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Professor (Dr.) S.K. Verma

(31-10-1949 to 02-05-2016)

Founder of Exercise Fitness & Health Alliance, EFHA

Founder of Journal of Exercise Science & Physiotherapy, JESP

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To a Great Teacher, Guide, Mentor, Philosopher & Wonderful Human Being.

You will always be remembered in our heart.

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Mrs. S.Verma
Editor-in-Chief

It is indeed a matter of happiness to declare that the Volume 20, No.1 (January - June), 2024 of Journal of Exercise Science and Physiotherapy (JESP) is released for the readers. This issue of JESP contains abstract of research articles on diverse important aspects of physiotherapy, exercise science, psychology, nutrition and health presented as posters in 3rd Conference on BRICS Exercise & Sports Science (BRICSCESS) held on February 26-29, 2024 at Manav Rachna International Institute of Research and Studies, Delhi NCR (India).

I hope this issue of JESP will help all our readers to get some newer insights into a host of topics related to physiotherapy, exercise science and health fitness.

I thank the researchers who have contributed for the development of Journal of Exercise Science and Physiotherapy.

I would like to expand an invitation to all the exercise science professionals and especially the young research scholars **to submit their manuscripts for publication in JESP.**

I would like to thank all the editorial team members, reviewers and subscribers who are helping in making JESP as one of the leading journal in physiotherapy, sport and exercise sciences and we are looking forward to another successful year and to an exciting future.

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COMPARISON OF CERVICAL CORE STRENGTH AND ENDURANCE USING PRESSURE BIOFEEDBACK AMONG STUDENTS WITH NORMAL NECK POSTURE AND STUDENTS WITH TURTLE NECK SYNDROME

Prachi Gawate[1], Madhura Deshmukh[1], Manibhadra Panda[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India.
   Corresponding Author's Email Id: madhurad1802@gmail.com

Introduction: Turtle Neck Syndrome (TNS) is a neck disorder caused by poor head posture due to computer use and excessive extension of the upper cervical vertebra. Deep cervical flexors (DCF) play a crucial role in maintaining balance and supporting the cervical spine. Impaired DCF can lead to neck pain and altered posture. Deep Cervical Flexors (DCF) exercises can relieve neck pain, maintain proper posture, and improve muscle strength in TNS patients. A study evaluated the effectiveness of pressure-biofeedback guided deep cervical flexor training in Vertical Dexterity Technician operators. Cervicogenic Headache (CGH) patients often experience lower DNF strength and endurance, suggesting the use of DNF strength training with a pressure biofeedback unit could offer a more comprehensive treatment plan.in this study A comparison between students with normal neck posture and those with turtleneck syndrome using pressure feedback to measure cervical core strength and endurance is done.

Method: This observational study included 70(35 having turtle neck syndrome and 35 with normal neck posture) student volunteers from Aurangabad between the ages of 18 to 25 .

Participants were chosen using inclusion and exclusion criteria, and the test method was described to them. They were then asked to provide permission. The subjects CVA, DNF strength and endurance were then assessed.

Results: Data from 70 participants' compare the strength and endurance in normal neck posture and Turtle Neck Syndrome using pressure biofeedback. It was observed that normal neck posture students have better strength and endurance than the Turtle Neck Syndrome.

Conclusion: The study concludes that Pressure Biofeedback guided deep cervical flexors in Normal Neck Posture show better strength and endurance and in Turtle Neck Syndrome there is poor strength and endurance.

Key words: TNS, CVA, DNF, DNF Strength and DNF Endurance

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ASSESSING THE USE OF SMARTWATCHES FOR TRACKING PHYSICAL HEALTH

Nidhi Shrivastava[1], Divya Tripathi[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: nidhisri1107@gmail.com

Introduction: Smartwatches have revolutionized how we monitor physical health, offering real-time insights into vital metrics. This brief explores the effectiveness of smartwatches as tools for tracking health, assessing their impact on well-being.

Methods: This cross sectional study will be conducted on 50 people living in Delhi-NCR. A self administered questionnaire will be used to gather data which will include questions about socio demographic variables, use of smartwatches and physical activity.

Result: The study aims to provide insights into how smartwatches are being used by the population for tracking their physical health.

Conclusion: Advocates should acknowledge and explain that physical education plays a unique role in girls' education that cannot be fulfilled by ad-hoc physical activity, manual work, or informal leisure participation. This is because physical education is characterized by professionally led and organized activities that are developmentally appropriate and carefully sequenced.

Key words: Smartwatches, Physical health, Socio-demographic

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DEVELOPMENT AND ORGANOLEPTIC EVALUATION OF NUTRITIOUS COOKIES INCORPORATING PRUNES AND RAGI

Mahima Raina[1], Gurseen Rakhra[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: rainamahima01@gmail.com

Introduction: This research focuses on the development of nutritious cookies by incorporating prunes and ragi, aiming to enhance both the health profile and sensory attributes of the product. Prunes, rich in antioxidants and fiber, coupled with ragi, a nutrient-dense millet, offer a unique blend of essential nutrients beneficial for bone strength. Ragi, a nutrient-dense millet, adds essential vitamins, minerals, and dietary fiber, offering a gluten-free alternative with potential glycemic control benefits.

Methods: The study investigates optimal formulations to achieve a balance between nutritional content and sensory acceptance, considering factors such as texture, flavor, and appearance. Bone loss in men appears to accelerate from age 50 and is associated with decreased bone formation which may be associated with falling levels of free androgen. High-intensity training maintained over several years must be regarded in women as a risk factor for osteoporosis.

Result: The synergistic combination of prunes and ragi aims to create a functional snack with improved nutritional value, targeting sportsperson seeking a healthier natural supplement for help maintain their bone as well as overall health. The development of these cookies aligns with current trends in promoting sustainable and nutritious food choices, addressing the growing demand for convenient yet health-conscious snacks.

Conclusion: The findings of this research contribute valuable insights to the field of food science and nutrition, offering a novel approach to the creation of delicious and health-promoting baked goods.

Key words: Prune, Ragi, Cookie, Bone Health, sportsperson

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ASSESSMENT OF DIETARY SUPPLEMENTS AND ERGOGENIC AIDS USE AMONG ATHLETES: A REVIEW

Sonal Aswal[1], Kommi Kalpana[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: sonalaswal2001@gmail.com

Introduction: Dietary supplements are commercially available products taken by athletes along with a regular diet. There has been a rise in the use of dietary supplements due to various reasons. It may be challenging to compare certain trends, due to different definitions used in different studies and the lack of distinction between the broad categories of dietary supplements and ergogenic aids. This lack of specificity makes it impossible to evaluate research on various dietary supplements taken by athletes. It is therefore crucial to understand the main factors influencing the use of dietary supplements and ergogenic aids in sports. The objective was to identify the prevalence, potential influencers and understand the knowledge, attitude and practices of dietary supplements and ergogenic aids use among athletes.

Methods: The research papers and articles were referred from different scientific platforms like PubMed and Google scholar.

Result: 10 research papers were reviewed, most of the study reported that the potential influencers are coaches, fellow teammates, family, media, internet and friends. Twenty distinct products were utilized by the athletes, and 76.8% of people reported using supplements. The studies revealed that the most frequently consumed supplements by the athletes were sports drinks, energy drinks, protein powders, creatinine, amino acids, vitamins, and minerals and traditional/herbal preparations including ginseng were among the popular products. It was reported that a decline trend in use of dietary supplements from 2002 to 2009. A lot of athletes didn't know where to look for trustworthy information, and 86.4 percent didn't know that taking supplements could have negative impacts. Most common reasons for using dietary supplements were for sports performance enhancement, recovery and for improving immune system and general health.

Conclusion: The review concluded that supplement use is quite prevalent, however many people lack correct knowledge regarding these products. Thus, it is crucial to educate athletes and give them access to objective, scientific knowledge. Numerous research on the usage of nutritional supplements by athletes have been done in other nations, but none have been done in India.

Key words: Dietary supplements, Ergogenic aids, Sports, Athletes

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RELATIONSHIP OF OBESITY AND RISK OF INJURY IN ATHLETES

Shreya[1], Divya Sanghi[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: divya.sahs@mriu.edu.in

Introduction: Obesity is linked with increased adiposity levels in individuals. It is a risk factor for injuries and fractures in athlete and non-athlete population. Or classifying obesity, BMI is used as a standard technique which classifies the adiposity levels in individuals using weight for height rather than fat mass. A higher muscle mass in athletes can misclassify them with increased BMI thus studying the fat percentage in athletes is required.

Methods: The review article is aimed to link the relationship between obesity and risk of injuries in athletes. The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, and research gate.

Result: Obesity has been observed to be more prominent in female athletes when compared to non-athlete counterparts, but no such difference in BMI has been observed in males. Subcutaneous fat thickness is lower in athletes as compared to non-athletes. Musco-skeleton injuries are associated with obesity, especially injuries to the lower extremities and knees. Adolescents identified as obese class 1 have a three times higher risk of sustaining an ankle injury compared with normal-weight adolescents.

Conclusion: The review concluded that though there are very limited studies conducted on the relationship between obesity and risk of injury in athletes. Future studies can be planned to find relationship between specific injury areas and BMI in respect to different sports.

Key words: Obesity, athletes, injuries, body composition

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EXPLORING WATERMELON RIND AS A SUSTAINABLE SOURCE FOR L-CITRULLINE EXTRACTION: IMPLICATIONS FOR SPORTS PERFORMANCE ENHANCEMENT

Prateeksha[1], Lakhvinder Kaur[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: prateekshapatari@gmail.com

Introduction: L-citrulline is an endogenous amino acid present in watermelon. It plays a crucial function in the nitric oxide cycle and acts as a precursor to arginine. The ingestion of L-citrulline, specifically, has been linked to increased synthesis of nitric oxide, resulting in enhanced physical performance, notably among athletes. Watermelon rind is a particularly abundant and affordable sustainable source of citrulline. Dietary supplementation with L-citrulline shows promise for endurance athletes looking to enhance performance and reduce feeling fatigued. The improvement is due to the decrease in lactate production, increased aerobic utilisation of pyruvate, and promotion of ammonia detoxification via the urea cycle. The research used acid hydrolysis through centrifugation with a strong acid to extract citrulline from watermelon rind. Citrulline was separated and quantified using High-Performance Liquid Chromatography (HPLC), and the quantities of antioxidants and nitric oxide were measured as well.

Conclusion: The study attempted to efficiently extract L-citrulline from waste materials like watermelon rind and analyse its purity. Antioxidant activity tests also reveal fatiguing muscle H+ clearance rates. This study provides a solid platform for determining L-Citrulline, enabling interventional studies on cardiac autonomic function.

Key words: Citrulline, Nitric Oxide, Physical

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COMPARATIVE STUDY OF THE SPORTS ACHIEVEMENT MOTIVATION BETWEEN TEAM GAMES AND INDIVIDUAL PLAYERS

Harish Kumar[1], Ridham Thakral[1]

1. Department of Sports Science, Punjabi University, Patiala, Punjab, India.
   Corresponding Author's Email: harish_ss@pbi.ac.in

Introduction: The purpose of the present study to compare the sports achievement motivation of team game players and individual players in Punjabi University, Patiala.

