoxide or methanolic potassium hydroxide to flask and leave for 15 min in a water-bath at 60°C. Cool at room temperature and volume is made upto the mark with methanol. Shake the solutions and measure the absorbance at 450 nm in spectrophotometer.



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NUTRIENTS	COMPOSITION
Moisture content	9.44%
Ash content	4.33%
Crude fiber	15.94%
Crude protein	5.8%
Lipid	8.5%
Carbohydrate	55.99%

Vitamins	Concentration(µg/ml)
Vitamin C	209.33±0.106
Vitamin K	30.35±0.04

Result

Association of American Feed Control Officials (AAFCO): AAFCO establishes nutrient profiles and feeding guidelines for pet foods in the United States. These profiles provide minimum and sometimes maximum nutrient levels for various life stages of dogs and cats.
National Research Council (NRC): The NRC publishes Nutrient Requirements of Dogs and Cats, which provides detailed information on the nutritional requirements of dogs and cats based on scientific research. These recommendations are widely used by veterinarians and pet food manufacturers. Vitamin C is essential for dogs. vitamin K is essential for dogs as it plays a crucial role in blood clotting and bone health.

Conclusion

Fermentation is a metabolic process that produces chemical change in organic substances through the action of enzymes. In biochemistry, it is defined as the extraction of energy from carbohydrate in the absence of oxygen. Vitamin C and vitamin K requirement for higher mammals is known to be low but the minimal maintenance dose had not been determined prior to the present studies.

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SUSTAINABLE URBAN DEVELOPMENT THROUGH INDIA'S SMART CITIES MISSION: A HUMAN-CENTRIC ANALYSIS

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Abstract

As India undergoes rapid urbanization, issues such as housing shortages, transportation inefficiencies, environmental degradation, and digital governance disparities continue to impact urban quality of life. The Smart Cities Mission (SCM) was initiated in 2015 to integrate technology-driven and citizen-centric solutions into urban planning. This study critically assesses the progress, impact, and future challenges of SCM using recent statistical data (2023-2024) and a human-centric framework. Findings reveal that while 76% of smart city projects are either completed or nearing completion, marginalized communities still lack equitable access to smart infrastructure. Despite investments exceeding ₹1.8 lakh crore (~$22 billion) in mobility, digital governance, and climate resilience, major gaps persist in affordable housing and environmental sustainability. This paper advocates for inclusive urban policies, stronger participatory governance, and equitable technological accessibility to ensure sustainability and social justice in India's smart city future.

Keywords: Human-Centric Development, Sustainable Smart Cities, Inclusive Urban Planning, Public Participation, Digital Equity

Introduction

The Human Face of Urbanization

Urban areas are dynamic ecosystems where people, infrastructure, and governance interact. India's urbanization rate has soared to 35.3% in 2024 (United Nations, 2024), with over 480 million people residing in cities. By 2050, nearly 50% of India's population will be urban, posing significant economic and environmental challenges.

Smart city initiatives worldwide have demonstrated that technology alone cannot create sustainable cities. Instead, citizen engagement, equitable access, and environmental resilience

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are equally crucial (Sassen, 2024). This study critically evaluates SCM's impact on human well-being, digital equity, and sustainable urban development through the following questions:

- Has SCM improved the quality of life for diverse urban populations?
- Do digital solutions benefit marginalized groups, or do they widen inequality?
- Is India's smart urban transformation environmentally sustainable?

By integrating empirical data and case studies, this study presents a real-world assessment of SCM's performance in fostering livable and sustainable urban environments.

Literature Review

Global Smart City Models and Their Human-Centric Approaches

Several countries have successfully combined smart technology with inclusive policies:

European Smart City Strategy (2023): Focuses on renewable energy, climate adaptation, and walkable neighborhoods (EU Commission, 2024).

China's Smart Urbanization Plan (2025): Emphasizes AI-driven governance, smart mobility, and social inclusivity (Zhou & Huang, 2024).

Singapore's Smart Nation Initiative: Uses real-time citizen engagement tools to adjust policies dynamically (Yuen, 2024).

These models illustrate that smart cities should not just be digital but also socially inclusive and environmentally responsible.

The Smart Cities Mission in India: Progress and Gaps

Achievements and Transformations

Integrated Digital Governance: 90+ Integrated Command & Control Centers (ICCCs) have improved emergency response and urban service delivery.

Improved Smart Mobility: Over 500 electric buses deployed, leading to a 30% reduction in traffic congestion.

Renewable Energy Integration: 35% of smart city projects incorporate solar and energy-efficient solutions (IMPRI India, 2024).

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Challenges in Human-Centric Urbanization

Insufficient Private Investment: Only 30% of smart city funding comes from private entities, limiting long-term financial sustainability (AIILSG, 2024).

Urban Housing Shortfall: 25% of proposed low-income housing remains incomplete, exacerbating housing inequality (Chattopadhyay & Kumar, 2024).

Environmental Limitations: Major cities like Delhi, Mumbai, and Kolkata still struggle with high pollution levels, despite SCM's sustainability targets (SPAST Reports, 2024).

This suggests that India's smart city model needs deeper integration of climate resilience, inclusive infrastructure, and citizen participation.

Research Methodology

Mixed-Methods Approach

This study employs a combination of qualitative and quantitative methods:

Quantitative Analysis: Assessment of urban infrastructure progress, energy efficiency, and public accessibility data from 2023-24.

Qualitative Case Studies: Interviews with 120+ urban residents in Delhi, Bengaluru, Pune, and Hyderabad to understand lived experiences.

Comparative Analysis: Evaluating SCM's implementation against global best practices.

Data Sources

Government Reports: Ministry of Housing & Urban Affairs (MoHUA), NITI Aayog

Urban Surveys: Indian Institute for Human Settlements (IIHS), AIILSG

Field Interviews: Conducted with urban planners, digital accessibility experts, and smart city residents

This multi-dimensional approach provides empirical insights into SCM's effectiveness in real-world settings.

Data Analysis and Findings

Infrastructure Development

76% of Smart City projects have been completed or are nearing completion.

₹1.8 lakh crore (~$22 billion) invested in urban transformation.

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42 smart roads constructed, enhancing pedestrian safety and reducing accidents.

Environmental Sustainability

21% reduction in carbon emissions recorded in select smart cities.

73 cities have installed Smart Water Management Systems to optimize consumption.

Air pollution remains high in Delhi, Mumbai, and Chennai, requiring stronger environmental policies.

Digital Governance and Public Participation

67% of smart cities offer public Wi-Fi, but rural migrants and the elderly struggle with digital accessibility.

Smart traffic management systems have improved commuting time by up to 25%.

Marginalized communities still face barriers in accessing e-governance services.

These insights highlight both successes and critical gaps in India's urban transformation efforts.

Policy Recommendations

Towards a More Human-Centric Smart City Model

To strengthen urban resilience and inclusivity, policymakers should:

Expand Affordable Housing Programs: Increase public-private partnerships (PPPs) to accelerate low-cost housing projects.

Enhance Public Participation: Establish localized urban governance councils to integrate citizen feedback into city planning.

Improve Digital Accessibility: Implement smart literacy programs targeting low-income groups and senior citizens.

Strengthen Climate Resilience: Prioritize urban green spaces, air pollution control, and disaster preparedness.

By shifting focus from technology-centric to people-centric urban development, SCM can become a model for inclusive and sustainable city planning.

Conclusion

The Smart Cities Mission has made significant strides in infrastructure and governance. However, for true sustainability, it must ensure greater inclusivity, environmental accountability, and equitable access to smart services.

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Final Thoughts

A smart city is not just about technology—it is about people. The success of SCM will ultimately depend on how well it empowers its citizens, bridges inequality gaps, and fosters climate resilience. With enhanced citizen participation and sustainable policies, India's smart cities can truly become models of equitable urban development.

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RESISTANCE TRAINING AND ITS INFLUENCE ON TENNIS ATHLETES' FITNESS

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Abstract

The objective of this study was to examine the effects of resistance training on the fitness levels of tennis athletes, specifically focusing on leg explosive power. A total of 30 intercollegiate tennis players participated in the study. The participants were divided into two groups: the experimental group, which underwent resistance training, and the control group, which did not receive any specialized training beyond their routine activities. The experimental group engaged in resistance training five days per week (Monday to Friday) for a duration of twelve weeks. The leg explosive power of all participants was assessed using the standing broad jump test before and after the training period. The results of the 't' test indicated that twelve weeks of resistance training produced significant improvements in leg explosive power among tennis players. These findings suggest that resistance training is an effective method for enhancing explosive power in tennis athletes.

Keywords: Resistance training, leg explosive power, tennis players

Introduction

Tennis is a sport characterized by its unpredictability, with various factors such as point length, shot selection, strategy, match duration, weather conditions, and the opponent's playing style influencing its complex physiological demands. Effective training for tennis players requires a deep understanding of the physiological variables essential for optimal performance. Tennis involves repeated short bursts of explosive energy throughout matches, which may last anywhere from under an hour to over five hours in some cases. As a result, successful tennis athletes must be trained both anaerobically for performance and aerobically for recovery during and after play.

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Despite the global popularity of tennis, comprehensive reviews summarizing relevant research on the sport remain limited. Studies have shown that resistance training plays a crucial role in enhancing strength levels among young athletes. Payne *et al.* (1997) conducted a meta-analysis demonstrating that resistance training programs significantly improve muscular strength in children and adolescents. Additionally, Faigenbaum *et al.* (2003, 2009) identified resistance training as a fundamental component of fitness and conditioning programs, proving it to be a safe, effective, and beneficial method for young athletes.

Resistance training has been widely adopted by strength and conditioning coaches at the high school and collegiate levels. Previous research has also investigated its impact on improving athletic performance in adolescent athletes. Christou et al. (2006) explored the effects of resistance training on young athletes' performance, confirming its benefits. Furthermore, studies by Balciunas *et al*. (2006) have demonstrated that resistance training enhances explosive power, vertical jump height, and speed in professional soccer players by strengthening the leg extensor muscles.

Materials and methods

To achieve the objectives of this study, 30 tennis players aged 21-25 years were selected from various academies affiliated with Madurai Kamaraj University, Tamil Nadu, India. The participants were randomly divided into two equal groups: the resistance training group (n=15) and the control group (n=15). The experimental group underwent resistance training five days per week (Monday to Friday) for twelve weeks, while the control group continued their routine activities without engaging in any specialized training.

Leg explosive power was measured using the standing broad jump test, with results recorded in meters. Assessments were conducted at the beginning of the study and again after twelve weeks of training. The intensity of resistance training was progressively increased every two weeks through modifications in the exercise regimen. Each training session lasted for 45 minutes, six days a week, over a twelve-week period. The sessions included a 10-minute warm-up, 25 minutes of resistance training, and a 10-minute cool-down. The total duration of resistance training performed per week was five days (Monday to Friday).

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Statistical Analysis

The collected data on leg explosive power were analyzed using the "t" test to determine any significant improvements between the pre-test and post-test measurements. In all cases, the level of statistical significance was set at 0.05 ($p<0.05$).

Table 1: Computation of 't' ratio on leg explosive power of tennis players on experimental group and control group (scores in numbers / seconds)

Group	Test		Mean	Std.Deviation	T ratio
Leg Explosive Power	Experimental Group	Pre test	1.46	0.75	8.30*
		Posttest	1.62	0.75	
	Control Group	Pre test	1.46	1.17	1.52
		Posttest	1.47	1.19	

**significant level 0.05 level (degree of freedom2.14,1 and 14)*

Table 1 displays the calculated mean, standard deviation, and 't' ratio for the reaction time in both the experimental and control groups. The computed 't' values for reaction time were 8.30 for the experimental group and 1.52 for the control group. The critical table value for statistical significance at the 0.05 level with degrees of freedom (1 and 14) was 2.14. Since the 't' value for the experimental group (8.30) exceeded the table value, the result was deemed statistically significant. Conversely, the 't' value for the control group (1.52) was below the threshold of 2.14, indicating that the result was not statistically significant.

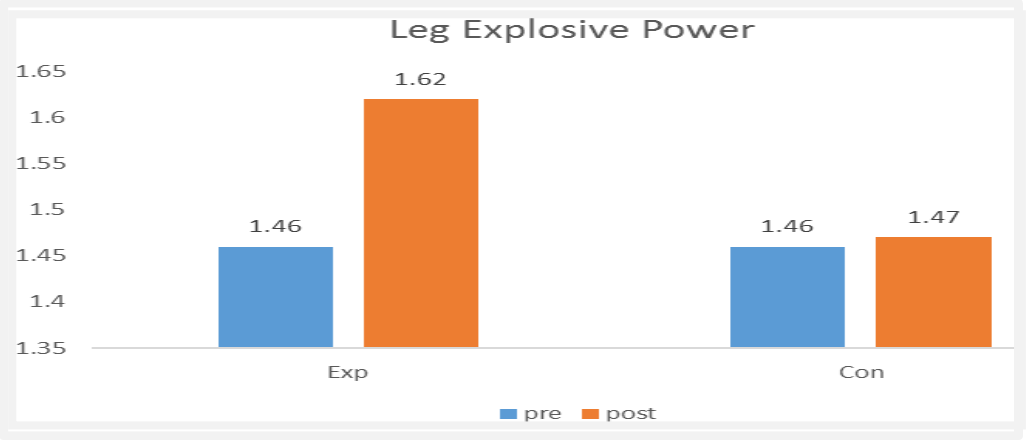

Figure 1: BAR DIAGRAM SHOWING THE MEAN VALUE OF LEG EXPLOSIVE POWER OF TENNIS PLAYERS IN THE EXPERIMENTAL AND CONTROL GROUPS.

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Discussion on Findings

This study aimed to evaluate the impact of resistance training on the fitness levels of tennis athletes. The findings revealed that ladder training was highly effective in enhancing leg explosive power, as assessed through the standing broad jump test. The results demonstrated that eight weeks of resistance training led to a significant improvement in leg explosive power. These findings align with the study conducted by Miller *et al.* (2006), but differ from those reported by Tartibyan *et al.* (2012).

Agility, along with other key components such as balance, coordination, speed, power, and reaction time, plays a crucial role in skill-related physical fitness. The observed improvements may be attributed to muscle fiber hypertrophy resulting from resistance training, which likely enabled participants to change direction and adjust their positions quickly without compromising accuracy or stability.

Furthermore, the study found that eight weeks of resistance training did not lead to significant improvements in reducing speed times. This observation is consistent with the findings of Tartibyan *et al.* (2012), yet differs from those reported by Shahidi *et al.* (2012). Previous research has indicated that resistance training enhances speed in professional soccer players by strengthening the leg extensor muscles. However, in addition to increased power, factors such as muscle length, temperature, body composition, and flexibility should also be considered when aiming to improve speed performance.

The results of this study further emphasize the benefits of resistance training, suggesting that tennis players can utilize resistance exercises not only to improve flexibility but also to enhance overall performance. Additionally, the findings indicate that notable improvements in mobility can be achieved following 12 weeks of resistance training.

Conclusion

Based on the study's findings, it can be concluded that resistance training plays a significant role in enhancing leg explosive power in tennis players.

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ENHANCING HEALTHCARE DATA SECURITY WITH BLOCKCHAIN AND AI INTEGRATION

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Abstract

Artificial Intelligence (AI), a powerful technology for automating tasks and deriving insights from data, is revolutionizing the healthcare industry. With the increasing global digital population, the security of online data, especially medical and patient information, has become a significant concern. AI, when integrated into healthcare systems, can enhance decision-making, improve diagnosis, and streamline operations, but it also raises challenges related to data security and privacy. Blockchain technology, initially used for Bitcoin transactions, has evolved into a versatile tool with the potential to support AI applications in healthcare. By providing a secure and decentralized way to store and share medical data, blockchain ensures the transparency, immutability, and protection of critical information through cryptographic hashes and a decentralized network. This study explores how AI, when combined with blockchain, can address existing challenges in healthcare systems, such as data security, performance efficiency, and safety. The research also investigates the role of AI in the medical industry, highlighting its potential and identifying unresolved questions about its integration with blockchain. Ultimately, the paper proposes an AI-powered blockchain model designed to enhance the security and privacy of patient data while leveraging the strengths of both technologies.

Keywords: AI, blockchain, healthcare sector, patient data, protection, privacy, security

Introduction

The integration of Artificial Intelligence (AI) into healthcare systems presents an opportunity to enhance service delivery and reduce costs. Leading tech giants like Google and Microsoft are making significant progress in refining AI, indicating a bright future for AI in

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healthcare. By leveraging AI's capabilities, significant improvements can be made in patient management and reducing medical errors.[1] Furthermore, AI implementation could improve physician efficiency and the overall quality of healthcare services.[2] AI is becoming a transformative force in healthcare, with the potential to alleviate the current human resource shortage. However, the adoption of AI also raises important ethical issues that need to be addressed. For example, there may be a gap between those who adopt AI and those who choose not to, which could lead to disparities. Preparing for such shifts in the healthcare landscape remains a feasible goal.

Recent studies have emphasized the need for investments in AI, especially in public health, but such investments must be paired with better access to high-quality data and education on AI's limitations. Additionally, establishing strong regulatory frameworks is crucial for the safe and effective deployment of AI. The rapid advancement of AI in medicine highlights its potential impact across clinical settings, data science, and policymaking, while also offering the promise of reducing healthcare disparities between developed and developing nations.[3] However, concerns about AI in healthcare, including patient safety, choice, healthcare costs, data fairness, and security, persist. Addressing these concerns is essential for AI's long-term success in healthcare [4].

This research will explore the potential of using blockchain technology to address some of these concerns, particularly those related to data security and safety. Given the transformative power of AI in healthcare, alongside the emerging challenges, there is a strong need for new frameworks to ensure security, safety, and effectiveness. Therefore, this paper proposes the development of a AI-powered blockchain model, which aims to address security and performance issues within healthcare systems. By leveraging the transparency and security of blockchain technology, AI-powered blockchain can provide secure, immutable record-keeping for healthcare systems, improving the safety of sensitive patient data. This study aims to explore the intersection of AI and blockchain, presenting a novel model that could drive significant advancements in digital healthcare. The following discussion will examine the foundational principles of blockchain technology, its potential applications in AI-based healthcare systems, and the key components of the proposed AI-powered blockchain model.

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AI in Healthcare

Advancements in AI techniques, such as machine learning and deep learning, have enhanced diagnostic and prognostic efficiency, as observed by Houfani *et al.* [5]. Sharma and Kumar [6] acknowledge a wide range of AI applications in healthcare, reinforcing the technology's potential. Whig *et al.* [7] point out AI's crucial role in saving time and effort for healthcare organizations, while Palmer and Short [8] view AI as a natural progression in computer use, optimizing data for improved user efficiency. Roy and Jamwal [9] present examples from India where AI supports diagnostic and prescriptive solutions in leading hospitals, particularly in fields like cardiology and brain science, which are rapidly evolving.

The potential of Artificial Intelligence (AI) in healthcare has become a major area of research, offering significant improvements across various aspects of care. Shaheen [10] highlights AI's ability to process vast amounts of data in clinical trials, yielding highly accurate results. Davenport and Kalakota [11] argue that AI can perform healthcare tasks as well as or better than humans. Matheny *et al.* [16] suggest that AI can complement human cognition in providing personalized healthcare, while Aung *et al.* [17] emphasize that although AI has great promise in enhancing healthcare, it requires careful governance, similar to the regulation of medical professionals. Shenoy *et al.* [18] highlight how AI technologies are expanding into new areas of healthcare, enabling improvements in speed, cost, capacity, quality, and consistency. Sunarti *et al.* [19] stress the importance of AI implementation for improving health service management and medical decision-making.

Ethical and governance issues surrounding AI in healthcare are crucial in the literature. Aung *et al.* [17] assert that AI in healthcare requires careful governance, similar to how medical professionals are regulated. These ethical considerations are essential for ensuring the responsible use of AI. Ultimately, AI has the potential to reshape healthcare, influencing clinical decision-making, optimizing efficiencies, enhancing clinical trials, and transforming patient care. However, these advancements must be implemented responsibly, with careful attention to ethical and governance concerns to ensure the best outcomes for patients and society.

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Patient Data, Protection, Privacy, Security

Concerns about security, safety, transparency, and trust are central to healthcare systems, as healthcare data consists of real-time, critical information. Blockchain technology helps reduce the risk of unsecured transactions by decentralizing and removing intermediaries that would typically monitor transactions between patients. The consensus mechanism of blockchain, along with its key features such as decentralization, immutability, traceability, and privacy [12], enhances the security of critical sectors like healthcare and the medical industry.

Transparency and trust are closely linked to corruption and citizens' satisfaction with public services, including healthcare. Improvements in security and safety within healthcare systems directly correlate with enhanced transparency and increased trust among citizens, aiming to elevate public living standards, particularly for patients [13]. Blockchain technology, as a promising solution, can increase transparency and build trust in public services while ensuring a sufficient level of privacy and security. Unlike client-server architectures, blockchain relies on a peer-to-peer (P2P) architecture, which distributes power and makes it a useful tool to improve security and safety in healthcare.

Another critical concern for enhancing safety and security is the rapid growth of online systems and the internet, which has resulted in a significant increase in online users and connected devices. Everyday online activities and shared documents are vulnerable to breaches if a computer system is compromised. Following the COVID-19 pandemic, many cyberattacks in the healthcare sector exploited the coronavirus theme to gain user trust [14]. Cyber threats, originating in banking, business, and military sectors, have also significantly impacted healthcare systems, which rely heavily on AI-powered devices for real-time diagnostics. The potential risks to future internet infrastructures will grow unless these issues are adequately addressed.

Emerging technologies, including Artificial Intelligence, augmented reality, virtual reality, the metaverse, blockchain technology, and natural language processing, are transforming how businesses interact with customers by providing more personalized experiences [15]. However, these advancements have also raised significant concerns about security and privacy, especially in relation to data mining, customer data use, and virtual environments, which are becoming increasingly relevant in the healthcare sector. Healthcare businesses must adapt to the

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growing digital landscape to remain competitive, while ensuring the security and safety of patients' data. The increasing influence of social media, influencer-driven medical marketing, and voice-enabled devices is reshaping the future of digital marketing and AI, which also necessitates continuous improvements in security and safety measures.

AI based Healthcare using Blockchain

Blockchain technology stands as one of the most advanced tools available today for securing consumers' sensitive or confidential data. It plays a crucial role across various industries, including artificial intelligence, supply chains, cloud computing, and notably, healthcare. In healthcare, blockchain enhances privacy, security, decentralization, and confidentiality. Moreover, the Internet of Things (IoT) devices connect seamlessly with healthcare systems, and applications within the healthcare sector interact with IT infrastructure. The integration of blockchain-based IoT systems in healthcare significantly boosts security, privacy, transparency, and efficiency, offering better economic solutions. However, traditional healthcare systems still face challenges related to security and privacy, such as phishing, identity theft, and impersonation attacks.

The world is grappling with numerous healthcare challenges, and blockchain emerges as a promising and secure technology that can provide innovative solutions across various sectors, including banking, supply chains, agriculture, and healthcare. While blockchain is not a cure-all, it is increasingly being used to improve patient data management, particularly within hospitals, diagnostic labs, pharmacies, and medical practices. Blockchain applications are capable of detecting critical diagnostic errors, even harmful ones. This makes blockchain an invaluable tool for enhancing the efficiency, security, and transparency of medical data exchange within healthcare systems [20].

One of the most discussed and emerging technologies today is the metaverse, which has garnered attention from both academics and businesses. Many stakeholders are considering integrating their current applications into the metaverse ecosystem. The healthcare industry is increasingly exploring the metaverse to improve service quality and elevate living standards. Specifically, the concept of electronic anti-aging healthcare in the metaverse is being explored. The metaverse can be used to enhance healthcare services, particularly in areas like chronic illness management, physical fitness, and mental health support. By leveraging these

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technologies, healthcare providers can expedite anti-aging processes, improve patient outcomes, reduce healthcare costs, and offer innovative healthcare experiences that contribute to better quality of life. Blockchain technology can help create a secure and transparent ecosystem for healthcare data, while AI can analyze vast amounts of medical data and develop personalized treatment plans [21].

