

IJIPAR

INTERNATIONAL JOURNAL OF INNOVATIVE PRACTICE AND APPLIED RESEARCH

A Peer Reviewed, Refereed Scholarly Quarterly Research Journal

Volume – 12 | Special Issue No – 2 | June – 2022 | Impact Factor – 5.2

ISSN No : 2349 – 8978

Special Issue on
“SWASTHA BHARAT IN INDIA : PROBLEM – PROSPECTS AND
WAY FORWARD”

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Published by



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ICARE Complex, Hatiberia, Haldia,
Purba Medinipur,
West Bengal - 721657, India

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EMERGING TECHNOLOGY IN PROMOTING PHYSICAL ACTIVITY AND HEALTH: CHALLENGES AND OPPORTUNITIES

Dr. JOSE MATHEW*

Abstract : In modern life technology is greatly helped in making life easy and well used. Technological advances have greatly affected sport science and other vast areas of life. On the horizon are novel and exciting cutting-edge technologies that have great potential for physical activity promotion. Indeed, human beings have applied technology in promoting physical activity for some time. Yet, in this day and age, emerging technologies and relevant behavioral theories are providing us with needed and exciting opportunities to assess and promote physical activity on a larger scale—particularly when discussing novel technologies and methodologies such as augmented reality games, crowd sourcing, and online active gaming. Researcher also believed that a wide range of systematic reviews could more accurately highlight the technological devices on sport performance.

Keywords: Technology, Physical Activity, Health, Challenges and Opportunities

Introduction

Sedentary behavior has been identified as one of the major causes of many chronic diseases such as cardiovascular disease, stroke, cancer, type 2 diabetes, and obesity. Emerging technology plays a complex role in sedentary behavior—very much like a double-edged sword. On one side, some emerging technologies (e.g., sedentary video games and computer games) have contributed to the epidemic of sedentary behavior and physical inactivity. On the other side, other innovative technologies have been increasingly utilized to promote physical activity and health. For example, newly emerging technologies such as mobile device applications, health wearable devices, and active video games have been adopted to promote health. As technology becomes an ever more prevalent part of everyday life and population-based health programs seek new ways to increase life long engagement with PA, so the two have become increasingly linked.

This special issue titled “*Emerging Technology Applications to Promote Physical Activity and Health*” has been published in *Journal of Clinical Medicine* in 2018. It attempted to offer a thorough, critical examination of emerging technologies in physical activity and health promotion, considering technological interventions in different contexts (communities, clinics, schools, homes, etc.) among various populations, exploring the challenges of integrating technology into physical activity promotion and offering solutions for its implementation. This special issue aimed to occupy a broadly positive stance toward interactive technology initiatives and, while discussing some negative implications of an increased use of technology, offered practical recommendations for promoting PA through various emerging technologies, including but not limited to: exergaming (active video games); social media; mobile device apps; health wearables; mobile games, augmented reality games, global positioning and geographic information systems (GPS/GIS); and virtual reality.

In detail, newly database findings and systematic reviews have been presented from 14 studies, which took place in various countries and regions of the world. These studies attempted to: (1) examine effects of exergaming on children's PA and health outcomes; (2)

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explore the benefits of applying mobile apps, wearable devices and social media; (3) test the validity of activity monitors in assessing PA in various settings; (4) investigate the relationships among environmental factors and sedentary behaviors; (5) explore the application of augmented reality and virtual reality games in real-world settings; and (6) provide directions for future research and practice in the promotion of PA and health through emerging technology.

Exergaming on Children's Physical Activity and Health Outcomes

Exergaming has been praised as an innovative and useful medium by which to promote PA in various populations, especially among children. In this review, Benzing and Schmidt explored the present status and future of exergaming implementation in the health and education field in diverse populations. The researchers reported examples of the strengths of exergaming in providing opportunities for PA and health promotion, such as increased physical activity enjoyment, the ability to reach specific populations (e.g., children with attention deficit hyperactivity disorder), and individualization. These authors reported, however, that there were some weaknesses, such as technical restrictions and the inability to sustain the programs over the long-term. These weaknesses, unfortunately, will threaten traditional exercise and may translate into increased screen time. Quan et al. investigated patterns of PA behaviors in first and second grade children while engaging in exergaming. The researchers used accelerometry to measure the PA behaviors and examined four sessions at random from the 27 exergaming sessions. The researchers found that the average percentage of time spent in sedentary behavior was 47.2%, followed by light physical activity 32.9% and moderate-to-vigorous physical activity 19.9% in each 30-min exergaming session. Additionally, it was shown that there were no gender differences in these PA behaviors, which altogether indicates that exergaming may be a good means to promote children's LPA and MVPA among both sexes. Ye et al. examined the effect of a nine-month combined physical education and exergaming program on children's motor skills, namely object manipulation and locomotor skills (adapted from the Test of Gross Motor Development-2) and health-related fitness compared to a traditional PE program. While children in the traditional PE group demonstrated significantly higher cardiorespiratory fitness than the intervention group, the decrease in body mass index (BMI) of children in the intervention group was significantly different from the increased BMI of children in the traditional group. In terms of fitness, musculoskeletal fitness scores for the intervention group were significantly higher compared to that of the traditional group. The findings suggest that incorporating exergaming as part of the PE curriculum over an academic year may improve children's muscular strength and BMI.

Applications of Mobile Apps, Wearable Devices, and Social Media

Lee and colleagues investigated the effect of a tailored Mammogram mobile app (Mammogram) on breast cancer screening behavior in Korean American immigrant women. In this qualitative study, the authors found three themes:

1. The women had increased knowledge on the necessity for the breast cancer screening and screening procedures.
2. Health navigators are needed to support these women to receive benefits from the healthcare system.
3. Mammogram needs to be further developed so it could be downloaded onto various models of smart phones and tablets.

The researchers concluded that a culturally-tailored health navigation service is important in overcoming the barriers to healthcare accessibility and supporting the immigrant population in the adoption of appropriate health screening behaviors. Pope et al. examined the effectiveness of a 10-week combined smart watch and social media intervention on health outcomes among breast cancer survivors. The intervention group wore Polar smart watches to

track physical activity and joined a Face book social group to receive twice-weekly physical activity-related tips. The comparison group only joined a separate Facebook group with the same physical activity tips. The researchers reported that both groups similarly increased LPA, MVPA, energy expenditure, and steps over time. Interestingly, the comparison group showed improved psychological variables (e.g., physical activity -related social support and decreased barriers) while the intervention group demonstrated decreased social support and no change in barriers. Harris and Chen examined the impact of four-week physical activity breaks using Fitbit on fifth graders' real-time physical activity and cardiovascular fitness. Students were assigned to one of the following three groups:

1. Fitbit- O: wore Fitbit as a self-monitoring tool
2. Physical Activities Engaging the Brain plus Fitbit Challenge (PAEB-C): engaged in daily six-min guided physical activity breaks during class in addition to wearing the Fitbit
3. Control group.

The results showed that the PAEB-C group reported a significantly higher number of daily real-time steps and more time spent in PA compared to the Fitbit-O group. Furthermore, there were significant differences in the fitness score between the Fitbit-O and the control and also between the PAEB-C and the control group, but no significant differences were found between the two Fitbit groups.

Assessing Validity of Wearable Devices

The preschool years are a critical period to develop cognitive function and engage in various physical activities. Quan et al. explored the relationship between Chinese preschoolers' seven-day PA measured via accelerometers and their cognitive functions. The correlation between PA and cognitive functions were not statistically significant in girls. However, the researchers found that boys' LPA was significantly related to their cognitive functions. Furthermore, when total physical activity (i.e., sum of LPA and MVPA) was entered in the model, replacing LPA and MVPA, it was associated with cognitive function, solely in boys. The authors suggested these gender-specific results may have been due to a mediating effect of cardio respiratory fitness.

Relationships among Environmental Factors and Sedentary Behaviours

Past literature has reported the association between air pollution and physical inactivity. In this study, Ma and colleagues examined the relationship between air quality and sedentary behaviors in Chinese adults. Time spent in sedentary behavior was measured by wrist-worn accelerometers, and the association between the air quality and sedentary behavior was adjusted for demographic variables, BMI, wake time, and weather-related variables. It was found that Chinese adults spent approximately 573 min per day sedentary. The results also revealed that on days with good air quality, adults spent approximately 20 min less in sedentary behavior compared to days with more polluted air. Additionally, higher concentrations of fine particulate matter were also related to longer sedentary time than other days with lower concentrations. In another study, Hsueh and colleagues investigated associations of older adults' perceived environmental factors with self-reported leisure-time physical activity and screen time. Perceived environmental factors consisted of 11 attributes, such as density, accessibility, safety, presence of sidewalks, and aesthetics. The results showed that good accessibility to shops and public transportation and good connectivity of streets were negatively associated with screen time of more than two hours. The researchers also revealed that six of the 11 environmental attributes were associated with achieving 150 min per week of leisure-time physical activity. The six attributes were good access to shops, public

transportation, recreational facilities, seeing people being active, good aesthetics, and the presence of a destination.

Applications of Augmented Reality and Virtual Reality Games

Virtual reality therapy has been increasingly used in treating people with mood disorders. However, the effect of virtual reality-based exercise on anxiety and depressive symptoms are not well documented. Zeng et al. conducted a preliminary systematic review on the association between virtual reality exercise and anxiety and depression. The findings indicated that virtual reality-based exercise was effective for improving moods related to anxiety and depression. Specifically, following virtual reality exercise, positive effects, such as energy and enjoyment, increased while the negative effect (i.e., tiredness and tension) was reduced. However, more evidence with stronger research designs is needed to fully support the effectiveness of virtual reality exercise on the treatment of anxiety and depression.

Emerging Technology for Physical Activity Assessment and Promotion

Technology is embedded in our society and is changing our lives in positive and negative ways. Indeed, emerging technologies have left no scientific field untouched, including the field of physical activity and health. As stated a number of times within this editorial, however, technology is like a double-edged sword when viewed through the lens of physical activity and health promotion. In fact, these emerging technologies have entered into homes, schools, communities, and other avenues, and have been very popular among various populations. For example, nowadays, smart phones not only allow us to regularly communicate with others through phone calls and text messages but also let us monitor our health status and monitor physical activity behaviors via multiple health-oriented apps. Healthcare professionals can play a valuable role in the selection and integration of emerging technology. This section will equip the readers with the requisite knowledge base regarding the use of emerging technology for physical activity assessment and promotion. We hope that such knowledge will promote further integration of emerging technology into physical activity and health by scholars and healthcare professionals alike.

a) Emerging Technology for Physical Activity Assessment

Technology is constantly changing our living environment and lifestyles. Approximately two decades ago, physical activity questionnaires were replaced with health wearable (e.g., pedometers) that measured physical activity and tracked and calculated human movement patterns for analyses. Particularly, the most popular electronic devices, such as pedometers, accelerometers, and heart rate monitors, provide details of physical activity measures, including but not limited to steps, estimated distance, energy expenditure, time in different intensity levels of physical activity, and heart rate. Beyond their measurement attributes, these devices also play an important role in providing feedback to clients, which can act to motivate these individuals to participate in more physical activity.

With the rapid development of technology, accelerometers capable of assessing physical activity and sedentary behavior are now appearing in smartphones and GPS devices. While technology advancement offers opportunities for the public to engage in sedentary behavior, the integration of accelerometers into a greater number of electronic devices is providing opportunities for professionals to objectively assess physical activity and sedentary behavior to address various health issues. In fact, the extant electronic devices are attractive for healthcare professionals in that they have achieved greater ease of use, greater precision, and greater scope (i.e., data of various sources from one device) by integrating innovative emerging technologies, such as mobile device apps, GPS units, and health wearable. With this information, knowing where, when, and how physical activity occurs allows for greater

understanding of physical activity patterns and, ultimately, allowing for more effective physical activity behavioral changes .

b). Emerging Technology in Physical Activity Promotion

As previously stated, researchers and healthcare professionals have taken advantage of emerging technology available in physical activity promotion. However, it should be noted that some emerging technologies such as GPS/GIS have only been used to measure and track physical activity behavior, with few interventions of this type having the objective of promoting an individual's physical activity behaviors. Fortunately, the introduction of persuasive technology shows great potential for emerging technology applications in physical activity promotion. More specifically, persuasive technology refers to a technology that is designed to change individuals' attitudes or behaviors through persuasion and social influence, but not through coercion. Research involving persuasive technology focuses primarily on interactive and computational technologies such as video games, desktop computers, the Internet, and mobile devices, yet it also incorporates behavioral theories and human-computer interactions. Indeed, persuasive technology is designed with the goal of changing a particular aspect of human behavior, including physical activity behavior, in a predefined way in non-commercial domains.

Some emerging technologies play key roles in persuading individuals to engage in greater PA participation in that:

1. They serve as the tool (e.g., recording heart rates and calories)
2. They are linked to social media (e.g., synchronize exercise app data to Facebook)
3. They offer social interaction (e.g., Kinect Just Dance 2019 allows for dancing with another person from the online community).

The applications of such technology have been increasingly seen in our daily lives. For example, Just Dance, a type of active video game with dance movement, provides scores and instant feedback to users for each of their movements while allowing users to compete with others simultaneously on-site or online. Most importantly, this technology's interactive feature captures users' attention so that they play the dance game without knowing that they are actually exercising.

Opportunities and Challenges

Emerging technologies bring exciting or even stunning opportunities for the promotion of physical activity and health. Yet, not all contributions from emerging technologies have been positive. The emerging field of physical activity and health, coupled with the rapid development of technology, has presented both challenges and opportunities that deserve further considerations for researchers and healthcare professionals. According to King et al. and Gao, challenges and opportunities can be classified into five categories:

1. Data collection and data expansion
2. Technical considerations
3. Areas for "bridging the gap"
4. Privacy protection
5. Internet of things.

a) Data Collection and Data Expansion

While processing data gathered from emerging technologies, a number of challenges have emerged. First, there has been a lack of big data analysis despite the potentially large amount of physical activity data that can be retrieved from multiple emerging technologies (e.g., physical activity data, posts on social media, GPS/GIS data) to improve population health. Thus, great opportunities exist to deal with big data via improved mathematical models and computer algorithms. Another potential challenge to the integration of emerging technology is

incorporating big data analysis. Simply put, big data analysis requires the use of innovative methods to obtain, accumulate, and study the rapidly accruing data existing in different formats (e.g., audio, video text) within our high-tech world. Second, there has been little use of crowd sourcing data in the physical activity field. Further, many emerging technologies are not yet capable of capitalizing on the ubiquity and heterogeneity of potential environmental data sources or at employing crowd sourcing to evaluate and manage large datasets in an effort to improve public health. As such, crowd sourcing data in physical activity and health is an emerging field. For example, researchers started to use crowd sourcing to complete physical activity evaluation and surveillance (Amazon Mechanical Turk; It appears promising to take advantage of crowd sourcing data in promoting physical activity in the future. Third, there is still a lack of sufficient physical activity data. Training and recruiting more researchers to study physical activity and emerging technologies is strongly encouraged. Finally, little understanding of person–environment interactions in studies utilizing emerging technologies has been seen. It is, therefore, warranted to increase the number of studies that investigate different dimensions of an individual's personal attributes (e.g., self-esteem, attitudes, cognition, and weight status) and environments (e.g., social environment, physical environment).

b) Technical Considerations

Technology is rapidly developing at an amazing speed, thus offering numerous challenges and opportunities is ahead of us. First, a challenge exists in an up-to-date manner with the latest technological advancements. Nowadays, it is not uncommon for researchers to find their recently purchased products become outdated after a short period of time. King et al. suggested the centralization of technological resources for researchers with links, critiques, etc. It is also recommended to partner with companies in the public sector to begin developing and testing emerging technologies. Second, it is noteworthy that a virtual exercise advisor has now been applied in physical activity promotion. Given the major potential of this type of interactive technology, it is advisable for healthcare professionals and researchers to solicit small business research grants to develop cutting-edge technologies for physical activity promotion. Third, augmented reality games (e.g., Pokémon Go) have successfully gained attention from users in recent years. These reality games are attractive as they integrate the physical and virtual worlds into one interface on mobile devices, particularly the apps of Smartphone devices. Of note for healthcare professionals, augmented reality games require users to walk around and explore their local surroundings; hence, increasing physical activity participation. However, physical harm may occur, such as playing these games while walking or driving. Playing the games also increases economic burden as a result of in-app purchasing and heavy data usage, and potentially leads the users to inappropriate or dangerous areas. In addition, the geo-locating feature embedded within some games can result in crime (e.g., criminals using the “lure” function of Pokémon Go). It is, therefore, imperative to offer the safety guidelines for users of such games. Fourth, the cost of recent technology and relevant equipment and supplies can present an obstacle. In many cases, researchers provide subjects with required equipment and supplies, assuming the investment will increase consistency in intervention across participants and decrease potential barriers to participation and adherence. Yet, it can be quite expensive to offer lots of devices to a large population at one time. To deal with this issue, researchers can solicit research funds and industry donations for technology-based PA promotion programs. Researchers can also enroll participants in cohorts to decrease the number of devices needed. For some programs, it is possible to request that participants cover the costs (e.g., when using a smart phone and its apps as intervention strategies)—potentially providing a more contextually relevant evaluation of the intervention program. Additionally, it is challenging to secure funds for longitudinal data collection. Also, challenges exist due to the

discrepancies in access to emerging technology among individuals from different socioeconomic status. It is suggested to locate and use publicly available technological resources or to employ widely used low-fee mobile devices, such as smart phones, for physical activity promotion.

c) Areas for “Bridging the Gap”

To bridge the gap between researches on the use of emerging technologies to promote physical activity in the real world, researchers face a number of challenges as below. First, experts from various disciplines need to develop and implement technology applications to improve health in field-/clinic-based settings. Many times, some well-functioning applications are designed by computer scientists while neglecting the needs of clients, which lead to little or no intervention impact. Hence, to design and implement an effective technology application for physical activity promotion, it is crucial to recruit researchers and practitioners from different disciplines, including physical activity specialists, computer scientists, and health practitioners, as well as consulting the end-users. Once more, it is also encouraged to form institutional collaborations with initiatives and monetary incentives. Notably, with the increasing application of the Social Ecological Model, the built environment inevitably becomes an indispensable component of PA promotion. As such, partnering with experts across disciplines (e.g., physical activity, planning, transportation, and technology) is also encouraged. Second, with the integration of electronic devices, mobile devices, and apps, bridging the gap between physical activity assessment and intervention becomes a challenge for researchers. Thus, working with all stakeholders, including clients, to identify leverage points for behavior change and integrate everyday physical activity data seamlessly into the lives of participants to promote behavior change strategies will be important in the years to come.

d) Promote and Model Digital Citizenship

Emerging technologies that continuously collect data regarding physical activity behavior as well as other social and environmental aspects related to physical activity invite several important ethical considerations for researchers in the areas of anonymity, privacy, and participant informed consent. Therefore, researchers should develop standardized protocols for privacy protection. Many concerns are present when it comes to the digital realm and its history with the undermining of anonymity. Conceivably, the largest undesirable feature for the use in physical activity promotion of emerging technologies is the confidentiality of health information while using these new technologies. It is critical that researchers remain ethically concerned about the issues of privacy, participant consent, and anonymity as it pertains to emerging technologies that are constantly collecting statistics on behavioral as well as environmental and social characteristics.

e) The Internet of Health Things

A handful of emerging technologies, as well as the challenges and opportunities associated with these technologies' integration into physical activity and health promotion, have been elaborated throughout this Editorial. In this Editorial, the following questions might have been posed: What emerging technologies will we use five to ten years from now to promote more healthful behaviors? Relatedly, what should we be doing currently to prepare for that future.