Methods: The age of subjects was ranging from 18 to 24 years. The criterion measure chosen was analysed by descriptive analysis and one sample t- test to compare the level between the team games players and individual players. The level of significance chosen to test the hypothesis was 0.05, p, 0.05. The collected data was analysed and one sample t- test to compare depression level among different games.

Result: The obtain data statistically represent the mean of sports achievement motivation with regard to team games is 21.44 and standard deviation is 3.74 where as in case of individual game, the mean value is 17.32 and standard deviation is 3.30.

Conclusion: The study also revealed that there were no significant different found between team game player and individual players. The results shows that sports achievement motivation level of team game players is higher than that of individual players

Key words:

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REHABILITATIVE APPROACH OF IT BAND SYNDROME IN A 20 - YEAR OLD INTER-COLLEGIATE FEMALE RUNNER-CASE STUDY

Barbi kar[1]

1. Gd Goenka University,Gurugram,Haryana
Corresponding Author's Email: karbarbiezm@gmail.com

Introduction: Illiotibial band syndrome is the second most common running injury .A gradual increase in its occurrence has been noted over the past decade. This might be related to increasing number of runners worldwide. The iliotibial band is a connective tissue made from the continuation of muscle connections, such as tensor fascia latae and gluteal muscles, and has structural and biomechanical features of fascia. Early researches believed that ITBS is caused by inflammation in tissue deep to the ITB due to excessive friction between the ITB and lateral femoral condyles when the former slides over the latter during repetitive flexion-extension movements eg.running .Recently the view has been challenged by a theory that ITBS is more likely caused by excessive compression of the richly vascularized and innervated layer of fat between the ITB and LFC. The most common factor reported in the literature as contributing to the development of ITBS is a sudden increase in exercise intensity.

Methods: The patient was 20 year old female, referred from orthopedic physician with diagnosis of right iliotibial band syndrome. Patient presented with tenderness over the lateral femoral condyle, discomfort in running, repetitive knee flexion is aggravating the pain. Grade 3 on Lindenburg grading system. Ober's and Renne's test was positive. She reported 8/10 stabbing pain on a visual analog scale. The idea of regional interdependence and neuromuscular re-education along with strengthening interventions and addressing the contributing factors of training errors, running surface was included. Early modifications of activities to prevent aggravation of symptoms was first line approach. Poor training habits were corrected. Stretching of ITB, cold therapy ,myofascial release of ITB ,electrical stimulation, muscle energy to positional faulty, counterstrain psoas, k-taping were the interventions. After 10 days, steroid injections were added with former treatment.

Result: The implementation of holistic approach resulted in positive outcomes. Pain score decreased and there were no signs of pain during running. At 3-months follow-up, subject had successfully completed a half marathon without pain.

Conclusion: This case study successfully demonstrates the management of ITBS by using a interdisciplinary approach based on current literature and concept of regional interdependence.

Key words: Iliotibial band syndrome, runners, physical therapy, holistic approach

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EFFECT OF METAVERSE - A VIRTUAL REALITY TRAINING ON DYNAMIC AND STATIC SURFACES TO ENHANCE POSTURAL SWAY CONTROL AND ANKLE MUSCLES STRENGTH AMONG FENCER ATHLETES

Ekta Kharde[1] , Ashwin Kshirsagar[1] , Akash Tandale[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
Corresponding Author's Email: akashatandale134@gmail.com

Introduction: Fencing is a sport that demands precise postural sway control to maintain stability and execute accurate movements. VR technology has emerged as a potential tool for enhancing athletic performance by providing immersive training environments. This study aims to investigate the impact of Metaverse, a VR training platform, on postural sway control and ankle muscle strength evaluated by the balance master, toe pro dynamometer and push pull dynamometer.

Methods: A study implementing simple randomization sampling in a randomized clinical trial was carried out on thirty fencing athletes with different skill levels. Participants in the VR training sessions, which simulated dynamic and static surfaces and were intended to test postural control and ankle muscle strength, were randomized to either the treadmill walking group or the ground walking group. Using force plates on a balance master, pre- and post intervention evaluations were compared for postural sway measurements. A toe pro dynamometer and a push pull dynamometer were used to measure the strength of the ankle muscles.

Results: Improved postural sway control in fencing athletes who received Metaverse VR training in a treadmill walking group was one of the anticipated result with the significant value less than 0.05 P value was obtained. It was predicted that the athletes would experience a new stimulation from the immersive and interactive VR training, increasing their engagement and flexibility. Group A demonstrated significant improvements in the limits of stability with statistically significant enhancements observed in forward , rearward, leftward, and rightward, and rightward, degrees after the intervention ($p<0.005$) . Group B exhibited no statistically significant difference in limits of stability measurements for forward , rearward, leftward, and rightward, degrees between pre and post assessments($p>0.005$).

Conclusion: The results could provide new perspectives on training methods that blend technology improvements with sports-specific requirements, opening the door to creative training strategies.

Key words: Virtual Reality, fencer athletes, postural sway control

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ASSESSING CITRUS POMACE FORTIFIED WHEAT BREAD FOR PHYSICOCHEMICAL CHARACTERISTICS, ANTIOXIDANT PROPERTIES,AND SENSORY QUALITIES

Maha Anwar[1], Payal Rani[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: payalrani.sahs@mriu.edu.in

Introduction: Citrus pomace is a byproduct of citrus processing that includes peels, pulp, and seeds. Though often discarded, it contains valuable compounds such as dietary fiber, antioxidants, and essential oils. Its utilization in food industry offers an co-friendly way to reduce waste disposal issues while enhancing nutritional value and flavor complexity. Previous research has indicated that taking polyphenol supplements could be a useful method for enhancing exercise performance. This is because they possess antioxidant roperties and can stimulate the production of nitric oxide. These characteristics may help improve exercise performance, although there has been no conclusive research yet to examine the direct effects of citrus flavonoids on human exercise performance.

Methods: The study uses citrus pomace to make two types of wheat bread. The bread's nutritional, antioxidant properties and microbiological safety will be analyzed, as well as consumer preferences using a 9-point hedonic scale. The research papers and articles were referred from different scientific platforms like Pub Med, Google scholar, research gate.

Results: The result revealed that Fortified wheat bread with citrus pomace was successfully developed, providing a product with enhanced nutritional content, improved physicochemical and antioxidant properties, and better sensory attributes.

Conclusion: The review concluded that the incorporation of citrus pomace as a functional ingredient in wheat bread has been proven to significantly enhance its nutritional and sensory attributes, resulting in the development of superior quality and value-added bakery products.

Key words: Citrus pomace, Fortified wheat bread

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THE IMPACT OF POLYCYSTIC OVARIAN SYNDROME ON MUSCLE STRENGTH AND PERFORMANCE IN ATHLETES

Bhoomika Nagpal [1], Dr. Divya Sanghi[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email Id: divya.fas@mriu.edu.in

Introduction: The incidence of PCOS has increased in women athletes over many years. Among women in their reproductive years, polycystic ovarian syndrome (PCOS) is a common endocrine disorder marked by polycystic ovarian morphology, oligo/anovulation, and hyperandrogenism. It is diagnosed by ROTTERDAM CONSENSUS CRITERIA.

Method: For the review, research papers was identified and analyzed to find out the relationship between sporting performance and PCOS in women. The research papers will be sourced from PubMed, Research Gate, and NCBI.

Result: Studies have indicated that there is enhanced performance and increased muscle strength in PCOS athletes when compared to non-PCOS athletes. The findings suggested direct relationship between increased testosterone and androgen hormones with performance.There could be a development of functional amenorrhea in athletes suffering from PCOS when compared to their counterparts. Female athletes suffering from PCOS have shown concern for their physical and psychological conditions. Sports medicine and nutrition is aimed at researchers who highlight the relationship between PCOS and its effect on performance enhancement in female athletes. Hyperandrogenism has been associated with increased muscle mass which can further lead to enhanced performance during sporting events. It has also been linked with increasing competitive behavior

Conclusion - The review concluded that there are very limited studies conducted on the muscle strength of women athletes having PCOS. Further studies can be conducted for better results for the athletes.

Keywords - Polycystic Ovarian Syndrome, Hyperandrogenism, Athlete

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PREVALENCE OF SPORTS INJURIES IN COACHES – AN OBSERVATIONAL STUDY

Akash Tandale[1], Dr. Ashwin Kshirsagar[1], Prajakta Taksale[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
Corresponding Author's Email: prajaktataksale080@gmail.com

Introduction: Coaches plays integral part in the development of a sports person. Coaches have a direct relationship with the players, most of the times they physically join the training sessions that may be of low to high intensity. The involvement of the coaches in training sessions may cause injuries in them.

Methods: The information was gathered from the 198 coaches between the ages of 25 - 45 who train players for competitive sports. The coaches were requested to fill a questionnaire via Google form method.

Results: 198 coaches were included in the study. Sports injuries in coaches was found to be 86% in this study. Injuries to the lower extremities were more common than those to the upper extremities. Male coaches injured at a more frequency than female. Around 14% of coaches experienced mental stress as a result of their injuries.

Conclusion: In order to determine the prevalence of sports injuries among coaches, injuries to the lower extremity were more frequent than those to the upper extremity and the following study concludes that 86% of coaches have experienced a sports injury in accordance to injuries, 14% of coaches experience emotional stress.

Key words: Prevalence; Sports injuries; Coaches; Survey

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COMPARISON OF LUMBOSACRAL ALIGNMENT AMONG OBESE & OVERWEIGHT STUDENTS

Sharvari Meher[1], Sopheya Bansode[1], Manibhadra Panda[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
Corresponding Author's Email: bansodesofiya89@gmail.com

Introduction: Obesity, defined as BMI greater than or equal to 30, is a significant factor in spinal disorders like low back pain and perioperative complications. Females are more prone to obesity due to dietary patterns, unhealthy food consumption, and inadequate physical activity. Spinal kinematics, particularly the lumbosacral spine, are crucial for daily living and locomotive activities. Anterior tilting of the sacrum increases the lumbosacral angle, causing shearing stress and increasing anterior lumbar convexity. Obesity and overweight may increase the risk of low back pain due to increased shear forces at the Lumbosacral junction. This study examines lumbo-sacral alignment parameters between overweight and obese individuals.

Methods: This observational study included 70 volunteers from Aurangabad between the ages of 18 to 25 with a BMI of 25 or above. Participants were chosen using inclusion and exclusion criteria, and the test method was described to them. They were then asked to provide informed permission. The subject's lumbosacral alignment was then assessed.

Results: The comparison of Lumbo-sacral Alignment showed non-significant difference (P value= 0.155) between both the groups. The comparison of Lumber Lordosis Angle and Sacral Inclination Angle showed significant difference between both the groups with p value 0.001.

Conclusion: From the result it is concluded that , there is no statistically significant difference in Lumbosacral alignment between Overweight & Obese adults but Lumber Lordosis Angle and Sacral Inclination Angle differ significantly between both the groups.

Key words: Lumbosacral Angle, Lumbar Lordosis Angle, Sacral Inclination Angle Spinal alignment, BMI

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DEVELOPMENT OF RTS FROM AMARANTH MICROGREEN FOR ATHLETES: A REVIEW

Nirupama[1], Madhvi Awasthi[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email: madhavi.fas@mriu.edu.in

Introduction: Microgreens are leafy greens harvested after the appearance of 2-3 true leaves, whose length is 2-4 cm, and are harvested with both stems and leaves intact. It takes an average of 10-14 days to harvest microgreens. As microgreens have a short life cycle, they can be grown quickly without the use of soil or any other pesticides or fertilizers.