Modern technologies, including edge computing, blockchain, and machine learning, are key in safeguarding patients' medical information. With advancements in blockchain, such as its ability to defend against cyber-attacks and offer transparency and data integrity within a decentralized framework, its applications are expanding. By employing blockchain and AI models at the edges of healthcare systems, sensitive data can be protected, ensuring cloud security while reducing the need for extensive processing power and computational time. This is particularly useful when federated AI works with smaller datasets, further enhancing security and efficiency [22].

Automation and digitalization have had a significant impact on the healthcare industry, bringing forth cutting-edge technologies. Recently, the combination of the metaverse, AI, and blockchain has garnered global attention. The metaverse, with its immersive capabilities, has enormous potential to provide a wide array of healthcare services to both patients and professionals. Integrating blockchain and AI into the metaverse and various sectors like finance and business can deliver more effective, efficient, and secure healthcare services in a virtual space [23]

Proposed Model

AI-Powered Blockchain

We have developed the AI-powered blockchain model, designed to enhance the security and management of patient data. This model integrates blockchain technology with AI-powered healthcare systems. Below are the various components of the proposed AI-powered blockchain system, along with a description of its architecture and the associated AI-powered blockchain algorithm.

The patient is the primary user and the central entity in the system. Their login credentials are securely stored on the blockchain network in a cryptographic format to ensure data integrity and privacy.The patient's app (also referred to as the user or patient wallet) serves

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as the secure interface for storing login details and verifying successful login attempts, ensuring seamless access to the system. Operational Framework component represents the interoperability framework that connects the patient's wallet with various public services and patient networks, facilitating smooth interaction between the patient and healthcare providers. **P**atient Services are the healthcare or public services accessible to the patient after a successful login. The patient's public key is made available upon authentication, ensuring that only authorized users can access specific services. The core network of the AI-powered blockchain model, which consists of nodes and smart contracts. This network plays a key role in the identification and validation of transactions within the model, ensuring a decentralized and secure environment. Each patient's record, along with transaction details, is encrypted and stored securely on the blockchain, ensuring that only authorized users can access this sensitive information after a valid session. An open ledger that ensures trust and transparency in managing patient data. This component serves as a secure storage space for patient records, enabling safe retrieval and management of data by authorized personnel while ensuring privacy and security. With advancements in blockchain technology, these components work together to offer enhanced security, transparency, and efficiency in managing patient data, making the AI-powered blockchain model a promising solution for modern healthcare systems.

Conclusion

The enhancement of security and safety within healthcare systems has become increasingly urgent due to the growing volume of online data and the rising number of internet users each year. The integration of AI and blockchain technology could provide a perfect solution with applications in the medical field, patient data management, and healthcare services. AI has emerged as a transformative force in healthcare, while blockchain technology can ensure transparency and foster trust in public service delivery, making it highly beneficial for healthcare systems. Blockchain-enabled AI addresses current challenges related to security, performance, immutability, and safety through the proposed AI-powered blockchain model, which aims to protect patient data. The pseudocode for the proposed model outlines the process of adding new patient details with a public ID, which can be used for patient services following a successful login to the blockchain network that includes nodes.

Future research should focus on a more detailed analysis, training the model to tackle challenges in both the government and private healthcare sectors related to the integration of

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blockchain technology. Blockchain is not merely a database and distributed ledger technology; it also functions as a computing tool with multiple nodes that can benefit both patients and healthcare providers. The automation process, enhanced by AI and blockchain technology, can improve healthcare systems in many ways beyond just ensuring the safety and security of patient data.

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SECURING IOMT DATA WITH BLOCKCHAIN TECHNOLOGY

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Abstract

Interconnected devices make up the Internet of Medical Things (IoMT), which gathers and sends patient medical data to healthcare providers at predetermined intervals. IoMT, which enables remote healthcare services without requiring physical interaction, has been increasingly popular in the medical industry in recent years. This study suggests a security framework that combines Blockchain Data Encryption (BDE) and the Proof of Activity (PoA) protocol, along with a malicious code detection algorithm, to improve data security in healthcare systems. The PoA protocol fortifies data security by validating nodes in the blockchain, thereby replacing malicious nodes to protect medical data. The proposed framework outperforms existing systems in terms of accuracy, precision, security, and efficiency while reducing response time, making it a more dependable solution for blockchain-based healthcare systems. Blockchain technology is being used more and more in IoMT systems because it can provide secure data storage through a decentralized network of blocks.

Keywords: Block chain; IoMT; malicious code detection; security; data management; PoA

Introduction

To monitor and protect patient data more discreetly, healthcare institutions have created data management systems. Through a variety of sensor-based applications, the Internet of Medical Things (IoMT) has emerged as a key instrument in the medical industry in recent years. Blockchain-enabled systems are frequently used for data storage in IoMT devices, such as wearable health monitors and sensors like heart rate monitors, which securely collect and send patient data. By reducing the need for travel and relieving the strain on both patients and physicians, IoMT adoption also lowers treatment expenses. However, securing patient data remains a significant challenge, as data encryption before transmission to servers is essential to prevent unauthorized access. While IoMT devices offer a cost-effective and secure method of data transmission, they face challenges, such as the need for clients to provide decryption keys before

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computations can be made, potentially affecting data confidentiality in cloud storage. Patient health records, containing sensitive information, require robust security mechanisms to protect against threats, including data modification, device hijacking, and unauthorized network access. Blockchain technology offers a promising solution to these security concerns, as it employs a decentralized structure of interconnected blocks, where each block is cryptographically verified by nodes to ensure data integrity and privacy.

Blockchain eliminates the need for a centralized system, offering a more secure and transparent way to manage data. In this study, we propose using the Proof of Activity (PoA) algorithm, which combines Proof of Stake (PoS) and Proof of Work (PoW) protocols, to detect malicious threats in data transactions. To further improve data security, the PoA protocol also includes a downgrade mechanism. The BDE-PoA malicious code detection technique is used to increase data accessibility and reliability in blockchain-enabled healthcare networks, and the study focuses on Blockchain Data Encrypted (BDE) systems for safe data management. This method protects against cyberattacks and guarantees the security of private medical information by detecting and eliminating any hazardous or unnecessary information.

Related Work

Clinics, emergency rooms, rehabilitation facilities, and outpatient care are just a few of the services offered by the health care system. Curing a sickness is the most crucial aspect of medical services, and therapy is the main priority. In healthcare administration, societal well-being is crucial. The system offers a variety of resources to guarantee the surroundings of patients is safe. The prevention of disease, the integrity of every patient, and maintaining wellbeing all depend more on high-quality medical care. Therefore, creating a system to track information access across institutions is a necessary part of health data management [5]. Medical records use blockchain-enabled IoMT devices to gather, test, and track secure patient data. Since portability is the primary component of these gadgets, anyone can utilize them anywhere, at any time [6–8]. Healthcare data can be accessed through the use of loMT in medical devices and as a wireless connection to people [9]. Such information aids with online disease diagnosis, particularly in light of the ongoing epidemic that is affecting patients all over the world.

IoMT is used in health care systems to link to cloud services and track patient data. Cloud server management measures and stores resources in the quantitative evaluation [10–12]. Through

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the integration, interchange, and transfer of data from multiple healthcare devices, an IoMT-enabled block chain offers data security, transfer, and protection [13]. Inadequate data protection measures are recognized, and legal or compliance difficulties arise due to the accessibility or usage of data [14].

IoMT Security Enabled Block chain Using BDE-PoA Malicious Code Detection Algorithm

The suggested BDE-PoA algorithm for detecting malicious code

Code that is not real: Malicious code detection with BDE-PoA

Data gathered from IoMT devices is the input.

Output: Safe data transfer without any loss Step 1: Gets the information from the IoMT device

Step 2: Puts the information in a block chain

Step 3: Uses a block chain to transfer the data Step 4: Identification of malicious code

#Result Analysis#

cons=con(result[cons]) and pros =con(result[pros])

Step 5: The outcome If advantages outweigh disadvantages Return experts

Other Return Drawbacks

Step 6: Safeguards data exchanges Step 7: Arrives at the location

Every phase of the suggested system is depicted in the steps above.

Blockchain-powered IoMT improves data transfer security, guaranteeing better health data handling. Creating new data, updating records, and improving security are just a few advantages of routinely managing health data. By keeping track of medical records, electronic health records (EHRs) help organizations gather data more effectively and detect illnesses more quickly, improving services for patients and the general public.

Blockchain-powered Data may be safely stored, exchanged, and updated in the blockchain from any hub thanks to the strong structures included into IoMT systems. Additionally, EHRs are user-accessible, guaranteeing increased accessibility. To improve data security, current systems use two algorithms, BSDMF and PoA, to identify malicious code through a downgrade mechanism. These algorithms provide great security and large storage capacities by facilitating effective data transfer within blockchain networks. The creation of stakes and computer resources are further enhanced by the usage of downgrading technology. By properly detecting node assaults early on, malicious code detection improves the security of both the blockchain and IoMT models. Better data management is made possible by blockchain-

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enabled IoMT, which also facilitates safe data access in healthcare systems. Security, accuracy, precision, trust, and response speed are all enhanced by the BDE-POA security protocol.

Result Evaluation

The total effectiveness of the suggested system BDE-PoA malicious code detection technique is demonstrated by the simulation results. A number of evaluation measures are examined in this suggested system. The algorithm is used to verify the tasks' accuracy, reaction speed, and trust value. Three parameters fault tolerance, efficiency, and probability are established by utilizing the consensus algorithm with BDE.

Accuracy Ratio

IoMT Blockchain technology is used by healthcare institutions to control data exchange. The BDE-PoA malicious code detection method in the suggested system aids in

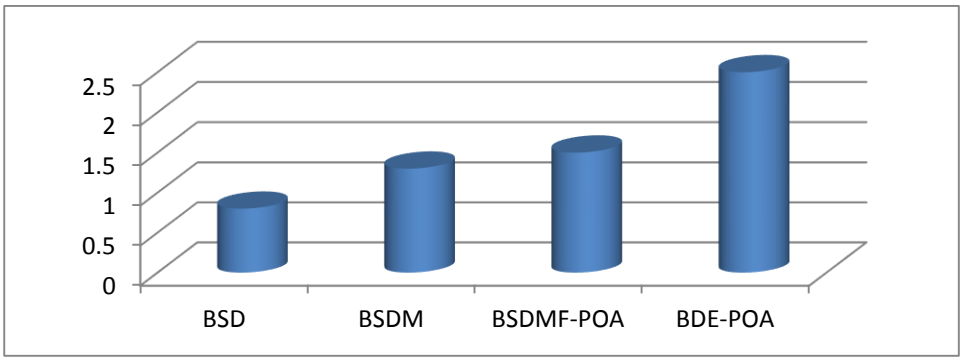

Figure 2: Proposed accuracy ratio

many medical equipment. Blockchain-based healthcare solutions enhance service delivery, data continuity, and quality. IoMT-based technologies improve patient outcomes and enable very accurate general treatment.

Response Latency Ratio

The block chain framework is utilized between personal servers and cloud servers to ensure a safe data flow. By reducing the processing units' latency ratio, the suggested approach improves server security and privacy. The response latency ratio is lower than that of current systems, as seen in Fig. 3. Additionally, fewer patients had significant latency times.

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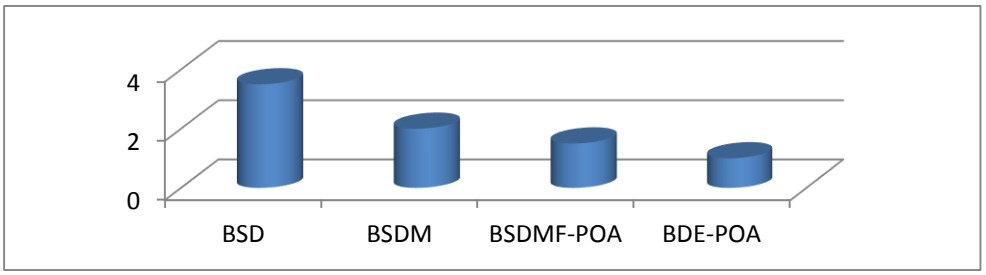

Figure 3: Response latency ratio

Conclusion

Blockchain technology provided by IoMT is being used more and more in healthcare management systems to protect patient data. Sensors are used to collect data from wearable technology and medical apps, which are subsequently saved on cloud servers. The security of healthcare data management is guaranteed by blockchain technology in general. Data security issues still plague modern systems, though. Enhanced security for data transfers is demonstrated by comparing BDE and PoA using a malicious code detection technique. According to the findings, the suggested system provides increased efficiency, fault tolerance, short response time, low latency, and high accuracy. Data dangers are quickly identified and eliminated from transactions. Additionally, the program uses probability approaches to increase node efficiency. Additional protocols may be added to IoMT-enabled blockchain systems in the future to improve data security. Furthermore, through real-world implementations, healthcare applications could be tested.

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COGNITIVE FLEXIBILITY AND DECISION-MAKING STYLES: A CORRELATIONAL STUDY AMONG YOUNG ADULTS

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Abstract

Decision-making is a crucial cognitive function influencing various aspects of life. Cognitive flexibility, the ability to adapt and shift thought processes in response to changing circumstances, plays a significant role in decision-making. This study aims to explore the relationship between cognitive flexibility and decision-making styles among young adults and examine gender differences in cognitive flexibility. A sample of 70 young adults, aged 18-25 was selected using a convenience sampling method. Data collection was conducted using the Cognitive Flexibility Inventory (CFI) and the General Decision-Making Style (GDMS) questionnaire. Pearson's correlation and an independent samples t-test were used for data analysis. The findings revealed a significant positive correlation between cognitive flexibility and both intuitive ($r = 0.30$, $p < 0.05$) and rational ($r = 0.57$, $p < 0.01$) decision-making styles. However, no significant correlation was found between cognitive flexibility and dependent, avoidant, or spontaneous decision-making styles. Additionally, no significant gender differences in cognitive flexibility were observed ($t = -0.50$, $p > 0.05$). These results suggest that cognitive flexibility enhances rational and intuitive decision-making but does not significantly relate to other decision-making styles. The study highlights the importance of cognitive flexibility in effective decision-making and its potential applications in education and career development.

Keywords: Cognitive flexibility, Decision-making styles, young adults

Introduction

Decision-making is a basic cognitive process that influences various aspects of human life, from everyday choices to complex problem-solving in both professional and personal contexts. Scott and Bruce (1995) defined decision-making as the learned, habitual response pattern exhibited by an individual when challenged with a decision situation.Individuals exhibit

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distinct decision-making styles, shaped by cognitive, emotional, and situational factors. Cognitive flexibility, as defined by Ionescu (2012), is the ability to adjust one's thinking and behavior in response to novel, changing, or unexpected situations. It involves integrating new information and shifting between different modes of thought. Laureiro-Martínez and Brusoni (2018) investigated how expert decision-makers adapt their cognitive processes to different problem structures. Their study highlighted the role of cognitive flexibility in overcoming strategic inertia and enhancing organizational adaptability, emphasizing its importance in dynamic decision-making environments. Similarly, Kara, Donmez, and Cetin (2020) examined the relationship between decision-making styles and cognitive flexibility among sports students. The findings revealed that cognitive flexibility has positive correlation with self-esteem and careful decision-making and has a negative correlation with avoidant, suspensive, and panic decision-making. While cognitive flexibility and decision-making styles have been studied independently, there is a gap in the literature regarding their interrelationship.

Methods and Materials

This study aims to examine the relationship between Cognitive flexibility and Decision making style among young adults. The objectives of the study includes, to examine the relationship between cognitive flexibility and decision making styles , to find out the difference in decision making styles between male and female participants. The hypotheses proposed are H_1-There is a relationship between cognitive flexibility and decision making styles.H_2- There is a significant difference in cognitive flexibility between male and female participants.The sample of the study comprises 70 young adults (35 male and 35 female) between the age 18-25. A convenient sampling method was utilised and data was collected from participants through Google form via WhatsApp, with informed about the study prior to their participation. The tools, Cognitive Flexibility Inventory (CFI) was developed by Dennis and Vander Wal (2010) and General Decision making Style (GDMS) was developed by Scott and Bruce (1995), were used in this study. CFI has 20 items and are rated on a 7 - point Likert scale. It ranges from (1) strongly disagree to (7) strongly agree. The GDMS has 25 items and assesses five primary decision-making styles. They are rational, intuitive, dependent, avoidant and spontaneous and it is a 5-point Likert scale.IBM SPSS version 23 is used for analysing the data. Pearson's correlation and independent samples t-test were used for the evaluation of the data.

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Results

Table 1: ***Normality testing of the study variables***

Variables	N	Mean	SD	Skewness	Kurtosis
Cognitive flexibility	70	87.96	12.51	1.13	3.05
Intuitive	70	16.83	3.16	-0.90	1.70
Dependent	70	16.54	2.78	-0.80	3.41
Rational	70	17.13	3.23	-0.97	2.01
Avoidant	70	16.24	3.25	-0.73	1.15
Spontaneous	70	15.50	2.70	-0.52	2.74

Table 1 shows the results of normality testing for the study variables. The skewness and kurtosis values for cognitive flexibility were 1.13 and 3.05 respectively. The skewness values for intuitive, dependent, rational, avoidant and spontaneous decision making styles were -0.90, -0.80, -0.97, -0.73 and -0.52 respectively. The kurtosis values for intuitive, dependent, rational, avoidant and spontaneous decision making styles were 3.05, 1.70, 3.41, 2.01, 1.15, 2.74 respectively. The skewness and kurtosis value lies between the acceptable range of -2 to +2 and -7 to +7 respectively, which shows that the data were normally distributed based on West et al, (1996). Hence, parametric tests for hypotheses testing were used in this study

Table 2: ***Frequency distribution of the demographic variable (n=70)***

Demographic variable	Category	Frequency	%
Gender	Male	35	50
	Female	35	50

Table 2 shows the frequency distribution of the demographic variables such as gender.It has an equal frequency of 35 participants in both male and female, making up 50% of the total sample.

Table 3: ***Correlation between Cognitive flexibility and decision-making styles***

Variables	Intuitive	Dependent	Rational	Avoidant	Spontaneous
Cognitive flexibility	0.30*	0.23	0.57**	0.02	0.07

N =70 *p<0.05 **p<0.01

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Table 3 reveals the relationship between cognitive flexibility and decision-making styles among young adults. It is observed that there is a moderate positive correlation between cognitive flexibility and intuitive as its r- value is 0.30 and significant at the .05 level (p = .011). There is a strong positive correlation between cognitive flexibility and rational as its r- value is 0.57 and significant at the 0.01 level (p = .000). There is no significant and weak positive correlation between cognitive flexibility and dependent (r=0.23, p=0.05), whereas avoidant (r=0.02, p=0.81) and spontaneous (r=0.07, p=0.51) show very weak and no significant correlation with cognitive flexibility. Hence, the alternative hypothesis (H_1) is accepted.

Table 4: ***Significance of gender differences in cognitive flexibility***

Variable	Category	N	Mean	SD	t	Sig.
Cognitive flexibility	Male	35	87.20	14.63	-0.50	0.61
	Female	35	88.71	10.12		

Table 4 presents the significance of gender differences in cognitive flexibility. The mean and standard deviation for males are 87.20 and 14.63 respectively whereas for females, are 88.71 and 10.12 respectively. The t-value for cognitive flexibility is -0.50, indicating no significant difference in cognitive flexibility between male and female participants. Hence, the hypothesis (H_2) is rejected.

Discussion

The findings indicate a significant positive correlation between cognitive flexibility and both intuitive and rational decision-making styles. This suggests that individuals with higher cognitive flexibility are more likely to engage in intuitive and rational decision-making processes. It is indicating that cognitive flexibility enhances analytical thinking and the ability to consider multiple perspectives before making decisions and individuals with high cognitive flexibility may also rely on their instincts and experience when making decisions, which has been linked to adaptive problem-solving strategies. However, cognitive flexibility did not show a significant relationship with dependent, avoidant, or spontaneous decision-making styles. This implies that young adults with higher cognitive flexibility may not necessarily rely on others for decision-making (dependent), nor do they tend to avoid making decisions or act impulsively. Furthermore, the analysis of gender differences in cognitive flexibility revealed no significant

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difference between male and female participants. Both groups demonstrated similar levels of cognitive flexibility, with males and females showing comparable means. Thus it supports the growing body of research indicating that gender differences in executive functioning are minimal.

Conclusion

This study explored the relationship between cognitive flexibility and decision-making styles among young adults and examined gender differences in cognitive flexibility. The results indicated a significant relationship between cognitive flexibility and both intuitive and rational decision-making styles. However, no significant difference in cognitive flexibility was found between male and female participants. These findings highlight the role of cognitive flexibility in facilitating effective decision-making processes. Young adults with higher cognitive flexibility are more likely to make decisions using both analytical reasoning and intuition, which may contribute to more adaptive and successful outcomes.

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THE CHANGING ROLE OF LIBRARIES AND LIBRARIANS: EMBRACING INNOVATION IN THE DIGITAL AGE

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Abstract

The role of libraries and librarians has undergone a significant transformation in response to the rapid advancements in digital technology. Traditionally seen as repositories of physical books and resources, libraries have expanded their functions in the digital age to become dynamic centers of knowledge, community engagement, and innovation. This paper explores the evolving role of libraries and librarians in the context of digital advancements, highlighting how libraries are embracing new technologies, such as digital collections, online databases, and information management systems, to meet the changing needs of modern society. Libraries now serve as hubs for digital literacy education, collaborative learning, and community support, offering programs that promote lifelong learning, creativity, and innovation. Librarians, once primarily focused on managing physical collections, now require diverse skill sets, including expertise in information technology, digital curation, data management, and community outreach. The paper examines how these shifts are reshaping the responsibilities of librarians, emphasizing their new roles as information specialists, educators, and facilitators of digital inclusion. Ultimately, this paper argues that the future of libraries lies in their ability to adapt to technological advancements while remaining grounded in their core mission of providing equitable access to information and fostering a culture of lifelong learning. Libraries are not only keeping pace with change but are also at the forefront of shaping the future of knowledge-sharing in an increasingly digital world.

Keywords: Innovation, Information management, Library Automation, Digital Technology. Librarianship.

Introduction

The role of libraries and librarians has undergone significant transformation over the past few decades. Historically, libraries were primarily places where books were stored, and

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librarians were tasked with organizing and managing physical collections. However, with the advent of digital technology, the role of libraries has expanded beyond their traditional function. Today, libraries have evolved into dynamic hubs of information, culture, and community engagement. The changing nature of the library profession reflects shifts in technology, societal needs, and the growing demand for digital literacy, as well as the increasing importance of libraries in fostering lifelong learning and inclusion. This essay explores the changing role of libraries and librarians in the digital age, highlighting their expanding functions and the implications for library professionals.

The Traditional Role of Libraries

Traditionally, libraries have been centers for the storage and dissemination of printed materials. They were seen as quiet, neutral spaces where users could access books, journals, newspapers, and other forms of media. Libraries served as repositories of knowledge, preserving collections for public access and ensuring the proper organization and categorization of resources. Librarians were the custodians of these collections, responsible for cataloging, organizing, and maintaining physical resources. They were the gatekeepers of knowledge, ensuring that information was accessible to those who sought it. Libraries also played a key educational role in society, providing access to information that was often limited in scope and availability. In many communities, public libraries were the only places where individuals could access books, magazines, and other educational materials. This role was particularly crucial for marginalized or lower-income communities that did not have access to personal libraries or advanced educational resources. Librarians, as trained information professionals, helped guide users in finding and using these materials for research, study, and personal enrichment.

The Impact of Technology on Libraries

The advent of the internet and digital technologies over the past few decades has drastically altered the landscape of libraries. The digital age has introduced new challenges and opportunities, particularly in how information is accessed, stored, and shared. With the rise of the internet, search engines, and online databases, the need for physical collections has diminished. More people can access vast amounts of information from home, often bypassing traditional libraries altogether.

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In response to these changes, libraries have had to adapt by embracing new technologies and expanding their roles. The shift from print to digital media has prompted libraries to incorporate electronic resources such as e-books, online journals, databases, and multimedia content into their collections. This transition has led to the rise of digital libraries—repositories of digital content that can be accessed remotely by users around the world. Many libraries now offer digital lending systems, allowing users to borrow e-books and audio books, while others host digital archives and resources that may not have been available in physical form. Moreover, the internet has enabled libraries to extend their reach beyond their physical locations. With online catalogs, remote databases, and virtual reference services, libraries now serve global communities. This shift has transformed librarianship, requiring librarians to be adept not only in managing physical collections but also in understanding digital tools, managing databases, and ensuring the accessibility of online resources.