Directions for Future Research

Given the limitations in the empirical studies with emerging technology, researchers and healthcare professionals have a number of questions to answer prior to successfully and effectively promoting physical activity and health through advanced technologies. To begin, some recommendations for future exergaming research are as follows:

- 1) Examine the long-term efficacy of exergaming use in non-structured home settings for physical activity promotion using high-quality randomized controlled trials, and the potential benefits of family/group play and potential barriers in such settings
- 2) Determine whether individuals with access to exergaming actually replace their screen time with exergaming as opposed to traditional sports or physical activity
- 3) Conduct process evaluation for exergaming to ensure the intervention fidelity\
- 4) Investigate exergaming use in early childhood and their subsequent effectiveness
- 5) Ascertain the effectiveness of using a multi-player mode in comparison to single-player mode
- 6) Examine the effectiveness of home-based, patient-implemented exergaming rehabilitation as compared with clinic-based rehabilitation research
- 7) Quantify the role of exergaming in contributing to individual's daily physical activity levels
- 8) Implement serious games or storytelling games that promote physical activity behaviors
- 9) Investigate the effects of multiple sports-based exergaming and different exergaming consoles on specific motor skills
- 10) Investigate the extent to which exergaming can promote players' learning and maintenance of new movement and cognitive skills.

Conclusion

Technology is continuously evolving and constantly changing our lives. On the horizon are novel and exciting cutting-edge technologies that have great potential for physical activity promotion. Indeed, human beings have applied technology in promoting physical activity for some time. Yet, in this day and age, emerging technologies and relevant behavioral theories are providing us with needed and exciting opportunities to assess and promote physical activity on a larger scale—particularly when discussing novel technologies and methodologies such as augmented reality games, crowdsourcing, and online active gaming. Undoubtedly, the technology era appears to be a prime time for researchers and healthcare professionals in physical activity and health. Offering a logical and clear critique of emerging technologies in physical activity and health promotion, we sincerely hope that the special issue, along with this editorial, can provide useful suggestions and practical implications for researchers, practitioners, and educators in the fields of public health, kinesiology, physical activity and health, and healthcare.

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PANDU - NUTRITIONAL ANEMIA IN CHILDREN

Dr. ANNAPURNA PATIL¹ & Dr. VIJAYALAXMI MALLANNAVAR²

Introduction

Nutritional deficiency disorder present throughout the world, but its prevalence is higher in the developing countries like India. Iron deficiency is the commonest cause of anemia. Iron deficiency is currently the most widespread micronutrient deficiency and affects nearly 1.5 billion people globally. Infants, preschool children's, adolescents are at greatest risk of iron deficiency and its resultant anemia. Presently available data shown that about one-third of world's population suffers from iron deficiency anemia and of which 90% lives in developing countries. The peak incidence of iron deficiency in children occurs between 6 months – 3 years and in adolescents 11-17 years. The third National Family Health Survey (NFHS-3) estimates that 70% of children in India have anaemia.

Pandu Roga there is pallor on the skin due to deficiency of Rakta Dhatu (blood tissue) either in the form of haemoglobin and or red blood cells (RBCs) in relation to age and sex, hence it is called anaemia. Pandu Roga is one of the common disease in children. The description of Pandu Roga is available since Vedic period. Pandu Roga is basically a nutritional disorder and children are more prone to nutritional disorders than adults. It may develop as a separate disease or as a consequence of other diseases.

In Pandu Roga there is quantitative and qualitative deficiency of Rakta (blood). Varna Vikriti is found in patient of Pandu Roga due to deficient quantity of Rakta Dhatu. So the term Raktalpata is also considered synonymous to Pandu Roga. The clinical description of Pandu Roga has similarity with anaemia and iron deficiency is the commonest cause of anaemia in children.

AIM –

1. To find etiological factors of nutritional anemia in children
2. To review literary search on Pandu.

DEFINITIONS

ANAEMIA - Anaemia is the blood disorder characterized by the reduction in Red blood cell count, Haemoglobin content, Packed cell volume. Generally it occurs because of decreased production of RBC, increased destruction of RBC or excess loss of blood from the body. All these are caused either by environmental influences such as nutritional problem.

NUTRITIONAL DEFICIENCY ANAEMIA -

Nutritional deficiency anaemia that occurs due to deficiency of a nutritive substance necessary for erythropoiesis. The substances which are necessary for erythropoiesis are iron, proteins, and vitamins like C, B₁₂ and folic acid.

PANDU ROGA -

In Pandu Roga, one gets affected with Raktalpata (Lack of blood), Alpamedaska (Fat and marrow deficiency), Nihsara (weakness), Shithilendriya (Sensory weakness) and Vaivarnya (Altered complexion). Such child attains Vaivarnyata of skin like Pandu. Because of dominance of Panduvarna in all of them the disease goes by the name of Pandu roga.

Nidan - Several causes have been mentioned for Pandu Roga by different Acharyas. Acharya Charaka has explained some specific causes for each variety of Pandu Roga, as per the

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predominant Dosha

Aahar - Excessive intake of Kshara, Ushna, Viruddha, Asatmya, Vidagdhanna, Tila Taila, Masha Atisevana, Madya, Teekshna Ahara, Amla, Lavana and Ruksha Ahara

Vihar - Excessive exercise results in Kshaya, Trishna, Shrama, and Dourbalya. This causes Vataavridhi and Dhatukshaya leading to Pandu Roga

Rutu vaishamya - Seasonal regimen, if not followed, causes Dosha Prakopa of the respective seasons and leads to different Vyadhis like Pandu Roga

Vega dharana - Chardi Veganigrahana is specific to the occurrence of Pandu Roga

Nidanarthakara Rogas -

PanduRoga can manifest as a secondary condition to some other diseases like Yakrit Pleeha Roga, Krimi, RaktaSrava leads to either Rakta Kshaya or severity of doshas which results in Pandu Roga

Poorvaroopa - Poorvaroopa will give us the information regarding the forthcoming disease; if treated at this stage, progress or severity of disease can be checked

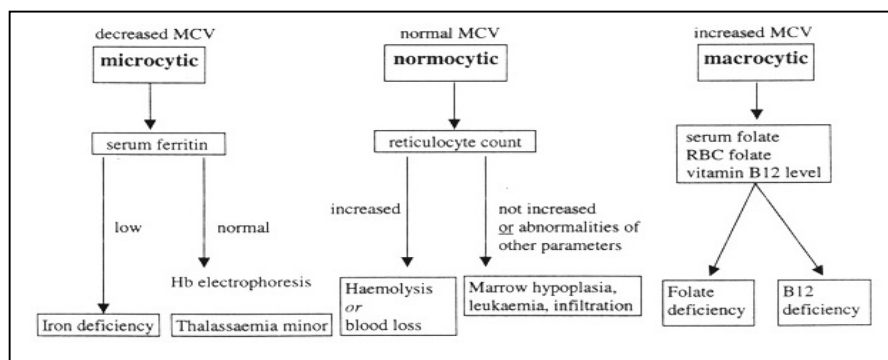
- Hridaya spandana
- Twak roukshya or twak sphutan
- Swedabhavata
- Shrama
- Gatasada
- Aruchi
- Peetata of vit and mutra

Clinical features of Pandu (Anaemia) –

Vaivarnata (pallor), Daurbalyata (weakness), Shrama (fatigue), Akshikootashota (oedema), Shwasa (dysp noea), and Pindikodwestana, Adhika nidra, Shirashula (Headache), Karnanada (Ringing in the ears), Nakavakrata (Brittle nails).

Characteristic sign – Pallor detected in nail beds, oral mucous membranes and conjunctiva
Children present with non- specific symptoms like irritability, anorexia, tiredness, weakness and cramps, poor school performance.

Types of Pandu – Vataja, Pittaja, Kaphaja, Sannipataja and Mridabhakshanajanya



Prevention of Anemia –

According to Ayurvedic – In children worm infestation is the prime reason for anemia so Before starting the treatment for Pandu krimighna dravyas is advised.

Intake of green leafy vegetables and sprouting green grams

Eat and drink vitamin C rich foods and drinks

Iron supplements for susceptible children and at puberty, especially in girls

MANAGEMENT – As per ayurved

- Haritaki with guda
- Haritaki powder and loha bhasma with jiggery and honey
- Amalaki choorna (rich in Vit C)

According to modern view –

Oral therapy – Elemental Iron 3-6 mg/kg/day in 3 divided doses for 4-6 months.

Ferrous sulphate is most effective

National Nutritional programmes related to child health

Anaemia is a major nutritional problem affecting the health of the people in the country. It is particularly serious among the young children. To prevent serious and harmful consequences of iron deficiency anaemia and to control the widespread prevalence of anaemia in the country the Government of India has been implemented a programme called National Nutritional Anaemia Control Programme, since the year 1970.

Objectives: Mainly they are supplementary nutrition programmes preschool children. The programme focuses on the following

- Promotion of regular consumption of foods rich in iron.
- Provision of iron and folate supplements in the form of tablets to the 'highrisk' groups.
- Identification and treatment of severely anaemic cases.
- **Special nutrition program(SNP)** – Children below 6 yrs of age are to be provided 300 calories and 10 grams of proteins per child per day
- **Vitamin A prophylaxis program** – children between the ages of 9 months of 3 years are administered 2ml of vitamin A concentrate
- **Mid day meal program** – children attending primary school (6-11 yrs of age)
Under this program provision of hot meal, of which the food grain components is 100g per child per day for 200 school days or through the supply of 5kg wheat/rice per month per child in a family for 10 months
- **Integrated child development services program** – preschool children < 6years and adolescent girls
This program provides supplementary nutrition, vitamin A, Iron and folic acid
Immunization, health checkups, preschool non formal education for children 3-6 years
- **Nutritional anaemia control program-** children 20 mg elemental iron (equivalent to 60 mg ferrous sulphate) + 0.1 mg folic acid
- **Iodine deficiency disorders control program** – supply of iodized salt to the identified areas
- **Balwadi nutrition program-** provide food supplements at balwadis to children of the age group 3-6 years in rural areas
- **Wheat based supplementary nutrition program-** supplementary nutrition is provided to the preschool children.

CONCLUSION –

By Following all these measures we are able to eradicate the nutritional anemia in children and which proved the dream of our Prime Minister”Swastha Bacche Swastha Bharat”

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QUALITY PHYSICAL EDUCATION: A SUSTAINABLE APPROACH TO COMBAT NON-COMMUNICABLE DISEASES

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Abstract : Today the whole world is worried and almost desperate due to Noncommunicable Diseases (NCDs). WHO continues to express concern over its every session, from time to time. Low physical activity for NCDs such as cardiovascular disease and type 2 diabetes is one of the major risk factors. In today's competitive era, children do not have time to play, in such a situation, only the period of physical education (PE) of the school is one in which children can do good physical activities. Knowledge of PE and its use not only helps the children in physical activities, but people of all ages can get effective tips on PE. Evidence-based remedial measures recommend exercises and continue physical activity behaviour changes to control NCDs.

Key Words : Fit India Movement; NCDs; Physical Activity; Physical Education; UNESCO

Non-Communicable Diseases (NCD's)

A non-communicable disease (NCD) is a disease that is not transmissible directly from one person to another. NCDs, also known as chronic diseases or the lifestyle disease, tend to be of a long duration and are the result of a combination of genetic, physiological, environmental and behaviours factors. The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. NCDs contribute to around 38 million (68%) of all deaths globally and to about 5.87 million (60%) of all deaths in India. Children, adults and the elderly are all vulnerable to the risk factors contributing to NCDs, whether from tobacco use, harmful use of alcohol, lack of physical activity, unhealthy diet, and air pollution.

Quality Physical Education (QPE)

Playfields are the real laboratory of life where we nurture the child's talent in all the perspectives of life and there also we can notice the creative and mindful expression of the child's which will be working as reinforcement of the qualitative life. We can find a healthy mind in a healthy body because of the regular physical workout (Play). Physical Education is the process of gaining value-based education through physical movements or physical activities, it is mainly focused on student's growth and development.

PE also aims to provide basic movement skills, knowledge, and active attitude for lifetime PA to children and adolescents. Quality Physical Education (QPE) term is coined by UNESCO. QPE is the planned, progressive, inclusive learning experience that forms part of the curriculum in early years, primary and secondary education. QPE classes teach students how their bodies react and how to deliver a fine fundamental movement skill. The learning experience offered to children and young people through physical education lessons should be developmentally appropriate to help them acquire the psychomotor skills, cognitive understanding, and social and emotional skills they need to lead a physically active life. The QPE policy package aims at:

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Impact of Physical Activity on NCD's

Childhood obesity has become so far-reaching every nook and corner of the country. Obesity increases the risk of coronary heart disease, is linked to Type II Diabetes, hypertension, stroke, asthma, some cancers, can contribute to sleep apnea, and is the second leading cause of death (Blankenua, 2009; Kaprowy, 2012; Mattingly, 2013).

Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Physical inactivity (lack of physical activity) has been identified as the fourth leading risk factor for global mortality. Regular physical activity is an entrenched defensive factor for the counteractive action and treatment of the main NCDs, to be specific: - Heart infection, Stroke, Diabetes, Breast malignancy, Colon disease, hypertension, overweight and corpulence, and is related with improved psychological wellness, delay in the beginning of dementia and improved personal satisfaction and prosperity.

ROLE OF PE TO COMBAT NCDs

In 2016, non-communicable diseases and injuries (NCDIs) comprised 63 percent of all deaths in India, including cardiovascular diseases (27%), chronic respiratory diseases (11%), cancer (9%), diabetes (3%), other NCDs (13%) and injuries (11%). It is evident that PA is required to attain sound health and wellness. Participation in high-quality PE, therefore, provides a good opportunity to benefit children's health (UNESCO, 2015). School PE gives a setting to normal and organized PA, a typical legitimization for PE's place in the school educational plan is that it adds to students' long-lasting health and fitness. For the school children, a sports period is a moment in which children open their minds to do recreational activities of their mind, they laugh openly, run, and jump, etc. If we incorporate all the components of physical education correctly into our daily routine since childhood, then surely physical fitness in our lifestyles will remain strong support to old age. Physical Education Teachers (PETs) have to design safe physical activity (PA) and exercises programs to achieve the objectives of PE. PETs are also considered as a facilitator to deliver the qualitative lives to the children's and they are not only limited to teaching sports skills, but they also provide health and life long fitness related information to the children during theory classes, due to which children resolve to stay healthy and fit at the right age.

Discussion and Concluding Suggestions:

The present article indicates the importance of QPE in curbing NCDs. In today's competitive era, children do not have time to play, in such a situation, only the period of PE of the school is one in which children can do good PA. Beyond health, increasing participation in PA has multiple social and economic benefits and can contribute to achieving the 2030SDGs. It is unfortunate to see the accelerated hike in NCDs ailments such as diabetes and hypertension in the youth population of India. The current physical inactivity rates are increasing because

students are now choosing smart phones and computer games instead of outdoor PA, the virtual world especially the social sites are now totally replaced by the real world human touch.

1. Increase the time duration of PE practical period/classes, at-least 04 periods in a week ($5 \times 35 = 140$ minutes). The proper evaluation system of student progress in PE classes can be adopted and presented in a report card form.
2. Schools are the most suitable space where actual transformation can begin and flourish given the right support and opportunity is provided to guide and empower both PETs and students. PE requires proper attention the same as the other subjects and making it more enjoyable and inclusive.
3. Frequency of school sports especially team games should be increase to get mass participation.
4. PETs skills and knowledge up gradations as per the international standard. Workshops on QPE can also be organized to train PETs in a scientific way. Such PETs should be banned who have obtained degrees without attending the college, such teachers are playing with the future of the child as well as the nation.
5. Schools can also motivate their students and their parents to get engaged in community-based programs, Like *Rahgiri*.
6. Although the Government of India with the help of state governments, has taken a good step to make PE as important subjects because of its actual need in the present scenario but still strong political will is required to bring drastic changes. Govt. Support is also required to strictly implement the WHO Global Action Plan on Physical Activity 2018-2030.
7. Every year rapid survey can be employed across the country to get the factual data related to the PE and PA status of the students. This Research-based assessment will be helpful in developing new teaching strategies.

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SUSTAINABLE DEVELOPMENT AND ITS IMPACT ON AATMANIRBHAR BHARAT IN INDIA

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Introduction:

The government has made paramount importance the goal of self-reliance in its policy and practice, the COVID has taught us how to speed up the same and what efforts shall be put for it. Aatmanirbhar Bharat Campaign is the result of the same. It is the time to take bold decisions regarding investment for promoting manufacturing in India only. The focus of the Campaign is also on reforming various policies related to 'land, labour, liquidity and laws. It also focuses on empowering the poor, labourers, migrants, etc., both from organized and unorganized sectors. In fact, the Covid crisis has taught the decision makers the importance of local manufacturing, local market and local supply chains. Prime Minister Mr. Narendra Modi remarked that

Rationale of Self-Reliant India (Atamnrirbhar Bharat)

Due to pandemic India has seen worst growth performance since the 1991 liberalization the coronavirus outbreak has severely disrupts the economy, the World Bank. Indian economy is expected to lose over \$4.5 billion every day due to lockdown and around \$100 billion during the 21-day nationwide lockdown period. Infact, the second wave of the coronavirus has proved more dangerous than the first and the covid-19 cases in India increased abruptly. During this period Indian economy faced many challenges most notably at two levels- supply-side disruptions and reductions in aggregate demand. An assessment was made by taking 5 key economic indicators GDP, Unemployment rate, Inflation rate, Interest rate, and Industry output. Due to this International Monetary Fund slashed India's economic growth rate for the fiscal year 2021 to 1.9% from 5.8%. Domestic agency CRISIL predicted India's economic rate to 1.8% from 3.5%.