Methods: The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, research gate, MDPI sports journal.

Results: The studies from various databases revealed that Microgreens are excellent sources of antioxidants including anthocyanins, ascorbic acid and minerals viz Zn, K, Ca, N, P, S, Mn, Se, Mo. The iron content and antioxidants are in the range of 4.10 and 9 mg/100g which is more than green leafy vegetables. This property of microgreens can be utilized in sports for enhancing the iron stores and control on free radical formations.

Conclusion: The review concluded that there are very limited studies conducted on the effects of Microgreen on the sports performance of athletes. The field of sports will surely benefit from the interventional studies based on microgreens-based food products.

Key words: Amaranth Microgreen, antioxidants, sports

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DEVELOPMENT OF β-GLUCAN INCORPORATED BROWN TOPMILLET COOKIES FOR ATHLETES: A REVIEW

Soumya Tyagi[1], Sarushi Khanna[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email: sarushi.sahs@mriu.edu.in

Introduction: Browntop millet has a high fiber content which helps to clear the intestines of waste, aiding in the body's detoxifying process, and fiber also acts as a prebiotic when fermented in the colon. Brown-top millet is gluten-free and can be utilized by individuals with celiac disease. It also lowers blood vessel pressure, which lessens the risk of myocardial infarction and migraine. Oat beta-glucan raises the amounts of non-esterified fatty acids and glycogen in the liver and skeletal muscle, lowers the levels of blood urea nitrogen and lactic acid, and extends the fatigue running duration.

Methods: The purpose of this review paper is to examine how adding beta-glucan to brown top millet can improve the nutritional value, antioxidant content, and phytochemical profile of cookies. The research papers and articles came from a variety of scholarly sources, including the MDPI sports journal, PubMed, Google Scholar, and Research Gate.

Results: The findings showed that because beta-glucan and brown top millet have been shown to boost vigor, vitality, and endurance, they have been extensively utilized in exercise physiology. Constipation, diverticulosis, dyslipidemia, and metabolic syndrome are a few of the non-communicable disorders that brown top millet can aid in preventing and managing. Additionally, it decreases blood vessel pressure, thus minimizing the risk of migraine and myocardial infarction.

Conclusion: In brief, the research aims to create β-glucan fortified cookies using brown top millet, analyze their nutritional and physicochemical characteristics in detail, determine their potential health benefits, determine consumer acceptability, and add to the body of knowledge regarding the development of functional foods.

Key words: Brown top millet, beta-glucan

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CORRELATION BETWEEN Q ANGLE AND FOOT MUSCLE STRENGTH ALONG WITH FOOT ANGLES IN PROFESSIONAL BHARATANATYAM DANCERS: AN OBSERVATIONAL STUDY

Pranoti Zawar[1], Dr. Ashwin Kshirsagar[1], Vaishnavi Patil[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
Corresponding Author's Email: vp9953680@gmail.com

Introduction: - Bharatanatyam is a south Indian dance genre and it is among the eight recognized traditional Indian dance forms. Bharatanatyam dancers undertake frequent motions that require great mobility, strength, and endurance, putting their bodies under stress and making them at risk for injuries caused by overuse that could have an influence on their health in the future. It is a highly complex dance forms that predispose to abounding biomechanics changes of the knee angles and foot angles along with muscles strength. Misalignments in foot structure may contribute to compensatory movements, leading to injuries. This study will assist them gain a better understanding of their knee angle and foot angles along with muscles strength problems so that additional innovations can be introduced into their therapy in the future.

Methods: 40 Bharatanatyam dancers were taken in the thesis based on enrolment criteria. The outcome measures used were the Q angle, Foot angles (rearfoot and forefoot angles) checked by universal goniometer and foot muscles strength (plantar-flexors, dorsiflexors, invertors, evertors, toe flexors and lesser digits) were measured by hand held (push-pull) dynamometer and toe-pro dynamometer. The relationship between Q angle, Foot angles and foot muscles strength was checked. Categorical data was represented in the form of frequency and percentage. The normality of data was checked by using the Shapiro wilk test. Spearman's correlation test was used for checking the correlation between outcomes variables. P-value<0.05 was considered statistically significant.

Results: The associate statistics of our study shows very high to Strong positive relationship between Q angle and Foot angles on right side and on the left side shows high to very high positive relationship The Q angle and Foot muscles strength of right leg shows very high to Strong positive relationship and of left leg shows high to very high positive relationship.

Conclusion: There is a significant relationship of Q angle and Foot muscles strength along with foot angles in professional Bharatanatyam dancers.

Key words: Bharatanatyam dancers, Q angle, Forefoot angle, rearfoot angle, foot muscles strength

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EFFECT OF GRAPE SEED EXTRACT ON PERFORMANCE IN ENDURANCE ATHELETES: A REVIEW

Shreya Pasricha[1], Gurseen Rakhra[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email: gurseen.fas@mriu.edu.in

Introduction: Endurance is the capacity to sustain physical activity for a long period of time. Training aims at maximizing the use of the aerobic energy system, use of glycogen and fatty acids to derive energy. Grape seed extract is a dietary supplement made by removing, drying, and pulverizing the seeds of grapes. Grape seeds are rich in antioxidants, including phenolic acids, anthocyanins, flavonoids, and oligomeric proanthocyanidin complexes. Therefore, Grape Seed Extract can be beneficial to enhance performance specially in endurance athletes.

Methods: The review article is aimed to access the effect of grape seed extract on performance in endurance athletes. The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, Research gate and MDPI Sports Journal.

Results: The results revealed that Grape Seed Extract enhanced the performance of endurance athletes especially in elite male athletes, basketball players and female volleyball players. Grape seeds are rich in antioxidants due to which there was an increase in ORAC (oxygen Radical Absorbance Capacity) value and antioxidant enzyme activities, limiting the reduction of FRAP (ferric reducing antioxidant power) and production of isoprostanes, Increase in hemoglobin levels and a significant rise in the plasma glutathione. Resulting in vasodilation in active skeletal muscle mediated by enhanced endothelial function thus enhancing performance.

Conclusion: The review concluded that Grape Seed Extract influences the performance of endurance athletes, it enhances the performance but more study is required to derive a concrete link between Grape Seed Extract and athletes in other sports activities.

Key words: Grape Seed Extract, Performance Enhancement, Endurance Athletes

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EFFECTS OF MANGIFERA INDICA LEAF EXTRACT ON THE SPORTS PERFORMANCE OF ATHLETES: A REVIEW

Tejal Sharma[1], Payal Rani[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email: payalrani.sahs@mriu.edu.in

Introduction: Mango (mangifera indica Lam), one of the most popular tropical fruits, belongs to the family of Anacardiaceae. Tropical and subtropical climates are conducive to mango growth, particularly in areas with high rainfall. In biomedical applications, mango leaves, stems, and pulp are successful in scavenging free radicals and antioxidative. In addition to their antioxidant properties, mango leaves are reported to be anti-inflammatory, anti-diabetic, and anti-cancerous.

Methods: This review article aims to investigate the transformative potential of Mangifera indica leaves extract in enhancing the phytochemical, antioxidant, and nutritional composition of bread. The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, research gate, MDPI sports journal.

Results: The results revealed that mango fruit and leaf extracts have been widely used in exercise physiology due to its demonstrated ability to increase vigor, vitality, and endurance. Moreover, certain degenerative diseases associated with metabolic syndrome, bacterial infections, gastrointestinal problems, and immunomodulatory illnesses are ameliorated by these substances.

Conclusion: The review concluded that though there are very limited studies conducted on the effect of mangifera indica leaf extract on the sports performance of athletes. It is possible to plan interventional research to understand better outcomes, which will undoubtedly benefit athletes in the future.

Key words: mangifera indica leaves extract, endurance, sports

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EMERGING ROLE OF ARTIFICIAL INTELLIGENCE IN SPORTS PHYSIOTHERAPY: A LITERATURE REVIEW

Devanshi Mehra[1]

1. Banarsidas Chandiwala Institute of Physiotherapy, Affiliated to Guru Gobind Singh Indraprastha University, India
Corresponding Author's Email: devanshimehra2@gmail.com

Introduction: Artificial Intelligence is one of the active research fields to develop systems that mimic human intelligence and is helpful in many fields. Physiotherapy is an emerging frontier discipline that combines sports, health and medicine. Rehabilitation training is divided into three stages: first stage is diagnosis and treatment of sports injuries, second is the physical function, the last is to use scientific training methods and means to restore the level of athletes to the state they can participate in competitions.
With the progress of society, track and field sports events have become popular. Higher requirements have been placed on the physical fitness of track and field athletes. During competitions or during normal training, athletes are likely to suffer physical injuries. Traditional Rehabilitation has fixed methods thus cannot effectively treat each athlete's difference. It is essential to combine new technologies and integrate them into traditional rehabilitation training to improve quality of physical recovery. The purpose of this review is to evaluate whether artificial intelligence when used in sports physiotherapy will aid the physiotherapist in better patient outcomes.

Methods: Data collection for review was carried out by search based on Google Scholar, PubMed, Research Gate, and SpringerOpen of previous 5 years to obtain relevant literature about impact of artificial intelligence on sports physiotherapy. A total of 50 articles were found related to role of artificial intelligence on rehabilitation and 5 articles were directly pertinent to the subject.

Results: Artificial Intelligence has the potential to revolutionize sports physiotherapy by improving diagnosis, treatment and outcomes for athletes. Opportunities and benefits of artificial intelligence in sports physiotherapy include improved accuracy and efficiency of diagnosis and treatment, enhanced athlete performance and injury prevention and personalized treatment and rehabilitation plans.

Conclusion: The utilization of artificial intelligence in sports physiotherapy has shown great potential in providing valuable insights and information to sports physiotherapist that helps in providing personalized treatments and rehabilitation plans that help enhance athlete performance and injury prevention.

Key words: Artificial Intelligence, Sports, Rehabilitation, Performance

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EFFECT OF FOXTAIL MILLET ON HYPERTENSIVE ATHLETES : A REVIEW

Akshay Malik[1], Mahak Sharma[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Corresponding Author's Email: mahak.fas@mriu.edu.in

Introduction: Hypertension is one of the leading medical condition responsible for premature death worldwide. Hypertension is considered as a causative factor for stroke, cardiovascular diseases, heart failure and kidney disorder. Hypertension also remains the common cardiovascular condition encountered in athletic population. Therefore, dietary intervention is necessity to counter mild and moderate Hypertension.

Methods: The review article is aimed to access the effect of foxtail millet on hypertensive athletes. The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, research gate, MDPI sports journal.

Results: The results revealed that athletes indulging in weightlifting, rowing and American style football having high blood pressure as compared to endurance athletes and having prevalence of Hypertension from 8.8% to 25.6%. To encounter all these problems foxtail millets can have a positive effect on Hypertension. Foxtail millet consist of Phenols and carotenoids which acts as ACE inhibitors and prevents the conversion of Angiotensin 1 to Angiotensin 2 and enhances Nitric Oxide in the body, which results in preventing vasoconstriction and inhibits reabsorption of water and sodium and helps in vasodilatation thus lowering the blood pressure.

Conclusion: The review concluded that though there are very limited studies conducted on effect of foxtail millet on hypertension but no studies reported on athletes. Interventional studies can be planned for understanding of better outcome, which will definitely help the athletes in the future.