The Expanding Role of Libraries in Society

As libraries have adapted to the digital age, their role in society has expanded. Modern libraries are no longer just repositories of books; they have become community hubs that serve a broader range of functions. Libraries are now spaces for collaboration, creativity, and learning. They offer a wide variety of services designed to meet the needs of diverse populations, from children to seniors, from students to lifelong learners.One of the most significant changes has been the increased focus on information literacy. In the age of digital overload, where misinformation and fake news are rampant, libraries play a vital role in helping users develop the skills needed to navigate and critically evaluate the vast amounts of information available online. Librarians are increasingly involved in teaching information literacy and helping users understand how to search for, evaluate, and use information effectively. In addition to promoting information literacy, libraries have become spaces for community engagement. Many libraries host events, workshops, and educational programs that promote civic engagement, personal development, and community cohesion. Libraries serve as gathering spaces for public discussions, book clubs, technology workshops, and cultural events. For marginalized communities, libraries often serve as critical spaces for social support and inclusion, offering services like job training, digital literacy programs, and language classes.

Libraries are also expanding their role as creativity and innovation hubs. Many modern libraries are equipped with makerspaces, which provide users with access to tools and

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technologies for hands-on learning and creative projects, such as 3D printing, coding, robotics, and digital media production. These spaces foster creativity, innovation, and collaboration, particularly for students, entrepreneurs, and hobbyists. By providing access to expensive equipment and fostering a culture of innovation, libraries are contributing to the development of new skills and ideas that are crucial in today's economy.

The Evolving Role of Librarians

As libraries have transformed, so too has the role of the librarian. The librarian of today is no longer merely a custodian of physical books but a facilitator of information and knowledge. Librarians must be skilled in managing digital resources, utilizing technology, and understanding the needs of a diverse, digital-savvy public.One of the most critical skills for contemporary librarians is digital literacy. Librarians must be proficient in the use of technology, from managing online catalogs and digital archives to understanding how to curate and preserve digital content. They must also be adept at data management and cybersecurity to ensure that digital resources are both accessible and secure.

In addition to technical expertise, modern librarians must possess strong communication and outreach skills. They need to be able to engage with users, help them navigate complex information, and provide personalized services. This involves working with diverse communities, understanding their unique needs, and tailoring services to meet those needs. Librarians also serve as educators, teaching information literacy and helping users develop the critical thinking skills necessary to navigate the digital world. Finally, librarians must be proactive in advocating for libraries as essential public resources. As the role of libraries continues to evolve, librarians must champion the value of libraries as vital institutions that support education, community development, and democratic participation. They must work to ensure that libraries remain relevant and accessible to all individuals, regardless of their socioeconomic status or technological access.

Challenges and Opportunities

While the transformation of libraries presents many exciting opportunities, it also comes with significant challenges. One of the key challenges is the need for librarians to acquire new skills in information technology, digital curation, and data management. As libraries adopt more advanced technologies, librarians must stay abreast of emerging trends and develop the technical expertise required to manage and integrate these innovations effectively. Another challenge is

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the increasing pressure on libraries to demonstrate their value to funding bodies and stakeholders. As libraries evolve, they must prove that their digital services are meeting the needs of users and contributing to the broader goals of education, community engagement, and social equity. Despite these challenges, the digital age also offers libraries numerous opportunities to expand their role in society. By embracing new technologies and adapting to the changing information landscape, libraries can continue to be vibrant, relevant, and indispensable institutions in the 21st century.

Conclusion

The role of libraries and librarians has undergone a profound transformation in the digital age. Libraries are no longer simply places to borrow books; they have become dynamic centers of knowledge, community, and innovation. The evolving role of libraries reflects broader societal shifts, including the rise of digital technology, the increasing importance of information literacy, and the demand for spaces that foster creativity and collaboration. As libraries continue to adapt to these changes, librarians play a crucial role in guiding users through the complexities of the information landscape, ensuring equitable access to knowledge, and advocating for the continued relevance of libraries in an ever-changing world. Librarians today are skilled professionals who manage digital resources, provide information literacy education, and facilitate access to new technologies. Their role now includes digital curation, data management, teaching critical thinking and research skills, and promoting equitable access to information for all users. As libraries embrace emerging technologies such as artificial intelligence, virtual reality, and augmented reality, librarians are stepping into new roles as facilitators of innovation and creativity, helping users navigate and leverage these tools for personal and professional growth. In the future, libraries will remain vital institutions, adapting to new technologies, trends, and community needs. Their evolution will continue to reflect society's ongoing commitment to learning, accessibility, and the free exchange of information. Librarians will remain at the forefront of this transformation, shaping the future of libraries and contributing to the cultural, educational, and social fabric of our communities.

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THE RELATIONSHIP BETWEEN SOCIAL COMPARISON AND BODY IMAGE AMONG YOUNG ADULTS

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Abstract

Social comparison is an important aspect of human life, where individuals evaluate themselves by comparing their abilities, opinions and characteristics to others. This process plays a significant role in shaping body image, as individuals often assess their own appearance based on the comparisons with peers, media figures or societal standards. Depending on these comparisons, individuals may either feel positive or negative about their bodies. This study aims to explore the relationship between social comparison and body image among young adults. A total of 60 young adults, including both males and females, were selected using a convenience sampling technique. Standardized scales assessing social comparison and body image were administered to the participants. The findings indicate no significant relationship between social comparison and body image. This suggests that social comparison may not directly influence body image, and other factors such as self-esteem and personal body satisfaction could play a prominent role in shaping body perception.

Keywords: social comparison, body image, young adults

Introduction

Social comparison is a process through which individuals evaluate themselves by comparing their abilities, opinions, and characteristics to others, particularly when objective standards are unavailable (Festinger L, 1954). This tendency plays a crucial role in shaping one's body image, which refers to an individual's perceptions, thoughts, and feelings about their body, that can be influenced by societal and cultural norms (Grogan, 2008). Studies have shown that such social comparisons can have a significant negative impact on body satisfaction, emphasizing the emotional consequences of evaluating oneself against societal standards (Lin *et al.* 2002).

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According to Festinger's (1954) Social Comparison Theory, individuals often compare themselves to others to assess their own worth, but this process can lead to a contrast effect, where comparisons with seemingly superior individuals result in dissatisfaction. This effect is evident in body image concerns, as Streetar *et al.* (2012) found that body mass index (BMI) is inversely associated with body satisfaction, suggesting that individuals with higher BMI may experience greater body dissatisfaction due to unfavorable comparisons. Similarly, studies have highlighted how social media platforms expose individuals to idealized images, significantly influencing body dissatisfaction (Fardouly *et al.* 2015) and can negatively shape self-perception (Monica *et al.* 2023).

Beyond appearance-related concerns, social comparison also affects motivation and emotional regulation. Diel *et al.* (2021) found that comparing oneself to others can shape emotions and drive performance-related behaviors, further reinforcing the impact of social comparison on self-perception. In some cases, negative body image can lead to more severe consequences, such as disordered eating behaviors (Singh et al. 2015). With young adults being particularly susceptible to social comparison due to high social media engagement, understanding its impact on body image is essential. So, gaining insights into how these psychological processes contribute to body dissatisfaction and self-evaluation in today's society can help in addressing body image concerns and promoting healthier self-perceptions.

Methodology

The aim of this study is to examine the relationship between social comparison and body image among young adults in Tirunelveli district. Specifically, this study seeks to (i) examine the relationship between social comparison and body image, (ii) assess the levels of social comparison and body image and (iii) identify potential gender differences in the study variables. The hypotheses formulated for this study are: (H1) there is a significant relationship between social comparison and body image, and (H2) there is a significant gender difference in social comparison and body image.

A convenience sampling method was employed, resulting in a total sample of 60 participants from the Tirunelveli district. Data were collected through an online survey administered via Google forms, with participants receiving prior information about the study before providing their consent. Two standardized scales were used: the Iowa-Netherlands Comparison Orientation Measure (INCOM) developed by Gibbons and Buunk (1999), which

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measures social comparison tendencies using an 11 item, 5-point Likert scale, and the Body Appreciation Scale developed by Avalos *et al.* (2005) which measures body image through a 13 item, 5-point Likert scale. Statistical analyses were conducted using IBM SPSS version 23.0, employing Pearson's correlation and Independent sample t-test.

Results

Table 1: Normality testing of the study variables

Variables	N	Mean	Skewness	Kurtosis
Social comparison	60	32.93	-0.33	-0.20
Body image	60	50.98	-0.39	-0.49

Table 1 shows the result of normality testing for the study variables. The skewness and kurtosis value lies within the acceptable range -2 to +2 and -7 to +7 respectively, as per West *et al.* (1996), confirming that the data follow a normal distribution. Thus, parametric tests were considered suitable for hypothesis testing.

Table 2: Frequency distribution of the socio-demographic variables (n=60)

Demographic variables	Category	Frequency	%
Gender	Male	26	43.3
	Female	34	56.7
Education	Undergraduate	18	30.0
	Postgraduate	42	70.0
Occupation	Student	49	81.7
	Employed	9	15.0
	Unemployed	2	3.3

Table 2 summarizes the frequency distribution of the socio-demographic variables such as gender, education and occupation. The sample comprised 43.3% males and 56.7% females. Most participants were postgraduate students (70%), while (30%) were undergraduates. In terms of occupation, 81.7% were students, 15% were employed and 3.3% were unemployed.

Table 3 presents the descriptive statistics of mean, standard deviation and Pearson correlation results for the study variables. The mean scores for social comparison and body image were 32.93 and 50.98 respectively, with standard deviationsof 6.60 and 9.65. The r value

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is -0.22, which was not statistically significant, indicating no significant relationship between social comparison and body image. Therefore (H1) is rejected.

Table 3: Correlation between Social comparison and Body image

Variables	N	Mean	SD	r value
Social comparison	60	32.93	6.60	-0.22(NS)
Body image	60	50.98	9.65	

NS - Not Significant

Table 4: Independent sample t-test for significance of gender difference in the study variables (n=60)

Variables	Groups	N	Mean	SD	t
Social comparison	Male	26	32.69	6.71	0.24(NS)
	Female	34	33.12	6.62	
Body image	Male	26	50.58	11.63	0.28(NS)
	Female	34	51.29	7.99	

NS - Not Significant

Table 4 displays the results of independent sample t-test examining the gender differences in social comparison and body image. The analysis showed no significant differences between males and females in either variable, leading to the rejection of H2.

Discussion

This study examined the relationship between social comparison and body image among young adults. The findings revealed no significant relationship (r value = -0.22, p>0.01) between social comparison and body image. Although social comparison showed a negative correlation with body image, this correlation was not statistically significant. However, the lack of a significant correlation in this study denotes that other factors such as self-esteem and cognitive appraisal may moderate the relationship. Similarly, the independent sample t-test results indicated no significant differences between males and females in social comparison and body image. These results suggest that the effect of social comparison on self-perception may vary on individual differences and contextual factors. The study implies that social comparison alone may not significantly influence body image, recommending the need to explore other contributing factors. Further research can examine the role of moderating variables such as media exposure, peer influence and cultural factors in shaping body image.

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Conclusion

This study found no significant relationship between social comparison and body image among young adults. Additionally, gender differences in social comparison and body image were not statistically significant. These findings suggest that social comparison may not be strongly associated with body image within this sample.

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RELATIONSHIP BETWEEN SELF - CONFIDENCE AND MOTIVATION AMONG SPORTS PERSON

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Abstract

The aim of this study was to examine the relationship between self-confidence and motivation among sports persons. Self-confidence and motivation are crucial psychological factors that influence athletes' performance, enjoyment, and overall success in their respective sports. This study employed a quantitative research design and utilized structured questionnaires such as the Trait Sports Confidence Inventory (TSCI) and the Sport Motivation Scale (sms-28) to measure Self-Confidence and Sports Motivation of sports persons across different disciplines. The results indicated a significant positive correlation between self-confidence and motivation among sports persons. Higher levels of self-confidence were found to be associated with greater motivation to achieve success and excel in sports. Furthermore, gender-based analysis revealed that both male and female athletes exhibited a similar pattern of association between self-confidence and motivation. Sports training programs should include strategies that target the development of self-confidence alongside motivation enhancement techniques. By focusing on building self-confidence, coaches, trainers, and sports psychologists can empower athletes to overcome challenges, set ambitious goals, and persist in the face of setbacks, leading to improved performance outcomes and increased enjoyment in sports

Keywords: self confidence, sport motivation, sports persons

Introduction

Researchers studying the psychological aspects of athletic performance have extensively studied self-confidence and motivation since these are factors that potentially improve athletic performance. (Monazami *et al.,* 2012; Farzalipour *et al.,* 2012; Kouli *et al.,* 2010; Hays *et al.,* 2009; Vealey, 2009; Vealey *et al.,* 1998). Every method to improve athletic performance has been explored in today's sports. Sports coaches attempt to implement the findings of scholarly study in the field of sport psychology, also known as psychological elements of sportive performance, in their teams. Motivation for sports and self-confidence are two of the psychological aspects that are addressed. Self-confidence refers to an individual's belief in their

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ability to execute specific actions, whereas motivation refers to an individual's willingness to work towards a goal. The connection between athletes' drive and self-confidence has been the subject of numerous research. For example, a study by Hanton *et al.* (2004) discovered a favorable correlation between athletes' motivation levels and their degree of self-confidence. Additionally, the study demonstrated that athletes with high self-confidence were more driven to set and pursue difficult goals. Similarly, athletes with high levels of self-confidence were more likely to set and be motivated to meet greater performance goals, according to a study by Vealey *et al.* (1998). The study also found that athletes who had low levels of self-confidence were more likely to experience anxiety, and were less motivated to engage in competitive activities. The purpose of this study is to examine the relationship between self-confidence and motivation among sportspeople. Specifically, the study aims to investigate the extent to which self-confidence affects the motivation of athletes, and whether there is a reciprocal relationship between self-confidence and motivation.

Hypothesis

It is hypothesized that there is a positive relationship between self-confidence and sports achievement motivation among sports persons of all sports, such that higher levels of self-confidence are associated with higher levels of sports achievement motivation.

Delimitations

- The study was delimited to participants who regularly practiced various sports.
- Sports persons from Kerala and Pondicherry were only included.
- The study was delimited to 2 variables - Self Confidence and Sport Motivation.

Method

Participants

A total of 100 participants aged between 20-29 years who are regularly practicing sports from Kerala and Pondicherry were randomly selected as subjects. 45 Females and 55 Males responded for the study. Players from different sports and games like athletics (15%), boxing (2%), badminton (2%), baseball (2%), cricket (6%), football (15%), handball (7%), hockey (17%), kabaddi (6%), kho-kho (4%), softball (2%), tennis (2%), powerlifting (2%), volleyball (9%), basketball(4%), yoga (2%) were selected for the study.

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Procedure

Responses were collected using a Google form. The primary goal of this study was made known to the participants. Informed consent of the participants was obtained and confidentiality of their responses was assured. Participants were directed to fill in the socio demographic details, followed by the questionnaires. The participant's responses were subsequently tabulated and coded into an Excel spreadsheet for analysis.

Selection of Variables and Tools used for the Study

1. Self-Confidence - **Trait Sports Confidence Inventory (TSCI)**
2. Sports Motivation - **Sport Motivation Scale (sms-28)**

Analysis

Data was analyzed using SPSS version 20. Descriptive analysis was done to calculate mean and standard deviation. The data collected from athletes were statistically analyzed on the basis of gender by 't' ratio. Pearson correlation was used to find the relationship between Self Confidence and Sports Motivation.

Result

Table 1: Descriptive statistics and Correlations for Study Variables

Variables	*Gender*	*N*	*M*	*SD*	*T*	*Sports Motivation*	*Self Confidence*
Sports	Male	55	130.00	29.45	-1.08	1	.575**
Motivation	Female	45	123.80	27.24	-1.09		
Self	Male	55	90.61	4.98	-.98	.575**	1
Confidence	Female	45	89.44	6.86	-.95		

***. Correlation is significant at the 0.01 level (2-tailed).*

An independent t-test was performed to determine the changes in Sports Motivation and Self Confidence between the genders. The results of Table 1 show that there is no significant difference regarding Sports Motivation and Self Confidence in terms of gender. Pearson correlation analysis was performed to understand the relationship between Self Confidence and Sport Motivation. The results in Table 1 also indicate that there is a significant correlation between Sport Motivation and Self Confidence. Thus Hypothesis is accepted.

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Discussion

The current study's goal was to find out how self-confidence and sport motivation relate to one another among athletes. The current study's findings demonstrated a strong relationship between sport motivation and self-confidence. Similar results were obtained in the studies of Sari *et al.,* (2015) where heexplored "the relationship between self-confidence and motivation in sport context." 111 hockey players make up the sample in this analysis. According to their findings, self confidence positively and strongly correlated with intrinsic motivation to learn and achieve things, intrinsic motivation to feel stimulated, external regulation, identification, introjection, intrinsic motivation, and extrinsic motivation. Studies have shown that self-confidence has a significant impact on motivation levels, which, in turn, influences an athlete's performance (Bandura, 1997; Vealey, 1986).

Conclusion

By analyzing the data using correlation analysis this study reveals that there is a positive relationship between Self Confidence and Sport Motivation.

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ONLINE SHOPPING BEHAVIOUR AND CONSUMERS' SATISFACTION IN TIRUNELVELI DISTRICT

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Abstract

The consumers buy goods and services from the sellers directly with the help of the internet facility in online shopping. Most businesses operate online portals to market and sell their goods and services online. All kinds of products are available on the internet because of fast globalisation. Customers can now recognize the various product categories that are offered on the worldwide market.The significant advantage of online shopping is time saving. Consumers can visit the online shops from their comfort zone at any time in a day and place the orders.Although the benefits of online shopping are considerable, the shoppers face a few challenges like identity theft, faulty products, delayed delivery, damaged products, and the accumulation of spyware, etc. Given this background, an attempt was made to know the Consumers' behaviour and satisfaction toward online shopping in Tirunelveli District.

Keywords: Online shopping, Consumers' Satisfaction, Motivational Factors, Challenges

Introduction

The consumers create demand in the market, and producers produce goods or services accordingly. All consumers consume goods and services directly and indirectly to maximize satisfaction and utility. Consumer satisfaction contributes to future demand, which has a significant impact on spending growth. Consumer spending is a major driver of economic growth. Consumer spending makes up the lion's share of aggregate demand and gross domestic product, so boosting consumer spending is seen as the most effective way to steer the economy toward growth.

Consumers are more rational nowadays and can get choices from the market. Awareness among consumers is spread through the internet. The number of internet users is increasing day by day, and hence, online shopping is becoming more popular. At any given time, there are millions of people online, and each of them is a potential customer for a company

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providing online sales. As people need not physically go to various shops to purchase items, online shopping is a good way to save energy and money. It allows the consumers to browse through endless possibilities, and the consumers can get full information about the product with its reviews being passed by the existing users.

The online buying behavior process refers to the products purchased online. A consumer's attitude towards online shopping refers to their psychological state in terms of making purchases over the Internet. Understanding customers' needs, attitudes towards online shopping, and the level of satisfaction will help marketers gain a competitive edge over others. Here, the researcher attempted to find out the shopping behaviour of consumers and their of online shopping in Tirunelveli District.

Literature Review

The most attractive and influencing factor for online shoppers in Kanyakumari District is Website Design/Features, followed by convenience and time-saving. Security, price, discounts, feedback from previous customers, and quality of products are some other factors that influence online shoppers. The correlation results have shown that elderly people are not so keen to shop online, higher education makes online shopping less attractive, and for the income, the correlation results are so weak. (Jemila Dani, N., 2015).

Working professionals tend to shop online more than off-store due to the time-saving factor. The consumers who belong to the high-income group have a fashionable style of shopping online, and they buy the best products anywhere in India through offline shopping (KavithaRajayogan & Muthumani, 2015).

The respondents perceived online shopping positively. Females tend to shop online than males. The younger age group (15 years to 30 years) has exhibited a positive disposition towards online shopping. Well-educated people, although earning less income and living in rural areas, are regular online shoppers (Tanvi Jindal & Payal Bassi 2019).

Online consumers are affected by assorted factors, and they are hesitant to do online shopping due to the technological complexity of online buying. (UmaNarang, 2021).

The majority of the respondents prefer online shopping, but only for certain types of goods, such as clothing, electronics, and books. Some respondents avoid making purchases

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online even though they think that there are better deals and cheaper prices because they feel that faulty goods might be received (Jude Christo Cedric Kanthimathinathan 2023).

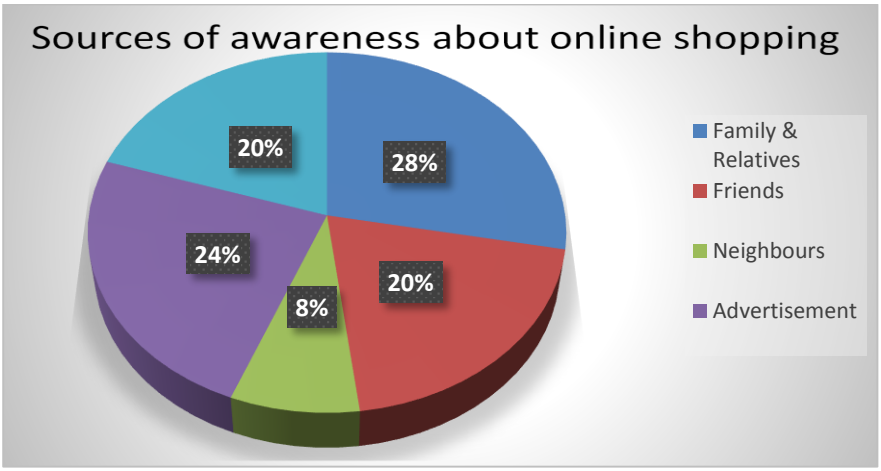
The main aim of the study is to understand the factors that motivate the customers to shop online, analyze the problems faced by the respondents in online shopping, and know the satisfaction level of the shoppers towards online shopping

Methodology

The 50 samples were selected by administering convenience sampling technique, field work was carried out, and the collected data were analyzed with the help of Tables, Percentage and Garrett Ranking method.

Results and Discussion

- 26 percent of the respondents have less than 2 years of experience in online shopping, and 10 percent of the respondents are having the experience in online shopping more than 8 years.
- 46 percent of the respondents often do online shopping, and 24 percent of the respondents do online shopping regularly.
- 36 percent of the respondents paid the amount at the time of delivery of the product.
- 32 percent of the respondents spent less than Rs.1000 for online purchases in the last year, and 8 percent of the respondents spent above Rs.5000 for online purchases.
- The majority of the respondents bought jewellery and cosmetic items, followed by baby items, clothing, books, health products, electronic goods, and mobile phones.



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- 64 percent of the respondents are highly satisfied with online shopping, 30 percent have moderate satisfaction, and only 6 percent have less satisfaction. More than 90 percent of the respondents have a positive attitude toward online shopping and recommend it to others.

Motivational Factors for Online Shopping

S.No.	Factors	Total score	Mean score	Rank
1	Doorstep delivery	2375	47.50	VIII
2	Reasonable pricing of the product	2708	54.16	VII
3	Product on delivery on time	2730	54.60	IV
4	The product was delivered safely	2559	51.18	VI
5	Time saving	2362	47.24	IX
6	Wide variety of brands	2858	57.16	I
7	Convenience	2748	54.96	II
8	Good Quality	2725	54.50	V
9	Fast delivery	2734	54.68	III

A wide variety of brands is the important factor for which the majority of the respondents do online shopping. Therefore, it stands in first place with a mean score of 57.16. The second important factor that determines the preference of the respondents towards online shopping is convenience which is followed by fast delivery, timely delivery, good quality, safe delivery, reasonable price, doorstep delivery, and time saving.

Problems faced during online shopping

S. No	Problems	Total score	Mean score	Rank
1	Delay in delivery	2522	50.44	III
2	Cheap quality of product	2565	51.30	II
3	Damage in product	2370	47.40	VI
4	Delivery of wrong product	2747	54.94	I
5	Non – delivery	2436	48.72	IV
6	Payment Failure	2394	47.88	V

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Delivery of the wrong product is the major factor for the restricted use of online shopping. The cheap quality of products is the second important limiting factor which is followed by delayed delivery, non-delivery, payment failure and damaged product.