Table 1: Various Sectors of Indian Economy affected by Covid -19

S. No.	Sectors affected by Covid -19	Decrease Percentage
1.	Financial, Real Estate and Professional Services	20
2.	Mining and Quarrying	17
3.	Electricity, Gas, Water Supply and other utility Service	16
4.	Construction	15
5.	Trade, Hotels, Transport, Communication and other broadcasting service	11
6.	Overall CVA	11
7.	Manufacturing	7
8.	Agriculture, forestry and Fishing	2
9.	Public Administration, Defense and Other service	1

Because of the unexpected COVID pandemic, major cities globally were under lockdown that had led to an almost total stoppage of economic activities for a few months, which in turn lead to economic recession in all countries. The unusual outcome of the crisis is that it has hit the services sector harder than manufacturing. All the contact-dependent services that are labour intensive are facing hard times, which includes hospitality, tourism,

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recreation activities, and related businesses. The crisis has disturbed the cyclical flow of funds in various economies. The liquidity crunch had a profound impact on global economies. Different Governments around the world have announced stimulus packages, and their respective central banks reacted through monetary measures for solving problems of social security, illiquidity in businesses. India, as a developing economy, also decided on and announced various monetary measures by RBI, the central bank of India, and fiscal stimulus package by the Government of India. The stimulus package is called an Atmanirbhar Bharat package that amounts to 20 billion rupees.^{vii} The focus of this campaign is on following sectors:

Strengthening Indian Businesses

The Self Reliant Campaign investment Package supported various sections of economy including cottage industry, MSMEs, labourers, middle class, industries, among others, Pradhan Mantri Garib Kalyan Package -1 and 2 which provided Crore relief package for the poor labourer and workers to help them fight the battle against Corona Virus, Collateral-free Automatic Loans for Businesses, including MSMEs, equity support to MSMEs, new definition of MSMEs further supported these by disallowing Global tenders up to Rs 200 crores- a step towards Self-Reliant India and support Make in India, EPF contribution reduced for Business and Workers for 3 months, Special Liquidity Scheme including financial guarantee for non-banking financial companies (NBFCs), housing finance companies (HFCs) and microfinance institutions (MFIs), Liquidity Injection for DISCOMs, Power Distribution Companies, Relief to Contractors, time line to complete Real Estate Projects under RERA, relief to Taxpayers.

Financial Support to Poor, including migrants and farmers

Investment support to ameliorate the hardships faced by poor, specifically by migrant labourers, street vendors, migrant urban poor, small traders self-employed people and small farmers and housing. Various incentives were given which includes: Free food grains supply to migrants for 2 months, Technology system to be used enabling Migrants to access PDS (Ration) from any Fair Price Shops in India by March, 2021-One Nation one Ration Card, Affordable Rental Housing Complexes for Migrant Workers and Urban Poor, 2% Interest Subvention for 12 months for Shishu MUDRA loanes, Credit facility for Street Vendors, boost to housing sector and middle income group through extension of Credit Linked Subsidy Scheme for MIG under PMAY(Urban), Emergency Working Capital for farmers through NABARD, special drive to provide concessional credit to PM-KISAN beneficiaries through Kisan Credit Cards. Fisherman and Animal Husbandry Farmers.

Developing and Modernizing Agriculture Sector of India

India's agriculture sector presently contributes around 15.9% of the country's GDP and provides 49% of the total employment (2018-19). India's agricultural sector has performed better with 2.9% growth rate during 2019-20, as against 2.74% achieved during 2018-19. Farmers have toiled against all adversities during COVID and provided food security, ensuring continuous supply of agriculture commodities, especially staples like rice, wheat, pulses and vegetables.

New Horizons of Growth

In order to boost growth and manufacturing in the country various measures has been started in Self-reliant (Atmanirbhar Bharat) Campaign. These are like Policy Reforms to fast-track Investment, Upgradation of Industrial Infrastructure, Self-reliance in coal production which include policy reforms and investment in coal and mineral sector, self-Reliance in Defence Production, enhancement of FDI limit in the defence manufacturing under automatic route will be raised from 49% to 74%, reduction in flying cost, construction of three new airports in PPP mode, making India an Aircraft Maintenance, Repair and Overhaul (MRO),

Privatization of Distribution of electricity in UTs, Boosting private sector investment in Social Infrastructure through revamped Viability Gap Funding Scheme, boosting private participation in Space activities etc.

Government Reforms and Enablers

The self-reliant approach is aimed at providing employment, support to businesses, ease of doing business, development of Education and Health sectors of State Governments. Additional Allocation of Rs 40,000 crore increase in MGNREGS to provide employment boost in the rural area., increase in Public Expenditure on Health and starting National Digital Health Mission, Technology driven Systems - Online Education during COVID, PM eVIDYA boosting online education, Reforming Governance for Ease of Doing Business, Decriminalisation of Companies Act violations involving minor technical and procedural defaults such as shortcomings in CSR reporting, inadequacies in Board report, filing defaults, delay in holding of AGM, Ease of Doing Business for Corporates, Public Sector Enterprise Policy for a New, Self-reliant India, increase in borrowing limits of States from 3% to 5% for 2020-21.

Self-Reliant India (Atmanirbhar Bharat): An Analysis

Self-reliant India campaign was started to bring the country out of the damage caused by the Corona crisis. So far, 2 phases of self-reliant India have been launched. Now the third phase of the self-reliant India campaign 3.0 has been launched by the government. Under the third phase, 12 new schemes have been started to give boost to economy. Under the self-reliant India campaign, an investment of Rs 27.1 lakh crore has been made by the government and the Reserve Bank. This amount is 13% of the country's GDP. The focus of Aatmanirbhar 3.0 is on

The first and second wave of corona virus has brought social and economic life to a standstill. India's distressed financial condition has been further impacted by the global halt of trade and exports. COVID-19 pandemic has affected the manufacturing and the services sector—hospitality, tours and travels, healthcare, retail, banks, hotels, real estate, education, health, IT, recreation, media and others. The focus of the programme is to encourage domestic enterprises to cater the demand from national and global customers. The programme facilitates for higher share of investments from global companies, while also bringing in technology and building local supply

The Atmanirbhar Bharat campaign through various measures is committed to achieve this target. Recently Government of India has started a Production-Linked Incentive Schemes which focuses thirteen vital sectors of Indian economy with an incentives /investment of Rs 1.97 lakh crore for boosting manufacturing sectors. Production-Linked Incentive Schemes is a way to reward increased production in a specified sector, and has ramifications for economic growth and job creation. "PLI schemes are a cornerstone of the government's push for achieving an Atmanirbhar Bharat" announced an outlay of INR 1.97 Lakh Crores for the Production Linked Incentive (PLI) Schemes across 13 key sectors, to create national manufacturing champions and generate employment opportunities for the country's youth. In addition to the three schemes announced earlier in March 2020, Government of India has further introduced the following 10 new PLI schemes in November 2020. The dream of the country is to make Indian economy a \$5-trillion economy by 2024.

Self-Reliant India (Aatmanirbhar Bharat) Campaign: Challenges and Suggestions

The government announced an economic stimulus package of Rs. around 21 lakh crores under the Atmanirbhar Bharat Abhiyan. The intended objective of this plan is two-fold. First, interim measures such as liquidity infusion and direct cash transfers for the poor will work as shock absorbers for those in acute stress. The second, long-term reforms in growth-critical sectors to make them globally competitive and attractive. Together, these steps may revive the

economic activity, impacted by Corona virus pandemic and create new opportunities for growth in sectors like agriculture, MSMEs, power, coal and mining, defense and aviation. However, there are several challenges that are needed to be addressed in order to fulfill the vision of this plan.

1. **Confusion about the Policy:** It appears that Atmanirbhar Bharat Abhiyan reduced domestic market access to imports, but at the same time opened the economy and export to the rest of the world. It appears that the campaign pushes towards protecting domestic industries under the self-reliance initiative, echoing India's pre-liberalisation stance.
2. **Logistics cost:** It is estimated that the Logistic cost in India is about 13 percent of GDP. Which is more as compare to many manufacturing countries of the world. Due to the high logistics cost, the competitiveness of India's exports is greatly reduced.
3. **Lack of Infrastructure:** Whereas it is an accepted thing in the world that the creation of quality infrastructure for sustainable development is such a way, which gives rise to many economic activities, creates employment on a very large scale. But the Self Reliant (Atmanirbhar Bharat Abhiyan) approach do not address this shortcoming.
4. **Skilled Manpower:** Skilled workforce is pre requirement for achieving the required results. Lack of skilled work force leads to poor performance and middling manufacturing of products.
5. **Budget:** The package of Rs 20 lakh crore comprises both fiscal and monetary measures, the latter being in the nature of credit guarantees and liquidity infusions into banks and other financial sector institutions.
6. **Lack of Demand:** The great lockdowns have lowered the aggregate demand in the country. People don't have money as they have no work. So, a fiscal stimulus is needed. However, the package is largely based on credit, little has been disbursed directly in the banks of people as compared to US and various other countries. So, they don't have money to spend which has led to demand crunch.
7. **Reforms in Domestic Sector:** reform in economy is a comprehensive approach and should be carried out by state and centre govt. However, many states due to one or other reasons are not reforming the economy. Unless an integrated and comprehensive approach is not followed, domestic economy cannot be revived and economy can face shortage of demand and its production may hamper.
8. **Escalating Fiscal Deficit:** Government claims that the stimulus package is around 10% of India's GDP. However, it would be very difficult for the government to contain the fiscal deficit.

Conclusion

Further, there should be proper coordination between various Central and state level agencies. In order to make the self-reliant (Atmanirbhar) campaign successful it is vital to have next generation infrastructure and connectivity in the country. The Atmanirbhar Bharat Abhiyan is an important mission for the economic revival and progress of the Indian economy. If implemented effectively, it can help achieve the dream of India of being economically stable, technologically superior and self-reliant in its needs.

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EMOTIONAL MATURITY AND INTERNET ADDICTION

BASAVARAJ KUMASI* & RAVINDRA GOUDA S M*

Abstract : In addition to providing an environment for virtual contact, social networks have a significant impact on the quality of one's mental well-being. According to a study by Pew, teens between the ages of 10 and 18 spend an average of 11 hours per day utilising electronic media. the anthropologist, adolescence was a time of increasing interests and activities. Adolescence is generally marked by difficult interpersonal conflicts. In some of these battles, the adolescent is pitted against the social norms he or she is expected to conform to. Our culture imposes school attendance on teenagers, places restrictions on their employment options, and governs them using rules that only apply to juveniles. The age at which adolescents can vote, drink, drive, enlist in the military, and even enter into contracts is regulated by society. It is common for these age restrictions to have no bearing on the biological or psychological development of the adolescents concerned. Adolescents go through various stages of development.

Keywords: Internet, Online, Maturity and Adolescents

Introduction

When computers come into contact with young people, they can be dangerous. Most parents, especially those with teenagers, make this remark at some point. As a result, parents find it increasingly difficult to keep tabs on their children's emotional growth when they are immersed in technology like computers and the latest applications they may find online. Most teenagers' parents are unfamiliar with the nuances of the internet. In addition, there is a communication gap between parents and adolescents, which only adds to the parents' concern when they appear to be unable to comprehend their teenagers' conduct. Adulthood is a roller coaster ride, and adolescents are no exception. As the child matures, he or she is referred to as a "teenager" for his or her adult-like physique and intellect. In other words, it's when you're forced to pay adult pricing for movies yet aren't allowed to watch adult content. To sum up her thoughts on early adolescence, a 13-year-old girl used these phrases to describe her feelings. Adolescence is defined as the time span between puberty and the end of physical growth.

Individuals' and cultures' experiences of the transition to adolescence may also differ in terms of the psychological impact. Adolescence is described as "a time of turbulence and anxiety." Adolescence (1904) by American psychologist Granville Stanley Hall helped make this period of life a subject of scientific study. Adolescence, in Hall's view, was characterised as an upheaval, as opposed to a period of steady growth. Anna Freud, the daughter of Sigmund Freud and a notable theorist, even stated that teenagers who keep their psychological equilibrium during adolescence may be abnormal.

In the words of Margaret Mead, the anthropologist, adolescence was a time of increasing interests and activities. Adolescence is generally marked by difficult interpersonal conflicts. In some of these battles, the adolescent is pitted against the social norms he or she is expected to conform to. Our culture imposes school attendance on teenagers, places

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restrictions on their employment options, and governs them using rules that only apply to juveniles. The age at which adolescents can vote, drink, drive, enlist in the military, and even enter into contracts is regulated by society. It is common for these age restrictions to have no bearing on the biological or psychological development of the adolescents concerned.

ADOLESCENTS GO THROUGH VARIOUS STAGES OF DEVELOPMENT.

The Evolution of Life

Transitioning from a child to an adult occurs during puberty. The hypothalamus sends a signal to the brain that causes these reactions. The teenage growth spurt is followed by the slow development of reproductive organs and secondary sex traits, which is known as the adolescent period (breast development in girls, beard growth in boys, and appearance of pubic hair in both sexes). When it comes to size and maturity, gender differences in the timing of a growth spurt can create some fascinating results. Body size and muscular strength begin to diverge between sexes by the fourteenth year of life.

The Advancement of Thought

In addition to the physical changes that occur during puberty, the mind undergoes a fundamental shift. As outlined in Jean Piaget's theory of intellectual development, most children begin formal operations about age 12 or so, which is the final major stage of cognitive development. At this point, one's mind has matured to an extent, but it is still immature. Abstract thinking, inductive and deductive reasoning, hypothetical reasoning, inter-propositional logic, and reflective reasoning are all characteristics of formal-operational mind.

Psychiatric Growth

Adolescence is commonly thought to be a time of moodiness, inner turmoil, and rebellion. This is the conventional thinking. This theory has been largely disproved by current research (Steinberg & Morris, 2001). In high school, many students experiment with drugs and alcohol or break the law in other ways, such as driving a car when under the legal drinking age. The majority of them, on the other hand, do not go on to develop an alcoholism or a criminal record. Adolescents may have an increase in mental and behavioral issues because of physical changes and the timing of these changes. Being an early or late mature (one year earlier or later than the average) has an impact on teenagers' self-esteem and body image satisfaction. When compared to their older counterparts, males who are still maturing tend to have less self-control and emotional stability. Depression, anxiety, and low self-esteem are more common among girls who reach puberty earlier than their peers. They often feel self-conscious about their more feminine physiques than their female classmates. Behavior and emotional issues may arise as a result of this. Adolescents' psychological well-being is influenced by their parents' parenting techniques. Adolescents with the fewest long-term issues tend to have parents who are authoritative – loving and sympathetic but strict about rules and their enforcement (Steinberg & Morris, 2001). The opposite is true for teenagers whose parents are either too strict or too indulgent.

Creating a Personality

Psychologist Erik Erikson argued that adolescents face the greatest challenge of their lives when it comes to developing a sense of self-identity. According to Erikson (1998), "a sensation of being at home in one's body" and "a sense of psychological well-being" are two significant benefits for adolescents who develop a sense of identity. Adulthood should be a time of role experimentation for adolescents, according to the majority of developmental psychologists. Role models are sought out by adolescents throughout this "identity crisis" time, when they are struggling with integrating their beliefs and opinions into a single picture. Adolescents' devotion to celebrities, sports figures, music stars, and politicians, as well as their engagement with them on social media, may have something to do with this.

Principles of Ethics

People's moral reasoning progresses through stages, according to Piaget's early study (1932). According to Lawrence Kohlberg's (1976) theory of moral development, teenagers are at the pre-conventional level of moral development, where they rely on abstract ideas that go beyond customary ethics and morality. Adolescents' moral perceptions might be heavily influenced by their peers. It is common for teenagers to doubt the authority of their parents, instructors, school administrators as well as the government. As they begin to form their own sense of self and their own set of values in late adolescence, most teenagers become less rebellious. Young people with the highest levels of moral development may opt to take part in protests, while others may prefer to give their time for causes that advance ethical values that are important to them.

Maturity in Emotions

Adolescent brains continue to mature throughout adulthood, as demonstrated by longitudinal neuroimaging research. This has sparked a great deal of research into the relationship between neuro-maturation and judgmental maturity. Adolescents' real-world behaviour and neuro-developmental processes are not well-studied. Adolescent brain development research is already being used in public policy arguments over whether people should be considered mature. Neuroimaging research has shown that adolescence is a period of continuous growth and change, defying long-held ideas that the brain has essentially completed maturing by the time adolescence begins. When it comes to the "executive functions" of the brain, the frontal lobes are among the last to mature. They may not fully mature until the third decade of life. An interest in the relationship between maturity and judgement has arisen as a result of this. Even the media, parents, policymakers, and physicians are interested in the possibility of a biological explanation for the sometimes-perplexing health-risk behaviour and impulsivity of adolescents. Adolescents' susceptibility to internet overuse may therefore be explained by their lack of self-regulation methods and the inability of their parents to provide an external regulation. For goal-directed behaviour, the executive functions include response inhibition, working memory, and attention. Decision-making and judgement could be affected by executive dysfunction. A person's mood, temperament, personality, and motivation are all intertwined with their emotional state. Emotions serve as a motivating factor for conduct, whereas motivations direct and energise actions. Accurate development and adequate demand are necessary for emotional maturity. It has a significant impact on the quality of life for humans.

Emotional Maturity: Meaning and Definitions

Personality development is a process in which the personality is constantly seeking for improved emotional health, both intra-psychically and intra-personally, according to Walter D. Smithson (1974). Refined ability to comprehend and use one's emotions in self-controlled ways is defined as "emotional maturity" by Alexander Magoun. Emotionally mature people are able to put up with delays in meeting their demands. He's capable of putting up with a certain degree of irritation. If conditions change, he can delay or modify his expectations. He believes in long-term planning. When a child is emotionally mature, he or she is better able to adjust to new situations, whether they be in the home, at school, or in society at large. Having the ability to adapt and live fully within the boundaries of one's circumstances is a hallmark trait of maturity, as is the absence of any sense of self-doubt or inferiority complex.