Key words: Hypertension, Foxtail Millet, Sports

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CORRELATION BETWEEN THE STRENGTH OF SCAPULAR STABILIZERS WITH FOREARM PRONATOR AND SUPINATOR MUSCLES IN ELITE TENNIS PLAYERS-AN OBSERVATIONAL STUDY

Rohit Bhavthankar[1], Ashwin Kshirsagar[1], Janhavi Phatak[1]

1. Department of Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
Corresponding Author's Email: janhaviphatak24@gmail.com

Introduction: - Tennis is a high-intensity racket sport that involves either two teams of two players each or one player on each side. It necessitates strong proximal and distal muscle strength. To play tennis strokes, functioning of kinetic chain should be proper as the energy needed for power strokes is produced from bigger to smaller muscles. Changes in working of kinetic chain can lead to complications and further leading to injury. Bigger muscles fuel power strokes, supported by scapular stabilizers. Forearm pronation adds wrist speed for impactful strokes. Finding the correlation between the scapular stabilizers and forearm pronator and supinator muscles will help to improve an athlete's performance & reduce the injury risk.

Methods: 39 elite tennis players included in the study based on their level of play among which 100% (n=39) were males shows distribution of 38% (n=15) who were between 18-20 years old, where as 62% (n=24) were between 21-25 years old. 100% (n=39) of participating subjects has right-handed dominance underwent a testing for strength of Scapular stabilizers and forearm pronator and supinator muscles. Hand-Held Push Pull Dynamometer was used to measure the strength of Shoulder blade muscles including Upper trapezius, Serratus anterior, Middle, and lower trapezius. The Pronator's and supinator's muscle strength were measured by using a Baseline hydraulic wrist Dynamometer. Statistical analysis was done using SPSS software version 29. Mean and SD was calculated for demographic characteristics, strength of Scapular muscles, strength of forearm pronator and supinator muscles. Categorical data was represented in the form of frequency and percentage. The normality of data was checked by using the Shapiro wilk test. Pearson's correlation test was used for checking the correlation between outcomes variables. P-value<0.05 was considered statistically significant.

Results: The correlation was present between scapular and forearm pronator and supinator muscles. We found low negative relation between Pronators and Serratus anterior and Middle trapezius. While, the pronators and upper and lower trapezius indicated a minor positive connection. The Supinator muscles displayed a low positive relation with the Serratus anterior and upper trapezius, while supinator showed a very low negative relationship with the Middle trapezius and lower trapezius.

Conclusion: Correlation was present between the scapular and forearm pronator and supinator muscles. Clinical implication- Finding the correlation will help to improve athlete's exercise protocol and the performance.

Key words: Trapezius, Pronator & Supinator muscles, Muscle strength, tennis players

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DEVELOPMENT AND ORGANOLEPTIC EVALUATION OF NUTRITIOUS COOKIES INCORPORATING PRUNES AND RAGI

Mahima Raina[1] and Gurseen Rakhra[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Corresponding Author's Email: rainamahima01@gmail.com

This research focuses on the development of nutritious cookies by incorporating prunes and ragi, aiming to enhance both the health profile and sensory attributes of the product. Prunes, rich in antioxidants and fiber, coupled with ragi, a nutrient-dense millet, offer a unique blend of essential nutrients beneficial for bone strength. Ragi, a nutrient-dense millet, adds essential vitamins, minerals, and dietary fiber, offering a gluten-free alternative with potential glycemic control benefits.

The study investigates optimal formulations to achieve a balance between nutritional content and sensory acceptance, considering factors such as texture, flavor, and appearance. Bone loss in men appears to accelerate from age 50 and is associated with decreased bone formation which may be associated with falling levels of free androgen. High-intensity training maintained over several years must be regarded in women as a risk factor for osteoporosis. The synergistic combination of prunes and ragi aims to create a functional snack with improved nutritional value, targeting sportsperson seeking a healthier natural supplement for help maintain their bone as well as overall health. The development of these cookies aligns with current trends in promoting sustainable and nutritious food choices, addressing the growing demand for convenient yet health-conscious snacks. The findings of this research contribute valuable insights to the field of food science and nutrition, offering a novel approach to the creation of delicious and health-promoting baked goods.

Key words: Prune, Ragi, Cookie, Bone Health, Sportsperson

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ASSOCIATION BETWEEN PHYSICAL ACTIVITY LEVELS AND ACADEMIC PERFORMANCE AMONG COLLEGE GOING STUDENTS (18-25YRS)

Muskan Sharma[1], Divya Tripathi[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence author's Email: muskansharma2002.ms@gmail.com

Introduction: The study aims to assess the Physical Activity levels of college students and their correlation with academic performance, recognizing that performing physical activity daily has a positive impact on health.

Methods: This cross-sectional study will be conducted at Manav Rachna College, employing a comprehensive approach to measuring Physical Activity levels using Global physical activity questionnaire. The academic records of students will be compiled by reputable faculty members to ensure data authenticity

Results: There will be no association between physical activity levels and academic performance.

Discussions: Many researches have shown that there is no association between physical Activity and academic performance and a very few researches have shown the association between physical activity and academic performance

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EFFECTIVENESS OF MUSCLE ENERGY TECHNIQUE, STRETCHING, STRENGTHENING ON PATIENTS WITH CHRONIC SHOULDER PAIN AND DISABILITY

Sakshi Gujarathi [1], Dr. Bhalchandra Kharsade[2]

1. Department of Sports Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India.
2. 2. Department of Musculoskeletal Physiotherapy, MGM School of Physiotherapy, Aurangabad, Maharashtra, India
   Correspondence author's Email: sakshiguj@rediffmail.com

Introduction: Injuries to the shoulder complex account for 25 to 47.7% of all upper-limb injuries. Asymmetries in the passive range of motion (ROM)of the dominant shoulder and imbalances in strength between the agonist and antagonist muscles of the Glenohumeral joint are two morphological and biomechanical modifications linked to a greater chance of injury in the shoulder. A sort of soft tissue or joint manipulations or mobilizations called Muscle Energy Techniques (MET) is used in the treatment of musculoskeletal disorders that originated in osteopathic medicine. MET can assist in the release and relaxation of muscles and the body's natural healing processes. Stretching has been advocated as a valuable tool for treating GIRD, regaining shoulder range of motion, and minimizing the risk of shoulder injury and muscle discomfort.

Methods: The study design is a Randomized control trial with a sample size of 66 at MGM School of Physiotherapy. 66 shoulder pain patients with a mean (SD) age of 46.33 in the control group and 45.58 in the Experimental were divided into 2 groups. Group A(Control) received the Strengthening and Stretching protocol. Group B (Experimental) received Muscle Energy Technique along with Strengthening and Stretching for 6 weeks.

Results: Statistical comparison of the results between the groups showed that both the Control and Experimental groups showed significant differences in NPRS and SPADI scores. In the Control group (group A), there is a significant difference between comparing pre and post-values of NPRS and SPADI derived by paired t-test. (p-value<0.05). In the Experimental group (group B), there is a significant difference between comparing pre and post-values of NPRS and SPADI derived by paired t-test. (p-value<0.01). Between the groups Analysis, both NPRS and SPADI showed significant differences (p-value<0.05)

Conclusion: Between the groups Analysis both NPRS (Numerical pain rating scale) and SPADI (Shoulder Pain and Disability Index) showed significant differences (-value <0.005). Adding Muscle Energy Technique in Shoulder pain protocol helps in pain reduction and improving disability.

Keywords: Muscle Energy Technique, Stretching, Strengthening, Shoulder Pain

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SHEAR WAVE ELASTOGRAPHY: RECENT DIAGNOSTIC APPROACH FOR INJURY PREVENTION

Shruti Singhal[1]

1. Department of Physiotherapy, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Correspondence author's Email: shrutisinghals442000@gmail.com

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ABSTRACT

Ultrasound elastography has found to be effective diagnostic tool to quantify the elastic property of the examined soft tissue structure to detect the possible degenerative changes and to examine the current status of mechanical properties of underlying tissue. Different sorts of tendinopathies have shown histological and biochemical changes that causes delay in healing and poor follow-up during the rehabilitation sessions. Shear waves also targets the same objective to deal with the. Quantifying the biomechanical nature through shear wave velocity helps to assess the characteristics of ligament, tendons and muscle. Ultrasound based diagnosis creates a dynamic evaluation of changes within the suspected tissue. Generation of elastograms creates the understanding towards the elastic property of the underlying tissue. Consideration contraction-induced muscle fatigue gives information about the contractibility of the muscle fibers in a particular sporting activity. But still there are some limitations, due to which the correlation of clinical pain and structural disorientation can not be dictated. Introduction of such diagnostic tools can provide a new insight of designing the exercise sessions according the affection of the particular tendon, ligament and the possible muscles. Application of shear wave elastography comprises a huge modification of exercise regime and their biomechanical impact over the sports performance by studying the elastic nature of the affects structure, whether it is before, during or following the participation. Accuracy of the shear wave velocity measurements could develop the better clinical understanding of the fundamental properties of the relevant tissue

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FUNCTIONAL ICE CREAM SHOTS: FROM GLOBE TO OUTER SPACE

Khushi Gandotra[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Correspondence author's Email: Khushigandotra3@gmail.com

As the world trends many manned space missions have been and are being launched, nutritious, appealing yet self – sufficient food for long term space exploration has been topic of intense research. However, self-sufficiency primarily lies in the optimal production of natural, unprocessed, fresh foods as diets but the greatest quandary as stated by NASA is the consumption of processed foods during space missions. This research aims to identify gaps and eliminate the dilemma in space nutrition. With advancement of technology the spectrum of food products has widened, taking nuts into consideration as they are known to eliminate the inadequate nutrients: calcium, iron, polyphenols and various vitamins and are reportedly deficient in astronauts as mentioned in NASA and RSA databases and a product underlying these nuts is produced, in its natural form is served without any microgravitational hinderance. Thus, while developing functional ice-cream various parameters of dietary deficiencies were taken into consideration. Proximate level testing, texture analysis was run to validate the nutritional claims. Nutrition in space has many areas of impact, not only physical but psychological which is evident for productive missions and crew morale.

Keywords: space nutrition, microgravity, astronauts, long term space tasks, dietary deficiencies, fresh foods, self-sufficient

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ROLE OF ROBOTICS IN NEUROREHABILITATION: A LITERATURE REVIEW

Himani Chauhan[1]

1. Banarsidas Chandiwala Institute of Physiotherapy affiliated to Guru Gobind Singh Indraprastha University, Delhi, India.
   Correspondence author's Email: himanichauhan2318@gmail.com

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Background- In therapeutic setting, robots are used to support the administration of exercises and care to the upper and lower extremities to facilitate the neuro-motor recovery. Robotic-assisted rehabilitation provide therapists the ability to regulate and track movement characteristics including amplitude, speed, direction and joint coordination patterns.

Objective- The aims of the study were to determine the role of robotics in neurorehabilitation emphasizing how it relates to the rehabilitation cycle.

Methodology- Using keywords such as robotics, physiotherapy, exercise and rehabilitation, a comprehensive analysis of research on the recent advancements in robotics for neurorehabilitation was conducted by searching PubMed and Google scholar databases. Twenty-one reviews from last five years (2019-2024) were identified, out of which 7 articles were included in the study.