Suggestions

- Problems encountered by consumers during online shopping, such as delivery delays, broken items, or any other trust concerns, should be rectified to turn them into regular online consumers.
- To reach the greatest number of customers, the purchasing procedure must be user-friendly.
- Pricing and quality products must continue to complement one another to encourage consumers to purchase online.
- Security should be ensured, and trust should be created in the minds of consumers regarding security issues.
- Awareness should be created regarding the possibility of fraud, phishing, and fencing in online shopping.

Conclusion

Online shopping has become a popular and convenient way to purchase items today. It eliminates the need to wait in checkout lines or leave the comfort of your home. To enjoy a smooth shopping experience, simply choose a reliable online platform and make the purchases. However, consumers should observe a few basic Dos and Don'ts when shopping online to avoid falling victim to cybercrime and to become more savvy online shoppers.

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EFFECT OF STRESS ON MEMORY AMONG YOUNG ADULTS

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Abstract

The main objective of this study is to find out the effect of stress on memory. The sample size of this study is 55 and the participants come under the range of 18 to 25 years of age. Perceived Stress scale by Cohen Sheldon (1983) and Multifactorial Memory Questionnaire by Troyer (2002) were used to collect data by using convenient sampling method. Findings revealed that there is negative relationship between stress and memory.

Keywords: Stress, Memory, Young adults

Introduction

Stress as a state of anxiety produced when events and responsibilities exceed one's coping abilities (Lazarus, 1966). Memory is defined as the faculty of encoding, storing, and retrieving information (Squire, 2009). Stress has been shown to impair memory performance in both humans (Lupien *et al.*, 2009) and animals (McEwen, 2007). Acute stress has been shown to impair working memory performance in humans (Oei *et al.*, 2006). **Need:** The study on the effect of stress on memory among young adults is important because stress is common in this age group due to factors like personal challenges, academic issues, and work pressure. Stress can negatively affect memory, which is crucial for learning and performance in academic and work settings. By understanding how stress impacts memory, we can uncover the biological processes involved and develop better ways to protect cognitive health. **Objectives:** 1) To examine the relationship between Stress and Memory in young adults. 2) To examine the impact of Stress on Memory.

Methodology

Hypothesis of the Study

H_1: There will be no significant relationship between Stress and Memory

H_2: There will be no significant impact of Stress on Memory

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Sample Size, Sampling Technique and tools used: The participants of the study include students from different Universities of Kerala and other states within India. The sample size of the study is 55 which included both male and female participants falling under the range of 18-25 years of age. Convenient sampling technique used in this study. Data collected by both online and offline mode. The exclusion criteria of the study were below 18 or above 25 years of age. Stress- Perceived Stress Scale by (Cohen *et al.,* 1983), Memory- Multifactorial Memory Questionnaire by Angela K. Troyer (Rich, 2002) tools were used in this study to collect data.

Result and Discussion

Table 1: Tests of Normality

	Mean	SD	skewness	kurtosis	Kolmogorov-Smirnov[a]			Shapiro - Wilk		
					Statistic	df	Sig.	Statistic	df	Sig.
Stress	18.89	5.429	-0.175	0.148	0.97	55	0.200	0.978	55	0.414
Memory	40.82	9.592	0.363	0.045	0.129	55	0.024	0.975	55	0.299

Table 1 shows the result of normality testing for the study variables. The skewness value of stress and memory are accordingly -0.175 and 0.363 lies between -2 to +2. The kurtosis values of stress and memory are accordingly 0.148 and 0.045 also lies between -7 to +7. Kolmogorov-Smirnov[a]value of stress and memory are accordingly 0.200 and 0.024. Shapiro-Wilk value of stress and memory are respectively 0.414 and 0.299. Both lies between 0-1. So, the data are normally distributed. By this, the study adapted parametric tests of correlation and regression for data analysis.

Table 2: Correlations between stress and memory

	N		ME total	ST total
ME total	55	Pearson correlation	1	-.402
ST total	55	Pearson correlation	-.402	1

Table 2 shows the result of Pearson Correlation for the study variables. The result showed that there is a moderate negative correlation (- 0.402) between stress and memory. It suggests

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that as stress level increase, memory performance tend to decrease and conversely, lower levels of stress are associated with better memory performance. So, H^1 is rejected.

Table 3: Regression between stress and memory

Model	R	R^2	Adjusted R square	Std. Error estimate
1	.402	.162	.146	8.864

Table 3 shows the result of regression for the study variables and it shows that R^2 is 0.162 which showed that stress has 16.2% impact on memory. That means 16.2% of memory was explained by stress. Balance portion may be influenced by other factors. Based on the analysis H^2 is also rejected.

Conclusion

The findings of this study revealed a significant negative correlation between stress and memory among young adults, indicating that increased stress levels are associated with lower memory performance. Specifically, the results show that stress accounts for 16% of the variance in memory performance.

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AN EXPLORATORY STUDY OF LADERSHIP STYLES AMOUNG SOUTH ZONE HOCKEY TEAM CAPTAINS

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Abstract

In team sports, leadership is essential since it affects both individual and group performance. This study looks at how hockey team captains manage team dynamics, inspire players, and affect the success of the team as a whole. This study examines important leadership characteristics, such as transformational, transactional, and servant leadership approaches, using qualitative interviews and observational data. According to research, successful hockey captains modify their approach to leadership according on the demands of the team, the circumstances of the game, and the personalities of the players. The study sheds light on the similarities between organizational leadership concepts and sports leadership, with implications for coaching methods and athlete development.

Keywords: Transformational leadership, servant leadership, sports leadership, team performance, sports captaincy

Introduction

A key element of success in team sports is leadership, which affects both the growth of individual players and the performance of the entire team. The team captain is an important player in hockey who is in charge of encouraging teammates, building team unity, and making tactical choices on and off the rink. Although coaches give general guidance, captains have a special leadership role since they operate as a liaison among players and coaching staff, frequently serving as the team's emotional and tactical core.

Given that different techniques can have varying effects on team morale, motivation, and performance, the study of leadership styles among hockey team captains is very pertinent. Conventional leadership theories, such transactional and transformational leadership, offer helpful frameworks for comprehending the actions of successful sports executives. While transactional leaders concentrate on structure, discipline, and the upholding of team norms, transformational leaders use encouragement and vision to inspire and motivate their teammates.

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Furthermore, it has been acknowledged as a crucial element in creating productive team cultures is servant leadership, which places an emphasis on empathy and support.

The objective of this exploratory study is to look at the leadership philosophies of hockey team captains and how they affect the success and dynamics of their teams. Through an examination of captain conduct, decision-making procedures, and relationships with teammates, this study seeks to provide light on the characteristics of successful sports leadership. In addition to providing useful implications for athlete development, coaching techniques, and leadership training programs, the findings might advance our understanding of leadership in team-based environments.

Methodology

The principles of leadership of hockey team captains are investigated in this study using a qualitative, exploratory research design. In order to obtain a comprehensive understanding of captaincy behaviours and leadership methods, a combination of semi-structured interviews and observational analysis was employed, considering the dynamic and situational nature of leadership in sports. Captains of current and past hockey teams from amateur, collegiate, and professional leagues are included in the study sample. Purposive sampling was used to choose participants in order to guarantee a varied representation of leadership experiences from various leagues and team configurations.

Data collection methods

Semi-structured Interviews: Open-ended questions about the captains' leadership experiences, decision-making procedures, motivational techniques, and interactions with coaches and teammates were used in the interviews. Video conferences or in-person interviews were videotaped for transcription and analysis.

Observational Analysis: In order to corroborate self-reported leadership styles, game video and practice sessions were examined to evaluate captain conduct, communication, and teammate relationships during crucial events including team meetings, penalties, and high-stress scenarios.

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Survey Questionnaires: To acquire opinions on each captain's efficacy and leadership style, a brief questionnaire was given to coaches and players in addition to qualitative interviews.

Analysis of data

In order to find recurrent themes and patterns in the qualitative data, thematic analysis was employed. To classify leadership styles according to recognized frameworks, including transformational, transactional, and servant leadership models, interview transcripts and observational notes were coded. Peer and coach input was also examined in order to confirm leadership style classifications and triangulate results.

Limitations

The subjective nature of leadership perception and self-reported bias in interviews are two possible drawbacks of this study. Furthermore, the study may not apply to other team sports because it only looks at hockey team captains. Future studies could use longitudinal techniques to monitor leadership growth over time and broaden their scope to include other sports.

Results and discussion

Three predominant leadership philosophies among hockey team captains were identified through an analysis of survey responses, observational data, and interview replies: servant, transactional, and transformational leadership. Depending on the demands of the team and the circumstances of the game, several captains displayed a combination of these techniques; yet, some patterns in their leadership styles became apparent.

Transformational leadership

A lot of captains exhibited transformational leadership traits, which include inspiring others, motivating them, and building a strong sense of team identity. This type of captain concentrated on fostering team unity, setting a good example, and upholding a supportive team environment. Under these captains, players frequently expressed greater drive and a sense of group accountability.

• Transformational captains prioritized long-term team objectives over individual performance;

• They frequently delivered inspirational speeches prior to and during games

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• Their leadership was grounded on emotional intelligence, adjusting their strategy in response to team morale.

Servant leadership

A portion of captains demonstrated servant leadership by putting their teammates' growth and well-being first. These captains frequently served as mentors, creating a welcoming and encouraging atmosphere.

• Teams led by servant leaders reported strong interpersonal relationships, which aided in long-term team success;

• They concentrated on individual player development, making sure that each teammate felt appreciated; and

• They actively listened to teammates, providing direction and personal support.

Leadership styles' effect on team performance

The findings imply that there isn't a single leadership approach that is always better. Rather, successful captains modified their approach to leadership according to the demands of the squad and the circumstances of the game. While transactional leaders offered structure and strategic focus, transformational leaders excelled at inspiring teams through hardship, and servant leaders cultivated close relationships with others.

Teams with captains that were able to effectively combine different leadership philosophies showed increased team spirit, enhanced communication, and resiliency under duress. Teams under strict or erratic leadership, on the other hand, reported having trouble staying cohesive and motivated.

Comparisons to current theories of leadership

The results are consistent with more general theories of organizational leadership. Effective hockey captains demonstrated situational leadership, modifying their strategy based on the environment, much like corporate executives do. Additionally, the study backs up the notion that emotional intelligence and flexibility are essential for effective leadership in high-performance settings.

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Coaching Strategies: In order to assist captains in developing a well-rounded strategy, coaches should acknowledge the variety of leadership philosophies among them and offer specialized mentoring.

Captain Selection: Teams should take emotional intelligence and leadership potential into account in addition to talent level when selecting captains.

Leadership Development Programs: Hockey leagues might use leadership development courses emphasizing communication, motivation, and flexibility.

Conclusion

The different leadership philosophies of hockey team captains and how they affect team dynamics are highlighted in this study. Although each leadership style has its own merits, the most effective captains exhibit situational flexibility by skill fully combining aspects of servant, transactional, and transformational leadership. These results add to the expanding body of research on sports leadership and provide useful information for coaching and player development strategies.

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AI-DRIVEN ADVANCEMENTS IN RESEARCH WRITING: TRANSFORMING SCHOLARLY COMMUNICATION FOR THE FUTURE

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Abstract

Artificial Intelligence (AI) has significantly transformed research writing, offering tools that enhance productivity, accuracy, and accessibility. This paper explores the role of AI in research writing, focusing on its impact on literature review, data analysis, language refinement, and plagiarism detection. The study adopts a qualitative methodology, analyzing existing literature and AI-powered tools used in academic writing. The findings suggest that AI not only expedites the research process but also improves the quality of scholarly work, enabling researchers to focus on critical thinking rather than mechanical tasks. However, challenges such as ethical concerns, reliability, and academic integrity must be addressed. The paper concludes by highlighting the potential of AI to revolutionize research writing while emphasizing responsible usage.

Keywords: Artificial Intelligence, Research Writing, Scholarly Communication, Academic Integrity, Plagiarism

Introduction

The integration of Artificial Intelligence (AI) into research writing has revolutionized the academic landscape, making it more dynamic, efficient, and accessible. The increasing reliance on AI-powered tools has significantly changed how researchers approach literature reviews, data processing, grammar enhancement, and plagiarism detection. AI has eliminated many time-consuming manual processes, allowing scholars to focus on analytical and creative aspects of their work. One of the most significant benefits of AI in research writing is its ability to streamline the literature review process. AI-powered databases and search engines, such as

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Semantic Scholar and Google Scholar, assist in retrieving relevant articles, summarizing key points, and identifying citation trends. These tools help researchers quickly sift through vast amounts of academic literature and extract relevant insights, reducing the time required for manual reviews. In terms of data processing, AI enables more precise analysis by automating complex calculations, statistical evaluations, and pattern recognition. This automation not only improves the accuracy of results but also helps researchers identify correlations and trends that may not be immediately evident through traditional methods. AI-driven data visualization tools further enhance the representation of findings, making complex information more comprehensible. Moreover, AI-driven grammar and style enhancement tools, such as Grammarly, QuillBot, and Hemingway Editor, assist researchers in refining their writing by providing suggestions for clarity, coherence, and correctness. These tools are particularly beneficial for non-native English speakers, ensuring that language barriers do not hinder academic communication. Plagiarism detection has also seen significant improvements with AI-powered tools such as Turnitin and Copyscape, which help researchers maintain academic integrity by identifying unintentional similarities in text. These tools support ethical research practices and help uphold the originality of academic work.Despite these advantages, the integration of AI in research writing is not without challenges. Ethical concerns, including issues of academic dishonesty, potential biases in AI algorithms, and over-reliance on automation, must be carefully considered. Additionally, the reliability of AI-generated content remains a concern, necessitating human oversight to ensure accuracy and contextual relevance. This paper investigates how AI is reshaping scholarly writing by enabling efficiency, accuracy, and accessibility while addressing challenges such as ethical concerns and potential biases. By examining AI-driven tools and their impact on research methodologies, this study aims to provide insights into how AI can be responsibly leveraged to enhance academic writing and scholarly communication.

AI in Research Writing

1. Role of AI in Literature Review

AI-powered tools, such as semantic search engines and automated citation managers, help researchers efficiently gather and organize relevant literature. Natural Language Processing (NLP) algorithms analyze extensive datasets to extract key insights, summarize findings, and highlight emerging trends. Tools like Elicit and Research Rabbit assist in identifying relevant

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papers, understanding research gaps, and generating citations with increased efficiency. This automation reduces the time spent on manual searches and enhances the quality of literature reviews.

2. AI in Data Analysis and Interpretation

AI facilitates data analysis by automating statistical computations, identifying patterns, and generating visual representations of data. Machine learning algorithms assist in predictive modeling, hypothesis testing, and large-scale data processing, improving the accuracy and reliability of results. AI-driven tools such as IBM Watson, Tableau, and SPSS enhance the ability to interpret complex datasets, allowing researchers to derive meaningful insights that might otherwise go unnoticed.

3. AI in Language Refinement

Effective academic writing requires clarity, coherence, and precision. AI-powered language refinement tools, such as Grammarly, QuillBot, and Hemingway Editor, provide real-time grammar and style suggestions to enhance the readability of research papers. These tools help in detecting errors, improving sentence structure, and ensuring proper academic tone. Additionally, AI-based language models like ChatGPT assist in drafting and paraphrasing content, aiding non-native English speakers in producing high-quality research manuscripts.

4. Plagiarism Detection and Ethical Considerations

Plagiarism detection has become more advanced with AI-driven tools such as Turnitin, Copyscape, and Plagscan, which compare submitted work against vast academic databases to identify similarities. These tools ensure originality and help maintain academic integrity. However, ethical concerns arise when AI-generated content is used without proper attribution or when researchers rely too heavily on automation, potentially diluting critical thinking skills. Responsible AI usage requires maintaining a balance between automation and intellectual contribution while ensuring transparency in academic writing.

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Methodology

This study employs a qualitative research approach to examine the role of AI in research writing. A systematic analysis of secondary data, including peer-reviewed journal articles, conference papers, case studies, and evaluations of AI-powered writing tools, was conducted. The study follows a comparative analysis framework to assess the effectiveness of AI tools across different aspects of research writing, including literature review, data analysis, language refinement, and plagiarism detection.

1. Data Collection

- The study primarily relies on secondary sources, including:
- Published academic literature on AI applications in research writing.
- Case studies highlighting AI-driven improvements in scholarly communication.
- Reports and reviews on the efficacy of AI tools such as Grammarly, Turnitin, and IBM Watson.
- User feedback and expert opinions on AI tools from research communities.

2. Comparative Analysis of AI Tools

A structured evaluation was conducted to compare AI-based research writing tools based on key parameters:

- **Accuracy**: How precisely AI assists in writing, editing, and detecting plagiarism.
- **Efficiency**: The extent to which AI reduces the time required for literature review and language refinement.
- **Usability**: User-friendliness, accessibility, and adaptability of AI tools for academic writing.
- **Ethical Considerations**: Issues related to AI-generated content, biases, and academic integrity.

3. Ethical Considerations

The study ensures ethical rigor by critically assessing the reliability and biases of AI-generated content. While AI tools provide automation, their outputs require human verification

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to maintain authenticity in research writing. This study acknowledges the potential risks of AI, such as academic dishonesty and dependency on automated suggestions, and emphasizes responsible AI integration in scholarly work.

Results and Discussion

The findings indicate that AI significantly enhances research productivity and writing efficiency. AI tools automate repetitive tasks, provide language support, and assist in plagiarism detection, thereby allowing researchers to focus on critical analysis. Additionally, AI facilitates data-driven decision-making, helping scholars identify patterns, correlations, and emerging research trends more effectively. However, challenges such as ethical dilemmas, the need for human oversight, and potential AI biases must be addressed to ensure responsible AI usage. The balance between AI assistance and human intellectual contribution remains crucial to maintaining the integrity of academic writing.

Findings

1. AI improves research efficiency by automating literature reviews, grammar checks, and plagiarism detection.
2. AI enhances the accessibility of research writing for non-native English speakers.
3. Ethical concerns, including bias and academic integrity, remain challenges in AI-driven research writing.
4. AI should be used as an assistive tool rather than a replacement for human critical thinking.

Conclusion

AI has transformed research writing, offering substantial benefits in efficiency, accuracy, and accessibility. Its integration into academic workflows has enabled scholars to focus more on analysis and innovation rather than time-consuming mechanical tasks. However, responsible AI usage is crucial to maintaining academic integrity, as unchecked reliance on AI-generated content can raise concerns regarding originality, bias, and ethical implications. To ensure that AI serves as a supportive tool rather than a substitute for human intellect, future research should prioritize the development of robust ethical frameworks and guidelines for AI-assisted academic

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writing. Addressing these challenges will ensure that AI continues to complement human creativity and critical thinking in scholarly communication.

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IMPACT OF BURNOUT ON INSOMNIA SYMPTOMS AMONG IT PROFESSIONALS

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Abstract

Work in information technology (IT) professionals is highly competitive and becoming stressful. This can lead into burnout and which may cause to insomnia symptoms. The present study aimed to assess the burnout and insomnia symptoms among IT professionals using data from 51 IT professionals from Malappuram district, Kerala (age between 25 to 45). The samples were selected through a purposive sampling method. The respondents completed the socio-demographic profile, Maslach Burnout Inventory (MBI) scale developed by Maslach and Jackson and Insomnia severity Index (ISI) scale developed by Charles M morin and colleagues. Statistical analysis, including descriptive analysis, Pearson correlation, and regression were conducted using IBIM SPSS statistics 23.0. A correlational research design is adopted in the study. The findings indicate that there is significant relationship between burnout and insomnia. There is no significant role of burnout on insomnia and there is no gender difference between burnout and insomnia. This study helps to understand how these issues affect their mental health, productivity and well-being. Also help to implement interventions and change workplace policies.

Keywords: Burnout, Insomnia symptoms, IT professionals, Maslach Burnout Inventory, Insomnia severity index

Introduction

In today's fast-paced work places Burnout has become an important psychological concern mainly among IT professionals. Because IT professionals often faces a lot of challenges including workloads, high job demands, deadline pressure, long working hours. Burnout is defined by the World Health Organization (WHO, 2019) as "a syndrome resulting from chronic workplace stress that has not been successfully managed.

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Maslach & Jackson (1986) defined that Burnout is a syndrome of emotional exhaustion, depersonalisation, and reduced personal accomplishment that can occur among individuals who do ‘people work’ of some kind. It is "a work-related state of mental and physical exhaustion due to prolonged stress at work," according to Schaufeli *et al.* (2009).

Insomnia, one of the major consequence of burnout due to the job stress. American Psychiatric Association is defined (1994) that insomnia is inability to get asleep or stay asleep for at least four weeks. Understanding these is very important to enhance workplace wellness of IT professionals and prevent long term health risks.

Methods and Materials

The primary aim of this research is to examine the relationship between burnout and insomnia symptoms among IT professionals. The objective of this study includes, to measure the relationship between burnout and insomnia symptoms, to measure the burnout of IT professionals, to find the severity of insomnia symptoms among IT professionals and to check whether burnout causes insomnia symptoms. The hypothesis proposed are H1-There is a significant relationship between burnout and insomnia symptoms, H2- There is a significant role of burnout on insomnia among IT professionals, H3- There is a significant gender difference in burnout among IT professionals, H4 – there is a significant gender difference in insomnia. A Purposive sampling method was used, resulting in a total of 51 participants (male 32 and 19 female) from IT professionals in Malappuram, Kerala. Data collected through google form.

Two inventories were employed: Maslach burnout inventory questionnaire by Maslach and Jackson in 1981, which measure burnout. Insomnia severity Index questionnaire by Charles M morin and colleagues in 1993, which measure the insomnia symptoms

The correlational research design is used to examine the extent of the relationship between two variables. SPSS (windows version 20.0) was used for normality testing, Pearson's correlation, independent sample t-test and regression to find the differences.

Result

Table 1: ***Normality testing of the study variable***

Variable	N	Mean	Skewness	Kurtosis
Insomnia symptoms	51	14.19	-0.263	-0.353
Burnout	51	63.31	0.59	0.58

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Table 1 shows the results of normality testing for the study variables. The skewness and kurtosis values for Insomnia symptoms are -0.263 and -0.353 respectively. The skewness and kurtosis values for burnout are 0.59 and 0.58 subsequently. The skewness and kurtosis value lies between the acceptable range of -2 to +2 and -7 to +7 respectively, which shows that the data were normally distributed. No outliers were found. So, the study uses parametric test for hypothesis testing.

Table 2: ***Correlation of variables***

Variables	Burnout	Depersonalisation	Personal Achievement	Insomnia
Burnout	1	.727**	-.103	.242*
Depersonalisation		1	-.087	.257*
Personal Achievement			1	-.170
Insomnia				1

The table shows that there is a significant correlation between burnout and depersonalization (p =0.00, <0.01). There is a significant relationship between burnout and insomnia as its r value is 0.242, and significant at the 0.05 level (p=0.044). Hence the H1 is accepted.

Table 3: ***Significance of gender difference***

variable	Groups	N	Mean	Standard Deviation	t	Sig value
Burnout	Male	32	18.75	10.57	-0.46	0.64
	Female	19	20.05	8.22		
Depersonalisation	Male	32	13.25	9.29	-0.68	0.49
	Female	19	15.11	9.29		
Personal Achievement	Male	32	30.53	11.07	0.34	0.73
	Female	19	29.53	8.46		
Insomnia	Male	32	13.41	6.81	-1.17	0.24
	Female	19	15.53	5.07		

*NS – Not significant * - p<0.05*

The table shows that the t value of burnout -0.46, there is no significant difference in burnout between male and female (p=0.64). The t value of insomnia is -1.17, it indicates there is

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no significant difference in insomnia between male and female (p=0.24). Hence H3 and H4 are rejected.