What Does It Mean to Be Emotionally Mature?

1. To be able to feel and express one's deepest sentiments and desires, and to do so in a way that is appropriate and helpful.
2. Empathy and regard for the needs and feelings of others are all part of a person's job

description.

3. Improving one's decision-making abilities in the face of adversity.
4. Giving up immediate enjoyment for the sake of more urgent priorities or tasks.
5. Instead of wallowing in self-pity, practice selflessness and regard for the needs, feelings, safety, and survival of others.
6. adapting imaginatively and nimbly to the ever-shifting situations of one's existence.
7. Ability to use oneself and others as well as the community as a whole to make a positive impact on oneself and others.
8. The ability to distinguish one's own duties from those of others and the desire to take personal responsibility for one's own circumstances and actions.
9. Relationships that are mutually beneficial, comfortable, and enjoyable for both parties.
10. Healthy connections should be nurtured whereas harmful or destructive relationships should be limited or ended.

Emotionally mature people are able to maintain their composure even in the most difficult conditions. Hollingworth argues that a person who has reached emotional maturity is able to respond to stimuli with varying degrees of intensity. As long as he doesn't go over the top, he'll be fine. Despite the fact that his cap is blown away, he does not explode. Emotional maturity is defined by Bernard (1954).

- Inhibition of direct expression of negative emotions.
- Cultivation of positive, up building emotions.
- Development of higher tolerance for disagreeable circumstances.
- Increasing satisfaction from socially approved responses.
- Increasing dependence of actions.
- Freedom from unreasonable fear.
- Understanding and action in accordance with limitations.
- Awareness of the ability and achievement of others.
- Ability to err without feeling disgraced.
- Ability to carry victory and prestige with grace.
- The enjoyment of daily living.

In Fred McKinney's 1960 book, Emotional maturity is defined as "heterosexuality, appreciation of attitude and behaviour of others, desire to imitate the attitudes and habits of others, and capacity to delay his responses."

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A COMPARATIVE STUDY BETWEEN CORE STABILITY AND TRUNK EXTENSION TO AVOID LOWER BACK PAIN AMONG RIFLE SHOOTERS

MAHESH G*

Abstract : The purpose of the study was to compare the effect of core stability exercises and trunk extension exercises in reducing back pain of Rifle shooters. To achieve the purpose of the study, the investigator randomly selected 24 Rifle shooters in the age group of 20 to 25 years who reported back pain and visiting Rorize Sports Shooting Academy for their fitness. The selected subjects were divided into three groups, one group was experimented with core stability exercise, another group was experimented with trunk extension exercises and the third group was considered as control group. The back pain prior to experimental treatment and after experimental treatment was assessed using visual Analog Scale. The difference between initial and final scores on back pain was considered the effect of respective experimental protocols. The statistical significance between the initial and final scores was tested using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis of this study.

Keywords: Rifle shooters, Core Stability, Trunk Extension, Back Pain.

INTRODUCTION

The goal of physical fitness programmed is to improve the performance in activities of daily living, job demands, sports and recreational activities, which was said by Craig Liebenson (2003).

Physical fitness is the basic fitness of all other fitness. Physical fitness is not only the most important keys to a healthy body, but it is also the basis of dynamic and creative activity. Physical fitness is the combination of strength, speed, flexibility, agility and endurance. It is the ability to enjoy our lives and to achieve our goals without undue fatigue or stress. Physical fitness varies from person to person and different types of fitness are needed for different types of profession.

Physical fitness is not synonymous with health. It plays an essential role in all aspects of health because they are inextricably related. Good health provides one of the most important keys to healthy living, which makes life to the fullest. Freedom from disease, organic development, efficient provide the framework of fitness. It has been said that fitness adds not only "years to one's life" but life to one's years.

Strength is the most important motor ability, i.e., it depends largely on the energy liberation processes in the muscles. Strength is a part and parcel of all motor abilities, technical skills and tactical actions. Strength and strength training therefore, assure high importance for achieving good performance in all sports. The role or strength training for general health, good posture and for prevention of injuries is usually overlooked which in the long run can prove harmful.

OBJECTIVE OF THE STUDY

The purpose of the study was to make comparative study between core stability and trunk extension or avoid lower back pain among Rifle shooters.

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METHODOLOGY

For the purposes of this study, 24 Rifle shooters were specifically selected among the shooters who were regularly practicing in Rorize Sports Shooting Academy for their conditioning and fitness. The subjects expressed their willingness to participate in the study as they are interested to reduce their back pain. They were selected specifically for the study. The age of the shooters ranged from 20 to 25 years.

Selection of variables

Variables are the conditions or characteristic that the experimenter manipulates, controlled or observes. The investigator has selected only one dependent variable, namely back pain.

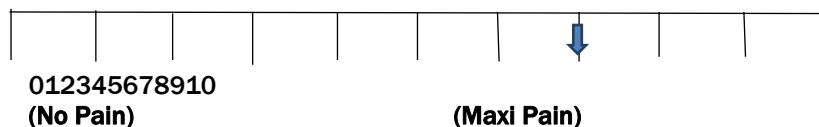
For interval training programme the investigator selected two variables, They are:

1. 4 weeks core stability
2. 4 weeks trunk extension exercises

Test Administration

Pain scale

Visual Analog scale (VAS) is the standard pain rating scale. It is a scale of 0 to 10, where 0 represents no pain 10 maximum pain. Patient is asked to mark his/her pain injury within 0 to 10.



STATISTICAL ANALYSIS

The statistical procedure adopted to compare the effect of core stability exercise and trunk extension exercises on back pain on the Rifle shooters.

ANCOVA technique was used to test the adjusted post test mean differences among the experimental groups. If the adjusted post- test result was significant, the Scheffe's post hoc test was used to determine the significant of the paired mean differences (Clarke and Clarke, 1972)

RESULT AND FINDING OF THE STUDY

The obtained results using ANCOVA due to 4 weeks core stability exercises and trunk extension exercises on back pain of the Rifle shooters was presented in the table.

COMPUTATION OF ANALYSIS OF COVARIANCE OF BACK PAIN (Score in Numbers)

	Core Stability Exercise	Trunk Extension Exercise	Control Group	Source of Variance	Sum of squares	Df	Mean Square	Obtained F
Pre Test Mean	7.40	7.20	7.50	Between	0.47	2	0.23	0.24
				Within	26.50	27	0.98	
Post Test Mean	5.70	6.60	7.20	Between	11.40	2	5.70	5.48*
				Within	28.10	27	1.40	
Adjusted Post Test Mean	5.67	6.74	7.09	Between	10.89	2	5.45	14.39*
				Within	9.84	26	0.38	
Mean Diff.	-1.70	-0.60	-0.03					

Table. F ratio at 0.5 level of confidence for 2 and 27 (df) = 3.37,2 and 26(df)=3.35. *Significant

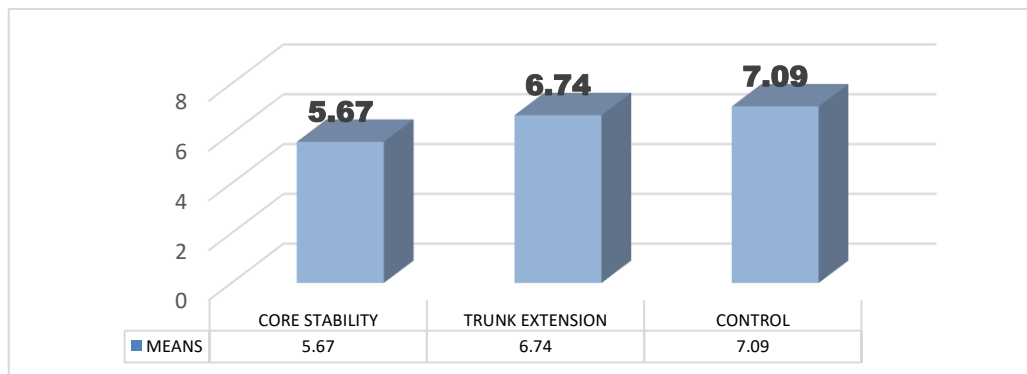
Means				Required CI
Core Stability exercise	Trunk extension exercise	Control exercises	Mean Difference	
5.67	6.74		1.07	0.71
5.67		7.09	1.42	0.71

As shown in the table, the obtain F value on the scores of pretests means 0.24 was less the required F value and was not significant. The obtained F value on posttest means was 5.48 was greater than the required table value of 3.37, which proved that there was significant difference among posttest means. Taking into the consideration of the pretest means and posttest means adjusted posttest means were determine and analysis of covariance was done and the obtained F value 14.39 was greater than the required value of 3.35 and hence it was accepted that there were significant differences among mean values of core stability exercises, trunk extension exercises and control group. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test.

Table. Scheffe's Confidence Interval Test Score on Back Pain

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between core stability exercises and trunk extension exercises group; and core stability exercise group and control group. This proved that core stability exercise significantly better than trunk extension group and control group. The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I

BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF BACK PAIN



CONCLUSIONS :

On the basis of the results obtained by the statistically analyzing the data within the limitations and delimitations of this study the following conclusions were drawn.

- There was no significant difference due to trunk extension exercise on back pain of the Rifle shooters.
- There was significant reduction in back pain of the Rifle shooters.
- Comparing between core stability exercises was significantly better than the trunk extension in reducing back pain of the Rifle shooters.

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MODERN TECHNOLOGICAL ADVANCEMENTS IN THE CONTEMPORARY PERIOD TO INCREASE SPORTS PERFORMANCE

NAMBURI RAMYA*

Abstract : People are benefiting from advancements in technology in nearly every area of their lives. They can make jobs faster and easier, increase productivity, provide more data to individuals, and enable people to perform things that were previously impossible. Athletes are one group that really can benefit by technological advancements. Sports have evolved into modern technology accessories as a unique social phenomenon. Technology is changing the sport world, and because technology plays such a large role in our daily lives, it is also changing our bodies. As a result, technology continues to alter how sports are played, how injuries are treated, what types of sports are played, and how performance results are improved. Scientists have found a variety of technologies that can assist athletes in improving different elements of their performance. Each of these provides athletes with something unique, such as performance statistics, fitness or diet information, increased speed or strength, and a variety of other perks. Here are some of technological advancements that might aid performance in sports.

SPORTS GENETICS

Scientists have discovered that researching a person's DNA may provide them with a wealth of information. It could then tell them if the person is genetically susceptible to certain diseases and provide them information about their ancestors. According to Richard van Hooijdonk, scientists are now focusing on how reading DNA may potentially boost athletic performance. They're looking at how genetic markers can tell them all they need to know about how an individual athlete's performance may be improved. They can figure out not just which sport a person is most likely to flourish in, but also what they need to consume to perform and how their bodies will react to intense training.

WEARABLE TECHNOLOGY

While wearable technology is not a new concept in the fitness and athletics worlds, advances in sensor technology and accuracy have completely transformed the fitness tracker market, making wearable tech one of the most significant technological advances in sports. A decade ago, sportsmen and fitness fanatics who wanted to measure basic workout stats had to rely on cumbersome, unattractive, and inconvenient gadgets. Wearable technology has now made its way into the realm of fashion since it is so beautifully designed and practical. Athletes and fitness fanatics may correctly track parameters like steps walked, stairs climbed, calories burnt, and much more using high-end wearable equipment. These gadgets can even track your sleep and give you useful information on how to improve your routine.

VIDEO TECHNOLOGY

Video analysis and video refereeing are being employed in a variety of sports, according to Innovation Enterprise. Individuals, teams, and coaches can use the analysis to examine their strengths, flaws, blunders, and areas that need further training. This data is then utilized to improve performance by deploying new methods and improved training programs.

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Video refereeing has the potential to produce more accurate findings and is less biased than using a human referee. It has the ability to illustrate situations in more detail and in slow motion. Video refereeing also offers for a distinct perspective on an occurrence.

AERO/HYDRODYNAMICS

In speed sports (players, athletes' costumes, sports balls, sports equipment, and so on), aero/hydrodynamics is crucial. The aerodynamic and hydrodynamic behaviour of fluids affects sports balls (spherical - golf, cricket, tennis, soccer, baseball, softball, etc.) and sports clothes (swimsuits, ski jumping & alpine skiing suits, cycle skin suits, skate suits) (air and liquids). The curved flight path of a soccer, tennis, cricket, baseball, or golf ball, as well as the route of a surfboard and sailboat across water, is dictated by aero/hydrodynamics. It has an impact on the athlete's speed, motion (position and placement), and overall performance. It is nearly difficult to attain desired success in any professional speed sport if the effects of aerodynamics and hydrodynamics are ignored.

SLEEP MONITORING

The importance of sleep for sportsmen has long been recognised. Their bodies require sleep in order to obtain proper rest and to restore cells. Sleep is also necessary for concentration and peak performance. According to BizTech Magazine, there is now equipment that measures an athlete's sleep for these reasons. It keeps track of not only how much sleep the athlete gets, but also when they sleep, their sleeping habits, and the quality of their sleep. This can assist an athlete in determining how much extra sleep they require and whether they need to enhance their sleep quality. They can increase their attention and general performance by using tactics to improve this.

MENTAL STIMULATION

In athletic performance, the mind plays an important role. Focus, coordination, and precision are just a few of the mental roles that the mind plays in sports. As a result, mentally warming up may have a big impact on performance. That was the emphasis of Halo Neuroscience's co-founders. They concentrated on the motor cortex, which controls coordination. They've created Halo Sport, a headband containing foam nibs that give pulses to the motor cortex, causing neurons to fire simultaneously. The device is linked to the Halo Sport app, which collects data while the headband is worn. Athletes can boost their brain plasticity and capacity to establish new connections by wearing the device for 20 minutes before training or an event.

NUTRITION

The mind plays an essential part in sports performance. Focus, coordination, and accuracy are just a few of the mental responsibilities that the mind plays in sports. As a consequence, psychologically warming up might significantly improve performance. Halo Neuroscience's co-founders emphasised this point. They focused on the motor cortex, which is in charge of coordination. Halo Sport is a headband with foam nibs that send pulses to the motor cortex, forcing neurons to activate at the same time. The headband is connected to the Halo Sport app, which captures data while it is worn. Wearing the gadget for 20 minutes before training or an event can help athletes increase their brain plasticity and capacity to form new connections.

REHABILITATIVE TECHNOLOGIES

Rehabilitative technologies are chemicals and techniques that are used to treat moderate to severe injuries. They also include drugs used by healthy sportsmen to combat the otherwise debilitating consequences of their training routines. These technologies are usually found in sports clinics and training facilities and are delivered by athletic training or sports medicine professionals. Anti-inflammatory chemicals, such as acetylsalicylic acid, are used in

rehabilitative therapies. Whirlpool machines and ultrasound equipment are examples of rehab technology that athletes utilise to rehabilitate injured muscles and joints. Electronic stimulation or slim are more modern inventions that transmit currents into the damaged region to promote blood flow and help in the healing process.

CONCLUSION

Sporting technologies are man-made methods for achieving human objectives or goals in or related to a certain sport. It's a method by which players try to improve their training and competing environment in order to increase their overall athletic performance. Sensors and wearables, huge developments in protective equipment, and the introduction of virtual reality and streaming services have all revolutionised the way people interact with sports. Sports technology is making it simpler for everyone to enjoy their favourite sports and activities, from athletes to coaches and managers to supporters in the stands. We're excited to see what the future of sporting technology holds. Technology has had a significant impact on sport and exercise science, as it has on most other aspects of life. It's impossible to picture current sports and exercise science sub-disciplines without technology. Frustration and ambivalence are inextricably linked to the usage of technology. Surprisingly, it is the ubiquitous presence of technology that has made the greatest contribution.

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MECHANICAL, MATERIALS AND ELECTRICAL ENGINEERING APPLICATIONS TO SPORTING SCENARIOS

SATHISH .B.P[♣]

Abstract : Active strategies that also interest and engage students in the learning process can be used to promote learning in educational settings. In an effort to interest and introduce students to engineering principles through a familiar context of sports, a multidisciplinary team of academic staff and students from two universities and a county college developed a set of hands-on modules. Experimentation in one such module allowed for students to explore mechanics of materials at an introductory level. At a four-year university, this module is one of several covered in a freshman introduction to the engineering course. The students conducted four module experiments. After this guided instruction, the freshmen work in small teams to develop their own experiments. In an engineering materials course at a two-year county college, students perform the mechanics of materials experiment, as this is the topic of the course. Students later brought in other products to test a section or material sample. The purpose of this article is to explain the module and its incorporation into each of the courses, to evaluate students' attitudes and interests in the sports in engineering topics, and to determine the perceived level of usefulness of the materials for the students in their learning and determine student level of outcome achievement.

Keywords: Engineering, Physical education, Relationship, Sport, Technology

Introduction

The Mechanical Engineering courses aims at developing new technologies for sporting applications and sporting facilities. Students will develop knowledge of human physiology and its relationship with sports and exercise. They will make equipment and facilities more efficient, and will be at the fore front of sporting performance developments. Mechanical Engineering needs an opportunity to protect employment in the stimulating area of Sports. Infact the sports professional can also catch employment in all Mechanical Engineering areas, as an outcome of the complete Mechanical Engineering. Mechanical Engineering complications in sports have been undertaken by either engineers or physiologists, or multidisciplinary groups/committee. The personnel with absence of multidisciplinary skills have less progress. Now the branches are different and responsibility could not be the same, so there is basic requirement of specialists of the particular branch so that we can improve the research on performance and invention of new techniques. This study focus on the uniqueness of sports activity in the students in the field of Mechanical Engineering.

We can easily understand the meaning of Mechanical Engineering and its uses. We never thought Mechanical Engineering as a profession in the field of sports. But it is very popular in the Western sports culture now. India is a developing country. It requires enhancement of technology and use of sports mechanics. Because every movement of man's extremities is related with sports and based on mechanical principles. Many sports engineers have background in traditional academic discipline such as mechanical engineering. Previous study in an area such as this provides a solid platform to develop a special expertise required in the industry. However, pursuing a degree in Mechanical Engineering is certainly not the only route that can be taken, many sports engineers have backgrounds in electrical engineering,

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material science, medical, physics, mathematics or pure physics. Also, there are increasing number of sports engineering and sports technology degree programmes. Because sports Mechanical Engineering encompasses such a broad church of activity, individuals from a miscellaneous range of backgrounds can be successful. However, a common trait seems in all successful sports engineers, and that trait is love for sport that can only be rivaled by their obsession for science and technology.