Result and Conclusion- The literature review provides evidence to support the use of robotics to manage common neurological conditions. Strong evidences were found for improvement in intensity and quality of neurorehabilitation and to manipulate brain plasticity and excitability. Robot-assisted rehabilitation uses automatic assessment systems but these are not reliable as they are based on objective measures. Another limitation is the effect of impairment on an individual's daily life activities cannot be assessed through it. Further research is required to identify the extent to which robotics can improve function and quality of life of individuals with neurological conditions.

Keywords: neurorehabilitation, robotics, physiotherapy, recovery, exercise

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IMPACT OF DISORDERED EATING ON COGNITIVE FUNCTION IN SHOOTERS: A REVIEW

Shipra Arora[1] and Dr. Kommi Kalpana[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Correspondence author's Email: kalpana.fos@mriu.edu.in

Introduction: The intricate relationship between disordered eating behaviours and cognitive function among individuals engaged in shooting sports. As shooting demands precision, focus and mental resilience, understanding the potential impact of disordered eating on cognitive abilities become imperative. The paper delves into existing literature to provide a comprehensive overview of this complex interplay.

Methodology: A systematic review was conducted, encompassing studies from various disciplines, including sports science, psychology, and nutrition. The inclusion criteria focused on research that investigated the influence of disordered eating patterns on cognitive function in shooters. Data synthesis involved the analysis of methodologies employed in selected studies, ensuring a rigorous examination of both experimental and observational designs.

Results: Findings from the reviewed studies suggest a noteworthy association between disordered eating and compromised cognitive function in shooters. Variables such as attention, reaction time, and decision-making skills were consistently impacted by disordered eating behaviours. The paper synthesizes these results, highlighting patterns and variations across studies, thus providing a comprehensive understanding of the nuanced dynamics at play.

Conclusion: In conclusion, this review underscores the critical need for a holistic approach to athlete well-being, considering both physical and mental aspects. The findings suggest that disordered eating may detrimentally affect cognitive function in shooters, potentially compromising their performance and overall success. Addressing these issues through targeted interventions, nutrition education, and mental health support is essential to fostering a healthier and more sustainable environment for individuals engaged in shooting sports.

Keywords: Disordered Eating, Cognitive Function, Shooting

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REHABILITATIVE APPROACH OF IT BAND SYNDROME IN A 20 YEAR OLD INTER-COLLEGIATE FEMALE RUNNER-CASE STUDY

Barbi Kar[1]

1. GD Goenka University, Sohna, Gurugram, Haryana, India.
Correspondence authors Email: karbarbiezm@gmail.com

Introduction: Iliotibial band syndrome is the second most common running injury. A gradual increase in its occurrence has been noted over the past decade. This might be related to the increasing number of runners worldwide. The iliotibial band is a connective tissue made from the continuation of muscle connections, such as tensor fascia latae and gluteal muscles, and has structural and biomechanical features of fascia. Early researchers believed that ITBS is caused by inflammation in tissue deep to the ITB due to excessive friction between the ITB and lateral femoral condyles when the former slides over the latter during repetitive flexion-extension movements, e.g. running. Recently, the view has been challenged by a theory that ITBS is more likely caused by excessive compression of the richly vascularised and innervated layer of fat between the ITB and LFC. The most common factor reported in the literature contributing to the development of ITBS is a sudden increase in exercise intensity.

Methods: The patient was 20-year-old female, referred by an orthopaedic physician with a diagnosis of right iliotibial band syndrome. The patient presented with tenderness over the lateral femoral condyle, discomfort in the running, and repetitive knee flexion aggravating the pain—grade 3 on Lindenburg grading system. Ober's and Renne's tests were positive. She reported 8/10 stabbing pain on a visual analogue scale. The idea of regional interdependence and neuromuscular re-education, strengthening interventions and addressing the contributing factors of training errors and running surface was included. Early modifications of activities to prevent aggravation of symptoms were the first-line approach. Poor training habits were corrected. The interventions included stretching of ITB, cold therapy, myofascial release of ITB, electrical stimulation, muscle energy to positional faulty, counterstain psoas, and k-taping. After 10 days, steroid injections were added to the former treatment.
Results: The implementation of a holistic approach resulted in positive outcomes. Pain score decreased, and there were no signs of pain during running. At the 3-month follow-up, the subject had completed a half marathon without pain.

Conclusion: This case study successfully demonstrates the management of ITBS by using an interdisciplinary approach based on current literature and the concept of regional interdependence.

Keywords: Iliotibial band syndrome, runners, physical therapy, holistic approach

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DEVELOPMENT AND ORGANOLEPTIC EVALUATION OF HERBPRASH FOR PCOS ATHLETES

Tanvi Mittal[1] and Ankita Sharma[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Correspondence authors Email: Mtanvi2013@gmail.com

Polycystic Ovarian Syndrome (PCOS) is an endocrine disorder prevalent among women in India, with two out of every ten women affected. This condition is identifiable by polycystic ovary morphology and ovulatory hyperandrogenism, characterised by increased androgen production, including ovarian testosterone and sub-follicular cysts. Current treatments for PCOS can be expensive, lengthy, and associated with side effects. There is a growing interest in exploring natural remedies, specifically herbal formulations, to address these challenges to provide safe and effective alternatives.

The present study aims to develop a polyherbal formulation similar to the well-known Ayurvedic remedy, Chyawanprash. Chyawanprash is widely used to enhance immunity and stamina. The goal is to create an herbal product tailored for PCOS patients that not only boosts immunity but also alleviates PCOS symptoms. By incorporating various herbs with proven benefits, the formulation offers a holistic approach to PCOS treatment, addressing both the immune system and the specific symptoms associated with the disorder. This initiative is driven by the need to make PCOS treatment more accessible, cost-effective, and with reduced side effects compared to existing approaches.

Women athletes tend to take more androgen supplements and thus are susceptible to developing PCOS conditions.

Keywords: PCOS, Hyperandrogenism, Herbs, Seeds, Chyawanprash

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IMPACT OF PHYSICAL ACTIVITY ON COGNITIVE DEVELOPMENT OF ADOLESCENTS

Tania[1]

1. Department of Nutrition and Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India.
Correspondence authors Email: tanupandir2222@gmail.com

Adolescence is a period that begins with puberty and ends with the transition to adulthood (approximately ages 10-20). Hormones trigger physical changes associated with puberty. Cognitive changes include improvements in complex and abstract thought and development that happens at different rates in distinct parts of the brain. Aim-To study the impact of physical activity on cognitive function among adolescents. Objectives are to assess the dietary intake among the adolescents, to examine the influence of the intensity and duration of physical activity on cognitive outcomes, to find out the correlation between physical activity and learning power and attention span in adolescents. This research assesses the impact of physical activity on cognitive development of adolescents.

Key words: Physical activity, cognitive development, adolescent, Rey auditory verbal learning test, stroop colour and visual test

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EFFECTS OF KINESIO TAPING IN PATELLOFEMORAL PAIN SYNDROME: REVIEW OF LITERATURE

Deepansha Sikri[1]

1. Department of Physiotherapy, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: deepansha001@gmail.com

Introduction: Patellofemoral pain syndrome (PFPS) or chondromalacia patella is a condition in which the patellar cartilage present between the articulating surfaces of the femur and the patella deteriorates. It is characterized by localized anterior knee pain and around the knee which is aggravated while running, prolong sitting, while performing squat or using stairs. Variety of interventions are available for the treatment of PFPS. However, Kinesio Tape (KT) is a rehabilitation technique that has become more popular from past few years for the treatment of PFPS. KT is a 100% cotton hypoallergenic adhesive tape, having elasticity up to 140% from its original length. KT provides support and stability to muscles and joints, also facilitates the healing process of the body. The study aims to conduct a review of the literature of studies conducted to date and to determine the effects of KT in PFPS. To determine the evidence on efficacy of KT in controlling the symptoms of PFPS.

Methods: Databases were collected from Google scholar, Med line, pub med and other journals. A total of 25 articles were included in the study.

Results: KT has a favorable impact on various factors including pain, knee performance, position sense, kinesiophobia and mechanical knee correction. KT has positive short-term effects on PFPS symptoms.

Conclusion: The administration of KT stimulates the cutaneous mechanoreceptors, which trigger nerve impulses when mechanical loads cause deformation. Applying KT's tactile stimulus to a painful patella would cause the substantia gelatinosa cell to become active, preventing pain signals from travelling to the spinal cord and removing (or easing) the pain. KT can be used as an alternative conservative treatment or along with other interventions as a protocol for PFPS. Further studies are required to develop a specific treatment protocol.

Key words: Kinesio taping, kinesiology tape, patellofemoral pain syndrome, anterior knee pain, chondromalacia patella, conservative treatment

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EFFICACY OF MANUAL THERAPY IN REDUCING PAIN AND IMPROVING FUNCTION IN INDIVIDUALS WITH LOWER BACK PAIN

Yshika Dua[1], Sumit Bishwakarma[1]

1. Department of Physiotherapy, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: yshikadua01@gmail.com

Introduction: - Lower back pain is a pervasive issue worldwide, affecting individuals of all ages and backgrounds. Its prevalence is staggering, with estimates suggesting that up to 80% of adults experience lower back pain at some point in their lives. This condition not only causes physical discomfort but also carries significant socioeconomic implications due to its impact on productivity, healthcare costs, and quality of life. Manual therapy has gained widespread acceptance in clinical practice due to its proven safety and effectiveness. The study aims to analyze the developments in the field of Manual therapy for LBP over the past 23 years, including leading countries, institutions, authoritative authors, journals, and references. It endeavors to provide a comprehensive summary of the existing research foundation and to analyze the current cutting-edge research trends.

Methods: Relevant articles between 2000 and 2023 were retrieved from the Web of Science Core Collection (WOSCC) database. They used the software VOSviewer and CiteSpace to perform the analysis and summarize current research hotspots and emerging trends.

Results: Through screening, they included 1643 papers from 2000 to 2023. In general, the number of articles published each year showed an upward trend. Canadian Memorial Chiropractic College was the most published research institution. Long, Cynthia R. was the active author. Journal of Manipulative and Physiological Therapeutics was the most prolific journal with 234 publications.

Conclusion: This study provides an overview of the current status and trends of clinical studies on MT for LBP in the past 23 years using the visualization software, which may help researchers identify potential collaborators and collaborating institutions, hot topics, and new perspectives in research frontiers, while providing new clinical practice ideas for the treatment of LB. Lower back pain is a pervasive issue worldwide, affecting individuals of all ages and backgrounds. Its prevalence is staggering, with estimates suggesting that up to 80% of adults experience lower back pain at some point in their lives. This condition not only causes physical discomfort but also carries significant socioeconomic implications due to its impact on productivity, healthcare costs, and quality of life.

Key words: Low back pain, Manual therapy

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INSIGHTS INTO POSTPARTUM CARE: PILATES AND CORE STRENGTHENING IN DIASTASIS RECTI – A SCOPING REVIEW

Khushi Wadhawan[1], Vindhya Vijikumar[1]

1. Department of Physiotherapy, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: khushiwadhawan31@gmail.com

Introduction: - Postpartum women undergo significant physiological changes often facing challenges such as weakened core muscles, hyperlordosis and low back pain. Diastasis recti (DRA) a condition where the connective tissue between rectus abdominis muscle stretches and separates, is commonly affecting 2 out of 3 postpartum women, further compromising postpartum recovery (PpR) health and function.Given the prevalence of DRA there is a growing interest in understanding the effectiveness of Pilates, an exercise technique which emphasizes core strengthening, breathing control and movement precision. Therefore, this scoping review aims to explore the existing literature on Pilates, core strengthening, and DRA recovery and providing insights into current practices, gaps in knowledge and avenues for future research.