Table 4: ***Regression analysis for burnout and insomnia***

	Unstandardized Coefficient		**Standard Coefficient**	**t**
	B	**Standard error**	**B**	
(constant)	14.016	3.387		4.138
Burnout	0.068	0.131	0.105	0.518
Depersonalisation	0.114	0.137	0.168	0.831
Personal achievement	-0.090	0.086	-0.145	-1.038
R=0.305	$R^2 = 0.93$	F=1.61	p<0.05	

Table 4 shows linear regression analysis with R^2 value 0.93 which is not significant at 0.05 levels. Hence there is no significant role of burnout on insomnia. Therefore H2 is rejected.

Discussion

The findings of this study states that a significant relationship between burnout and insomnia symptoms among IT professionals, supporting hypothesis H1, suggesting that higher level of burnout are linked to higher level of insomnia symptoms. A previous article by L. Vignoli et.al.in 2017, also support that insomnia is strongly associated with burnout. IT professionals often deals with long working hours, deadline pressure and workloads. It results burnout and that increases the Insomnia symptoms**.**

This study found no significant relationship between burnout and insomnia among IT professionals, indicating that while burnout and insomnia are associated, burnout may not predict insomnia symptoms. Hence, H2 is rejected. However, Hypothesis H3 and H4 are rejected, which indicates that there are no significant gender differences in burnout and Insomnia symptoms. It reveals that both male and female IT professionals experience burnout and Insomnia symptoms similarly. They both face equal job demands stressors and deadline pressure and work in similar work conditions.

Conclusion

This study highlights that there is a significant relationship between burnout and Insomnia among IT professionals. These findings highlight the importance of treating mental

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health even though the burnout does not directly predict insomnia and there are no gender differences in burnout and Insomnia. To improve IT Professionals well-being, organisations should implement stress management, work-life balance and sleep hygiene programs into place.

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EMOTIONAL INTELLIGENCE AND SELF- EFFICACY AMONG YOUNG ADULTS - A CORRELATIONAL STUDY

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Abstract

The main aim of the study is to examine the relationship between Emotional intelligence and Self- efficacy among young adults. The study was conducted among young adults aged 18 to 25 years in colleges and universities. The scales used in this s tudy were schutte emotional intelligence scale and general self-efficacy scale (Schwarzer and Jerusalem,1981). The sample was collected through convenient sampling. Statistical Analyses, including descriptive Analysis, Independent sample t-test and correlation were conducted. A correlational research design is adopted in this study .Findings revealed that there is significant positive correlation between the variable and there is no significant difference between gender in emotional intelligence but significant difference found in self-efficacy between gender.

Keywords: Emotional intelligence, Self-efficacy, Young adults

Introduction

Emotional intelligence (E.I.) is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions (Salovey & Mayer 1990). Emotional intelligence (E.I.), (Salovey and Mayer, 1990) includes essential elements including motivation, self-control, self-awareness, empathy, and social skills. Since young adults frequently struggle emotionally as they make the transition from adolescence to adulthood, emotional intelligence (E.I.) is essential for managing stress, forming relationships, and making wise decisions.

The concept was originally proposed by the psychologist Albert Bandura in 1977. *Self-efficacy is the belief we have in our own abilities, specifically our ab*ility to meet the challenges ahead of us and complete a task successfully (Akhtar, 2008). It affects how people approach

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problems, deal with failures, and keep going when things get tough. Academic achievement, job decisions, and general psychological resiliency in young people are all influenced by self-efficacy. Studies indicate that since they are better able to manage stress, form wholesome connections, and stay motivated, people with higher emotional intelligence also typically have higher levels of self-efficacy.

Methods and Materials

The primary aim of this research is to examine the relationship between emotional intelligence and self-efficacy among young adults. The **objective**s of the study includes, to explore the relationship between emotional intelligence and self-efficacy among young adults, and to identify the gender differences in emotional intelligence dimensions and also in self-efficacy among young adults. The hypotheses proposed are:H1 There will be a significant gender difference in self-efficacy. H2there will be a significant gender difference in emotional intelligence dimensions. H3-There will be a significant relationship between emotional intelligence and self-efficacy among young adults. The convenient sampling method was employed, yielding a sample of 50 participants. Data were collected using a Google form shared through WhatsApp, and participants were informed about the study before taking part. Two inventories were employed: Self report emotional intelligence inventory (Schutte, 1998) And The General Self-Efficacy Scale (GSE) (Schwarzer and Jerusalem, 1981). The correlational research design is used to examine the extent of the relationship between two variables. SPSS (Windows version 20.0) was used for normality testing, Pearson's correlation, and independent sample T test is used to find the differences.

Result and Discussion

Table 1 shows the normality testing of skewness and kurtosis. The skewness value for the independent variable is -0.829 and the dependent variable value was -0.196 which is between the acceptable range of -2 and +2 and the kurtosis value for the variables was 1.689 and

Table 1: Normality testing of the study variables

Variable	N	Mean	Skewness	Kurtosis
Emotional intelligence	48	119.85	-0.829	1.689
Self-efficacy	48	29.40	-0.196	-0.312

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-0.312 which is also the acceptable range of -7 and +7. It indicates that the data were normally distributed. No outliers were found. So, the study uses parametric test for hypothesis testing.

Table 2: Difference between male and female young adults (Independent t-test)

variable	Gender	N	Mean	S.D	t	P(t-sig)
Perception of	Male	19	41.05	4.18	2.11	0.40(NS)
Emotion	Female	29	38.17	5.19		
Managing	Male	19	23.26	3.81	1.05	0.29(NS)
own Emotion	Female	29	22.13	3.24		
Managing	Male	19	17.89	2.88	0.38	0.70(NS)
others	Female	29	17.59	2.42		
Utilization of	Male	19	16.16	2.65	1.65	0.10(NS)
Emotion	Female	29	14.97	2.07		
Uncategorized	Male	19	30.00	3.68	1.34	0.18(NS)
	Female	29	28.55	3.59		
Self-efficacy	Male	19	31.95	4.44	3.08	0.004*
	Female	29	27.72	4.94		

*NS (Not Significant) *-p<0.05*

Table 2 shows the difference between male and female young adults reveals self-efficacy with t score of 0.004 significant at 0.05 level, male have a mean score(M = 31.95)and female (M=27.72). H1 is accepted. From the table, Emotional Intelligence dimensions' scores revealed that there is no statistically significant difference between male and female on E. I. so H2 is rejected. The results might have been affected by the sample's unequal distribution of males and females.

Table-3 Shows the relationship between Self-efficacy (S.E) and the dimension of emotional intelligence (E. I.). The relationship between S.E and Perception of emotion is not significantly correlated (r=0.24) but has weak relationship. The relationship between S.E and managing own emotion is significant (r=0.352*), The relationship between S.E and managing others emotion has weak correlation (r=0.216), the relationship between S.E and Utilization of emotion is Significantly strong correlation (r=0.544**), The relationship between S.E and Uncategorized strongly correlated (r=0.451**). The relationship between perception of emotion and managing own emotion is strongly correlated (r=0.637**), the relationship between perception of emotion and managing others emotion is strongly correlated (r=0.546**), the

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Table 3: Correlation between emotional intelligence and self - efficacy

variable	Self-efficacy	Perception of emotion	Managing own emotion	Managing others emotion	Utilization of emotion	Uncategorized
Self-efficacy	1	.219	.352*	.216	.544**	.451**
Perception of emotion		1	.637**	.546**	.338*	.557**
Managing own emotion			1	.629**	.656**	.636**
Managing others emotion				1	.406**	.560**
Utilization of emotion					1	.565**
Uncategorized						1

relationship between perception of emotion and Utilization of emotion is correlated weakly (r=0.338*),The relationship between perception of emotion and uncategorized is strongly correlated(r=0.557). The relationship between managing own emotion and managing others emotion is strongly correlated(r=0.629**),the relationship between managing own emotion and Utilization of emotion(r=0.656**),the relationship between managing own emotion and Uncategorized is strongly correlated (r=0.636**),the relationship between and managing others emotion and utilization of emotion is highly correlated(r=0.406**),the relationship between managing others emotion and uncategorized is strongly correlated(r=0.560**),the relationship between utilization of emotion and uncategorized is strongly correlated (r= 0.565**) shows strong positive relation.

Conclusion

The present study aimed to know the relationship between emotional intelligence and self-efficacy among young adults. The result revealed that there is significant positive correlation between the variables and there is significant difference between gender in self-efficacy and has no gender difference in emotional intelligence.

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"KAZHUGUMALAI ROCK-CUT MONUMENTS: A HERITAGE OF THOOTHUKUDI DISTRICT"- A STUDY

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Abstract

This article highlight to Kazhugumalai Rock-Cut Monuments a heritage of Thoothukudi District Kazhugumalai, located in the district of Thoothukudi, 85 Kilometer from the town of Thoothukudi and contains structures from ancient Hindu and Jain temples. It was a prominent Jain center during the medieval period. The remains of rock-cut Jain Beds (Samanar Padukkai), Vettuvan Koil which is a monolithic temple and unfinished along with bas-reliefs of Tirthankar Jain statues are located at Kazhugumalai. These are indicative of the craftsmanship of the Pandya dynasty and the monuments testify the importance of the site in the cultural map of south India which also depicts the blend of Hindu and Jain religion. The temple is a testimony to the conflict and fusion of various religions in the region. South India is well-known for its rock-cut temples below or above the ground, and Vettuvan Koil, commonly referred to as 'the Ellora of the South', is one of the finest examples of this type of construction. Although the temple is in a construction status, it is a resource for understanding the the creative ideas of the early Tamil Nadu artisans. The site serves as a cultural pilgrimage for Jains, as the inscriptions and bas-reliefs offer vital information of the history and development of Jainism in the Southern part of India now the state of Tamil Nadu. Kazhugumala must be preserved to protect the historical character of the district Thoothukudi and for cultural tourism.

Keywords: Kazhugumalai, rock-cut monument, Thoothukudi district, Heritage, Kazhugumalai

Introduction

The district of Thoothukudi, a region well-known for its rich cultural heritage and maritime history, is home to several historical sites that showcase Tamil Nadu's longstanding religious and artistic traditions. Kazhugumalai stands out among them as a distinctive heritage site that displays the district's rich architectural history. This historic rock-cut monument site, which is 85 kilometres from Thoothukudi, is a reminder of the area's rich history. It includes monolithic temples, beautiful carvings, and inscriptions that cover centuries of artistic and

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religious development. As a hub of Jainism in the early mediaeval era and a striking example of rock-cut building from the Pandyan era, Kazhugumalai is extremely significant to the district's history. The Jain bas-reliefs carved into the rocky hillside provide insights into the development of Jain philosophy in South India, while the incomplete but finely sculpted Vettuvan Koil, sometimes referred to as the "Ellora of the South," showcases the talent and vision of early Tamil artisans. Beyond its aesthetic value, Kazhugumalai connects Thoothukudi to the larger story of Tamil Nadu's religious and cultural evolution by serving as a symbol of the city's historical identity. Maintaining this heritage property is essential for both publicising the district's historical value on a broader scale and for comprehending its past.[i]

Historical Background of Kazhugumalai

The ancient town of Kazhugumalai, which translates to "Hill of the Vultures," is located in the Thoothukudi region of Tamil Nadu and has a rich cultural legacy that dates back to the eighth century CE. During the Pandya dynasty's reign, the location gained notoriety for its contributions to construction, art, and religious patronage. King Jatila Paranthaka Nedunjadaiyan is one of the important individuals connected to this era; it is thought that he ordered the building of the famous rock-cut temple known as Vettuvan Koil.

Numerous Jain and Hindu structures may be found in the Kazhugumalai neighbourhood, which reflects the area's long history of religious tolerance and cohabitation. A notable example of rock-cut architecture among these constructions is the Vettuvan Koil, which is frequently likened to Maharashtra's famous Ellora Caves. This historic landmark provides a window into the sophisticated construction methods of the era with its elaborate carvings and brilliant architecture. In addition to serving as a reminder of the area's rich spiritual and cultural past, Kazhugumalai's monuments showcase the artistic and architectural accomplishments that blossomed under the Pandya emperors' patronage.[ii]

JainAbodes A Centre of Early Jainism

A remarkable reminder of the long history of Jainism in South India is the Jain temple in Kazhugumalai. With a wealth of monuments, inscriptions, and rock-cut sculptures attesting to its profound spiritual and historical significance, Kazhugumalai was a major Jain centre from the sixth to the thirteenth centuries CE. The Jain Beds, also known as "Samanar Padukkai," are

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rock-cut cave shelters that were previously utilised by Jain monks for religious activities and meditation. These are among the site's most significant features. [iii]

The elaborate bas-reliefs that adorn these caverns provide insight into the spiritual and artistic traditions of ancient Jainism. The site's most revered depiction is of the 23rd Tirthankara, Bhagwan Parshvanatha, who is portrayed with a canopy of a multi-headed serpent, showcasing the rich Jain art iconography.Additionally, more than 150 bas-relief sculptures of Tirthankaras, including Parshvanatha and Mahavira, from the eighth and ninth centuries CE may be seen at Kazhugumalai. These sculptures are regarded as some of the best specimens of early mediaeval Jain art in India, and they are carved into the southern face of the mountain. The idea that the location has a special spiritual energy that draws both pilgrims and academics adds to its religious and artistic significance. Both Jain and Hindu structures coexist in the area, which is what makes Kazhugumalai particularly distinctive.[iv] The peaceful cohabitation of several religious sects is shown in this beautiful blending of religious sites, which highlights South India's varied spiritual heritage during the early mediaeval era. In addition to being a respected Jains' pilgrimage site, Kazhugumalai is a fascinating location for historians and travellers who wish to learn more about the area's long-standing religious customs.[v]

Vettuvan Koil the Unfinished Masterpiece

An incomplete yet breathtaking example of early Pandyan building, Vettuvan Koil is tucked away on a monolithic hill in Kalugumalai, Thoohukudi district, Tamil Nadu. frequently likened to rock-cut temples Known as the "Ellora of the South," the Vettuvan Koil is a sculpture that was created entirely out of a single rock and exemplifies the creativity and skill of ancient craftspeople. The temple is still unfinished, though, for reasons that history has forgotten, providing a fascinating look at what might have been one of the greatest works of art of its era. The temple, which is devoted to Lord Shiva, has a beautiful vimana (tower) with elaborate sculptures and faces east. The temple's top sections have remarkable sculptural elements, despite the facade's continued roughness and incompleteness. The intricate friezes on the outer walls show ganas (celestial attendants), many of whom are dancing and performing exuberant music, giving the motionless stone a sense of joyful movement. Their lively facial expressions, intricate hairstyles, and realistic poses demonstrate the sculptors' extraordinary talent and astute understanding of human emotions.[vi]

The temple's spiritual significance is symbolised by the four holy figures Shiva with Parvati, Dakshinamurti, Narasimha, and Brahma gazing out in different directions from the top

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of the vimana. A unusual artistic innovation rarely seen elsewhere is the portrayal of Dakshinamurti, the lord of wisdom, playing a mridanga (drum) in place of the traditional veena. Shiva, reclining with Parvati in the Umasahita form, radiates divine tranquilly. Magnificent Nandi sculptures, with their strong yet elegant forms bursting with life, may also be seen in the temple's corners. A tragic competition between a father and son, both sculptors, is one of the local legends that lend Vettuvan Koil an aura of mystery. It is reported that the father killed his son in a fit of passion after he boasted that his own temple at the foot of the hill would be finished while his father's would not. The Subrahmanya temple below is still a site of active worship, but the father's temple, Vettuvan Koil, was left unfinished as predicted. Vettuvan Koil is still a gem of early Pandyan rock-cut architecture in spite of its incomplete status.[vii] It is a distinctive cultural and historical landmark because of its dynamic sculptures, fine workmanship, and mysterious past. This temple, which stands as a tribute to the artistic genius of its founders, never fails to enthral tourists with its quiet yet profound tale of devotion, rivalry, and unrealised grandeur.[viii]

Significance of Architecture

Vettuvan Koil, known for its exquisite carvings and superb craftsmanship, is a magnificent example of architectural genius. The outside of the temple is lavishly decorated with sculptures of legendary animals, flowers, and deities, demonstrating the artistic prowess of the time. The intricately carved tower (vimana) that rises above the temple's sanctuary is its most remarkable feature. Beautiful reliefs of Lord Shiva in many forms beside his consort, Parvati, adorn this tower, which is a visual wonder. Vettuvan Koil's building method, which is referred to as monolithic rock-cut architecture, is particularly remarkable because it was carved from the top down. Since this technique, which calls for extreme precision, was done without the use of contemporary equipment or technology, any errors made during the carving process would be irreversible. The elaborate features and exquisite craftsmanship made possible by this method demonstrate the highly developed abilities of the ancient Tamil sculptors, whose mastery is still visible throughout the temple. With its striking sculptures and distinctive design, Vettuvan Koil is a tribute to Tamil civilization's artistic and architectural heritage.[ix]

Preservation and Cultural Importance

The preservation of the Jain houses in Kalugumalai is essential to comprehending Tamil Nadu's religious and cultural past. These inscriptions and rock-cut sculptures, which represent

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the various spiritual traditions of the area, offer important insights into the development of Jainism in South India. But as time has gone on, these ancient carvings have gradually deteriorated due to human interference, natural weathering, and religious disputes. The changing religious landscape has caused some artworks to be partially defaced or altered, while many sculptures have eroded as a result of exposure to the weather. The site has been protected through conservation efforts in spite of these obstacles, guaranteeing that the Jain statues' historical value and exquisite beauty will endure for years to come.

Kalugumalai is a culturally significant link to Tamil Nadu's long-standing Jain history. Inscriptions discovered at the location attest to the existence of Jain monastic communities, patronage contributions, and the influence of the religion on early Tamil society. Historians and academics can follow the evolution of Jainism in South India and its relationships with other faith traditions with the use of these documents. By expertly carving intricate reliefs into the rock face, early Tamil artisans created a hallowed area for devotion and meditation. This site also showcases their architectural genius. Adding to the larger story of Indian rock-cut architecture, this creative legacy parallels the magnificence of other Jain sites such as Sittanavasal and Ellora.

Archaeologists, heritage conservationists, and local government representatives have been working to preserve and promote Kalugumalai as a cultural landmark in recent years. While awareness efforts have attempted to inform tourists about the monument's historical and religious significance, the Archaeological Survey of India (ASI) has taken action to preserve and document the site. Additionally, to provide enduring archives of the site's sculptures and inscriptions, digital preservation techniques including 3D scanning and photographic photography are being used. For Jain groups, Kalugumalai remains a site of spiritual significance in addition to its historical and artistic significance. Pilgrims come here to honour the Tirthankaras and consider the austere principles of Jainism. In addition to drawing visitors and academics, Kalugumalai is a heritage site that supports Tamil Nadu's cultural tourism industry. The site's preservation aims to honour the various spiritual traditions that have influenced Indian history in addition to safeguarding the old sculptures. Future generations will be able to enjoy the rich artistic, religious, and intellectual history of the Jain people in South India if Kalugumalai is preserved.

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Conclusion

The rock-cut monuments of Kazhugumalai are a striking example of the Thoothukudi district's rich religious and cultural legacy. This historical monument exemplifies the creative excellence and spiritual diversity of ancient Tamil civilisation with its Jain bas-reliefs, the monolithic Vettuvan Koil, and the venerated Murugan Temple. Kazhugumalai, a major location for Shaivite customs and a major centre for Jainism in the early mediaeval era, is a testament to the peaceful coexistence of several religions that formerly flourished in Tamil Nadu. Additionally to its religious and architectural value, Kazhugumalai helps to define Thoothukudi as a historically significant area. Scholars, historians, and tourists who want to learn about the artistic and cultural development of the area will find the site to be a useful resource. The preservation of these monuments is still a major worry, nevertheless, notwithstanding their significance. Lack of public knowledge, encroachment, and natural erosion are obstacles to the preservation of this priceless legacy. The goal of preserving Kazhugumalai is to preserve the historical character of Thoothukudi district and make sure that its heritage will continue to motivate future generations, not merely to protect an archaeological site. This distinctive heritage property can be preserved as a cultural treasure with the help of appropriate conservation programs, raised public awareness, and sustainable tourism initiatives. Gaining the support required for its long-term conservation will be made easier by acknowledging its importance on a regional and national level.[x] Thoothukudi district may take pride in its role as a guardian of Tamil Nadu ancient legacy by honoring and conserving Kazhugumalai's rock-cut marvels, guaranteeing that its historical splendour would endure as a permanent feature of India's cultural landscape.

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FEAR OF INTIMACY AND LONELINESS AMONG UNMARRIED YOUNG ADULTS

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Abstract

Fear of intimacy becomes an individual's struggle with forming close or intimate relationship, it can affect daily life, often leading to feeling of loneliness. The aim of the study is to investigate the relationship between fear of intimacy and loneliness among unmarried young adults, and also find gender difference between the variables. The data were collected from 61 participants through online google form, using convenient sampling method. The study undertook correlation research design. The statistical analysis Normality test, Pearson's correlation test, and T-test were used. Conclusion: The findings showed the fear of intimacy and loneliness both significantly correlated. The t-test shows no significant difference between male and female group in relation to fear of intimacy and loneliness.

Keywords: fear of intimacy, loneliness, young adults

Introduction

Human connections play a vital part in shaping an existent's emotional, social, and cerebral well- being. Youthful maturity is a critical stage in life, marked by significant transitions and the conformation of meaningful connections. Immature grown- up in popular culture generally refers to people in their 18 to 25.

According to Robert W. Firestone (1999) in his book Fear of intimacy says that a fear of closeness is constantly subconscious and affects a person's capability to form or maintain close connections. Closeness is defined as a close familiarity or fellowship; closeness. While it may feel, this applies to romantic connections, closeness is important inn on-romantic connections as well. It's essential to forming connections with others that are deep, lasting, and healthy. The fear of intimacy leads to loneliness which means people with fear of intimacy may avoid emotional vulnerability may be it the causes of fear of rejection, trust issues, dependence or emotional pain.

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According to Ettema *et al.* (2010) Defined loneliness as a feeling of emptiness, sadness, and pining that comes from the awareness of being separate from others. Loneliness is the affective and cognitive discomfort or uneasiness from being or perceiving oneself to be alone or additional solitary (APA). Loneliness has come a major contemporary public health concern. The experience of loneliness has mischievous goods on physical and internal health. it's linked with vulnerable insufficiency, poor sleep, cerebral stress, depression, and anxiety, among other conditions.

Mark H.Thelen and Jillon S. *et.al* (2000) conducted a study on fear of intimacy among dating couples. The findings indicate that males exhibited higher fear of intimacy (FIS) scores than females, and FIS scores were positively correlated within couples. Ellie Liata (2020) conducted a study on loneliness among young adults During the COVID Pandemic; the Mediating Role Social Support Seeking. The result showed young adults were lonelier that older adults during the pandemic.

Methodology

Aim: The aim of the study was to understand the correlation between fear of intimacyand loneliness in the unmarried young adults.

Objectives

1. To find the relationship between fear of intimacy and loneliness among unmarried young adults.
2. To find the gender difference in fear of intimacy and loneliness among unmarried young adults.

Hypothesis

H1: There will be a significant relationship between fear of intimacy and loneliness among unmarried young adults

H2: There will be a significant gender difference in fear of intimacy and loneliness among unmarried young adults

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Variables

Independent variable: Fear of intimacy

Dependent variable: loneliness, Extraneous variable: Gender

Sampling

Population: The population of this study consist of unmarried young adults age group of 18 to 25, the 61 data were collected from unmarried young adults.The participants were selected using convenience sampling method.

Tool Description:

Fear of Intimacy (David Burns in 1980)

The FIS is a 35-item with 5 Point likert scale, the Cronbanch'salpha of . 93 with a one-month test-retest correlation of 89. The FIS has good construct validity

Loneliness scale: The UCLA Loneliness scale was developed by Dan Russel, *et.al* in 1978, the scale consist 20 items. The reliability employing Cronbach's alpha reliabilitywas reported to be 0.80. Test-retest reliability was found as 0.73. The UCLA Loneliness scale also exhibits adequate convergent validity

Statistical techniques: Normality is checked using Kolmogorov- Smirnov and Shapiro- Wilk tests. Skewness and kurtosis were also checked. Pearson's correlation coefficient is used to find out significance of relationship. Independent sample t-test is used to find gender difference among the study variables, and using SPSS version 23

Result

Table 1: Normality testing of the study variables

Variables	N	Mean	Skewness	Kurtosis
Fear of intimacy	61	94.70	-0.554	.265
Loneliness	61	27.92	0.455	-.024

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Table 1 shows the results of normality testing for the study variables. The skewness and kurtosis values for fear of intimacy are -.554 and .265 respectively. The skewness and kurtosis values for loneliness are 0.455 and -.024. The skewness and kurtosis values lies within acceptable range of -2 to +2 and -7 to +7 respectively, which shows that the data were normally distributed. So, the study uses parametric tests for hypotheses testing.