Idea of Mechanical Engineering and Its Importance In Sports

The Mechanical Engineering is not new course but off-course this the new thing is in the field of sports in INDIA, but not in abroad and western countries. The straightforward concept about Mechanical Engineering is to make such great paraphernalia to enhance the sport exposure technique to improve the performance. Mechanical Engineering is the form of sports engineering It's parts are physiology, bio-mechanical science and sports sciences.

The Mechanical engineering is combination of human movement and biomechanics, exercise, physiology as well as engineering themes such as advanced materials, unconventional manufacturing, dynamics & control, sustainability engineering, computer aided design and manufacture, computational, fluid mechanics and finite element analysis whereas design is the back bone of Mechanical engineering.

There are Some Possible Areas for Mechanical Engineering in Sports

The areas are as follows.

☐	Computing	☐
☐	Fluid mechanics	☐
☐	Physiology	☐
☐	Professional Practice	☐
☐	Design	☐
☐	Novel materials	☐
☐	Mathematics	☐
☐	Electronics	☐
☐	Engineering Science	☐

The Principles of Mechanical Engineering in Sports

While some people may view Mechanical Engineering in sports as a less serious side of engineering, those who work in the field feel they are making a significant contribution to the wellbeing of both players and spectators. "It is very exciting to think that our work is helping the national teams to improve their work in the Hockey World Cup, football world cup etc. or in the Olympics, "It is also stimulating to apply basic laws of science and see them at work as David Beckham uses the Magnus Effect [the lift force produced by a rotating cylinder] to swerve the ball into the top corner and out of the goalkeeper's reach." Sports mechanical engineers focus on developing new or improved types of sports equipment, some of the mechanical

engineers spend their time inspecting the engineering's actual foundation. The surfaces under players' feet. Without believing in engineering use, it is not possible that a firm footing can help prevent injuries while giving sports participants, quite literally, an even playing field. Mechanical Engineering focuses on using computational fluid dynamics to design and develop footballs. "It is known that the size and pattern of seams on a football greatly affects its flight, trying to quantify this effect. In this, the engineers studied the effect various combinations of top soil and wetness is seen on the players' healthiness and performance. "Natural soil surfaces are subject to large differences in mechanical properties due to differences in wetness content," observes. "In the biomechanics lab, we are using 3D indication capture apparatus to regulate body movement, and force platform and pressure monitoring equipment to look at the stresses applied to the human body and the sports surface.



Example of Mechanical Engineering in Sports

- **Running Technology:** Optical motion analysis systems are typically used to perform kinematic analysis of human movement. However these systems are primarily laboratory-based, expensive, have a limited calibration volume, and often require considerable post processing time. Such an approach to motion analysis is therefore often unreasonable for analysis of athletes during actual training and performance surroundings. A strong need exists to develop methods that provide meaningful information about athletic performance in the field without gratuitously filling the athlete or constraining the natural environment. We are currently using the device to quantify aspects of elite running performance including ground contact time, impact attenuation, trunk stability and sprint start technique. In the near future we propose to incorporate gyroscopes into the device to provide information about the orientation of the body under dynamic conditions.
- **Wearable Swimming Technologies:** Using a small wearable device a swimmer can now train in their own pool and on their own but gather performance data like they were supported by coach and timekeeper and in an instrumented pool with video analysis. In general the measurement of sport specific performance characteristics is an important part of an athlete's training and preparation for competition. Now the new generation research is setting sensors on the hands and monitoring the propulsive forces as well to help improve technique more directly.
- **Boxing, Martial Arts and Combative Sports:** In the combat sports it all happens so quickly, best practice for scoring often involves a number of judges and set areas that can count as scoring areas. Enter the electronic age where we can monitor striking, defending and scores quicker than the eye can see. Impact force can also be monitored. Put this all together to have a real time judging system and analysis of weak points in protection or attacks. Combine this with safety equipment and it's a winner all round.
- **Racket, Bat and Ball:** Monitoring players on the field gives us information but what about monitoring the bat or racquet they are using, put a little something in the ball too as an aid to athlete performance and game statistics. Have a look at what we are doing in cricket and tennis. A major challenge faced by tennis professionals and sports experts is to be able to accurately measure what athletes are doing in the training and competition atmosphere. Such information is important because it has potential to provide insight into physical activity levels associated with performance, as well as the skill based techniques involved in the activity. A common feedback method used to enhance the performance of

athletes is subjective visual assessment by an expert observer such as a coach. Some problems with this method are that different observers could have different ideas and give differing feedback and that some high speed motions cannot be clearly detected by human eyes. Today, the performance of many professional and elite players have been monitored and analyzed by using objective measurement systems as an aid to counter these problems. Two different popular monitoring methods for high speed motions are digital optical systems and video cameras. Both approaches rely on placing the markers on the area of interest with the position and motion of the markers recorded. The systems are quite accurate and have been used to monitor the performance of athletes for many years.



By taking advantage of the advancement in microelectronics and other micro technologies, it is possible to build cheap, miniaturized, light weight, and non-invasive instruments to monitor the performance of athletes in a number of sporting activities. These new technologies have sufficiently accurate outcomes when compared to optical and video systems. Micro Electromechanically Systems (MEMS) based inertial sensors including accelerometers and gyroscopes are good examples of using micro-technology to monitor athletes.

Sports engineering can be considered as a new engineering discipline. It bridges the gap between two distinctive fields: sport science and engineering. Sports engineers are responsible in designing and building new equipment based on athlete's demands, besides measuring the performance of the athlete, the equipment itself, as well as their interaction. It is without doubt that engineering and technology have played an important role not only in improving the performance of an athlete, but also in making sports more entertaining and safe. This article provides an insight into how engineering and technology have affected sports in many ways transforming it from just a past time to more exciting and competitive world events. Apart from the impact of engineering in sports, the history of the application of engineering and technology in sports is also elaborated. Furthermore, research conducted in related fields worldwide is highlighted. A brief overview of sports engineering research in Malaysia is also presented.

Conclusion

With the shortage of engineers entering the field, now is the time to become a Sports mechanical engineer in the field, if it appeals. "We currently are in short supply of all disciplines of sports engineering personnel as related to the typical energy engineering industry needs. This is in part due to the fact that many of our Engineers/Professionals have chosen to focus their training in a different line of business, such as the information technology industry." Depending on the specific industry chosen, many mechanical engineers will earn six-figure salaries within a few years and find name and fame.

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COVERAGE OF WOMEN SPORTS NEWS – A COMPARATIVE STUDY OF KANNADA AND ENGLISH NEWSPAPERS

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Abstract : The sports stories in newspapers have become extremely popular. There is probably more universal reader interest in the sports pages, than in any of the other parts of the newspapers. Mainstream newspaper coverage continues to rely on men as experts in the field of business, politics and economics. Women in the news are more likely to be featured in stories about rapes, natural, disasters or domestic violence than in stories about their professional abilities. While the coverage of women's sports is very less. Sports became the most interesting area of media coverage among different stream. It has most important place in the world's media to popularize the newspaper; there is distinct lack of comparative research on the media coverage of sports. Hence, this study is taken to know the coverage of sports news related to women. It is a comparative study of Kannada and English newspaper. Hence, the study has made an attempt to assess the coverage provided to women related sports both quantitative and qualitative wise. The study has been conducted by analyzing two language newspapers namely as Vijayvani Kannada newspaper and Times of India English dailies selected based on highest circulation. For the present study three months newspaper from January to March 2022 were selected. Content Analysis has been adopted for measuring the amount of space as well as qualitative content of the study.

Key words: Sports, Women, English Newspapers, Kannada Newspapers and Coverage

Introduction

Sports Journalism is an essential element of any news organization. While the sports department within some newspapers has been mockingly called the toy department, because sports journalisms do not concern themselves with the serious topics covered by the news desk, sport covered by the news desk, sports coverage has grown in wealth, power and influence.

Sports Journalism is a form specialization with our rules and conditions. Whether one is sports writer, reports or sub-editor, the basic principles of reporting remain the same. Within sports Journalism, there are sub categories like Football, Basketball, Cricket, Hockey, Tennis, etc.

"Sports are a field that unites every person worldwide including women in sports. There are several phenomenal women athletes that are admired and have inspired the young generation to step forward and live their dreams. When it comes to sports for women, things are not very easy for them and they have undergone hardships to rise above men. Even though men are more celebrated and paid higher in comparison to women yet female athletes seek their way out all the challenges through their dedication and hard work. Women have fought their way out and are at present being credited for their outstanding performance at different sports platform. They surpass all the obstacles and it does not kill their spirit as they are the ultimate game-changers. Several players like Sania Mirza, Mary Kom, Mithali Raj, PV Sindhu, Saina Nehwal, and others have made the nation proud with their glorious victory in different sports domains"(Ayushi Bhatt, 2021).

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Print media has become the part and parcel of our life today. Media sports became a new cultural fusion of sports with communication. Through media the feeling, values, priorities of sports are communicated with the general spectators. Print media helps us to visualize the happening of everyday life in more realistic way that compels us to think deeply about the incident. We can't think a daily newspaper is covering different intensities of competition and sports program, the related sports persons, their life, their performance. So this is quite important for all of us to go through the sport related newspaper.

Sports not only refresh our mind and soul, but also usher in a competitive spirit. Sports lovers are keen to view their favorite sports or read the news items of their preferred sporting events in the newspaper next day. It inspires people and sports stars are idolized by common people. Sport and sports news gets its place in the last four pages of a newspaper and avoid sports lovers' are seen flipping those pages first, every morning. Alas, the newspapers confine sporting events only to the last two or three pages of the newspaper.

Review of Literature

Ajay Somra and Amit Kakkar (2022) in their research 'Covering sports: A Content Analysis of sports News in Times of India and Dainik Bhaskar' reveals that proper coverage of all the sports is important for the promotion of sports cultural in the country. Since Hindi language newspapers have greater reach and circulation as compared to English, the Hindi newspapers should also focus more on sports coverage and increase the number of sports pages as well as give enough coverage to sports events of National and International level other than related to Cricket.

Hsu Zen Lim (2018) in his study 'Media Coverage for female sports: A Review of Literature' found that Media coverage included a review of newspaper and magazine print as well as visual and social media. In addition, a review of the portrayal of women in the media was also presented. Result indicated women sports were given lesser coverage time on media. It was also shown that whenever female athletes were highlighted in media, they tended to be seen as sexual objects instead. After analyzing the results from the literature, there were no stated rules that mentioned anything about creating a fair broadcast time for both male and female sports on media because a law cannot legislate media coverage.

Kent Kaiser (2017) in his study 'Women's and Men's Prominence in sports Coverage and Changes in Large, Medium, and Small, City Newspapers, Pre and Post' the present study confirms much research showing inequality in coverage of men's and women's sports. Yet it also shows trends over time, pre and post – Title IX that other studies have not investigated, to show that anti- equality hegemonic force have perhaps strengthened in regard to the largest media that serve as agenda setters. At the same time, by considering media from different market sizes, it reveals difference in coverage.

Shourini Banerjee and Onkargouda kakade (2016) in their study 'Coverage of Women's Sports in Two English Dailies of Karnataka: A Comparative Study' found that women sports are a neglected lot. The sports categories are abundant with news related to cricket. In spite of several laurels, other sports do not that place in the news items of several laurels; other sports do not have that place in the news items of the newspapers. In the coming days, it is needed that sports of both male and female are given equal coverage. Media has enormous responsibilities in rendering proper coverage.

Statement of the problem

Nowadays women sports are neglected a lot. Women athlete's pictures did not find a place in the newspapers compare to men athletes. In the coming days, it is needed that sports of both male and female are given equal coverage in the media. So that it is felt necessary to now the Coverage of women sports News – A Comparative study of Kannada and English Newspaper.

Objectives

- To analyze the coverage of major sports categories in English and Kannada Newspapers.
- To examine the space allotted to women sports.
- To find out the prioritize coverage of sports category in selected newspapers.
- To compare the women sports news in selected newspapers.

Methodology

For this study, content analysis has been employed to find out the coverage of women sports news in English and Kannada dailies of Karnataka. For this study The Times of India and Vijayawani newspaper has been selected based on their highest circulation. Three months newspapers i.e. January, February and March 2022 have been take up for the study were selected for this study. From each newspaper 90 issues, a total of 180 issues have been selected on the basis of systematic sampling. The quantitative facts have been determined through measuring each sports news items, and the space each sport news item has occupied.

Data analysis:**Table: 1: Space allotted to Sports and advertisement in selected newspapers**

Newspaper	Sports Content		Advertisement	
	Space (Sq cm)	Items	Space (Sq cm)	Items
The Times of India	71215.04 (37.31%)	625 (51.27%)	22280.15 (32.87%)	62 (38.27%)
Vijaywani	119622.7 (62.68%)	594 (48.72)	45499.65 (67.12%)	100 (61.72%)
Total	190837.7 (100%)	1219 (100)	67779.8 (100%)	162 (100%)

Table 1 indicates that the coverage of sports content and advertisements published in newspaper. It is found that the space allotted to sports content is 190837.7 sq cm. Among the total space 37.31 percent (N=71215.04 sq cm) sports news coverage is given in The Times of India newspaper and the number of items is 51.27% (N=625). Whereas Vijayavani has given 119622.7 sq cm (62.68%) coverage to sports news and the number of items 594 (N=594).

Whereas The Times of India has given 22280.15 sq cm (32.87%) spaces to advertisements and Vijayavani has given 45499.65 (67.12%) space to advertisements in sports page. The Times of India newspaper covered 62 (38.27%) advertisements in the sports page and Vijayavani newspaper had covered 100 advertisements items.

Table: 2 Placement of major Sports News categories in the Times of India

Types	Space	%	Items	%
Javelin Throw	288	0.43	3	0.5
Hockey	1460.2	2.19	14	2.33
Cricket	32360.98	48.58	276	46
Carom	0	0	0	0
Tennis	5229.36	7.85	45	7.5
Football	9263.76	13.90	65	10.83
Badminton	1751.07	2.62	12	2

Horse Race	1881.04	2.82	15	2.5
Swimming	0	0	0	0
Athletics	459	0.68	8	1.33
Olympics	355.28	0.53	3	0.5
Shooting	409.04	0.61	4	0.66
Articles	445.02	0.66	4	0.66
Awards	1918	2.87	14	2.33
Snowboarding	469.02	0.70	4	0.66
Basketball	359.25	0.53	8	1.33
tournament	108	0.16	5	0.83
Chess	598.6	0.89	14	2.33
Race	1023	1.53	11	1.83
Boxing	48	0.072	3	0.5
Golf	244	0.36	8	1.33
Running race	150	0.22	2	0.33
Scatting	94.24	0.14	1	0.16
Others	244.24	0.36	3	0.5
Total	66613.48		600	

From table 2, it can be see that, Cricket is the predominantly covered sports in the sports pages of The Time of India 32360.98 sq cm (48.58%). Followed by Football 9263.76 (13.90%), awards related sports 1918 sq cm (2.87%), Tennis 5229.36 sq cm (7.85%), Horse Race 1881.04 sq cm (2.82), Horse race Space 1881.04 sq cm (2.82%), , Badminton Space 1751.07 Sq cm (2.62%), Hockey space 1460.2 sq cm (2.19%), followed by Moto Race related sports space 1023 sq cm (1.53%), whereas chess space 598.6 sq cm (0.89%), Snowboarding space 469.02 sq cm (0.70%), Athletics space 459 sq cm (0.68%), Articles space 445.02 sq cm (0.66%), followed by Shooting related sports news space 409.04 sq cm (0.61%), Basket ball space 359.25 sq cm (0.53%) and Olympics 355.28 sq cm (0.53%) got equal space in sports news. Related to other and Golf sports news 244.24 sq cm (0.36%) had got equal space in The Times of India Newspaper, followed by for running race 150 sq cm (0.22%) space allotted. Tournament space 108 sq cm (0.16%), Scatting related spots news space had got 94.24 sq cm (0.14%) allotted. For Boxing 48 sq cm (0.72%) a very least space allotted and there is no single news coverage of related swimming.

When looking at the number of sports items published, it is found that Cricket related news are highest covered in sports page 276 items (46%), followed by Football items 65 (13.90%), Tennis items 45 (7.5%), Horse race 15 items (2.5%), whereas hockey and Awards related 14 items (2.33%) were covered. Followed by Badminton 12 items (2%), Moto race 11 items (1.83%), for Athletics, Basketball and Golf related sport items 8 (1.33%), followed by tournament 5 items (0.83%), for shooting 0.66 percent (N=4), Articles and 4 (0.66%) items related to snowboarding sports, equally Others, Olympics and Boxing covers 0.5 percent (N=3), followed by Running race related sports 2 items (0.33%) and only one news covered related to Scatting and no single items covered related Swimming.

Table: 3 Placement of major Sports News categories in Vijayavani

Types	Space	%	Items	%
Javelin Throw	0	0	0	0
Hockey	686.9	0.55	14	2.11
Cricket	71655.41	58.048	283	42.68
Kabbaddi	2098	1.69	25	3.77

Tennis	5151.35	4.17	63	9.50
Football	2786.6	2.25	29	4.37
Badminton	645.75	0.52	6	0.90
Horse Race	0	0	0	0
Swimming	132	0.106	3	0.45
Athletics	126	0.102	6	0.90
Olympics	0	0	0	0
Shooting	0	0	0	0
Articles	0	0	0	0
Awards	702	0.56	6	0.90
Snowboarding	0	0	0	0
Basketball	634.5	0.51	12	1.80
Tournament	216	0.17	6	0.90
Chess	154	0.12	8	1.20
Horse Race	81	0.065	3	0.45
Boxing	0	0	0	0
Golf	0	0	0	0
Running race	81	00.65	3	00.45
Scatting	0	0	0	0
Others	29024.9	23.51	106	15.98
Total	123441.2		663	

Table 3 reveals the major categories of sports news covered in Vijayavani. Majority of the space 71655.41 sq cm (58.04%) is allotted to cricket, followed by others categories 29024.9 sq cm (23.51%), Tennis 5151.35 sq cm (4.17%), Football 2786.6 sq cm (2.25%), Kabaddi 2098 sq cm (1.69%), sports awards related news 702 sq cm (0.56), Hockey 686.9 sq cm (0.55%), Badminton 645.75 sq cm (0.52%), Basketball 634.5 sq cm (0.51%), whereas Tournament 216 sq cm (0.17%), Chess 154 sq cm (0.12%), Swimming 132 sq cm (0.106%), Athletics related news 126 sq cm (0.102), and only Race and Running race related sports news allotted less space 81 sq cm (00.65%). Not single news is allotted for Scatting, Boxing, Golf, Olympics, and Articles, shooting and snowboarding.