Methods: A literature search was conducted across PubMed, ResearchGate and PEDro, supplemented by manual searches of reference lists, yielded 92 articles. 7 full text randomized control trials were selected which offered relevant insights into Pilates' efficiency in addressing core strength and DRA. Studies encompassing inter-recti separation (iRs), quality of life scores, pelvic floor muscle training, and influence of Pilates on muscle strength were included in the review.

Results: Literature highlighted a significant association between deep core stability exercises and Pilates. Pilates based exercises proved a significant reduction in iRs, improving abdominal muscle endurance, alleviating postpartum low back pain and aiding in postnatal body restoration.

Conclusion: Despite variations in methodologies and outcome measures, consistent positive outcomes suggests that Pilates target deep core muscles, including transverse abdominis and pelvic floor muscle and showed significant potential as a therapeutic approach for DRA, emphasizing the importance of customized exercise interventions for postpartum interventions in clinical settings. Future research directions should explore the long-term effects of Pilates, definite measurement methods to assess degree of deformation in Linea alba and including women with severe DRA.

Key words: diastasis recti abdominis, postpartum women, Pilates exercise, core strength, core muscles

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IMPACTS OF HINDU RELIGIOUS FASTING AMONG 25 YEARS AND ABOVE

Mansi[1], Vandana Garg[1]

1. Department of Nutrition & Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: mansiraghav.2001@gmail.com

Introduction: - Religion and spirituality from an essential part of an individual identity. About 80% people around the world are believed to be associated with some religion. Fasting is not only the part of worship but A great instrument of self discipline too. fasting in hinduism requires abstention. abstention may assume various forms including abstention from partaking of food' abstention from drinking water' abstention from speech and abstention from sexual activity. To review the Impact of Hindu religious fasting in among 25 years and above.

Methods: Re reference list from relevant articles were search from studies on traditional fasting. To access the impact of Hindu religious fasting on sleep pattern and dietry pattern among 25 years and above the quantitative and qualitative data taken from ten research studies which provided the tools used to access knowledge in practicing of healthy dietry pattern and shows the proof that the better nutrition literacy can result in better dietry habits and physical activity and tools used to accessed in given studies are self identified questionnaire the data of these can be sourced from electronic database PUMBED, SCHOLARLY, ICMR.

Results: The purpose of this study was to access the impact of traditional fasting on dietry intake, sleep pattern and physical activity on different adult population. Different study have reported the impact of traditional fasting on diabetes, psychological health, sleep pattern weight management and physical activity. Many studies show that fasting ameliorates many biochemical parameters related to cardiovascular and cancer risk and neurodegeneration.

Conclusion: This study concluded that the good nutrition literacy can result in good dietry intake and physical activity the personalised counselling and awareness campaign can improve the qualitative intake in public more further studies required to be performed in knowledge acquirement of knowledge in nutritional background to improve the ongoing programme that help in improvement in dietry pattern' sleep pattern and physical activity.

Key words: Fasting, Hindu religion

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NUTRITIONAL KNOWLEDGE OR NUTRITION LITERACY AND ITS IMPACT ON DIETARY INTAKE AMONG INDIAN STUDENTS-A REVIEW

Devanshi Kumari[1], Vandana Garg[1]

1. Department of Nutrition & Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: kumaridevanshi34@gmail.com

Introduction: - Nutritional knowledge and literacy is broadly defined as knowledge of the concepts and processes related to nutrition and health. Nutritional knowledge or nutrition literacy is directly affecting the behavior and attitude of people towards their choices of selecting food from all food groups to maintain good health and immunity. However, studies to date have summarized the existing nutrition knowledge among Indian students and its effect on diet pattern.

Methods: This review was conducted to evaluate the impact of nutritional knowledge or nutrition literacy on the implementation of healthy eating pattern and also suggesting expected methods to improve the behavior and attitude towards healthy eating from the existing published research of India. The data for the review sourced from electronic databases PubMed, science direct, scholarly and ICMR and a predefined search term strategy.

Results: Previous studies conducted in different Indian regions highlighted that poor knowledge and attitude were significantly associated with insufficient dietary intake. However nutrition education intervention studies using the educational session and counseling methods showed a significant change in the level of knowledge and attitude towards healthy dietary intake among college and school students. Studies reported an overall increase in 10-20% increase in attitude and nearly 50% increase in knowledge related to healthy eating habits.

Conclusion: More studies need to be conducted in different Indian settings (location and socio-economic groups) to assess the effect of nutrition education intervention on different aspects such as how to include cost effective sessional foods and nutritious eating at home and outside. Future studies should be conducted to assess the nutrition knowledge and attitude towards improvement in dietary intake.

Key words: nutritional knowledge, knowledge assessment, dietary habits

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EFFECT OF CURRY LEAF (MURRAYA KOENIGII) EXTRACT ON IMMUNITY OF SPORTS ATHLETES

Astha Thakur[1], Pratibha Singh[1]

1. Department of Nutrition & Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: revamp.feast@gmail.com

Introduction: - In recent years, the relationship between sports participation and immune function has garnered increased attention due to concerns about declining immunity in athletes.

Methods: A comprehensive search of electronic databases including PubMed, Scopus, and Web of Science was conducted to identify relevant studies published up to January 2024. Keywords such as "curry leaf extract," "immunity," and "athletes" were used in various combinations. Studies were included if they investigated the immunomodulatory effects of curry leaf extract in athletes, regardless of study design. Relevant articles were selected based on predefined inclusion and exclusion criteria.

Results: The review identified a total of __ studies meeting the inclusion criteria. Curry leaf extract demonstrated immunomodulatory effects across various models, including enhanced phagocytic activity, increased lymphocyte proliferation, and modulation of cytokine levels implicated in immune regulation. Furthermore, the optimal dosage and bioavailability of curry leaf extract for immune enhancement in athletes require further investigation.

Conclusion: In conclusion, curry leaf extract holds promise as a natural immunomodulatory agent for sports athletes. While preclinical studies suggest beneficial effects on immune function, evidence from well-designed human trials is lacking. Future research should focus on elucidating the mechanisms underlying the immunomodulatory effects of curry leaf extract, determining optimal dosages, assessing long-term safety, and investigating potential interactions with other supplements or medications commonly used by athletes.

Key words: Curry leaves, immunity, athletes

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EFFECT OF TILT TABLE ON POSTURAL CORRECTION IN NEUROLOGICAL CONDITIONS : REVIEW OF RECENT RESEARCH

Garima Mishra[1], Avi Choudhary[1]

1. Banarsidas Chandiwala Institute of Physiotherapy, Affiliated to Guru Gobind Singh Indraprastha University, Delhi, India
Correspondence authors Email: gariimamiishra@gmail.com

Introduction: Tilt table, as a rehabilitation measure has been used by physical therapists and neurological rehabilitators in various neurological conditions, for postural correction where the main aim of rehabilitation is to enhance patients – arousal & awareness, and tilt table does just that – by providing mobilization into a standing position. The purpose of this review is to provide an insight into the effect of tilt table on postural correction in neurological conditions based on the recent researches.

Methods: This review includes research studies, from last five years (January 2019 – January 2024) found by searching the related keywords on PubMed & Google Scholar and thoroughly reading the full text articles available in English.

Results: This research identified 236 unique articles in total including the search bar results available on both PubMed & Google Scholar, of these only 15 met the eligibility criteria and were included in the review.

Conclusion: The articles including variety of researches provides a knowledge that the use of tilt table is limited to a very few neurological conditions but can be used for more neurological conditions – where postural correction is the key part of rehabilitation.

Key words: Tilt table, Neurological Rehabilitation, Postural Correction, Physiotherapy

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EFFECT OF TISSUE FLOSSING TECHNIQUE ON STRENGTH: REVIEW OF RECENT RESEARCH

Ravikant Singh[1]

1. Banarsidas Chandiwala Institute of Physiotherapy, Affiliated to Guru Gobind Singh Indraprastha University, Delhi, India
Correspondence authors Email: ravikantofficialmail@gmail.com

Introduction: Tissue flossing technique is becoming increasingly popular in the field of sports, athletic training, and injury rehabilitation. Tissue flossing involves using a elastic band to apply an external pressure over a muscle or joint with 50% tension and 50% overlap method to maintain arterial inflow but reducing the venous outflow away from the site. The aim of this review is to look into the recent researches done in the field of flossing technique for performance parameter of strength.

Methods: Google scholar & PubMed were used to search for related articles from last 5 years, keywords tissue flossing, floss band, voodoo flossing, athletes were used to extract the intended articles. English journal articles, full text available, and content related to outcome measures were included.

Results: The research identified 379 articles were obtained from database of google scholar & PubMed upon filtering the articles according to the inclusion criteria finally 9 articles were included for further qualitative analysis.

Conclusion: The articles including variety of researches provides an insight that there was no significant increase in short term application of tissue flossing technique on strength but there can be possible effects on its long term application.

Key words: Tissue flossing, strength, physiotherapy, rehabilitation, voodoo flossing, medical flossing

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HAND GRIP STRENGTH: A PREDICTOR OF NUTRITIONAL STATUS

Kopal Goel[1], Pratibha Singh[1]

1. Department of Nutrition & Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: kopalgoel42@gmail.com

Introduction: - Hand grip strength (HGS) is a reliable indicator of overall muscle strength and nutritional status, which are crucial components of health and well-being. This study aims to investigate the relationship between hand grip strength and nutritional status of female university teachers.

Methods: The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, research gate etc., where hand grip strength was measured using a handheld dynamometer, and nutritional status was assessed using anthropometric measurements, dietary intake data and other tools.

Results: Studies revealed a significant correlation between hand grip strength and nutritional status indicators. Same way HGS is also found to be positively correlated with the BMI of any person and BMI is also correlated to the nutrition status of any person. This relationship underscores the importance of dietary quality in maintaining musculoskeletal health and overall well-being.

Conclusion: This study demonstrates a significant association between hand grip strength and nutritional status. Maintaining a balanced diet rich in essential nutrients is essential for preserving muscle strength and overall health. Further longitudinal studies can be done to explore the long-term effects of nutritional interventions on hand grip strength on this demographic group.

Key words: hand grip strength, nutritional status, musculoskeletal health, dietary intake, anthropometry

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NUTRITIONAL KNOWLEDGE OR NUTRITION LITERACY AND ITS IMPACT ON DIETARY INTAKE AMONG INDIAN STUDENTS-A REVIEW

Deepanshi Bhatnagar[1], Mehak Sharma[1]

1. Department of Nutrition & Dietetics, School of Allied Health Sciences, Manav Rachna International Institute of Research and Studies, Faridabad, Haryana, India
Correspondence authors Email: deepanshibhatnagar790@gmail.com

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Introduction: - Pre diabetic condition is associated with metabolic syndrome. Early diagnosis and treatment of pre diabetes can lead to prevent the onset of type 2 diabetes mellitus as well as it lead to prevent the occurrence of cardiovascular abnormalities. Insulin resistance is the main cause of pre diabetes. Pre diabetes is considered as a causative factor for type 2 diabetes mellitus, cardiovascular diseases, stroke and kidney disorder. Pre diabetic also remains the common metabolic condition encountered in athletic population. Therefore, dietary intervention is necessity to counter pre diabetes.