Table 2: Correlation between fear of intimacy and loneliness

Variable	N	Pearson's correlation
Fear of intimacy	61	0.35**
Loneliness	61	

***Correlation is significant at the 0.01 level (2-tailed)*

Table 2 shows the relationship between fear of intimacy and loneliness. The result reveals that there is a positive correlation between fear of intimacy and loneliness. The correlation coefficient of fear of intimacy and loneliness is 0.35, it observed that the correlation coefficient value is significant at the 0.01 level. Hence ,the hypothesis (H1) is accepted.

Table 3: Significance of gender difference in fear of intimacy and loneliness

Variable	Gender	N	Mean	SD	t-value
Fear of intimacy	Males	14	99.93	9.627	
	Females	47	93.15	17.26	1.40(NS)
Loneliness	Males	14	33.00	17.16	
	Females	47	26.40	12.72	1.56(NS)

Table 3 shows that the t-value of fear of intimacy and loneliness between both males and females are 1.400 and 1.567 respectively. There are no significant gender differences in fear of intimacy and loneliness between 14 males and 47 females. Hence, the (H2) is rejected.

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Discussion

The purpose of the study was to find out the relationship between fear of intimacy and loneliness among unmarried young adults. 61 data were collected for the study and Pearson's correlation was used to find the relationship between fear of intimacy and attachment among unmarried young adults. Table 1.1 shows the normality of study variables. The skewness and kurtosis values lies within acceptable range of -2 to +2 and -7 to +7 respectively, which shows that the data were normally distributed. Table 1.2 shows the relationship between fear of intimacy and loneliness among unmarried young adults. The result reveals that there is a positive correlation between fear of intimacy and loneliness, because the unmarried young adults faced fear of intimacy and loneliness. So, the (H1) is accepted. This suggests that individuals with higher fear of intimacy tend to experience greater loneliness. The independent sample T-test used to find the gender difference. Table 1.3 shows that there is no significant gender differences in fear of intimacy and loneliness. It indicating that both males and females experience fear of intimacy and loneliness at similar level. Hence, the (H2) is rejected.

Conclusion

This study concludes that there is a positive relationship between fear of intimacy and loneliness. And also find there is no significant no significant gender differences in fear of intimacy and loneliness.

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THE INFLUENCE OF PERCEIVED PARENTING STYLE ON SELF- EFFICACY AMONG WOMEN COLLEGE STUDENTS IN TIRUNELVELI

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Abstract

Perceived Parenting style is a child's or adolescent's subjective interpretation of their parent's parenting behaviours and attitudes during their upbringing. Self-efficacy is the belief that you can successfully complete a task or achieve a goal. The study aims to explore perceived parenting style and examine its relationship with self-efficacy among women college students in Tirunelveli. The study was conducted on women college students age18 to 25, the sample were selected through a Purposive random sampling techniques.There were 71 participants surveyed from women college students. The respondents completed the socio-demographic details, the perceived parenting style questionnaire developed by Divya T. v. & Manikandan K. in (2013), and the self-efficacy scale developed by Ralf Schwarzer and Matthias Jersalem (1995). The results indicate there is no significant relationship between perceived parenting style and self-efficacy. It aims to understand how young women interpret their parents' behaviours and whether these perceptions influence their self- confidence in completing tasks and achieving goals.

Keywords: Perceived parenting style, self-efficacy, women college students

Introduction

According to Darling & Steinberg (1993) parenting style as a constellation of attitudes towards the child create an emotional climate in which parental behaviours are expressed. Baumrind's categorized parenting style as an authoritative, authoritarian, permissive and neglectful. It plays a curial role in shaping a child's psychological development, behaviour and well-being.

Self- efficacy is the personal belief of an individual in their ability to complete their task and achieve a goal. Self- perceptions of capability that help determine motivation and behaviour

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(Zimmerman 2000). Tamboli and Shaikh (n.d.) found a significant relationship between perceived parenting styles and young adults' self-efficacy, indicating that different parenting approaches influence self-confidence and capability in young adults.

Parenting style plays a crucial role in a child's psychological, emotional and social development. It shapes their behaviour, self-confidence, decision making skills and ability to handle challenges. Self-efficacy refers to an individual's belief in their ability to succeed in tasks and achieve goals which is shaped by early experiences, including parenting. Self-efficacy is crucial because it influences how people think, feel and behave when facing challenges. It determines their confidence in their abilities and impacts their personal, academic and professional success.

Methods and Materials

The primary aim of this research is to examine the relationship between perceived parenting style and self-efficacy among women college students. The objective of the study includes, to examine the relationship between perceived parenting style and self-efficacy. The hypotheses proposed are: H1- there will be no significant relationship between authoritarian parenting style and self-efficacy among Women College students, H2- there will be no significant relationship between authoritative parenting style and self-efficacy among women college students. H3- there will be no significant relationship between permissive parenting style and self–efficacy among women college students. Purposive random sampling was utilized, resulting in a total 71 participants from women college students. Data collection was carried out through a Google form via WhatsApp, with participant's informed consents about prior to their participation.

Two inventories were employed: Perceived parenting style questionnaire by Divya, T. V & Manikandan. K (2013), which measures the perceived parenting style in 3 dimensions namely authoritative, authoritarian and permissive in a 5- point Likert scale. The reliability of the PPS is Authoritative style is having an Alpha coefficient of 0.79, authoritarian 0.81 and permissive 0.86. All the styles of the perceived parenting style scale have an acceptable level of reliability and the General self- efficacy scale developed by Ralf Schwarzer and Matthias Jerusalem (1995), which assesses self- efficacy, internal reliability for GSE= Cronbach's alphas between 0.76 and 0.90. The correlational research design is used to examine the extend of the

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relationship between two variables. SPSS (Window version 20.0) was used for normality testing, spearman to test the hypothesis.

Results

Table 1: Normality testing of the study variables

Variables	N	Mean	Skewness	Kurtosis	Kolmogorov-Smirnov	Shapiro-wilk
Authoritative	71	35. 61	-.334	-.530	0.200	0.171
Authoritarian	71	24. 96	.173	-.225	0.200	0.735
Permissive	71	26.30	.208	-.169	0.200	0.640
Self- efficacy	71	27.96	.460	-.047-	0.002	0.034

Table 1 shows results of normality testing for the study variables.The skewness and kurtosis value lies between the acceptable range of -2 to +2 and -7 to +7respectively, so the data is normally significant. As per the Kolmogorov – Smirnov and Shapiro Wilk p- value >0.05 – the data is normally distributed. Authoritative, authoritarian and permissive parenting style have p- value >0.05, so they follow a normal distribution. Self-efficacy has p-value >0.05 so is doesn't follow the normal distribution. Therefore, non- parametric test were used.

Table 2: Frequency distribution of the demographic variables (n=71)

Demographic variables	**Category**	**Frequency**	**%**
Education qualification	Undergraduate	54	76
	Postgraduate	17	24
Birth order	First born	24	34
	Second born	30	42
	Last born	12	17
	Others	5	7

Table 2 shows the frequency distribution of the demographic variables such as education qualification, birth order. In terms of education, the majority were undergraduate students (76%), while postgraduate students comprised (24%) of the sample.

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Table 3: Correlation between perceived parenting style and self- efficacy

Variable	P	p-value	N
Authoritative parenting style self-efficacy	0.187	0.118	71
Authoritarian parenting style self-efficacy	-0.014	0.909	71
Permissive parenting style self-efficacy	-0.220	0.066	71

Table 3 reveals the relationship between perceived parenting style and self-efficacy among women college students using Spearman correlation technique. None of the correlations are statistically significant ($p > 0.05$) authoritative parenting style shows a weak positive correlation with self-efficacy ($\rho = 0.187$) but it's not significant. Authoritarian parenting style has no correlation with self- efficacy ($\rho = -0.014$, $p = 0.909$.) Permissive parenting style shows weak negative correlation with self-efficacy ($\rho = -0.220$ $p = 0.066$) but it's not significant. There was no relation found between perceived parenting style and self-efficacy thus, H1, H2 and H3 accepted.

Discussion

The purpose of the study was to examine how there's an influence of parenting style on self-efficacy among women college students. The result of this study showed that there is a weak positive correlation between authoritative parenting style and self-efficacy but not significant, which means that as authoritative parenting increases, self-efficacy might also slightly increase. However because of the p value is > 0.05, it is not significant. No correlation between authoritarian perceived parenting style and self-efficacy but not significant, which means there is no statistical significance, the p- value is very high. Weak negative correlation between permissive parenting style and self-efficacy but not significant, which means that permissive parenting style increases, self-efficacy might slightly decrease. However, since the p-value is > 0.05, it's not significant.

Conclusion

The study concludes that perceived parenting styles do not significantly influence self-efficacy among the women college students. Parenting style alone do not strongly influence a

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young woman's confidence in completing tasks and achieving goals. This suggests that self-efficacy is influenced by multiple factors beyond parental behaviour, such as education, peer support and individual personality traits. Parents should focus on fostering independence and resilience in their children rather than relying solely on parenting styles. Colleges and Universities can implement programs that enhance self-efficacy through mentoring, skill development, and confidence-building activities.

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AI-ASSISTED RESEARCH: FINDING THE HUMAN TOUCH

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Abstract

This article critically examines the role of artificial intelligence (AI) in academic research writing. With increasing demands for high-quality research in shorter timeframes, AI offers enhanced efficiency, accuracy, and innovation. However, ethical and methodological challenges, including issues of bias, plagiarism, and authorship, remain significant concerns. This article argues for a balanced integration of AI, emphasizing that it should serve as an augmentation rather than a replacement for human intelligence. By fostering responsible AI usage, researchers can leverage its advantages while maintaining ethical integrity. The future of AI in research writing envisions a dynamic collaboration between human intellect and machine capabilities.

Keywords: AI Integration, Ethical Implications, Transformative Potential, Critical Evaluation, Responsible Use

Introduction

The advent of AI in academic research writing has sparked both excitement and apprehension. AI-powered tools now assist researchers in literature reviews, data analysis, manuscript preparation, and even hypothesis generation. While these technologies promise efficiency and precision, they also raise complex ethical and methodological concerns. This article explores the impact of AI on research writing, addressing its benefits, challenges, and the ethical considerations required for responsible integration.

The Role of AI in Research Writing

1. Enhancing Efficiency and Accuracy

AI-powered tools streamline the research process by automating repetitive tasks, such as:

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- **Literature Review**: AI-driven platforms like Semantic Scholar and Elicit analyze vast corpora of academic papers to identify relevant sources (Beel *et al.*, 2016).
- **Data Analysis**: Machine learning algorithms detect patterns in research data, assisting in hypothesis testing and statistical modeling (Jordan & Mitchell, 2015).
- **Manuscript Preparation**: Tools like Grammarly and AI-powered paraphrasers refine writing style and grammar, improving clarity (McNamara *et al.*, 2019).

2. AI in Academic Publishing

AI is transforming the publishing process by assisting in:

- **Plagiarism Detection**: AI tools like Turnitin and Copyscape identify potential plagiarism and suggest corrections (Vincent-Lancrin & van der Vlies, 2020).
- **Peer Review Assistance**: AI-based platforms like PaperPal expedite peer reviews by assessing research quality and highlighting inconsistencies (Tennant, 2018).

3. Ethical and Methodological Challenges

3.1 Bias and Fairness in AI

AI algorithms inherit biases from their training data, which can skew research findings (Bender *et al.*, 2021). Researchers must critically evaluate AI-generated insights to prevent the perpetuation of biases.

3.2 Plagiarism and Academic Integrity

AI-generated text poses challenges to originality in research writing. Scholars must ensure AI contributions are properly cited and do not constitute academic misconduct (Heaven, 2020).

3.3 The Question of Authorship

As AI tools contribute more significantly to research, debates around AI's role in authorship arise. Current academic guidelines discourage listing AI as a co-author but emphasize acknowledging AI-generated contributions (COPE, 2023).

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4. Responsible AI Use in Research

To optimize AI's benefits while addressing ethical concerns, researchers should:

- **Maintain Human Oversight**: AI should assist, not replace, human critical thinking (Floridi & Cowls, 2019).
- **Promote Transparency**: Clearly disclose AI-assisted methodologies and acknowledge AI-generated content.
- **Adopt Fair AI Practices**: Ensure AI tools are trained on diverse and unbiased datasets (Gebru *et al.*, 2021).
- **Establish Ethical Guidelines**: Universities and journals should develop policies regulating AI use in research (Vincent-Lancrin & van der Vlies, 2020).

5. The Future of AI in Research Writing

As AI continues evolving, its role in research will expand. Future advancements may include:

- **AI-Driven Literature Synthesis**: AI could generate comprehensive literature reviews, synthesizing key insights across disciplines (Jin *et al.*, 2021).
- **Multilingual Research Tools**: AI-powered translation and summarization tools will enable global research collaboration (Tiedemann, 2020).
- **Ethically-Aligned AI Development**: Ongoing interdisciplinary efforts are crucial to ensure AI aligns with ethical and academic standards (Bender *et al.*, 2021).

Conclusion

The integration of AI in academic research writing presents both opportunities and challenges. AI can enhance research efficiency, accuracy, and accessibility, but ethical concerns surrounding bias, plagiarism, and authorship must be carefully managed. The key lies in fostering a responsible research culture that leverages AI's capabilities while preserving the integrity of human scholarship. By striking this balance, researchers can create a collaborative research ecosystem where AI and human ingenuity work in harmony.

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INFLUENCE OF PERCEIVED DISCRIMINATION ON SOCIAL ANXIETY AMONG HIGHER EDUCATION STUDENTS FROM TAMIL MEDIUM SCHOOLS

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Abstract

This study explores the relationship between perceived discrimination and social anxiety among first-year undergraduate students from Tamil medium schools.Perceived discrimination refers to an individual's perceptions of being the target of others' negative attitudes, judgment, or unfair treatment (Banks et al., 2006, Pascoe and Richman, 2009).According to Leary & Kowalski (1995), people feel socially anxious when they wish to make a good impression on others but doubt their ability to do so. The study involved 50 students (23 male and 27 female) selected through purposive sampling, with data collected using the Perceived Discrimination Scale (PDS) and the Social Interaction Anxiety Scale (SIAS). The study reveals that there is a significant positive correlation between perceived discrimination and social anxiety among higher education students from Tamil medium schools. Statistical analysis of the data provided valuable insights.

Keywords: Perceived discrimination, socialanxiety, higher education students, Tamil medium

Introduction

The transition to higher education can be a challenging experience for students, especially those from diverse linguistic and cultural backgrounds. For students from Tamil medium schools, the shift to English-medium higher education institutions can be particularly difficult. One of the significant concerns for these students is the perceived discrimination they may face due to their linguistic, cultural, or socio-economic backgrounds. Perceived discrimination can have significant consequences on an individual's mental health and well-being. Social anxiety, in particular, is a common outcome of perceived discrimination, as individuals may feel uncomfortable, self-conscious, and fearful of social interactions. This study

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aims to address the influence of perceived discrimination on social anxiety among higher education students from Tamil medium schools. Many studies explored how perceived discrimination affects social anxiety in different groups of people. However, no one has focused on students who went to Tamil medium schools and are now in higher education. My research aims to fill this gap. Chaw (2023), did a study on the correlation between perceived discrimination and social anxiety in college students who identify as LGBTQ revealed results that there is no significant correlation and the perceived discrimination does not significantly predict social anxiety among this study population. Annalakshmi N. & Venkatesan (2018) conducted a study on Perceived discrimination among higher-education students. So, this study showed that male students reported higher discrimination from peers and teachers compared to female students. Perceived discrimination positively predicted state anxiety among students. Cuevas et al. in the study Discrimination and anxiety: Using multiple polygenic scores to control for genetic liability reveals Experiencing discrimination is connected to higher anxiety, even when considering genetic influences. This suggests that the link between discrimination and anxiety goes beyond just genetic factors like those related to anxiety, depression, or neuroticism. These findings highlight the importance of health professionals being aware that discrimination could contribute to mental health problems.

Methodology

This study explores the relationship between perceived discrimination and social anxiety among higher education students from Tamil medium schools. The study focuses on three main objectives: (1) examining the relationship between perceived discrimination and social anxiety, (2) investigating whether perceived discrimination predicts social anxiety, and (3) identifying gender differences in these variables. The hypotheses proposed are H_1- There would be a significant difference between Perceived Discrimination among Social Anxiety, H_2-Perceived Discrimination will significantly predict Social Anxiety and H_3- There would be a significant difference between Perceived Discrimination and Social Anxiety based on gender. A correlational research design was chosen for this study to understand the relationship between Perceived Discrimination and Social Anxiety. The participants of this studywere 50 1st undergraduate students enrolled in a university in Tirunelveli, specifically those from Tamil medium schools. The sample consists of 23 male and 27 female students, selected using a purposive sampling technique. This method ensured that the sample was relevant to the research objectives and helped minimize bias, allowing for more accurate and focused data collection.

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The data was gathered through an in-person survey, allowing for direct interaction and clarity in responses. Two measures were used to collect data: (1) the Perceived Discrimination Scale (PDS) developed by Williams, Yu, Jackson, & Anderson (1997), which includes 9 items rated on a 4-point Likert scale. The scale's reliability ranges from 0.80 to 0.90, with established validity, and it assesses the students' perceived experiences of discrimination. (2) The Social Interaction Anxiety Scale (SIAS) by Mattick & Clarke (1998), consisting of 20 items rated on a 5-point Likert scale, measures social anxiety, particularly in social interactions. The reliability of the SIAS ranges from 0.92 to 0.95, with established validity. For the analysis of the data, normality checks were conducted using skewness and kurtosis to ensure that the data distribution met the assumptions required for further statistical tests. To examine the relationship between perceived discrimination and social anxiety, Pearson's correlation coefficient was used. This helped to determine the strength and significance of the relationship between the two variables. To explore gender differences, an independent samples t-test was conducted to compare male and female students' responses. Finally, a linear regression analysis was performed to assess whether perceived discrimination could predict social anxiety.

Results

Table 1: Normality testing of the study variables (n=50)

Variables	N	Mean	SD	Skewness	Kurtosis
Perceived discrimination	50	18.08	6.48	0.12	-1.47
Social anxiety	50	35.32	10.95	0.28	-0.04

Table1 shows that skewness and kurtosis values for perceived discrimination are .12 and -1.47 and for social anxiety .28 and -0.04. Since the values are within the acceptable range, the data is considered to be normally distributed, thus parametric tests for hypotheses testing are used in this study.

Test of hypotheses

Table 2: Correlation between perceived discrimination and social anxiety (n=50)

Variables	N	M	SD	r value
Perceived discrimination	50	18.08	6.48	
				0.32*
Social anxiety	50	35.32	10.95	

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Table 2 shows the Pearson correlation coefficient of the study variables. The r value is 0.32($p<0.05$), which indicates that perceived discrimination has a significant relationship with social anxiety. Therefore, the hypothesis (H1) is accepted.

Table 3: Linear regression for prediction of perceived discrimination on social anxiety

	Unstandardized coefficient B	Standard error	Standardized coefficient B	t
(constant)	25.64	4.44	0.32	5.77
Perceived Discrimination	0.53	0.23		2.31
R=0.32	R^2= 0.10	F= 5.35	P<0.05	

Table 2 shows the results of linear regression analysis with R^2 value 0.10 which is significant at 0.05 level. Thus 10% of the variation was contributed by perceived discrimination on social anxiety ((β= 0.32, R^2= 0.10, F = 5.35, $p<0.05$). The result shows that perceived discrimination significantly predicts social anxiety. Therefore, H2 is accepted.

Table 3: Significance of gender difference between the study variables (n=50)

Variables	Group	N	Mean	SD	t
Perceived discrimination	Male	23	21.87	5.39	4.50**
	Female	27	14.85	5.56	
Social anxiety	Male	23	41.22	10.89	4.02**
	Female	27	30.30	8.28	

This table indicates the results of the independent sample t-test in perceived discrimination and social anxiety. The t values of perceived discrimination and social anxiety for gender are 4.50($P<0.01$) and 4.02 ($P<0.01$) respectively, which means that there is a significant gender difference in perceived discrimination and social anxiety. Hence, H3 is accepted.

Discussion

This study explored the link between perceived discrimination and social anxiety among students from Tamil medium schools in higher education. The results showed that students who felt more discriminated against were more likely to experience higher levels of social anxiety. This is particularly true for students from minority linguistic backgrounds, like Tamil medium

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school graduates, who may struggle to adapt to an educational environment that primarily uses a different language, leading to feelings of exclusion. The study also found a gender difference in perceived discrimination and social anxiety. Male students had a higher score for both, with a significant difference between genders. Furthermore, the analysis showed that perceived discrimination is a key factor in predicting social anxiety for every unit increase in perceived discrimination, social anxiety went up by 0.32 units.

Conclusion

In conclusion, this study found that higher levels of perceived discrimination are associated with increased social anxiety among higher education students from Tamil medium schools. Additionally, there are gender differences in both perceived discrimination and social anxiety, with significant differences found between male and female students. Theregression analysis further confirmed that perceived discrimination is a significant predictor of social anxiety, meaning that as students feel more discriminated against, their social anxiety increases.

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CAN PERSONALITY TRAITS PREDICT ACADEMIC PERFORMANCE AMONGYOUNG ADULTS?

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Abstract

A personality trait is a relatively stable, consistent, and enduring characteristic inferred from an individual's pattern of behaviors, attitudes, feelings, and habits (Gordon Allport, 1937). Academic performance is the extent to which a student's development occurs, both academically and intellectually (Pascarella & Terenzini, 1980).This correlational study aims to examine the relationship between personality traits and academic performance and identify the gender differences regarding thestudy variables. It alsoexplores whether personality traits can predict academic performance among young adults. The data were collected from 50 students (25 male and 25 female) in the age range of 18 to 25, by using a convenience sampling techniqueat the UniversityinTirunelveli, Tamil Nadu. Measures used to collect data includethe big-five personality inventory (John, Donahue&gentle, 1991) and the Academic performance scale (Christopher McGregory etal. 2015). Statistical analysis reveals enlightening findings.

Keywords: Personality traits, Academic performance, young adults

Introduction

Personality traits, defined as relatively stable patterns of thoughts, feelings, and behaviours, can significantly impact an individual's academic success.Academic performance is defined as the knowledge gained by the student which is assessed by marks by a teacher or educational goals set by students and teachers to be achieved over a specific period (Narad and Abdullah, 2016). It is a significant aspect of a student's life, crucial in shaping their future career development and personal growth. Nowadays, students explore their academic journey and it is influenced by various factors such as intelligence, motivation, learning styles, and environmental factors. However, one significant aspect that has to be considered is the personality traits. Interestingly, certain personality traits, such as conscientiousness, extraversion, and agreeableness, have been found to positively correlate with academic performance. Nabia Siddiquie *et al.* (2018), investigate the relationship between personality

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traits, learning styles, and academic performance. This study found that academic performance was positively correlated with three personality traits such as conscientiousness, agreeableness, and openness and negatively correlated with neuroticism. Jaber *et al.* (2022), examine specific traits of personality to predict students' academic performance. This study confirms that the student's personality profile is a strong predictor of academic performance.