When looking at the number of sports items published, it is found that Cricket related news items are highest covered in sports page 283 items (42.68%), followed by others 106 items (15.98%), Tennis 63 (9.50%), Football 29 (4.37%), whereas Kabaddi 25 (3.77%), Hockey 14 (2.11%), Basketball 12 (1.80%), Badminton 6 (0.90%) similarly Athletics, awards and Tournaments. While, Horse Race and running Race news items 3 (0.45%). No single news related to Scatting, Boxing, Golf, Olympics, and Articles, shooting and snowboarding has been published.

Table 4: Women Sports Coverage in the Times of India

Types	Space	%	Items	%
Javelin Throw	0	0	0	0
Hockey	31.2	0.42	2	2.53
Cricket	4094.3	55.62	34	43.03
Carom	0	0	0	0
Tennis	294.6	4	8	10.12
Football	378.8	5.14	6	7.59
Badminton	1361.7	18.50	8	10.12
Horse Race	0	0	0	0

Swimming	0	0	0	0
Athletics	61.2	0.83	2	2.53
Olympics	0	0	0	0
Shooting	0	0	0	0
Articles	0	0	0	0
Awards	513.3	6.97	6	7.59
Snowboarding	235.2	3.19	2	2.53
Basketball	0	0	0	0
Tournament	0	0	0	0
Chess	0	0	0	0
Race	0	0	0	0
Boxing	48	0.65	2	2.53
Golf	172	2.33	4	5.06
Running race	0	0	0	0
Scatting	94.24	1.28	1	1.26
Others	75.6	1	4	5.06
Total	7360.14	100%	79	

It can be seen in table 4 about the Women sports news covered in The Times of India newspaper. The highest space allotted for the Cricket 4094.3 sq cm (55.62%) related to women, followed by Badminton 1361.7 sq cm (18.50%), Awards to sports 513.3 sq cm (6.97%), Football 378.8 sq cm (5.14%), Tennis 294.6 sq cm (4.26%), Snowboarding 235.2 sq cm (3.19%), Golf 172 sq cm (2.33%), Scatting 94.24 sq cm (1.28%), other women sports news 75.6 sq cm (1.27%) and very less space is allotted for women Hockey 31.2 sq cm (0.42%). While, not a single women news related Horse Race, Swimming, Olympics, Articles, shooting, Basketball, tournaments, Chess , Race has been published in Times of India Newspaper.

Above table also indicates the women sports news items covered in The Times of India newspaper. The highest number of news items were related to cricket 34 (43.03%), followed by Tennis and Badminton related news items 8 (10.12%), whereas for Football and sports awards 6 (7.59), others and Golf related news items 4 (5.06%), 2 (2.53) equally news items were on Hockey, Athletics, Snowboarding and Boxing were published in the Times of India newspaper related to women.

Table 5: Women Sports Coverage in Vijayavani

Types	Space	%	Items	%
Javelin Throw	0	0	0	0
Hockey	260	2.80	5	5.55
Cricket	7467.21	80.58	58	64.44
Kabaddi	0	0	0	0
Tennis	896.55	9.67	15	16.66
Football	144	1.55	6	6.66
Badminton	417	4.50	3	3.33
Horse Race	0	0	0	0
Swimming	0	0	0	0
Athletics	0	0	0	0
Olympics	0	0	0	0
Shooting	0	0	0	0
Articles	0	0	0	0
Awards	0	0	0	0

Snowboarding	0	0	0	0
Basketball	0	0	0	0
Tournament	0	0	0	0
Chess	0	0	0	0
Race	0	0	0	0
Boxing	0	0	0	0
Golf	0	0	0	0
Running race	81	0.87	3	3.33
Scatting	0	0	0	0
Others	0	0	0	0
Total	9265.76		90	

From the Table 5 reveals the Women sports news covered in Vijayavani newspaper. The highest space 7467.21 sq cm (80.58%) allotted for the Cricket, followed by Tennis 896.55 sq cm (9.67%), Badminton is 417 sq cm (4.50%), whereas for Hockey 260 sq cm (2.80%) space is given, Football 144 sq cm (1.55%) and only 81sq cm (0.87%) space is allotted to Running. Not single news covered related to Horse Race, Swimming, Athletics, Olympics, Articles, Awards, Snowboarding, Basketball, Tournament and chess in the Vijayavani newspaper about women.

Above table also indicates that the women sports news items covered in Vijayavani newspaper. The highest number of news items 58 (64.44%) related to cricket, followed by Tennis 15 (16.66%), Football 6 (6.66%), Hockey 5 (5.55%), whereas Badminton and Running Race 3 (3.33%) and Not a single sports news items covered related to Horse Race, Swimming, Athletics, Olympics, Articles, Awards, Snowboarding, Basketball, Tournament and chess in the Vijayavani newspaper.

Table: 6 Comparison of sports news related to Women and Men

Newspapers	The Times of India		Vijayawani	
	Space	Items	Space	Items
Women	9265.76 (10.88%)	90 (19.28%)	7360.14 (12.42%)	79 (15%)
Men	75965.75 (89.12%)	377 (80.72%)	51940.85 (87.58%)	448 (85%)
Total	85231.51 (100%)	467 (100%)	59300.99 (100%)	527 (100%)

Table 6 indicates the comparison of sports news related to women and men from The Times of India and Vijayavani Newspapers. It shows that majority of the space 75965.75 sq cm (89.12%) is allotted to men and very less space 9265.76 sq cm (10.88%) is given to women sports news. It also found that majority of the news items (80.72%, N=377) were related to men and only 19.28 percent (N=90) women sports news items published in the Times of India.

Vijayavani Newspaper also covered more numbers of Men sports related news space 51940.85 sq cm (87.58%) whereas very less space 7360.14 sq cm (12.42%) is allotted to women sports news. 85 percent (N=448) Sports news items in the Vijayavani newspaper were related to men and only 15 percent (N=79) news items were related to women sports.

The findings show that in both the newspaper majority of the sports news is related to men than women.

Conclusion

The present study is undertaken to study the coverage of Women Sports News in Kannada and English Newspapers. It is clear from the study that the coverage given to women sports in both Kannada and English dailies is significantly less compared sports news of men. It is also found from the study that more importance is given to cricket news and ignored other sports. In spite of several laurels, other sports do not have that place in the news items of the

newspapers. The pictures of the women sports players are significantly less compared to other pictures.

Print media has responsibilities in proper coverage to all the news items. Men sports players are represented in the media as physically strong and active. Women athletes and their victories are often treated as insignificant. Both The Times of India and Vijayavani newspapers gave maximum coverage to cricket. The English newspaper, the Times of India gave ample coverage to other sports too as it had two or more sports pages daily. As well as The Kannada Newspaper Vijayavani newspaper had also published more cricket news significantly, it carried two pages daily. Proper coverage of all the sports is important for the promotion of sports culture in the country.

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IMPACT OF IPL ON INCREASING SUBSCRIPTION OF LIVE STREAMING PLATFORMS: A CASE STUDY OF BANGALORE CITY

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Abstract: IPL is the most popular cricket tournament in India. It's very special tournament when we compared with other tournaments of Cricket in India. When IPL starts Madness will only increase day by day. Even adolescents and youngsters are sitting in front of TV or engaged with their Phone. From last few years IPL Live-streamed on Streaming platforms also, best example of this is Disney+ Hotstar, but you need to pay for subscription charges for it. But now there are more number of Live streaming platforms are streamed live Matches of IPL. So Youths are getting subscription and engaged with the daily matches of IPL in their own Phone or Laptop. The main purpose of this study is to know how the IPL watching habits of youths and to examine the increasing subscription of Live streaming platforms by IPL Lovers. For this study descriptive research design was adopted and the primary data collected through the survey method by using google form. The area of the study is Bangalore city of Karnataka state. A total of 150 respondents were selected. It is found from the study that when the Indian Premier League was started the number of subscription of OTT (Live streaming platforms) was automatically increased.

Keywords: IPL, Indian cricket tournament, Live-Streaming, OTT youths.

Introduction:

IPL was officially started in 2008, the Indian premium league also called as T20 (twenty-twenty). The IPL was inaugurated with the eight franchises the concept was introduced by Lalith Modi, who is the former chairman and commissioner of the league. IPL tournament's main intention is profit making, but it turns into most popular outlet for the game of cricket. When IPL was started main eight franchises are participated in the tournament they were the Mumbai Indians, the Chennai super kings, the royal challengers Bangalore, the Deccan charges Hyderabad, the Delhi Daredevils, Punjab XI kings, the Kolkata knight riders, and the Rajasthan royals.

The IPL 2022 is a ten team performing. They were Lucknow super giants, Gujarat titans, Rajasthan royals, Royal challengers Bangalore, Delhi capitals, Sun risers Hyderabad, Kolkata knight riders, Punjab kings, Chennai super kings and Mumbai Indians. Over the year, the IPL turned into a big festival of the Country. Its attract the attention of everyone in India. Board of control for cricket in India (BCCI) is the sport's governing body and this board organized IPL every year. Every year IPL kept growing and increasing the number of fans following

When we talk about sponsors of IPL it's a big deal of major companies in India. When IPL was started in 2008 DLF became the title sponsor and its offers 40 crore to the BCCI while holding the rights till 2012. In 2013 Pepsi got the chance and held it rights till 2015, they sealed the deal 79.2 crore. In 2016 and 2017 Vivo bagged the deal of sponsor, its offers 100 crores. 2018 and 2019 again Vivo sponsored and offered 440 crores to the BCCI. 2020 and 2021 tournament was hosted in UAE Dream 11 bagging the deal of sponsor. Present Year

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means 2022 IPL TATA have bagged the title of sponsorship rights at 300 crores. They holding their sponsorship next year also.

In India, Star sports has the rights of broadcast IPL 2022 Live matches on Television. The price of this channel is 22.42rs per month. Star sports broadcast in English, Hindi, Telugu, Tamil, Kannada and Bangla. These languages broadcast the live shows of IPL.

The present study deals with the IPL live streaming platforms. The best example of IPL live streaming platform is Disney+ Hotstar, in 2017 Hotstar launched an international subscription service to watch the live streaming of IPL. 2017 to 2022 they hold their rights and streaming the live IPL matches, and giving exciting experiences to the viewers or IPL lovers. The Disney+ Hotstar Offers Rs 299 plan it includes four devices at a time for a month, RS 899 plan offers two devices at a time for a year, and Rs 1499 offers four devices at a time for a year. All the types of subscriptions allow you to watch live streaming of IPL matches. But now along with Disney+ Hotstar, Tata Play, Yupp TV, Willow and Sky sports also streamed Live matches of IPL.

Review of literature:

Durgansh Sharma and Vaibhava Sharma (2020) in their study "Covid-19 and IPL: Impact on Indian Economy in 2020" found that IPL 2020 impact over the Indian economy, especially crucial at the time of global pandemic and its economic-social repercussions. India started investing towards upcoming IPLs. Covid-19 has put on hold every area across the globe but India gives fantastic support to Indian premium league and get a chance to increase their economy standard in pandemic days. IPL 2020 cricket tournament also increased GDP rate of Indian economy.

Sakthi Kumares, Muskaan Shah and Samyuktha Sathyanarayan (2020) in their study "Analysis of Opinionated Texts on IPL 2020 Matches Using Social Media Data" observed that more than other social media platforms twitter posts about IPL teams and Matches feedback and people are most involved in twee related IPL positive and negative sentiments about different teams. IPL is not a sporting like another regular sports it's a festival of entire country. The study gets almost equal percentage of positive and negative views along with a few neutral comments by netizens.

Atanu Das and Tufan Mete (2018) in their study "A Status Survey in IPL Match on Televisio Advertisements and Comparative Study Print Media Coverage in Different News Paper" examine the advertisements of kings XI Punjab and Delhi Dare Devils regarding the mobile set, soft drinks, telecom's and online app, biscuits are providing maximum time for the promotion of these category products than others. The study shows Kolkata knight riders and royal challengers match received significantly higher area of news coverage and area of pictorial coverage than Kings XI Punjab and Delhi Dare Devils in the leading print media of west Bengal.

Mustafa sapatwala and Pankaj Athawale (2018) in their study "Media Rights Comparison of IPL and International Sports League" examine that compared other major tournaments of cricket in world the media rights of IPL are like cherry on cake in terms of the money as compared to the other major sports. The study shows important differentiation between IPL and other tournaments the quantum of the event. IPL has more number of matches, fan base, transfer windows, teams, cities, the color of jerseys and includes other countries players and many different things that's why Indian media are ready to purchase the rights of IPL matches.

Statement of the problem:

IPL is not like other tournaments of cricket for youths, every year they are eagerly waiting for IPL tournament. Indian premium league has received a great response from Live streaming platforms, Sponsors, and subscribers. When IPL starts sports channel viewers and

OTT viewers are automatically increased in India. Therefore, it felt necessary to have an in-depth study on "Impact of IPL on Increasing Subscription of Live Streaming Platforms: A Case Study of Bangalore city"

Objectives:

- To know the socio-characteristics of respondents
- To know the IPL watching habits of youths
- To examine the increasing subscription of live streaming platforms by IPL lovers.

Research method:

To assess the impact of IPL on increasing subscription on live streaming platforms Bangalore city was selected for the study. Descriptive research design was adopted. Descriptive research to gather data about varying subject. The primary data was collected through survey method by using structured questionnaire. By using simple random sampling technique total 150 respondents were selected. The data was analyzed through SPSS software.

Analysis:

Table 1- Gender

Gender	Frequency	Percentage
Male	104	69.3%
Female	46	30.7%
Total	150	100%

The above table reveals that that most of the respondents were male (69.3%, N=104) and remaining 30.7% (N=46) were female.

Table 2- Age

Age	Frequency	Percentage
15-20	14	9.3%
20-25	64	42.7%
25-30	48	32%
30 and above	24	16%
Total	150	100%

Table two observed the age group of the respondents. It indicates that majority of the respondents (42.7%, N=64) were belonged to 20 to 25 years' age group, followed by 32 percent (N=48) were belonged to 25 to 30 years' age group, 16 percent (N=24) respondents belonged to 30 and above. Whereas only 9.3% (N=14) were belonged to 15 to 20 years of age group.

Table 3-Education

Education	Frequency	Percentage
Primary	02	1.3%
High school	02	1.3%
PU	44	29.3%
UG	50	33.3%
PG	28	18.7%
Others	24	16%
Total	150	100%

The above table reveals the education qualification of the respondents. Its shows that most of the respondents (33.3%, N=50) were belonged to UG, followed by 29.3 percent (N=44) respondents were belonged to PU. Whereas 18.7 percent (N=28) had PG, 16 percent (N=24) were belongs to other category and only 1.3 percent (N=2) had primary and secondary education.

Table 4- Occupation

Occupation	Frequency	Percentage
Student	44	29.3%
Government sector	10	6.7%
Private sector	36	24%
Self-Employee	48	32%
Un-employee	12	08%
Total	150	100%

It notices from the table 4 reveals the occupation of the respondents. It indicates that most of the respondents (32%, N=48) were self-employees, followed by students (29.3%, N=44). Whereas 24 percent (N=36) were working in private sector, 8 percent (N=12) were un-employees and 6.7 percent (N=10) were working in Government sector.

Table 5- Marital Status

Marital status	Frequency	Percentage
Married	52	34.7%
Unmarried	98	65.3%
Total	150	100%

Table 5 indicates the marital status of the respondents. It shows that majority of the respondents (65.3%, N=98) were unmarried and 34.7 percent (N=52) of the respondents were married.

Table 6 - Favorite sports

Sports	Frequency	Percentage
Cricket	124	82.7%
Football	54	36%
Hockey	30	20%
Tennis	36	24%
Kabaddi	76	50.7%
Other	18	12%

It observed from the table 6 that a great majority of the respondents (82.7%, N=124) were like watch cricket, followed by kabaddi (50.7%, N=76), whereas 36 percent (N=54) were like to watch football, 24 percent were (N=36) like to watch tennis and 20 percent (N=30) were like to watch hockey. It shows cricket is the most preferred sports among selected respondents.

Table 7- Watching habit of cricket

Opinion	Frequency	Percentage
Yes	120	80%
No	14	9.3%
Sometimes	16	10.7%
Total	150	100%

It is notices from the table 7 that more than three fourth (80%, N=120) respondents were like to watch cricket. 10.7 percent (N=16) were sometime watch cricket and only 9.3 percent (N=14) were don't like to watch cricket.

Table 8- Formats of cricket

Format	Frequency	Percentage
ODI	28	18.7%
Test	16	10.7%
T20	106	70.6%
Total	150	100%

Table 8 reveals the favorite format of cricket preferred by the respondents. Above table shows that nearly three fourth of the respondents (70.6%, N=106) were like to watch T20, followed by ODI (18.7%, N=28) and only 10.7 percent (N=16) were like to watch test matches.

Table 9- preferred place to watch IPL

Place	Frequency	Percentage
At the Stadium	34	22.7%
At the television	66	44%
At the streaming Platform	50	33.3%
Total	150	100%

It is observed from the table 9 that nearly half of the respondents (44%, N=66) were like to watch cricket at television, 33.3 percent (N=50) were like to watch IPL at the streaming platform and 22.7 percent (N=34) were like to watch at the stadium. Which means Television is the main medium to watch IPL by the respondents.

Table 10- how long have been watching IPL Cricket

Opinion	Frequency	Percentage
From its first edition	54	36%
From last 5 edition	58	38.7%
From last 3 edition	22	14.7%
Recently started	16	10.7%
Total	150	100%

It is observed from the table 10 that that majority of the respondents (38.7%, N=58) were watching IPL from last 5 edition, followed by from its first edition (36%, N=54). Whereas 14.7 percent (N=22) respondents were watching it from the last 3 editions and only 10.7 percent (N=16) were recently started to watch IPL.

Table 11- preferred language of commentary to watch IPL

Language	Frequency	Percentage
English	84	56%
Hindi	20	13.3%
Regional language	46	30.7%
Total	150	100%

Table 11 reveals that preferred language of commentary to watch IPL. Above table shows that more than half of the respondents (56%, N=84) were prefer English language for commentary, followed by Regional language (30.7%, N=46) and 13.3 percent were preferring Hindi language commentary.