Methods: The review article is aimed to access the effect of finger millet on pre-diabetic athletes. The research papers and articles were referred from different scientific platforms like PubMed, Google scholar, research gate, MDPI sports journal.

Results: The results revealed that athletes indulging in football are more prone to become pre diabetic as compared to other athletes and having prevalence of pre diabetes from 7.93%. To encounter all these problems finger millets can have a positive effect on Pre diabetes. Finger millet, consist of Phenols and antioxidants which act as α -glucosidase inhibitor and help to control postprandial hyperglycemia. Wheat albumin, the Phaseolus vulgaris α-amylase inhibitor, and several phenolic compounds are affective against hyperglycemia-induced chronic diseases. Antioxidants such as N-C and acid are effective in reducing diabetic acetylcysteine, vitamin complication.

Conclusion: The review concluded that though there are very limited studies conducted on effect of finger millet on pre diabetic but no studies reported on athletes. Interventional studies can be planned for understanding of better outcome, which will definitely help the athletes in the future.

Key words: Pre diabetic, Finger Millet, Sports

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AN INTEGRATED APPROACH USING MET WITH SPENCERS TECHNIQUE INTHE COMPLEX SHOULDER PATHOLOGY A CASE REPORT

Shashank Shubham[1]

1. Banarsidas Chandiwala Institute of Physiotherapy, Affiliated to Guru Gobind Singh Indraprastha University, Delhi, India
   Correspondence authors Email: Shashankshubham19@gmail.com

Introduction: A male of 56 years complaint of restricted range of motion and pain in shoulder complex having an history of diabetes mellitus from past 6 to 7 years also chronic smoker with daily alcohol intake, Cook (by profession), Range of motion of the patient is 30 degrees and MMT was grade 2+ VAS – 8, he was also psychologically disturbed (depressed and anxious). To rehabilitate the patient for normal ADLs, and reduction in pain. Increment in range of motion and strength in patient, specially shoulder joint.

Methods: For reduction in pain usage of electro therapy, hot pack (20 min), IFT (Inter ferential therapy)150 Hz for 15 min, Manual therapy, Spencers technique, shoulder isometric traction technique, manual releases on sub scapularis, Rotator cuff release and upper trapezius release, electro therapy (ultrasound at intensity 0.9 Weber /cm sq). On day seven shifted to strengthening exercises

Results: After 10 days the range of motion of the patient was at 150 degrees, MMT – grade 4, VAS-2.

Conclusion: He re-joined his work as a cook, he was psychologically motivated.

Key words: Rehabilitation, shoulder complex co morbidities, physiotherapy

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EFFECT OF PHYSICAL THERAPY ON PARKINSON'S DISEASE- A LITERATURE REVIEW

Reenu Rawat[1]

1. GD Goenka University, Sohna, Gurugram, Haryana, India.
   Correspondence authors Email: Reenurawat0202@gmail.com

Introduction: Parkinson disease is a progressive, neurodegenerative movement disorder with symptoms reflecting various impairments and limitations, in activities of daily life, balance problems, gait disturbance, immobility and falls. Parkinsons disease (PD) management is undergoing a paradigm shift, with a surge in research investigating exercise and physical therapy interventions alongside established pharmacological and surgical approaches. Beyond pharmacological and surgical interventions, the scientific community is actively exploring the potential of exercise and physical therapy in PD management. This review critically assesses the impact of Parkinsons disease (PD) on physical activity, emphasizing long-term effects of exercise and physical therapy interventions.

Methods: Building upon previous reviews focused on short-term benefits, we evaluate the potential for sustained improvements in muscle strength, aerobic capacity, gait, balance, and fall reduction. Additionally, we explore the concept of exercise-induced neuroplasticity, address potential risks and adverse effects, and propose recommendations for clinical practice and novel treatment approaches.

Results: Our analysis reveals that physical therapy shows significant improvements in gait training and balance training persistently. Positive effects on quality of life of the patient with Parkinson's post-intervention.

Conclusion: Furthermore, sustained strength training, aerobic exercise, tai chi, or yoga exhibit long-term benefits. However, further investigations are warranted to definitively confirm disease-modifying effects of these interventions.

Key words: Parkinson's, mobility, exercise, quality of life

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COMPARING THE EFFECT OF GRADUALLY GRADED FORCE WITH DIRECTIONAL PREFERENCE IDENTIFICATION VERSUS HIGHVELOCITY THRUST ON PAIN, RANGE OF MOTION, AND DISABILITY AMONG ADULTS WITH MECHANICAL LOW BACK PAIN

Aniket Mishra[1] , Ankit Jain[1] , Sumit Saxena[2] , Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Department of Physiotherapy, Dr. RML Hospital and ABVIMS, New Delhi, India
3.Viral Research and Diagnostic Laboratory Department of Microbiology MGM Medical College, Indore, Madhya Pradesh, India
Corresponding Author E-mail: Ajain@amity.edu

Introduction: Rationale: Evaluate and compare the efficacy of gradually graded force along with directional preference identification and high-velocity thrust techniques for addressing the pain, range of motion, and function in healthy adults with mechanical low back pain. Identifying directional predilections and employing force in a progressively calibrated manner can offer a remedy to diminish reliance on vigorous force and its associated hazards compromising structural stability, thereby mitigating compromise to stability and potential adverse outcomes. The finding of this study help the clinician to choose the better therapeutic strategies with lesser structural compromisation. The objective of this study is to compare the effect of gradually graded force with directional preference identification and high velocity thrust on Pain, range of motion, disability.
Methods: The study will employ an experimental controlled trial with a two by two factorial design, conducted at Amity Physiotherapy OPD, Department of Physiotherapy, Noida, Uttar Pradesh, India, with 40 participants. Patients will be selected based on specific criteria, including confirmed diagnosis of mechanical low back pain and ability to provide informed consent. Outcome variables will include pain (measured via the Numerical Pain Rating Scale), range of motion (assessed with a goniometer), and functional disability (evaluated through functional outcome questionnaires). The study aims to explore the effects of manual therapy techniques, including gradually graded force and high-velocity thrusts, alongside directional performance identification with personalized treatment or a general approach. Participants will be randomly allocated to one of four groups: Group A will receive gradually graded force without directional preference identification, Group B will receive the same force with directional performance identification, Group C will undergo high-velocity thrusts without directional performance identification, and Group D will receive high-velocity thrusts with directional performance identification. Trained therapists will administer the respective treatments over a two-week period. Pre- and post-treatment assessments of pain, range of motion, and disability will be conducted using standardized scales and assessments.

Statistical analyses: including t-tests and ANOVA, will compare the treatment approaches' effects, with a significance level set below 95% ($p < 0.05$). Statistical analyses: Including t-tests and ANOVA, will be performed to compare the effects of the treatment approaches, with a significance level set below 95% ($p < 0.05$)

Conclusion: This study will determine the effectiveness of different manual therapy techniques in managing mechanical low back pain. By comparing gradually graded force to high-velocity thrusts and directional performance identification to a general treatment approach, we aim to optimize physiotherapy interventions. The outcomes, including pain levels, range of motion, and functional disability, will provide valuable insights for improving patient care and quality of life.

Keywords: Low back pain, High velocity Thrust , Gradually graded force , Directional Preference, Manual therapy

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EFFECT OF CERVICAL -THORACIC SAGITTAL OVERPRESSURE WITH SCAPULAR MUSCLE STABILISATION EXERCISES ON PAIN AND SHOULDER RANGE OF MOTION AMONG INDIVIDUALS WITH UNILATERAL MEDIAL SCAPULAR PAIN

Shrey Bansal[1], Ankit Jain[1], Sumit Saxena[2], Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Department of Physiotherapy, Dr. RML Hospital and ABVIMS, New Delhi, India
3.Viral Research and Diagnostic Laboratory Department of Microbiology, MGM Medical College, Indore, Madhya Pradesh, India
Corresponding Author E-mail: ajain@amity.edu

Introduction: Unilateral scapular pain poses a significant clinical challenge, often affecting the functionality and quality of life of individuals. The scapula, being a crucial component of the shoulder complex, relies on the coordinated function of surrounding muscles and the cervico-thoracic region. Effective interventions are needed, considering the intricate connection between these factors.
Rationale: The purpose of this study is to evaluate the effectiveness of cervicothoracic sagittal over pressure technique and scapular muscle stabilisation exercises, alone and combined for reducing unilateral scapular pain. It addresses the research gap in interventions for this condition, aiming to develop evidence-based rehabilitation strategies. Specifically, it will investigates their effects on pain and shoulder range of motion in individuals with unilateral medial scapular.
Methods: This study will utilize an experimental control design which will be conducted at Amity Physiotherapy OPD, Noida, Uttar Pradesh, with a sample size of 30 subjects recruited based on **predefined** selection criteria. Outcome variables will include the independent variables as cervicothoracic sagittal overpressure and scapular muscle stabilization exercises. It will include the dependent variables as range of motion of shoulder flexion and abduction to be measured with a goniometer, and pain to be assessed by the NPRS scale. Participants will be randomly allocated to two groups. Group A will receive cervicothoracic sagittal overpressure and scapular muscle stabilization exercises for 30 minutes, three times a week for six weeks, while Group B will receive scapular muscle stabilization exercises for the same duration and frequency. Baseline measurements will be monitored pre- and post-interventions.
Statistical analysis: will be done using paired and unpaired t-tests, which will have a significance level below 95% i.e. ($p < 0.05$).
Conclusion: The finding of this study will conclude whether cervico-thoracic sagittal overpressure combined with scapular muscle stabilisation is better than scapular muscle stabilisation exercise alone

Keywords: Cervicothoracic Sagittal overpressure, Scapula muscles stabilization, Unilateral scapular Pain, Shoulder range of motion

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EFFECT OF SPINAL MOBILISATION AND CORE STABILITY EXERCISES WITH OR WITHOUT EXTERNAL LUMBAR STABILISERS ON PAIN, RANGE OF MOTION AND FUNCTIONAL MOBILITY AMONGST PATIENTS WITH CHRONIC NONSPECIFIC LOW BACK PAIN

Ishika Gupta[1], Ankit Jain[1], Vidhi Jain[2], Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Department of Physiotherapy, Vinayak Hospital, Noida
3.Viral Research and Diagnostic Laboratory, Department of Microbiology, MGM Medical College, Indore, Madhya Pradesh, India
Corresponding Author E-mail: ajain@amity.edu

Introduction: Low back pain (LBP) is an exceedingly prevalent condition, with a reported lifetime occurrence reaching approximately 80%, which has been associated with pain, decreased range of motion (ROM) and functional mobility leading to joint instability as a cause of LBP. Spinal mobilization and core stability exercises are proven to provide a promising result but despite that, use of external lumbar stabilizers in presence or absence of clinical advice is common in people with chronic non-specific LBP.

Rationale: The study seeks to ascertain whether use of external lumbar stabilizers can have any effect over individuals experiencing chronic non-specific LBP. The use of lumbar belt has not been very evident in the literature in the management of chronic nonspecific LBP. This study aims to determine whether patients with chronic non-specific LBP benefit from the external lumbar stabilizer.