Methodology

This study aims to explore the relationship between personality traits and academic performance among young adults, focusing on how these traits may predict academic outcomes and examining potential gender differences. The study focuses objectives: (1) examining the relationship between personality traits and academic performance, (2) identifying gender differences regarding the study variables. (3) investigating whether personality traits will predictacademic performanceand to achieve these objectives, the study employed a correlational research design, which is ideal for investigating the connections between personality traits and academic performance. The participants in this study were young adults, students who enrolled in both undergraduate (UG) and postgraduate (PG) program at a university in Tirunelveli.A total of 50 students (25 male and 25 female) participated, between the age range of 18 and 25. The participants were chosen through a convenience samplingtechnique. Data were collected through an in-person survey method. The Big Five Inventory (BFI), developed by John, Donahue, and Kentle (1991), was used to assess personality traits. The BFI consists of 44 items rated on a 5-point Likert scale and measures five broad personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. This inventory has demonstrated high internal consistency, with a Cronbach's alpha coefficient of 0.83.Academic performance was assessed using the Academic Performance Scale, a Uni-dimensional scale, developed by McGregory, *et al.*, (2015). This scale has 8 items. The scale has also shown high reliability, with Cronbach's alpha coefficients of 0.89 and 0.85.To ensure the data was normally distributed, normality was assessed along with, several statistical techniques were employed. Pearson's correlation coefficient was used to assess the strength and significance of the relationship between personality traits and academic performance. An independent sample t-test was applied to examine gender differences, and regression analysis was used to determine whether personality traits could predict academic performance among young adults.

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Results

Table 1: Normality testing of the study variables (n=50)

Variables	N	Mean	SD	skewness	Kurtosis
Personality traits	50	144.96	10.83	-0.17	-0.76
Academic performance	50	18.56	4.59	-0.09	-1.12

Table 1 shows that skewness and kurtosis values for personality trait are -0.17 and -0.76 and for academic performance are -0.09 and -1.12. Since the values are within the acceptable range, the data is considered to be normally distributed, thus parametric tests for hypotheses testing are used in this study.

Table 2: Correlation between personality traits and academic performance (n=50)

Variables	N	Mean	SD	Academic performance
Extraversion	50	25.24	3.76	-0.33*
Agreeableness	50	31.70	4.39	0.03 (NS)
Conscientiousness	50	29.40	4.92	-0.52**
Neuroticism	50	23.52	5.94	0.11(NS)
Openness	50	35.10	3.92	0.20(NS)
Academic performance	50	18.56	4.59	1

The significant level is (P<0.05); NS- Not Significant

Table 2 shows that there is a significant relationship between certain personality traits such as extraversion (r=-0.33*,) and conscientiousness (r=-0.52**) and academic performance. But there is no significant relationship between agreeableness, neuroticism, openness and academic performance

Table 3 shows that there are no significant gender differences between personality traits and academic performance.

Table 3: Significance of gender differences between the study variables (n=50)

Variables	Group	N	Mean	SD	t
Extraversion	F	25	25.08	3.10	0.30(NS)
	M	25	25.40	3.59	
Agreeableness	F	25	31.72	4.79	0.03(NS)
	M	25	31.68	4.05	
Conscientiousness	F	25	28.68	3.70	1.03(NS)
	M	25	30.12	5.89	
Neuroticism	F	25	24.40	6.22	1.05(NS)
	M	25	22.64	5.63	
Openness	F	25	34. 32	3.41	1.42(NS)
	M	25	35.88	4.30	
Academic performance	F	25	19.04	4.49	0.73(NS)
	M	25	18.08	4.74	

NS-Not Significant

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Table 4: Regression analysis for study variables (n=50)

	Unstandardized coefficient β	Standard error	Standardized coefficient β	t
(constant)	33.61	8.35		4.02
Extraversion	-0.27	0.18	-0.22	1.53
Agreeableness	0.10	0.13	0.92	0.71
Conscientiousness	-0.49	0.14	-0.53	3.47
Neuroticism	-0.02	0.12	-0.02	0.13
Openness	0.11	0.18	0.09	0.60
R=0.57	R^2=0.33	F=4.38	P<0.05	

Table 2, 3 shows linear regression analysis with R^2 value 0.33 which is significant at 0.05 levels. Thus 33% of variation was contributed by personality traits on academic performance ((β=-0.22, 0.92, -0.53, -0.02, 0.09), R^2= 0.33, F =4.38, p<0.05). The result shows that personality traits predict academic performance.

Discussion

This study explored the relationship between personality traits and academic performance among young adults. The results showed that certain personality traits, such as extraversion andconscientiousness, are significantly correlated to academic performance. Conscientiousness, which includes characteristics like organization and self-discipline, is a strong predictor of academic performance. Extraversion, which includes factors like outgoingness and sociability, was also a significant relationship between academic performance. This may be because extraverted students tend to be more engaged in campus life, and more likely to participate in class. The good thing is that personality traits can be developed and strengthened over time.So, this study shows the importance of considering personality traits when trying to understand academic success. Result of this study also supported by such previous studies the concept presented by poropat (2009) found a significant correlation between conscientiousness, extraversion and academic performance.

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Conclusion

The study showed that certain personality traits such as extraversion and conscientiousness are significantly correlated with academic performance. Also, this result revealed that there are no significant gender differences between extraversion, agreeableness, conscientiousness, neuroticism, openness, and academic performance. The findings showed that personality traits significantly predict academic performance. Understanding the role of personality in academic success can provide better support for students and help them to achieve their goals.

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RELATIONSHIP BETWEEN SOCIAL MEDIA ADDICTION AND ACADEMIC PERFORMANCE AMONG SCHOOL STUDENTS

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Abstract

Social media addiction is a behavioral addiction, similar to other compulsive behaviors like gambling, where individuals struggle to control their urge to engage with social media platforms. Academic performance is the extent to which a student, teacher or institution has attained their educational goals, encompassing both short term and long term objectives.Social media can negatively impact academic performance by causing distractions, reducing study time and potentially leading to mental health issues. This study examined the relationship between social media addiction and academic performance in a sample of 50 school students aged 14-17. The Social Media Addiction Scale - Student Form (SMAS-SF) and the Academic Performance Scale (APS), analysis revealed a weak positive, but statistically insignificant, correlation between social media addiction and academic performance. These findings suggest that within this sample, social media addiction does not appear to be a substantial predictor of academic performance. This study highlights the need for further research with larger and more diverse populations to comprehensively explore the complex interplay between social media usage and academic performance in school students.

Keywords: Social media addiction, Academic performance, school students

Introduction

Social media addiction as a behavioral addiction characterized by the compulsive use of social media platforms, resulting in negative consequences across daily life, including impaired relationships, diminished work or study performance, and compromised physical health (Kuss and Griffiths, 2011). Academic performance as the knowledge acquired and assessed by teachers through grades or the fulfillment of educational objectives established collaboratively by students and instructors within a specific timeframe (Narad and Abdullah, 2016). He found

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the correlation between psychological factors, academic performance and social media addiction among university students, as a result there is a positive significant relationship between psychological factors, social media addiction and academic performance (Malakeh Z .Malak *et al* 2021). They found the impact of social media addiction on academic procrastination among undergraduate and postgraduate student, as a result there is a positive correlation between social media addiction and academic procrastination (Bushra Rizviand and Ishu Parihar 2024). He found the relationship between social media and academic performance among university students, as a result there is no significant relationship between social media addiction and academic performance (Osharive Peter 2015). Need:Theschool students' addiction to social media negatively affects their education, impeding academic performance and overall development, this study is motivated by this concern.

Methodology

Aim

To examine the relationship between social media addiction and academic performance among school students.

Objective

The objective of this study is to determine the relationship between social media addiction and academic performance among school students.

Hypothesis of the study

H1**:** There will be a significant relationship between social media addiction and academic performance among school students.

Sample

Population & Sample size: The Participants are school students of Kanyakumari District, Tamil Nadu. Sample size of the study is 50, which includes both male and female students within the age range of 14-17 years.

Sampling technique: A purposive sampling technique was used in this study.

Mode of data collection: Both online and offline modes.

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Measures: The Social Media Addiction Scale—Student Form (SMAS-SF) 29 items and 5 point likert scale(Cengiz Sahin 2018) and the Academic Performance Scale (APS) 8 items 5point likert by Christopher Mc Gregory (2015)scale tools were used in this study to collect data.

Results

Table 1: Tests of normality

Variable	N	Mean	Skewness	Kurtosis
Social media addiction	50	89.58	-0.788	-0.086
Academic performance	50	26.8	-1.077	1.374

Table 1 shows the result of normality testing for the study variables. The skewness value of social media addiction and Academic performance are accordingly -0.788 and -1.077 lies between -2 to +2. The kurtosis value of social media addiction and academic performance are accordingly -0.86 and 1.374 also lies between – 7 to +7. It shows that data are normally distributed. So, this study adopted parametric analysis.

Table 2: Correlations between social academic performance and academic performance

Variables	**N**	**Mean**	**SD**	**r value**
Social media addiction	50	89.58	24.394	0.196
Academic performance	50	26.78	2.359	

Table 2 shows the result of Pearson correlation result for the study variables and it shows that there is ano significant relationship betweensocial media addiction and academic performance (0.196). And a very weak positive correlation between social media addiction and academic performance.

Discussion

The study examine the relationship between social media addiction and academic performance among young adults. To use the Pearson's correlation to assess the relationship between social media addiction and academic performance. The result indicate that there is no significant relationship between social media addiction and academic performance. Though

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there is a weak positive correlation, indicating the students with higher level of social media addiction tend to have slightly higher academic performance this relationship is not strong enough to be statistically significant. Therefore social media addiction is indirectly related to academic performance.

Conclusion

The finding of this study reveals that there is a no significant relationship between social media addiction and academic performance. This meanssocial media addiction may increase academic performance slightly. But this relationship is very weak.

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EMPATHY AND PERCEIVED SOCIAL SUPPORT OF STUDENTS STUDYING IN SOCIAL SCIENCE

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Abstract

This study aims to investigate the relationship between empathy and perceived social support among PG students who studied in social science subjects. The quantitative and correlation research design was adopted in this study. The purposive sampling technique consisted of 56 students studying in social science. Appropriate tools measured the variables of the study. The result revealed that the relationship between empathy and PSS is non-significant. There is no gender difference in empathy and perceived social support. Students from rural areas are high in perspective-taking but not in other domains.

*Keywords****:*** *Perceived social support, empathy, social science students*.

Introduction

Perceived social support (PSS) and empathy play an important role in students' social development; they make a barrier-free learning environment for college students. The phenomenon of perceived social support is the perception about the relationships and incorporates perceived support obtained from friends, family, or any social system. Empathy promotes a trustful relationship, educational inclusivity, and a sense of continuity of adult students in society and other circumstances; it also made conflict-free education in colleges and other educational areas. (Panagou and Macbeth, 2024) investigate the indirect effects of ACEs on adults' mental health using affective empathy and PSS. The investigation discovered that PSS predicts 43% of subjective well-being obtained from 33 male and 54 female senior students studying at Erzincan University (Fikret, 2010). Emotional neglect was the only type of adversity that was strongly correlated with both aspects of empathy. Other research indicates that perceived social support correlates with favorable outcomes such as better mental health, improved coping skills, and overall well-being (Cohen & Wills 1985).The research found no

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significant gender differences and a positive correlation on perceived social support, self-esteem, and resilience among Indian young adults (Aditi, 2023). The evidence has found a mean difference in empathy levels between males and females (Park *et al.*, 2015; Kalliopuska, 1986; McDonnell, 2022). The literature investigated different outcomes in those who received social support and perceived social support (Uchino, 2009). Individual perception of social support can enlarge through their early familial support communication, attachment style, and personality (Anders & Tucker, 2000); as individuals get older, this can have a greater impact on their physical and mental health. The evidence of literature studies has indicated that empathy and perceived social support are the critical values to college students (Pamukçu & Meydan, 2010; Valente, 2016).

Objectives of the study

The main objective of the study is to investigate the correlation betweenempathy and perceived social support of students studying in social science subjects and find out any differences in the perceived social support and empathy of students who have pursued higher education in social science subjects with respect to their socio-demographic details.

Methodology

The research followed a quantitative and correlation research design that is explanatory in nature to study "Empathy and Perceived Social Support of Students Studying in Social Science Subjects." A total of 56 participants were purposively selected from PG students who have studied in social science subjects at MS University departments. The students were aged between 20 and 24 years old and comprised both men (n=25) and women (n=31). The data were collected through sociodemographic variables such as gender and place of living. Cohen et al. (1985) administered the Interpersonal Support Evaluation List (ISEL) to measure perceived social support, and the subject's empathy was measured through the Interpersonal Reactivity Index (IRI) developed by Mark H. Davis (1983). Data were analyzed using Statistical Package for Social Sciences software (SPSS 23.0).

Result and data analysis

To analyze the collected data, the researchers did a normality test, Carl Pearson's correlation method, and an independent sample T-Test using SPSS version 23.0. The normality test found the distribution of 56 participants' perceived social support (mean=32.55, SD=5.28,

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skew=.284, Kurt=-.131) and empathy (mean=65.01, SD=18.67, skew=-.510, Kurt=-.970) is normal.

The Pearson's correlation was used to find the statistical relationship of variables; fantasy shows strong correlations with empathy concern ($r = 0.724$, $p < 0.01$), perspective taking ($r = 0.712$, $p < 0.01$), and personal distress ($r = 0.664$, $p < 0.01$), but not with the domains of PSS. Empathy concerns very strongly correlate with perspective taking ($r = 0.655$, $p < 0.01$) and personal distress ($r = 0.554$, $p < 0.01$), but not with the domains of PSS. Perspective taking strongly correlates with personal distress ($r = 0.648$, $p < 0.01$), but not with the domains of PSS. Personal distress does not correlate with domains of PSS. Appraisal strongly correlates with belonging ($r = 0.399$, $p < 0.01$) and tangible ($r = 0.509$, $p < 0.01$). Belonging strongly correlates with tangible ($r = 0.638$, $p < 0.01$).

Table 1: Carl Pearson's correlation matrix of the domains PSS and empathy domains

	Fantasy	Empathy Concern	Perspective Taking	Personal Distress	Appraisal	Belonging	Tangible
Fantasy	1	.724**	.712**	.664**	.130	-.007	.032
Empathy Concern		1	.655**	.554**	.164	.044	-.051
Perspective Taking			1	.648**	-.011	-.035	-.042
Personal Distress				1	.220	.102	.004
Appraisal					1	.399**	.509**
Belonging						1	.638**
Tangible							1

An independent sample t-test was tried to find the mean differences of the demographic details. It shows that there was no significant difference in domains of empathy levels and domains of PSS levels and between males and females (p-value > 0.05). The T-test showed students living in rural areas had a higher perspective-taking score ($M = 17.30$, $SD = 4.31$) compared to students living in urban areas ($M = 14.13$, $SD = 6.25$) with a significant t-value of -

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2.25 ($p < 0.05$), and there was no significant difference in other domains of empathy and domains of PSS with regard place of living (p-value > 0.05).

Table 2: T- value of gender and place of living regarding domains of empathy and PSS

Variables	Gender	N	Mean	S.D	T-value	Place	N	Mean	S.D	T-value
Fantasy	Males	25	15.76	5.76	-.20^{ns}	Urban	23	15.13	5.23	-.89^{ns}
	Females	31	16.06	5.53		Rural	33	16.48	5.83	
Empathy Concern	Males	25	17.64	5.32	1.24^{ns}	Urban	23	15.57	5.27	-1.21^{ns}
	Females	31	15.81	5.57		Rural	33	17.36	5.59	
Perspective Taking	Males	25	15.96	5.33	-.05^{ns}	Urban	23	14.13	6.25	-2.25*
	Females	31	16.03	5.50		Rural	33	17.30	4.31	
Personal Distress	Males	25	16.12	5.74	-.44^{ns}	Urban	23	16.04	5.27	-.50^{ns}
	Females	31	16.74	4.74		Rural	33	16.76	5.15	
Appraisal	Males	25	10.16	2.59	-.70^{ns}	Urban	23	11.22	2.43	2.19^{ns}
	Females	31	10.61	2.20		Rural	33	9.85	2.19	
Belonging	Males	25	11.28	1.92	-.18^{ns}	Urban	23	11.48	1.97	.40^{ns}
	Females	31	11.39	2.29		Rural	33	11.24	2.23	
Tangible	Males	25	10.52	2.00	-.97^{ns}	Urban	23	11.04	1.98	.76^{ns}
	Females	31	11.03	1.90		Rural	33	10.64	1.93	

Discussion

The current study tried to find out the relationship between empathy and perceived social support among students who have studied postgraduate social science courses at MS University. Pearson's correlation discovered that the relationship between domains of empathy and domains of perceived social support was non-significant (p-value > 0.05). The study also found that there are no differences in gender regarding variables, but students from rural areas were better at understanding others perspectives than those from urban areas but not in other domains of empathy and domains of Perceived social support This might be because rural communities tend to have closer social ties. It found that people who engage in more fantasy tend to have higher empathy. This connection didn't extend to feeling more supported socially. While different

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aspects of empathy, such as empathy concern, perspective-taking, and personal distress, were strongly linked to each other, they weren't connected to how much social support people felt. The Perceived social support was strongly linked with feeling a sense of belonging and tangible. In such previous studies, a significant relationship with empathy was shown, but in this study, no significant relationship between the study variable was revealed. Therefore, the study's alternative hypothesis was rejected.

Conclusion

The overall conclusion is that there is no significant relationship between empathy and perceived social support among social science students at MS University. The different domains of empathy, including empathic concern, perspective-taking, and personal distress, are strongly interconnected, but they are not connected to perceived social support. Compared to urban students, rural students showed better perspective talking because of stronger social relationships in rural areas. While empathy was positively correlated with higher fantasy levels, perceived social support failed to enhance as a result.

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EFFECT OF SPECIFIC DRILL TRAINING ON MOTOR FITNESS COMPONENTS VARIABLES ON SCHOOL LEVEL HANDBALL PLAYERS

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Abstract

The objective of this study was to examine the impact of specific drill training on motor fitness components, particularly agility, in handball players. To achieve this, thirty school-level handball players from Madurai District, Tamil Nadu, India, were selected. The participants, aged between 13 and 15 years, were randomly assigned to either an experimental or a control group, each consisting of 15 players. The experimental group underwent specific drill training, while the control group did not receive any specialized training. The training program was conducted for six weeks, with sessions held six days a week. Specific drill training served as the independent variable, whereas agility, a key motor fitness component, was the dependent variable. The pre-test and post-test data of both groups were analyzed using the 't' test statistical technique. The results indicated a significant improvement ($P \leq 0.05$) in agility among the players in the experimental group, confirming the effectiveness of the specific drill training program.

Keywords: Specific Drill Training, Agility

Introduction

Handball is a globally popular sport with a rich history of development. Though some theories suggest that a similar game was played in ancient Egypt over 4,000 years ago, the modern version of handball originated in Northern Europe during the late 19th century. Countries such as Denmark, Germany, Norway, and Sweden played a crucial role in shaping the game as it is known today. The name "Handball" is derived from the Danish language and was later adapted into German.

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The first formal rules of modern handball were drafted by Dane Holger Nielsen in 1898 and published in 1906. As the sport gained traction across Europe, modifications were made to suit different climates and playing conditions. This led to the introduction of indoor handball, making the game faster and more dynamic. Today, handball is recognized as one of the fastest-paced sports in the world, continuing to grow in popularity across various regions.

Statement of the Problem

The primary objective of this study was to assess the effect of specific drill training on motor fitness components, particularly agility, among handball players.

Hypothesis

The study was based on the following hypothesis:

1. Specific drill training would lead to a significant improvement in motor fitness components, particularly agility, among handball players.

Methodology

This section outlines the procedures followed in the study, including the selection of participants, variables, testing measures, data collection, training protocol, and statistical analysis. The reliability of the data and instruments used was ensured through standardized procedures.

Analysis of Data: The collected data on agility was analyzed to determine the impact of specific drill training. Thirty school-level handball players were divided into two groups: an experimental group (N=15) and a control group (N=15). The statistical analysis was conducted using the 't' test to assess significant differences between the pre-test and post-test results.

Table 1: COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST- TEST MEANS OF EXPERIMENTAL GROUP ON AGILITY

Group	Mean	Standard Deviation	Mean Difference	Standard Error Mean	t- Ratio
Pre test	10.55	0.86	0.25	0.05	4.51*
Post test	10.29	0.91			

In Significant at 0.05 level of confidence (2.14), 1 and 14.

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Table 1 presents the calculated 't' ratio comparing the pre-test and post-test mean values for agility among school-level handball players. The mean scores for the experimental group before and after the training were 10.55 and 10.29, respectively. The obtained 't' ratio of 4.51 exceeded the critical table value of 2.14, indicating statistical significance at the 0.05 level of confidence for degrees of freedom (1, 14). These findings confirm that specific drill training had a significant positive impact on improving agility in the experimental group.

Table 2: COMPUTATION OF 't'-RATIO BETWEEN PRE AND POST-TEST MEANS OF CONTROL GROUP ON AGILITY

Group	Mean	Standard Deviation	Mean Difference	Standard Error Mean	t- Ratio
Pre test	10.67	0.95	0.067	0.04	1.41
Post test	10.60	1.02			

Table 2 presents the computed 't' ratio comparing the pre-test and post-test mean values for agility in the control group of school-level handball players. The mean values for the pre-test and post-test were 10.67 and 10.60, respectively. The obtained 't' ratio of 1.41 was lower than the critical table value of 2.14, indicating that the result was not statistically significant at the 0.05 level of confidence for degrees of freedom (1, 14). These findings suggest that there was no notable improvement in agility for th The bar diagram shows the mean values of pre-test agility of experimental group and control group.

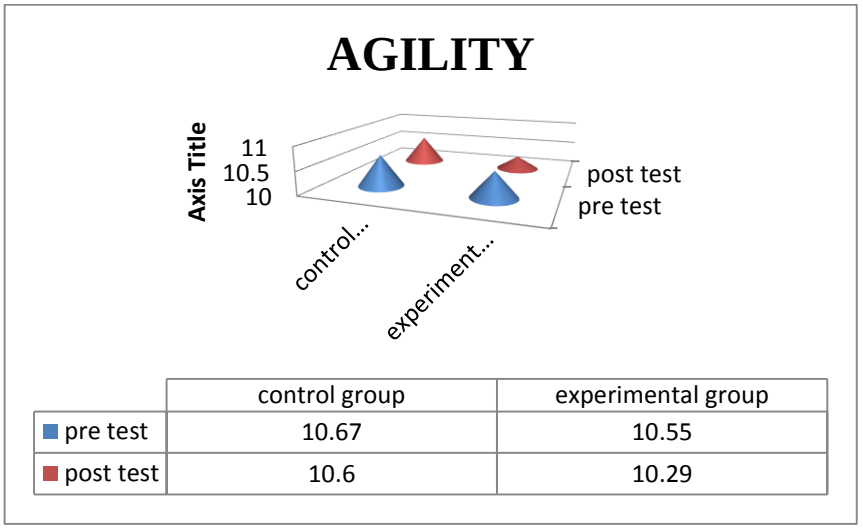

Figure 2: MEAN VALUES OF EXPERIMENTAL AND CONTROL GROUPS ON LEG EXPLOSIVE POWER

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Discussion on the Findings

The findings of this study demonstrate that specific drill training significantly enhanced selected motor fitness components, particularly agility, among handball players. This improvement can be attributed to the structured nature of the drill training, which effectively contributed to the players' performance development. The results indicate a notable enhancement in speed, agility, and explosive power in the experimental group when compared to the control group. These findings are consistent with previous studies conducted by Tomislav Krističević *et al.* (2016) and Shaik *et al.* (2015), which also highlight the positive impact of specific drill training on athletic performance.

Conclusion

1. Based on the findings and within the limitations of this study, it is evident that implementing specific drill training contributes to the improvement of motor fitness components in handball players.
2. A progressive enhancement in the selected fitness variables was observed in the experimental group after eight weeks of training. Additionally, the training program proved beneficial in further developing other motor fitness factors, particularly agility.

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RELATIONSHIP BETWEEN FEMINIST ATTITUDES AND SELF-ESTEEM AMONG WOMEN IN HIGHER EDUCATION

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Abstract

Feminist attitudes play a crucial role in shaping self-perception and confidence, making it essential to understand their influence on self-esteem. The present study examines the relationship between feminist attitudes and self-esteem among women in higher education in Tirunelveli.The study utilized a correlational research design with a sample of 50 women selected through a convenience sampling method. Data were collected using the Attitudes Toward Women Scale by Spence & Helmreich, (1978) and the Self-Esteem Scale by Upinder Dhar & Santosh Dhar (2009). The findings revealed a significant positive relationship between feminist attitudes and self-esteem, suggesting that stronger feminist beliefs are associated with higher self-esteem levels, with feminist attitudes serving as a predictor of self-esteem among women in higher education. These results highlight the importance of gender-equitable attitudes in fostering psychological well-being and confidence among women.