Table 12- Reason for watching IPL

Reason	Frequency	Percentage
Excitement	46	30.7%
For favorite team	86	57.3%
Craze about IPL	70	46.7%
For favorite player	96	64%
For time pass only	30	20%
For betting	10	6.7%
other	06	4%

The result presented in the table 12 reveals the reasons of watching IPL by the respondents. It shows that majority of the respondents (64%, N=96) were watching IPL for their favorite player, followed by for favorite team (57.3%, N=86). Whereas 46.7 percent (N=70) were watching IPL for craze, 30.7 percent (N=46) were watching IPL for Excitement, 20 percent

were for time pass only and only 6.7 percent (N=10) were watching IPL for betting. It is found from the table that most of the people are watching IPL for their favorite player.

Table 13- watching scheduled of IPL

Watching time	Frequency	Percentage
Every matches of the season	68	45.3%
Only favorite team matches	48	32%
Only on free time	34	22.7%
Total	150	100%

The result in the table 13 stated that majority of the respondents (45.3%, N=68) were like to watch every matches of the season, followed by only during favorite team matches (32%, N=48) and 22.7 percent (N=34) were watching IPL on their free time.

Table 14- preferred device to watch IPL

Devices	Frequency	Percentage
TV	102	68%
Mobile	106	70.7%
Laptop	20	13.3%
Tablet	14	9.3%
Computer	10	6.7%

The result in table 14 stated that nearly three fourth of the respondents (70.7%, N=106) were preferred mobile to watch IPL, followed by TV (68%, N=102). Whereas 13.3 percent (N=20) were preferred to watch it in laptop, 9.3 percent were prefer tablet and 6.7 percent (N=10) were preferred computer to watch IPL.

Table 15- watching IPL with

Opinion	Frequency	Percentage
Alone	46	30.7%
With Friends	72	48%
With Family	32	21.3%
Total	150	100%

It is notices from the table 15 shows that 48 percent (N=72) were like to watch IPL with friends, followed by alone (30.7%, N=46) and 21.3 percent (N=32) were like to watch IPL with their family members.

Table 16- Most liked IPL team

IPL team	Very likely	Likely	Neutral	Unlikely	Very unlikely
Lucknow super giants	38 (25.4%)	58 (38.6%)	30 (20%)	24 (16%)	00 (00%)
Gujarat titans	28 (18.7%)	60 (40%)	46 (30.7%)	14 (9.3%)	02 (1.3%)
Rajasthan royals	32 (21.3%)	52 (34.6%)	48 (32%)	18 (12%)	00 (00%)
Royal challengers Bangalore	116 (77.4%)	24 (16%)	05 (3.3%)	05 (3.3%)	00 (00%)
Delhi capitals	38 (25.3%)	58 (38.7%)	38 (25.3%)	16 (10.7%)	00 (00%)
Sun risers Hyderabad	36 (24%)	38 (25.3%)	50 (33.4%)	22 (14.6%)	04 (2.7%)
Kolkata knight riders	26 (17.3%)	48 (32%)	60 (40%)	14 (9.3%)	02 (1.3%)
Punjab kings	36 (24%)	58 (38.6%)	38 (25.3%)	14 (9.3%)	04 (2.7%)
Chennai super kings	78 (52%)	38 (25.4%)	14 (9.3%)	14 (9.3%)	06 (4%)
Mumbai Indians	38 (25.3%)	47 (31.4%)	49 (32.7%)	10 (6.6%)	06 (4%)

Table 16 reveals the most like IPL teams by the respondents. Above table indicates that (38.6%, N=58) were liked Lucknow super kings followed by very likely (25.4%, N=38).

Whereas 20 percent were neutral with this opinion, 24 percent were unlike Lucknow super giants team and no one opined very unlikely.

40 percent (N=60) of the respondents were likes Gujarat titans followed by neutral (30.7%, N=46). Whereas 18.7 percent were most like Gujarat titans team, 9.3 percent were unlike and only 1.3 percent were very unlike.

Above table shows that most of the respondents (34.6%, N=52) were likes Rajasthan royals followed by neutral (32%, N=48). Whereas 21.3 percent (N=32) were most likes Rajasthan royals team, 12 percent (N=18) were unlike and no one very unlikely.

Above table indicates that most of the respondents (77.4%, N=116) were very likes Royal challengers Bangalore, followed by likely. Whereas neutral and unlikely (3.3%, N=5) and no one opined very unlikely.

38.7 percent (N=58) of the respondents were likes Delhi capitals followed by very likely and neutral (25.3%, N=38). Whereas 10.7 percent (N=16) were opined unlikely and no one opined very unlikely.

Above table observed that majority of the respondents 33.4 percent (N=50) were neutral on Sun risers Hyderabad, followed by likely (25.3%, N=38). Whereas 24 percent (N=36) were opined very likely, 14.6 percent (N=22) were opined unlikely and no one opined most unlikely.

Above table indicates that most of the respondents (40%, N=60) were opined neutral on Kolkata knight riders, followed by likely (32%, N=48). Whereas 17.3 percent (N=26) were opined very likely, 9.3 percent were opined unlikely and 1.3 percent were opined very unlikely.

Above table observed that 38.6 percent (N=58) of respondents were opined likely for Punjab Kings, followed by Neutral (25.3%, N=38). Whereas 24 percent (N=36) were opined very likely, 9.3 percent were opined unlikely and 2.7 percent were very unlikely.

Above table indicates that 52 percent (N=78) of respondents were opined very likely on Chennai super kings, followed by likely (25.4%, N=4). Whereas 9.3 percent (N=14) were opined neutral and unlikely and no one opined very unlikely.

Above table shows that most of the respondents (32.7%, N=49) were opined neutral on Mumbai Indians, followed by likely (31.4%, N=47). Whereas 25.3 percent were opined very likely, 6.6 percent were opined unlikely and 4 percent were (N=6) opined very unlikely.

It is found from the above table that most of the respondents liked royal challengers Bangalore, because the area of the study is Bangalore. When IPL starts every year the slogan "E sala cup namde" is creating madness on Bangalurians. The team also creating craze and its motivates to youngsters to watch IPL. That's why people of selected area were liked RCB.

Table 17- having OTT subscription to watch IPL

Opinion	Frequency	Percentage
Yes	106	70.7%
No	44	29.3%
Total	150	100%

Table 17 reveals that nearly three fourth of the respondents (70.7%, N=106) were subscribed OTT platforms to watch IPL and only 29.3% (N=44) never subscribed any platforms.

Table 18- watching highlights after matches

Opinion	Frequency	Percentage
Yes	48	32%
No	44	29.3%
Sometimes	58	38.7%
Total	150	100%

Table 18 reveals that 38.7 percent (N=58) of respondents were sometimes watch highlights of the match, followed by regulary (32%, N=48) and 29.3 percent (N=48) were never watch the highlights.

Table 19- like to watch repeat telecast

Opinion	Frequency	Percentage
Yes	34	22.7%
No	56	37.3%
Sometimes	60	40%
Total	150	100%

It is notices from the table 19 that 40 percent (N=60) of respondents sometimes like to watch repeat telecast, followed by never (37.3%, N=56) and 22.7 percent were regularly watching repeat telecast.

Table 20- Preferred streaming platform to watch IPL

Streaming Platform	Frequency	Percentage
Disney+ Hotstar	110	73.3%
Tata play	16	10.7%
Yupp TV	08	5.3%
Willow	06	4%
Sky Sports	10	6.7%
Total	150	100%

It is observed from the table 20 that nearly three fourth of the respondents (73.3%, N=110) were prefer Disney+ Hotstar to watch IPL, followed by Tata Play (10.7%, N=16). Whereas 6.7 percent (N=10) of respondents were prefer Sky sports, 5.3 percent were Yupp TV and only 4 percent (N=06) were prefer willow streaming platform to watch IPL. Which means Disney+ Hotstar is the most preferred live streaming platforms to watch IPL, because Disney+ Hotstar is the first streaming service which is live streamed IPL, its starts Live streaming of IPL from 2017.

Table 21- Type of subscription on streaming platform

Opinion	Frequency	Percentage
Monthly	24	16%
Three months	12	8%
Six months	24	16%
Yearly	46	30.7%
Only IPL period	44	29.3%
Total	150	100%

Table 21 reveals that 30.7 percent (N=46) of respondents were subscribed yearly pack, followed by 29.3% (N=44) subscribed it during IPL only. Whereas 16 percent (N=24) of respondents equally were subscribed monthly and six-month pack and only 8 percent (N=12) were preferred three months' pack.

Table 22- participating on opinion polls during IPL live streaming

Opinion	Frequency	Percentage
Always	18	12%
Sometimes	86	57.3%
Never	46	30.7%
Total	150	100%

Table 22 reveals that participating on opinion polls during IPL live streaming by respondents. Above table indicates that more than half of the respondents (57.3%, N=86) were opined that sometimes they participate in opinion polls during IPL live streaming, followed by Never (30.7%, N=46). Whereas 12 percent (N=18) of respondents said they always participate in opinion polls.

Table 23- Participation in the game and contests organized by the streaming platform

Opinion	Frequency	Percentage
Always	12	8%
Sometimes	70	46.7%
Never	68	45.3%
Total	150	100%

Table 23 indicates that participation of the respondents in the game and contests organized by the streaming platform. It shows that 46.7 percent (N=70) of respondents were opined that sometimes they participate, followed by Never (45.3%, N=68). Whereas 8 percent (N=12) of respondents said they always participate in the game and contests.

Table 24- Watching post and Pre match discussion

Opinion	Frequency	Percentage
Always	22	14.7%
Sometimes	70	46.7%
Never	58	38.7%
Total	150	100%

It is notices from the table 24 watching post and pre-match discussion by respondents. Above tables shows that nearly half of the respondents (46.7%, N=70) were said sometime they watch post and pre match discussion, followed by Never (38.7%, N=58) and only 14.7 percent (N=22) were said they always watch it.

Table 25- opinion on IPL matches

Opinion	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Do you addicted watching IPL matches	58 (38.6%)	50 (33.3%)	34 (22.6%)	08 (5.3%)	00 (00%)
IPL matches increase craziness	44 (29.3%)	68 (45.3%)	30 (20%)	08 (5.3%)	00 (00%)
IPL matches are create madness than other tournaments	50 (33.3%)	56 (37.3%)	38 (25.3%)	04 (2.6%)	02 (1.3%)
IPL tournament is like festival to you	54 (36%)	58 (38.6%)	34 (22.7%)	04 (2.6%)	00 (00%)
Do you like to betting on the period of IPL	04 (2.6)	10 (5.7%)	56 (37.3%)	50 (33.3%)	30 (20%)
IPL increasing the strong bonding with your friends	38 (25.3%)	58 (38.6%)	44 (29.3%)	04 (2.6%)	06 (4%)
Do you celebrate after your favorite team won the match	58 (38.6%)	60 (40%)	28 (18.6%)	04 (2.6%)	00 (00%)
Do you approach others to watch IPL	54 (36%)	58 (38.6%)	28 (18.6%)	06 (4%)	04 (2.6%)
Do you like to share about IPL matches on social media	56 (37.3%)	48 (32%)	36 (24%)	06 (04%)	04 (2.6%)
Do you buy the products which IPL players gives ads	54 (36%)	44 (29.3%)	40 (26.6%)	12 (8%)	00 (00%)

Table 25 reveals the opinion of the respondents on IPL matches. It shows that 38.5 percent (N=58) of respondents were opined that they strongly agree with watching IPL matches is an addiction for them, followed by agree (33.3%, N=50). Whereas 22.2 percent (N=34) were

neutral with this, 5.3 percent were disagree and not a single respondents were opined strongly disagree. It is reported that nearly half of the respondents (45.3%, N=68) were agree with IPL matches are increase craziness, followed by strongly agree (29.3%, N=44). Whereas 20 percent were neutral, 5.3 percent were disagreed and no one opined strongly disagree.

Above table shows that IPL matches are create madness than other tournament. It shows that 37.3 percent (N=56) respondents were agree with this opinion, followed by strongly agree (33.3%, N=50). Whereas 25.3 percent (N=38) were neutral, 2.6 percent were disagreed and only 1.3 percent were strongly disagreed. It reported that 38.6 percent (N=58) of respondents were agree with IPL tournament is like a festival to them, followed by strongly agree (36%, N=54). Whereas 22.7 percent were neutral, 2.5 percent were disagree and no one opined strongly disagree

Above table indicates that 37.3 percent of the respondents were neutral with betting on the period of IPL, 33.3 percent (N=50) were disagree. Whereas 20 percent of respondents were strongly disagreed, 5.7 percent were agree and only 2.6 percent of respondents were strongly agreed with this opinion. Its shows that majority of the respondents (38.6%, N=58) were agree with IPL increasing the strong bonding with their friends, followed neutral (29.3%, N=44). Whereas 25.3 percent (N=38) of respondents were strongly agreed, 4 percent were strongly disagreed and only 2.6 percent were disagreed.

It is notices from the above table that majority of the respondents (40%, N=60) were agree that they celebrate after their favorite team won the match, followed by strongly agree (38.6%, N=58). Whereas 18.6 percent of respondents were neutral and no one opined strongly disagree. Its shows that 38.6 percent (N=58) of respondents were agree that they approach others to watch IPL, followed by strongly agree (36%, N=54). Whereas 18.6 percent were neutral with this opinion, 4 percent were disagreed and 2.6 percent were strongly disagreed.

It reported that 37.3 percent (N=56) of respondents were strongly agree that they like to share about IPL matches on social media, followed by agree (32%, N=48). Whereas 24 percent were neutral with this opinion, 4 percent (N=6) of respondents were disagreed and only 2.6 percent were strongly disagreed. It is notices from the table majority of the respondents (36%, N=54) were strongly agree that they buy the products which IPL players gives ads, followed by agree (29.3%, N=44). Whereas 26.6 percent were neutral with this opinion, 8 percent were disagreed and no one strongly disagreed with this opinion.

Table 26- Experience about IPL streaming platforms

Experience	Very good	Good	Average	Poor	Very Poor
Quality of streaming	70 (46.6%)	60 (40%)	20 (13.4%)	00 (00%)	00 (00%)
Commendatory	62 (41.3%)	80 (53.3%)	08 (5.4%)	00 (00%)	00 (00%)
Replays	64 (42.7%)	48 (32%)	38 (25.3%)	00 (00%)	00 (00%)
Player Interviews	74 (49.3%)	54 (36%)	22 (14.6%)	00 (00%)	00 (00%)
Post and Pre-match Discussions	54 (36%)	68 (45.3%)	26 (17.3%)	02 (1.3%)	00 (00%)
Advertisements	66 (44%)	56 (37.3%)	18 (12%)	04 (2.6%)	06 (4%)

Table 27 indicates the experiences about IPL streaming platforms. It shows that nearly half of the respondents (46.6%, N=70) were said quality of streaming is very good, followed by good (40%, N=60). Whereas 13.4 percent said average and no one opined poor and very poor.

It notices from the above table more than half of the respondents (53.3%, N=80) said the commendatory of streaming services is good, followed by very good (41.3%, N=62). Whereas 5.4 percent were said average and no one opined poor and very poor. It reveals that 42.7 percent (N=64) of respondents said that replay of IPL on streaming platform is very good,

followed by good (32%, N=48). Whereas average 25.3 percent (N=38) and no one opined poor and very poor.

It observed from the above table that nearly half of the respondents (49.3%, N=74) said that player's interview which is done by streaming services is very good, followed by good (36%, N=54). Whereas 14.6 percent were neutral with this opinion and no one said poor and very poor. Its shows that 45.3 percent (N=68) of respondents said that post and pre match discussion which is streamed is good, followed by very good (36%, N=54). Whereas 17.3 percent of respondents said average, 1.3 percent were said poor and no one said very poor.

It shows that majority of the respondents (44%, N=66) said streamed advertisements on IPL period is very good, followed by good (37.3%, N=56). Whereas 12 percent said average, 4 percent said very poor and only 2.6 percent were said very poor with this opinion.

Conclusion:

The main purpose of this study is to find out the subscription of streaming platforms are increased during the period of IPL. In 2022 IPL season 15 is started at 26 march. Every season of IPL there is no changes in celebration, craze, promotions, betting, talks and many other things. Indian premier league is not like test matches are one day matches it has their own followers and fans base, that's why 70.6 percent of respondents likes T20. In this year ten teams are playing the IPL there are most liked team is Royal challengers Bangalore by the respondents. Because we take Bangalore as an area of research so the craze about team RCB is can't compared with other team but Chennai super kings are also very preferred team of IPL because of Mahindra sing Dhoni. But the study also shows that in the IPL period betting also done by the respondents, but only 6.7 percent of respondents were said they do betting on the period of IPL. When we talk about live streaming services of IPL Disney+ Hotstar most preferred live streaming platform because this is the first streaming service which is streamed live show of IPL in India. Thus the respondents are also engaged with Hotstar to watch live streaming of IPL. Hotstar give good quality of streaming of IPL Live matches. 29.3 percent of respondents were subscribed the streaming platform because of IPL, so its indicates when IPL starts the subscription of streaming platforms are automatically increased.

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A STUDY ON THE INDIAN ARMED FORCES AND THEIR HEROICS IN THE SPORTING ARENA

UDAY KUMAR M*

Abstract : The Indian armed forces has always been on the forefront when it comes to producing sportsmen of international pedigree. In addition to their heroics on the battlefield, where the brave officers and soldiers of the defence forces have made the ultimate sacrifice by laying down their lives in the line of duty, they have been equal to the task of making the nation proud by winning medals for the country at international sports meets.

Sports has always been an integral part of the military fitness regime. There is a structured approach to organizing sports in the Indian army to get to the pinnacle of sporting excellence. There are inter-battalion, brigade, divisional and command level tournaments for each of the sporting disciplines, which brings out the ultimate champions in each sport.

Keywords: International sports meets, Inter-battalion, brigade, divisional and command level tournaments, sporting disciplines, Completion

Introduction

What began as part of military training to use sports/games to develop leadership and character qualities gradually evolved into a fiercely competitive conflict between units, regiments and formations. Within each service at successive levels, the training branches laid down the policy and coordinated the effort. At the highest level, the Services Sports Control Board coordinated inter-service competitions and participation at the national level.