Methods: This study will utilize an experimental control design which will be conducted at Dept of Physiotherapy, Vinayak Hospital, Noida, Uttar Pradesh, with a sample size of 30 subjects. Participants will be recruited based on predefined selection criteria. Outcome variables included the independent variables as Spinal mobilization, core stability exercises, external lumbar stabilizers, and dependent variables as pain (Numeric Pain Rating Scale), range of motion (Goniometer) of lumbar flexion and Extension, functional mobility (Oswestry Disability Index). Participants will be randomly allocated to two groups. Group A will receive Spinal mobilization and core stability exercises for 30 minutes, twice a week for six weeks, while Group B will receive Spinal mobilization, core stability exercises and external lumbar stabilizers during functional tasks for the same duration and frequency. Baseline measurements will be monitored pre- and post-interventions.

Statistical analysis: will be done using paired and unpaired t-tests, which will have a significance level below 95% i.e. ($p < 0.05$).

Conclusion: The finding of this study will conclude whether patients with chronic non-specific LBP will benefit from external lumbar stabilizers.

Keywords: Spinal Mobilization, Core Stability Exercises, External Lumbar Stabilizers, Low Back Pain

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EFFECT OF PROPRIOCEPTIVE NEUROMUSCULAR FASCILITATION AND GLENOHUMERAL MOBILIZATION ON PAIN, RANGE OF MOTION AND DISABILITY AMONG INDIVIDUALS WITH FROZEN SHOULDER: RANDOMIZED CONTROLLED TRIAL

Diksha Pundir[1], Ankit Jain[1] , Rabia Basri[2], Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Head of Department, Al Basri Physiotherapy Clinic, Okhla, New Delhi
3.Viral Research and Diagnostic Laboratory, Department of Microbiology, MGM Medical College, Indore, Madhya Pradesh, India
Corresponding Author E-mail: ajain@amity.edu

Introduction: Frozen shoulder affects significant population having estimated prevalence of 2- 5% and is characterized by pain, stiffness and limited shoulder range of motion. Pathophysiology involves articular mobility and contractile tissue limitations.
Rationale: The purpose of this study is to find out the effectiveness of different interventions on reducing the limitations caused by frozen shoulder. The objective is to compare the efficacy of proprioceptive neuromuscular facilitation and glenohumeral mobilization on pain, range of motion and disability among individuals with frozen shoulder.
Methods: The study will employ an experimental control design and will be conducted at Al Basri Physiotherapy clinic, Okhla, Delhi. A minimum of 45 subjects will be recruited and distributed into 3 groups based upon the selection criteria. Subjects will be included only after signing the written consent. Subjects of all genders aging between 30-60 year having frozen shoulder for more than 4 weeks will be included and exclusion criteria includes pregnancy, glenohumeral surgeries, comorbidities and conditions affecting pain perception. The baseline assessments will be done for pain, range of motion and functional disability. Pain will be assessed using Numeric Pain Rating Scale, Range of Motion using goniometer and disability through Shoulder Pain and Disability Index. All the interventions will be given twice a week for 4 weeks. Group A will receive conventional treatment, Group B will receive conventional treatment with proprioceptive neuromuscular facilitation and Group C will receive conventional treatment with gleno-humeral mobilization. The baseline assessments will be conducted pre and post interventions.
Statistical analysis: will be conducted through t-tests and ANOVA, which compare the effects of treatments, with a significance level set below 95% ($p< 0.05$)
Conclusion: The final conclusion of the study will highlight the best intervention that will improve the limitations of the condition, clinical decision making and patient centered care.

Keywords: Frozen shoulder, Propioceptive neuromuscular fascilitation, Glenohumeral mobilization, Pain, Range of motion, Disability

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EFFECT OF KINESIOTAPING ALONG WITH GLENOHUMERAL MOBILISATION & SCAPULAR STABILISATION ON PAIN, FUNCTIONAL DISABILITY AND RANGE OF MOTION AMONG PATIENTS WITH FROZEN SHOULDER

Kritika Tandon[1], Ankit Jain[1], Sonu Kalgan[2], Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Advanced Physiotherapy Clinic, Noida, Uttar Pradesh, India
3.Viral Research and Diagnostic Laboratory Department of Microbiology MGM Medical College Indore, Madhya Pradesh, India
Corresponding Author Email: ajain@amity.edu

Introduction: Frozen shoulder involves tightening of the capsule surrounding the glenohumeral (GH) joint leading to limited range of motion (ROM) and altered scapular mechanics. GH mobilisation and scapular stabilisation were proven to be an effective intervention in frozen shoulder separately. Kinesiotaping along with mobilisation was also found to be effective in improving the shoulder function. While none of the researchers have studied if Kinesio taping can be a stronger tool if used along with GH and Scapular correction.
Rationale: This study aims to investigate the impact of Kinesiotaping along with GH mobilization and scapular stabilization on pain and ROM in frozen shoulder. Currently the researchers advocate either glenohumeral mobilization or scapular stabilization, the prioritization of one over the other remains unexplained. This research seeks to provide clarity for clinicians by examining the combined effect of Kinesio tape alongside comprehensive correction of dysfunction.
Methods: The study will be conducted at the Advanced Physiotherapy Clinic, Noida, India, focuses on 30 individuals aging between 40 to 60 years, of all gender. Inclusion criteria encompasses patients diagnosed with frozen shoulder, experiencing ROM restrictions for 3 months to 1 year. Exclusions comprises osteoarthritis, fractures, neck pain, tumors, rotator cuff tears, diabetes, and cardiac or neurological issues. Outcome variables included treatment modalities, exercise programs, patient characteristics, risk factors, and diagnostic techniques, with pain and ROM as dependent variables. Instruments used were the Universal Goniometer, Numeric Pain Rating Scale (NPRS), and Shoulder Pain and Disability Index (SPADI). Subjects consented and were randomly allocated to two groups. Group A received glenohumeral mobilization and scapular stabilization exercises thrice weekly for 6 weeks, while Group B received the same interventions plus Kinesio taping for 45-minute sessions.
Statistical Analysis: Data will be analysed using the paired and unpaired t-test where the significance level was kept below 95% i.e. p value < 0.05.
Conclusion: This study will conclude whether kinesiotaping along with glenohumeral mobilisation and scapular stabilisation is better than glenohumeral mobilisation and scapular stabilisation

Keywords: Frozen Shoulder, Scapular Stabilization, Mobilization, Kinesio Taping, Pain, Disability

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EFFECT OF PATIENT EDUCATION, SUPERVISED SELF-STRENGTH AND PROPRIOCEPTIVE TRAINING ON PAIN, RANGE OF MOTION, FUNCTION AMONG ELDERLY WITH KNEE PAIN

Pooja Sharma[1], Ankit Jain[1]* , Shivam Sharma[2] , Suman Kumar[3]

1.Department of Physiotherapy, Amity Institute of Health Allied Sciences, Amity University, Noida, Uttar Pradesh, India
2.Department of Physiotherapy, Sharma Medicare Super Speciality Hospital and Trauma Centre, Greater Noida, Uttar Pradesh, India
3.Viral Research and Diagnostic Laboratory Department of Microbiology, MGM Medical College, Indore, Madhya Pradesh, India
Correspondence authors E-mail: ajain@amity.edu

Introduction: Knee pain in the elderly often results from prolonged neglect, leading to weakened proprioception and muscle strength. Limited awareness further delays seeking physiotherapy. This study explores how supervised intervention and patient education can significantly improve patient outcomes.

Rationale: This study will explore how supervised physiotherapeutic intervention, combined with patient education, can effectively alleviate knee pain in the elderly. The research aims to mitigate the impact of delayed proprioception, muscle strength, and limited awareness on patient outcomes. Objectives include assessing the future effects of supervised self-strength and proprioceptive training on pain, range of motion, and functional abilities in elderly individuals with knee pain.

Method: This experimental control study will be conducted at Sharma Medicare Super Speciality Hospital in Greater Noida, India, with a sample size of 30 individuals aged 65 and above, will explore the efficacy of physiotherapeutic interventions. Selection criteria, including clinical diagnosis, willingness to comply, and language proficiency, ensure a diverse group. Participants will be randomly allocated into two groups, with Group 1 undergoing specific quadriceps and hamstrings strengthening exercises, while Group 2 receives guidance for selfmanagement practices. The study aims to assess outcomes like pain, knee range of motion, and functional abilities using established measures, offering insights into effective knee pain management in the elderly.

Statistical data: Data will be analysed using the paired and unpaired t-test where the significance level will be kept below 95% i.e.$p < 0.05$

Conclusion: The finding of the study will conclude whether supervised physiotherapeutic intervention, combined with patient education, can effectively alleviate knee pain in the elderly

Keywords: Knee pain, Supervised Self strength, Pain, range of motion, Functional Disability

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To commemorate the memory of Professor S.K. Verma, **founder** of **Exercise Fitness & Health Alliance**, India (EFHA), **Journal of Exercise Science & Physiotherapy** (JESP) and a **Sport Scientist** known for his contributions to Sport Science and Physiotherapy.

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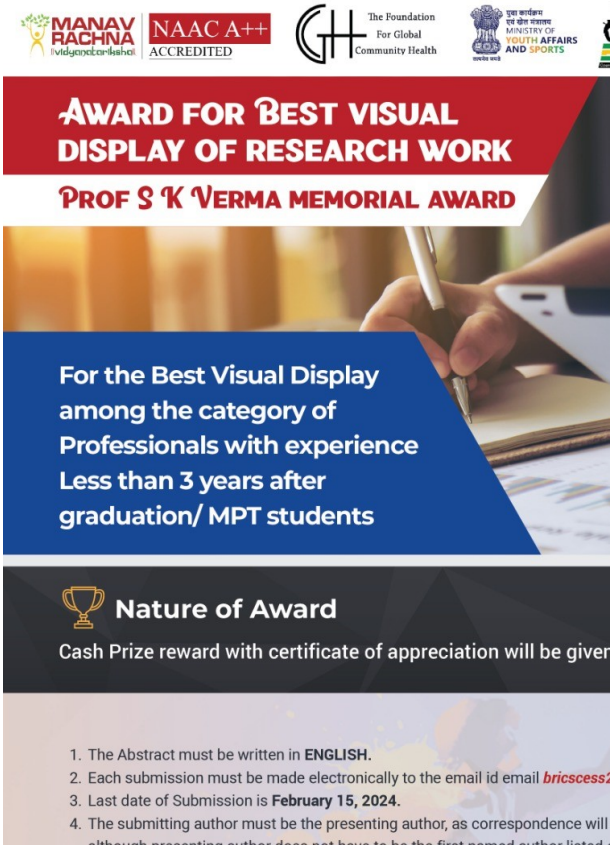

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Journal Article:

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Journal Article, Article not in English:

Seker-Aygül, Z., Akova, B. and Gür, H. 2001. The relationship of stress and stress management factors with injury in soccer players. *Turkish Journal of Sports Medicine,* **36:** 71-80. (In Turkish: English abstract).

Journal Article in press:

Gür, H., Cakin, N., Akova, B., Okay, E. and Kücükoglu, S 2002. Concentric versus combined concentric-eccentric isokinetic training: Effects on functional capacity and symptoms in patients with osteoarthrosis of the knee. *Archives of Physical Medicine and Rehabilitation,* in press.

Journal Article in electronic format:

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Book:

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