*Keywords****:*** *Feminist attitudes, Self-esteem, Women*

Introduction

Feminist attitudes refer to an individual's beliefs about gender equality, roles, and rights, influencing perceptions of women's social, political, and economic status (Spence & Hahn, 1997). Self-esteem, on the other hand, is the feeling of self-worth that results from consistently meeting expectations for personally valued activities (James W., 1890). Previous studies have shown that womanist identity attitudes positively influence self-esteem and reduce perceptions of gender bias, highlighting the role of identity development in psychological well-being (Ossana *et al.,* 1992). Similarly, Weitz (1982) found that feminist consciousness-raising enhances self-esteem and reduces depression, suggesting its therapeutic benefits. Tiggemann *et al.* (1999) investigated the relationship between weight concern, self-esteem, and feminist

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identity across the lifespan, revealing that stronger feminist identification was linked to higher self-esteem and lower body dissatisfaction.

Building on these findings, the present study aims to further explore the relationship between feminist attitudes and self-esteem among women in higher education. By examining whether stronger feminist beliefs are associated with higher self-esteem levels, this research seeks to provide deeper insights into the psychological benefits of feminist identity. The results may contribute to a broader understanding of how gender beliefs shape self-perception and well-being among women.

Methodology

The primary aim of this study is to examine the relationship between feminist attitudes and self-esteem among women in higher education in Tirunelveli. The study seeks to explore how feminist attitudes correlate with self-esteem among female students. The hypothesesproposed are (H1) There is a significant relationship between feminist attitudes and self-esteem, and (H2) feminist attitudes significantly predict self-esteem. A convenience sampling method was employed, with a total of 50 women in higher education from Tirunelveli participating in the study. Data collection was conducted through an online Google Form, and participants were informed about the study before providing their responses.

Two standardized measures were used in this study:

1. Attitudes Toward Women Scale (ATWS) developed by Spence and Helmreich (1978), which consists of 25 items, 4-point likert scale, measuring feminist attitudes, with a high score indicates a profeminist, egalitarian attitude, while a low score indicates a traditional, conservative attitude. The scale demonstrates high internal consistency (Cronbach's $\alpha = 0.85$ to 0.90) and strong construct validity, making it a reliable measure of attitudes toward gender equality.

2. Self-Esteem Scale by Upinder Dhar and Santosh Dhar (2009), used to assess self-esteem. The scale has a reliability coefficient of 0.87 and a validity score of 0.93, indicating strong psychometric properties.

This study adopts a correlational research design to analyse the extent of the relationship between feminist attitudes and self-esteem. Data analysis was conducted using IBM SPSS

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(version 23.0) for statistical computations, including normality testing and correlation analysis. Pearson's correlation coefficient and regression analysis was employed to test the hypotheses.

Results

Table 1: Normality testing of the study variables

Variables	N	Mean	Skewness	Kurtosis
Feminist attitudes	50	48.92	0.25	-1.24
Self-esteem	50	86.58	-0.98	2.55

Table 1 presents the results of normality testing for the study variables. The skewness and kurtosis values fall within the acceptable range of -2 to +2 and -7 to +7, respectively, as suggested by West et al. (1996). This indicates that the data are normally distributed, allowing for the use of parametric statistical tests.

Table 2: Correlation between feminist attitudes and self-esteem

Variables	N	Mean	SD	r value
Feminist attitudes	50	48.92	11.62	
Self-esteem	50	86.58	16.08	0.484**

$p < 0.01$

Table 2 shows the correlation between feminist attitudes and self-esteem. The results indicate a significant relationship ($r = 0.484$, $p < 0.01$), suggesting that higher feminist attitudes are associated with higher self-esteem among women in higher education.These findings support H1, confirming that feminist attitudes positively correlate with self-esteem.

Table 3: Regression analysis for feminist attitudes and self-esteem

	Unstandardized Coefficient		Standard Coefficient	t
	B	Standard error	β	
(constant)	53.85	8.782		6.132
Feminist attitudes	0.669	0.175	0.484	3.828
	R^2=0.234	F=14.653	P<0.05	

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Table 3 presents the linear regression analysis predicting Self-Esteem based on Feminist Attitudes. The results indicate an R^2 value of 0.234, meaning that 23.4% of the variance in Self-Esteem is explained by Feminist Attitudes. The regression coefficient ($\beta = 0.484$) is statistically significant ($F = 14.653$, $p < 0.05$). This confirms that Feminist Attitudes significantly predict Self-Esteem. Therefore, the hypothesis is supported.

Discussion

The findings of this study indicate a significant relationship between feminist attitudes and self-esteem among women in higher education. This suggests that women who hold stronger feminist beliefs tend to have higher levels of self-esteem.The results align withWeitz (1982), who found that feminist consciousness-raising enhances self-esteem, reduces depression, and fosters a sense of control. By externalizing blame and increasing agency, participation in these groups provides psychological benefits similar to therapy, promoting self-worth and well-being.

However, while feminist attitudes appear to contribute to higher self-esteem, other factors such as social support, personal experiences with discrimination, and cultural influences may also shape this relationship. Future research should explore these additional variables to gain a more comprehensive understanding of how feminist attitudes impact self-esteem.

To further support women in higher education, institutions can implement awareness programs and discussions on gender equality, fostering an environment where feminist attitudes are encouraged. These initiatives may help strengthen self-esteem and overall psychological well-being among female students.

Conclusion

In conclusion, this study highlights a significant predictive relationship between feminist attitudes and self-esteem among women in higher education. The findings suggest that embracing feminist beliefs may enhance self-worth and confidence, reinforcing the importance of gender awareness and empowerment in academic settings. Promoting feminist awareness and self-empowerment programs may help women navigate societal challenges, ultimately improving their psychological well-being.

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RELATIONSHIP BETWEEN BODY IMAGE AND EATING ATTITUDE AMONG ADOLESCENT GIRLS

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Abstract

Body image concerns have become a growing psychological issue, leading to disordered eating behaviors. This study explores the relationship between body image and eating attitudes among adolescent girls. It examines how body image perceptions influence eating behaviors. The study utilizes a correlational design with a sample of 51 adolescent girls, employing the Body-Esteem Scale for Adolescents and Adults (BESAA) and the Eating Attitudes Test (EAT-26) for data collection. Findings indicate a significant relationship between body image and eating attitudes, highlighting the need for greater awareness and intervention strategies to address these concerns among adolescents.

*Keywords****:*** *Body image, Eating attitude, Adolescent girls*

Introduction

Body esteem (BE) refers to self-evaluations of one's body or appearance. Eating disorders are serious illnesses marked by severe disturbances to one's eating behaviors, Mendelson *et al.,* and Morton *et al.,* (2001). Although many people may be concerned about their health, weight, or appearance from time to time, some people become fixated or obsessed with weight loss, body weight or shape, and controlling their food intake. These may be signs of an eating disorder. The study "Impact of Positive Body Image on Eating Attitude and Social Anxiety of Young Adults, Post Pandemic, Neha, Ms *et al.,* (2024) found that greater body appreciation reduces unhealthy eating and social anxiety. It highlighted post-pandemic lifestyle changes, media influence, and beauty standards. With the plethora of technologies, it is crucial to understand how media usage affects the adolescent girls with regard to their body image concerns. The study showed the adolescent girl's perception about their body esteem, to find out whether they are prone to develop an eating disorder and find out if media usage influences their perception about their body image or it doesn't.

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Methodology

This research aims to examine the relationship between body image and eating attitudes among adolescent girls, focusing on how their perceptions of body image influence eating behaviors. The study **objectives** include assessing body image perceptions, examining eating attitudes, and exploring their relationship. The **hypotheses** are H_1 is there will be a significant relationship exists between body image perception and eating attitudes. H_2 is there will be significant difference between traditional and modern grooming style. A purposive sample of 51 participants from local schools in Kozhikode, Kerala was used, with data collected through Google Forms questionnaires and consent obtained from both participants and their guardians. Correlation analyses were conducted to assess differences in body image and eating attitudes and t-test analyzed based on grooming style (modern vs. traditional). Data collected using two scales: the Body-Esteem Scale for Adolescents and Adults (BESAA) it is to assess body image perceptions, its dimensions are appearance, weight, attributions and the Eating Attitudes Test (EAT-26) to measure eating attitudes and its dimensions are dieting, bulimia & food preoccupation and oral control. The BESAA consists of 30 items with a 5-point Likert scale, while the EAT-26 contains 26 items rated on a 6-point scale. The research design is correlation; with data analyzed using SPSS for normality testing, correlation and t test.

Results

Table 1: Normality testing of the study variables

Variables	N	Mean	Skewness	Kurtosis
Body esteem	51	52.33	0.280	-0.317
Eating attitudes	51	12.04	0.790	-0.461

Table 1 presents the results of normality testing for the study variables. The skewness and kurtosis values for body esteem are 0.280 and -0.317, respectively. The skewness and kurtosis values for eating attitudes are 0.790 and -0.461, respectively. These values fall within the acceptable range of -2 to +2 for skewness and -7 to +7 for kurtosis, indicating that the data follow a normal distribution. No outliers were detected. Therefore, parametric tests will be used for hypothesis testing in this study.

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Table 2: Correlation between study variable dimensions.

	Dieting	Bulimia & food preoccupation	Oral control	Appearance	Weight	Attribution
Dieting	1	0.475**	0.380**	-0.204	-0.308*	0.098
Bulimia & food pre occupation		1	0.524**	-0.243	-0.315*	-0.021
Oral control			1	0.003	-0.122	-0.128
Appearance				1	0.734**	0.312*
Weight					1	0.327*
Attribution						1

The table shows that there is a significant correlation between dieting and bulimia & food preoccupation ($r = 0.475$, $p < 0.01$), as well as between dieting and oral control ($r = 0.380$, $p < 0.01$). Additionally, weight shows a significant correlation with appearance ($r = 0.734$, $p < 0.01$) and attribution ($r = 0.327$, $p < 0.05$). A significant negative correlation is observed between dieting and weight ($r = -0.308$, $p < 0.05$), and between bulimia & food preoccupation and weight ($r = -0.315$, $p < 0.05$). These results support the hypothesis (H_1) is accepted and indicating key relationships among the study variables.

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Dimensions	Preferred grooming style	N	Mean	Standard deviation	t value
Dieting	Modern	25	6.16	5.550	0.285
	traditional	26	5.69	6.143	
Bulimia and preoccupation	Modern	25	1.76	1.855	-1.044
	traditional	26	2.54	3.252	
Oral control	Modern	25	3.04	3.409	-1.595
	traditional	26	4.85	4.567	
Appearance	Modern	25	25.04	5.571	1.388
	traditional	26	22.81	5.899	
weight	Modern	25	18.36	6.344	0.253
	traditional	26	17.88	7.050	
attribution	Modern	25	10.40	4.518	0.145
	traditional	26	10.23	3.777	

Table 3: t- test between traditional and modern grooming style

A t-test was conducted to assess the significant difference in body image and eating attitudes based on preferred grooming style, with means, standard deviations, and t-values presented in the table above. The t-values for dieting, bulimia and preoccupation, oral control, appearance, weight, and attribution indicate no significant differences between individuals with modern and traditional grooming styles. The highest t-value was observed for appearance (1.390), while the lowest was for attribution (0.145). These findings suggest that preferred grooming style does not significantly impact body image and eating attitudes.

Discussion

The study findings suggest that body image perceptions significantly related with eating attitudes among adolescent girls. The results indicate that dieting behaviors are strongly associated with bulimia, food preoccupation, and oral control in EAT 26 scale. A notable correlation between body weight, appearance, and self-attribution was also observed in body esteem scale (BESAA), reinforcing the idea that body dissatisfaction can lead to unhealthy

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eating patterns. Interestingly, no significant differences were found based on preferred grooming styles (modern vs. traditional), suggesting that body image concerns and eating attitudes persist across different personal styles.

While the study confirms the role of body image in shaping eating behaviors, it also highlights the need to address subclinical and undiagnosed variants of eating disorders that may go unnoticed in traditional assessments.

Conclusion

This study underscores the critical relationship between body image and eating attitudes among adolescent girls and there is no difference in modern and traditional grooming life style.

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ADVANCED RESEARCH WRITING WITH AI IN PHYSICAL EDUCATION AND SPORTS SCIENCE

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Abstract

The integration of Artificial Intelligence (AI) in research writing has significantly enhanced the quality, efficiency, and accessibility of academic work. In the field of Physical Education and Sports Science, AI tools facilitate data analysis, literature reviews, and manuscript preparation. This paper explores the role of AI in research writing, focusing on its applications in Physical Education, Sports Science, and allied disciplines. It discusses methodologies, benefits, challenges, and ethical considerations in AI-driven research writing while adhering to APA citation guidelines. Furthermore, this paper highlights the impact of AI-driven tools on the academic community, fostering innovation and precision in research while addressing potential limitations and ethical concerns.

Introduction

The emergence of AI has transformed academic research across various disciplines, including Physical Education and Sports Science. AI tools such as Natural Language Processing (NLP) models, data analysis algorithms, and automated citation managers have streamlined research processes. These technological advancements have reduced the time and effort required for researchers to analyze data, generate insights, and structure their findings into comprehensive academic documents. AI-driven research tools not only aid in enhancing productivity but also contribute to the accuracy of data interpretation. As research in Physical Education and Sports Science continues to evolve, AI provides innovative solutions to longstanding challenges, such as complex data management, performance analysis, and personalized training methodologies.

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Role of AI in Research Writing AI plays a crucial role in research writing by assisting in various aspects, including:

- **Automated Literature Reviews**: AI tools like ChatGPT, Semantic Scholar, and Elicit assist researchers in analyzing vast amounts of scholarly articles, summarizing key findings, and identifying research gaps efficiently. This feature significantly reduces the time required for extensive literature surveys, allowing researchers to focus on critical analysis and synthesis.
- **Plagiarism Detection**: AI-powered tools such as Turnitin, Grammarly's plagiarism checker, and Copyscape ensure academic integrity by identifying similarities in texts and suggesting improvements. This helps researchers maintain originality and adhere to ethical publishing standards.
- **Language Enhancement**: AI-based language processing tools, including Grammarly and Hemingway Editor, refine research writing by improving clarity, coherence, and grammatical accuracy. These tools are particularly beneficial for non-native English speakers, enabling them to articulate their ideas more effectively.
- **Data Analysis**: Machine learning models and AI-driven statistical tools like SPSS, MATLAB, and Python libraries (e.g., Pandas and SciPy) process complex sports science datasets. These tools enhance the accuracy of performance metrics, biomechanics research, and physiological studies by identifying patterns and correlations that might otherwise be overlooked.
- **Automated Citation Management**: Reference management tools like Zotero, EndNote, and Mendeley assist researchers in organizing citations according to APA, MLA, and other formats. These tools ensure consistency in referencing and prevent citation errors.

AI Applications in Physical Education & Sports Science

1. **Performance Analysis**: AI-driven software such as Dartfish, Hudl, and Kinovea enables coaches and researchers to analyze athlete performance through video-based biomechanical analysis. These tools offer real-time feedback, assisting athletes in refining their techniques and improving efficiency in movement patterns.
2. **Injury Prevention**: AI assists in predicting injuries by utilizing wearable technology, motion sensors, and machine learning algorithms to analyze stress loads on the body.

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Predictive modeling techniques help sports professionals design personalized injury prevention programs tailored to an individual athlete's biomechanics and fitness level.

3. **Personalized Training**: AI-based training programs, such as Whoop and Fitbit Coach, adapt workout routines to an individual's needs by analyzing real-time physiological data. These tools help optimize training schedules, prevent overtraining, and maximize athletic performance.
4. **Educational Enhancement**: AI-powered learning platforms, including adaptive learning systems and virtual simulation technologies, provide personalized learning experiences for students in Physical Education. These platforms offer interactive modules, real-time assessments, and feedback mechanisms to enhance the teaching and learning process.

Methodology

This research employs a qualitative approach by analyzing existing literature, case studies, and AI-driven research models. Data sources include academic journals, AI-integrated research tools, and expert opinions from sports scientists, educators, and AI specialists. The methodology involves reviewing the effectiveness of AI tools in research writing and evaluating their impact on the quality of academic publications. Additionally, this study explores the ethical implications of AI-generated content, focusing on its influence on academic integrity and originality.

Findings & Challenges The integration of AI into research writing has resulted in several significant findings:

- **Improved Efficiency**: AI-driven tools have drastically reduced the time required for data analysis, literature reviews, and manuscript preparation, allowing researchers to focus on critical thinking and knowledge generation.
- **Enhanced Accuracy**: AI algorithms improve the precision of data interpretation, minimizing human errors and ensuring consistency in research findings.
- **Accessibility & Inclusivity**: AI tools bridge the language gap for non-native English-speaking researchers by offering real-time translation, language enhancement, and grammar correction features.

Despite these benefits, several challenges persist:

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- **Ethical Concerns**: AI-generated content raises issues related to authenticity, authorship, and potential plagiarism. Researchers must exercise caution in using AI tools to ensure their work remains original and ethically sound.
- **Data Bias**: AI models may reflect biases present in training datasets, leading to skewed research interpretations. Ensuring diverse and representative data sources is crucial to maintaining research integrity.
- **Dependency on AI**: Over-reliance on AI tools may hinder the development of critical thinking and original writing skills among researchers. A balanced approach is necessary to leverage AI while preserving human expertise in research writing.

Conclusion & Future Directions

AI is revolutionizing research writing in Physical Education and Sports Science by enhancing efficiency, accuracy, and accessibility. As AI technology continues to evolve, its role in academic research is expected to expand, offering even more advanced capabilities for data analysis, predictive modeling, and automated content generation. However, ethical considerations, bias mitigation, and academic integrity must remain at the forefront of AI adoption in research. Future developments should focus on the responsible integration of AI in academia, ensuring that it serves as a complementary tool rather than a substitute for human expertise. By embracing AI-driven research tools while maintaining rigorous ethical standards, the field of Physical Education and Sports Science can achieve new heights in knowledge creation and dissemination.

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A STUDY ON PSYCHOSOCIAL PROBLEMS FACED BY THE CHILDREN IN RESIDENTIAL HOMES

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Abstract

This study aims to explore the psychosocial challenges faced by children residing in residential homes in Tirunelveli. A representative sample of 60 female children, aged 14 to 24 years, was selected for the study. Data was primarily collected through structured questionnaires and personal interviews, allowing for a comprehensive understanding of the children's experiences. The study found that the majority of participants were aged between 17 and 19 years and belonged to the BC (Backward Class) community. Abandonment was the leading reason for their admission, with a significant number of children lacking siblings. Most participants reported monthly visits from their parents, and many indicated that they were sometimes affected by the schedule of the residential home. Additionally, conflicts with the daily routine were reported by some, though half of the children reported no conflicts at all. This study highlights the complex psychosocial issues faced by children in institutional care and underscores the need for targeted interventions to address their emotional and social well-being.

Keywords: Psycho-social Problems, Children's Home, Caregivers

Introduction

Children in residential homes often face a range of psychosocial problems that significantly impact their emotional and psychological development. Psychosocial issues in residential homes include feelings of abandonment, low self-esteem, and emotional instability. Children may struggle with attachment issues due to separation from their biological families, which can lead to difficulties in forming healthy relationships. Moreover, they may experience isolation from society, facing discrimination or marginalization due to their circumstances. Additionally, the lack of appropriate psychological support and care can exacerbate mental health issues like anxiety and

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depression. In some cases, the overcrowded conditions and institutionalized care can lead to a lack of individualized attention, further deepening emotional and behavioral problems. Addressing these challenges requires a multi-faceted approach that includes improved care giving, psychological support, and community integration to help these children develop resilience and cope with the difficulties they face.

Objectives

- To study the social demographic details of the respondents
- To identify the psychosocial problems faced by children in residential homes
- To study the living condition of the respondents
- To investigate the role of caregiver in the psychosocial development of children
- To provide recommendations for improving psychosocial support in residential home

Methodology

The data for this study was gathered from a sample of children experiencing psychosocial challenges in residential homes in Tirunelveli. A representative sample of 60 female children was chosen for the study. Primary data was collected through direct interactions with the participants, utilizing structured questionnaires and personal interviews. This approach facilitated the collection of firsthand information regarding their psychosocial stress, social isolation, stigmatization, caregiver-child relationships, and other related factors. The data collection process was carefully designed to capture the children's experiences and challenges, ensuring a thorough understanding of their conditions.

Table 1: Socio Demographic details of the respondents

Age	From 14-16	17-19	20-24		Total
	25%	42%	33%		100%
Community	SC	BC	ST	OC	
	22%	33%	2%	43%	100%
Reason for admission	Parent death	Abandonment	Abuse		
	17%	58%	25%		100%
Siblings	Having siblings	Donothave	Staying with the		
			siblingsat home		
	25%	42%	33%		100%
Parents' visit	Monthly once	Twice	weekly		

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	34%	66%	0		100%
Affected by the schedule	Sometimes	Often	Always		
	63%	12%	17%		100%
Conflictfor Daily	Sometimes	Always	Never		
	42%	8%	50%		100%

The majority of the children in the study were aged between 17-19 years (42%), belonged to the BC (Backward Class) community (33%), and were admitted due to abandonment (58%). Most children (42%) did not have siblings, and the majority of parents visited once a month (66%). Additionally, a significant portion (63%) reported being sometimes affected by the schedule of the home, and 50% stated that they never faced conflicts with their daily routine.

Table 2: PSYCHO SOCIAL WELLBEING ASSESSMENT OF THE RESPONDENTS

Friends' relation	Girls have friends relation	Don'thave	Notsure		Total
	58%	25%	17%		100%
Feeling of themselve	Thinks positivel	Thinksbetter	Thinksbad /worst		
	25%	40%	55%		100%
Adapted to the situation	Comfortable	Discomfortable			
	25%	75%			100%
Mingle with Other children	Easily Mingle	Takes time	Donotmingle		
	50%	20%	30%		100%
Feel safety And secured	Feel safety	Dissatisfied			
	75%	25%			100%

From the above table shows the psychosocial wellbeing assessment of the respondents. 58% of the respondents have friends. 40% of them think positive about themselves. Only 25% of the respondents feel comfortable and adapted to the situation. 50% of them easily mingle with others. Large number of girls 75% feel safety and secured.

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Table 3: CAREGIVER CHILD RELATIONSHIP

Caregiver respond to the children	Always	Rarely	Never	Total
	60%	40%	0	100%
Handling the difficult situation	Easy	Difficult	Notable	
	45%	30%	25%	100%
Interaction with the children	Rarely	Always	Never	
	35%	50%	15%	100%
Encourage the children to do group activities	Encourage	Discourage	Neglect	
	65%	10%	25%	100%

From the above table it clearly explains the caregiver-child relationship. 25% of them feel free with the caregiver. 60% of them responded by the caregiver. 45% of them handling the difficult situation. 50% of the girls have interaction with the caregiver. The caregivers encourage 65% of them todo group activities

Table 4: RECOMMENDATION FOR IMPROVING CHILD-CAREGIVER RELATIONSHIP

Psychosocial support (frequency)	Often	Now and then	Rarely	Total
	75%	20%	5%	100%
Type of psychosocial support	Peergroup	Workshop	Physical actions	
	60%	20%	20%	100%
Additional forms Or emotional or mental health support	Individual	Group therapy	Emotional resilience workshops	
	30%	30%	40%	100%
Type of training Given to care giver	Mental health support	Trauma informed category	Child development attachment training	
	35%	25%	40%	100%
Suggestion to enhance psychosocial support	Availability	Improve communication	Additional support for trauma recovery	
	30%	20%	50%	100%

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Table 4 shows the recommendation for improving psychosocial support for the children in residential homes. 75% of them need support always. 60% of them need peer group psychosocial support. 40% of them need emotional resilience workshop for better development. 40% of the care givers need child development attachment training. 50% of them needed additional support for trauma recovery.

Conclusion

In conclusion, children residing in residential homes face a multitude of psychosocial challenges that significantly impact their emotional, social, and cognitive development. These challenges, including trauma, attachment issues, social isolation, and a lack of stable family structures, can lead to long-term mental health problems if not addressed appropriately. The findings underscore the importance of providing children with a supportive and nurturing environment, where their psychological needs are met alongside their physical well-being.

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