Warfare was relatively simple and due to leadership qualities the sportsmen performed exceptionally well in wars. For my unit 4 Sikh of Saragarhi fame, sports competitions were a matter of life and death. It performed exceptionally well in 1962, 1965 and 1971 (where I was an eyewitness) riding on the junior leadership provided by its “gladiator sportsmen.” In each of these wars, we lost the crème de la crème of our sports teams only to re-raise them from scratch.

Given the importance attached to these competitions, units started maintaining ‘gladiators’ – men who were spared the rigours of military training to focus only on sports. Due to immense resources, organisation and intense competitive spirit standards went up and armed forces collectively dominated almost all national sports.

The three Services and many regiments/corps also maintained hockey, football, basketball and volleyball teams that swept most private tournaments. In 1953, the football team of young cadets of the National Defence Academy was runner-up to the famed MohunBagan in the Durand Cup, which was also won twice by the Army X1, Madras Regimental Centre and the Gorkha Brigade.



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Military was still an attractive career and talent scouting brought in the best available talent both as officers and soldiers. This was the golden era of the armed forces that produced world-class sportsmen like Major Dhyan Chand, Colonel Haripal Kaushik, Vrc, Colonel Balbir Singh, HonyCapt Shankar Lakahman, Brigadier H.S. Chimini, Nb Sub Milkha Singh, HonyCaptSriram Singh and Pan Singh Tomar. The list is endless.

However, the world was adopting a more scientific approach through the "catch them young" method and spending a lot of money to nurture the talent. Corporate sponsorship and advertisement made sports a career in itself. Within the armed forces training and combat became more complex. Soldiers joined only at the age of 17-21 years. The disproportionate time, effort and resources spent on sports began to impinge upon efficiency. There was an outcry to ban sports competitions and focus only on sports for wellness only. The armed forces failed to strike a balance and went to the opposite extreme, bringing a new policy in the late 1970s. Competitions were restricted to the unit level and thereafter only trials were conducted.

Soon a slump followed and standards dropped. The nadir was reached by 2000 when the armed forces ceased to be a sporting power at the national level and to safeguard their reputation stopped participating in national level games. Ironically, the gains towards training and efficiency were marginal.

With the countdown to the upcoming Olympics underway, all eyes are on the Indian athletes who are trying to secure a berth at Rio in their respective sporting disciplines. This is a chance for them to represent the nation at the world's biggest sporting spectacle, and they wouldn't want to let it go no matter how much sweat and blood they have to expend.

It comes as no surprise to me that a big part of India's Olympic contingent is made up of athletes from the defence forces, popularly known as the Services. Jitu Rai, Gurpreet Singh and Chain Singh (shooting), Shiva Thapa (boxing), Kheta Ram, Sandeep Singh, Nitender Singh Rawat, Gopi T, Ganapathi and Devendra Singh (athletics) have all qualified for the upcoming Rio Olympics.

These tournaments are intensely competed by the sportsmen of different battalions, who put their best foot forward for the "naam" and "izzat" of their respective battalions. The Services Selection Control Board (SSCB), the apex sports body governing body, then draws out the best athletes from the tri-services to represent the defence forces at the national level meets.

The Indian army launched a path-breaking program under the aegis of "Mission Olympic Wing" with a view to improve the overall standards of the country's sportspersons and spot potential medal winners for the upcoming Olympics. The Mission Olympic wing has five nodes: the Army Sports Institute (Pune), Army Marksmanship Unit (Mhow), Army Rowing Node (Pune), Army Yachting Node (Mumbai) and Army Equestrian Node (Meerut), which have their task cut out to produce world class sportsmen in archery, boxing, shooting, weightlifting, wrestling and rowing.

The programme has reaped huge dividends, with some of the army men winning medals for the country at the Asian and Commonwealth Games. The services athletes train at the state-of-the-art Army Sports Institute (ASI) at Pune, which is equipped with world class facilities for training and physical conditioning in addition to the best foreign coaches under whose able guidance the athletes can fine-tune their skills.

So let's go down memory lane and relive the exploits of some of the athletes from the armed forces who represented the country with honour and brought back laurels in different sporting disciplines.

Athletics

India's legendary athlete Milkha Singh's first real exposure to athletics happened in the early days of his army career as a recruit in the Electrical Mechanical Engineering Center at Secunderabad.

Milkha became the poster boy of Indian athletics in the 60s after his heroics in the 1960 Rome Olympics, where he finished a creditable fourth after missing the bronze by a whisker. The "Flying Sikh" won the 400-metre titles in the 1958 and 1962 Asian Games besides winning the 400m title at the 1958 Commonwealth Games held in Cardiff.

Sriram Singh Shekhawat from the Rajputana Rifles was a prominent middle distance runner in the 70s who won gold medals in the 800m at the 1974 and 1978 Asian Games. Sriram represented India in 800m at the 1976 and 1980 Olympics.

Shivanth Singh was a great long distance runner who defied all odds and trained hard to achieve notable success in his athletic career. Shivanth won the gold in the 5000m at the 1974 Asian Games. He had an intense rivalry with another great runner Hari Chand, and both of them competed hard for most of the titles in long distance running at the national meets.

In the last decade or so, Surinder Singh from Garhwal Rifles has been one of the best long-distance runners in the country. He has represented India at the 2006 Asian Games and the 2008 Summer Olympics. At the 2007 Asian Indoor Games, he won a silver medal in the 3000m race.

Meanwhile, the likes of BasantaBahadurRana and IrfanKolothumThodi have been seasoned runners in the international circuit. Both Basanta and IrfanThodi represented India at the 2012 Olympics.

Anil Kumar Prakash from the Madras Engineering Group was India's fastest man by a mile in the late 90s and early 2000s. He was the dominant sprinter of his generation and bagged most of the 100m titles at the national athletic meets. It is pertinent to note that he set the national record of 10.3 seconds in 100m at the National Athletic meet in 2005, which stood in his name for almost a decade. He also won a silver medal at the 2000 Asian Athletic championships held in Jakarta.

Paan Singh Tomar, a national steeplechase champion for seven years, served in the Bengal Engineers Group at Roorkee. Tomar represented India in steeplechase at the 1958 Asian Games in Tokyo. The achievement of this unsung hero got plenty of publicity after a Bollywood movie was made on him, showcasing his accomplishments in athletics. Other notable athletes from the armed forces: Bhim Singh, Ram Yadav, C Hamza, Chand Ram.

Boxing

Indian army has to be credited for producing some of the best boxers in the country's history, who have packed a punch at the international stage. Army boxer PadamBahadurMalla was the first Indian boxer to win a gold medal at the 1962 Asian Games in Jakarta.

Hawa Singh dominated the Indian boxing scene in the heavyweight category in the 60s and 70s. He won the national title for 11 consecutive years from 1961 to 1972. He also won the gold medal in the heavyweight division at the 1966 and 1970 Asian Games.

GopalDewang was another boxer of international pedigree who won silver medals in the Asian Boxing championships. Other notable services boxers who were awarded the Arjuna Award for their accomplishments in the sport are M Venu, Mehtab Singh, C. C. Machaiah, Dharmender Singh Yadav and Rajender Prasad.

NK Dingko Singh was one of India's best pugilist in the 90s. The stocky athlete hailing from Manipur served as a sailor in the Indian Navy. Dingko rose to prominence by winning a gold medal at the King's Cup Boxing tournament in 1997 at Thailand. He made a mark on the world stage by winning the gold medal in the bantamweight division at the 1998 Asian Games.

Shiva Thapa has been another boxer of world class pedigree, who won a gold medal at the 2013 Asian Boxing championships. Shiva became the youngest boxer to qualify for the Olympics when he made the cut for the 2012 London Olympics. He won a bronze medal at the 2015 World Amateur Boxing championships.

In the last two decades, services boxers like SomBahadur Pun, Suranjoy Singh, Gurcharan Singh, L Devendro Singh, VergheseJhonson, Nanao Singh and Narjit Singh have done the nation proud by winning medals at international boxing meets.

🏹 Shooting

The shooters from India's armed forces have hit bull's eye and made the nation proud in international meets several times over. The Army Marksmen Unit based in Mhow is an ace establishment for sporting excellence. It has undoubtedly been the breeding ground in nurturing some of the best sharp shooters in the country.

Colonel (then Major) Rajyvardhan Singh Rathore from the Grenadiers Regiment created history of sorts when he won a silver medal in the Men's Doubles Trap event at the 2004 Athens Olympics. Rathore, an accomplished trap shooter, has also won gold medals in the Doubles trap event at the 2002 and 2006 Commonwealth Games.



An ace pistol shooter, Subedar Vijay Kumar from the Dogra Regiment proved his mettle when he bagged a silver medal in the 25m Rapid Fire Pistol at the 2012 London Olympics. Vijay has been a silver medallist at the World Shooting Championships besides winning medals for India at the Commonwealth and Asian Games.

Jitu Rai seems to be the latest shooting sensation to come out of the Indian Army. Rai, a Naib Subedar with the 11th Gorkha Rifles, has been a top class pistol shooter in the international circuit, winning gold medals at the Asian and Commonwealth Games in 2014. Rai also made his mark at the 2014 ISSF World Cup by winning two silvers and a gold in the event.

Gurpreet Singh, a sapper in the Indian army, did the nation proud by winning two gold medals at the 2010 Commonwealth Games. Harpeet Singh, a sailor with the Indian Navy, won two gold medals in 25m Center Fire Pistol event at Commonwealth Games 2010 New Delhi and a silver medal in 25m Rapid Fire Pistol event at the Commonwealth Games 2014 Glasgow.

🏑 Hockey

It is notable that the first ever sporting icon of the country post-independence was Major Dhyan Chand, who served in the Punjab Regiment of the Indian army. A magician with the hockey stick, Dhyan Chand became well known for his artistry and dribbling skills which mesmerized fans across the world.

Chand was India's goal scoring machine in Indian hockey's golden era, when the team dominated the world scene by winning Olympic golds in the 1928, 1932 and 1936 editions of the Summer Olympics.

Ignacious Tirkey, an Indian field hockey player who captained India and played as a fullback, serves in the Madras Engineering Group of the Indian Army. Tirkey was awarded the Arjuna Award for his outstanding contribution to Indian hockey.

Meanwhile, Dananjay Mahadik who represented India as a fullback for almost 15 long years, served in the Maratha Light Infantry of the Indian army. Seasoned national shooters like

Sanjeev Rajput, Chain Singh, Omkar Singh, PembaTamang have all been medalists at the Commonwealth and Asian Games for India.

🏹 Archery

Much like shooting which involves a lot of concentration, focus and discipline, archery has also seen a lot of exceptional athletes coming from the army over the years. Tarundeep Rai from 58 Gorkha Training Center, Shillong has represented India at the Olympics. He became the first Indian to win an individual men's silver medal in archery at the 2010 Asian Games in Guangzhou, China. He also won the silver medal with the Indian team at the 2005 World Championship in Madrid, Spain.



Meanwhile, Majhi Sawaiyan represented India in archery at the 2004 Athens Olympics. He won silver medals in the team event of the 13th and 14th Asian Archery Championships.

⚽ Soccer

The so-called "Pahari regiments" of the Indian Army – namely the Gorkha Rifles, Garhwal Rifles, Kumaon Regiment and Assam Regiment – which draw most of their troops from the Himalayan region, are known to be the powerhouses of soccer within the services fold.

The Gorkha Brigade Football team was one of the top teams vying for domestic titles during the 60s. They won the Durand Cup in 1966 and 1969 besides losing out to Madras Regimental Center in the 1958 finals.

Meanwhile, the Madras Regimental Center team won the Durand Cup in 1955 and 1958. Some of the services footballers who made it to the Indian national team were ace strikers Shyam Thapa and Amar Bahadur Gurung from the Gorkha Rifles and Peter Thangaraj from the Madras Regiment.

The Services team has been a force to reckon with in the national football arena, winning the prestigious Santosh Trophy five times besides being the finalist on five other occasions.

The Services team are also the reigning national football champions. Havaladar Anthony Chettri, the current skipper of the Services Football team, happens to be from the 107 TA battalion which is affiliated to the 11th Gorkha Rifles regiment of the Indian Army.

🚣 Rowing

Bajrang Lal Takhar, a Naib Subedar with the Rajputana Rifles, created history by winning the first ever gold medal for India in rowing at the 2010 Asian Games held in Guangzhou. Lal is also credited for being the first silver medallist in rowing at the 2006 Doha Asian Games.

Major General Mohammad Amin Naik from the Corps of Engineers has been a world-class oarsman. He won a bronze at the 1982 Asian Games coxed pairs. He has also been awarded with the Arjuna Award for his stupendous achievements in rowing.

🐎 Equestrian sports

The Indian army officers get very good exposure to horse riding and polo during their training days at the National Defence Academy. The National Defence Academy and Indian Military Academy Polo teams are right up there with the very best in the country.

The Indian polo team has always been fielded with ace polo players from the 61st Cavalry. The regiment, which has the distinction of being the only horse-mounted cavalry in the world, has produced some of the finest polo players in Colonel (Retd.) Kuldeep Singh Garcha, Lt Col. Ravi Rathore, Colonel Navjeet Sandhu and Colonel Rajesh Pattu. Col (Retd.) Rupinder Singh Brar won a gold medal at the Tent Pegging event in the 1982 Asian Games.

✚ Weightlifting

The weightlifters from the defence forces have also made a mark at the international stage. In recent years, Katula Ravi Kumar from the Corps of Engineers has certainly raised the standards of weightlifting in the country by winning gold in the 69 kg category at the 2010 Commonwealth Games.

Meanwhile, the likes of Chandakant Malil, Sandeep Singh, Ramesh Kumar, V Prabhakar and Sukhen Dey have won medals for India at international weightlifting meets.

✚ Squash

Brigadier (Retd.) Raj Manchanda from the Indian army was the dominant squash player in the late 70s. Manchanda ruled over Indian squash by clinching the men's singles national title a record six times from 1977 to 1982. Captain KK Hazari won the national squash title in 1957 and 1958.

It can be fairly concluded that the Indian army has significantly contributed to the sporting success of the country, and that it endeavours to raise the standards of excellence to greater heights.



Conclusion

The kind of accessibility and provisions with regards to sports and fitness facilities that are seen in the Services year-round could be a step in the right direction towards encouraging a child's right to play; bridging the existing gap (if any). The right to play is crucial for children and adolescent alike – it contributes to their overall growth, development and health. In fact, this right is not one that adults should be excluded from; it could prove to be beneficial for persons of all ages, contributing to their sense of wellbeing. There is also an effort within the Armed Forces to provide safe recreation spaces for the children of domestic helps to reside and working within the locality.

Despite the accessibility and quality of services, it is unfortunate to see that not many individuals, within the fraternity, are taking advantage of the same – indeed a distressing trend that is being observed is that many children are discouraged from playing as they grow older (for example, on entering the 10th grade). This does, in many cases, lead to a break in the link between persons and play, becoming a permanent disconnection. It is about time that persons of all ages are encouraged to enhance their quality of life by utilising the sports and fitness facilities that have been provided by the Armed Forces.

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A STUDY ON AERODYNAMICS OF SPORTING SCENARIOS

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Abstract : In sport disciplines such as running, ice skating, bicycling and cross-country skiing the aerodynamic drag force constitutes the major obstacle to overcome. Furthermore, in ski jumping and in various activities involving a ball the aerodynamic lift force comes in addition into action. This book describes the various sport disciplines on the basis of aerodynamic analysis and also cover the biomechanics part by illustrative performance examples. Such treatment of the underlying physical phenomena of sport activities gives a valuable supplement to existing literature on sport. The reader will also be guided to references which exist for the various topics discussed, so she or he can go into a deeper study of the particular sport activity at wish.

Keywords: Aerodynamics, Archery, Arrow, Badminton, Baseball, Basketball, CFD, Computational fluid dynamics, Cricket. Discus, Drag, Football, Golf, Hammer throw, Ice hockey, Javelin, Lift, Rugby, Sepaktakraw, Shuttlecock. Ski jumping, Sport Soccer, Tennis, Trajectory analysis, Volleyball, Whiffle ball, Wind tunnel.

Introduction

In sports events, performance analysis is not an easy task since multiple factors, such as physiology, psychology, biomechanics, and technical progress in equipment are simultaneously involved and determine the final and ultimate outcome. Identification of individual effects are thus complicated, however from a general point of view, aerodynamics properties are recognized to play a determinant role in almost every sports in which the performance is the result of the optimal motion of the athlete (multi-jointed mechanical system) and/or is equipment (solid system) in the air. From ball games like golf, baseball, soccer, football and tennis to athletics, alpine skiing, cross-country skiing, ski jumping, cycling, motor sport and many others, the application of some basic principles of aerodynamic can make the difference between winners and losers.

If the general shape of the athlete/equipment system in terms of postural strategies and equipment customization is not optimized, it can either be made to deviate from its initial path, resulting in wrong trajectories and/or loss of speed and leading to failure in terms of performance. Coaches should thus be able to assess the aerodynamic efficiency of the motor task performed by the athlete with accuracy and in almost real time. Indeed, quick answers and relevant information can help the athlete to focus on specific aspects of his technical behaviour to improve his performance. So far for this purpose, two solutions are available i.e. dedicated wind tunnel testing or implementation of aerodynamic force models during the athlete training sessions. According to



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the complexity of sport performance and the necessity of almost real time answers for stakeholders, issue concerning the relevance of aerodynamic force modelling versus controlled experiments in wind tunnel must be discussed. In particular when searching to optimize athletes' performances, what are the advantages to develop and implement aerodynamic models comparing to controlled experiments in wind tunnel and for which purpose?

After a short description in section 2 of the aerodynamic principles commonly applied in sport to help optimize performance, the current chapter will document in section 3 both approaches (wind tunnel testing and aerodynamic force modelling) to assess the aerodynamics properties of a particular mechanical system: the athlete with or without his equipment. It will among others present a review of particular wind tunnel setting and modelling methods dedicated to specific sports such as cycling and skiing as well as shows in section 4, how appropriate applications of them can lead to an increase of athletes' performances.

Aerodynamic principles applied to help optimize performance in sport

❖ The performance in sport

Athletic performance is a part of a complex frame and depends on multiple factors (Weineck, 1997). For sports such those involving running, cycling, speed skating, skiing ... where the result depends on the time required to propel the athlete's body and/or his equipment on a given distance, the performance is largely conditioned by the athlete technical skills. Success then is the outcome of a simple principle i.e. the winner is the athlete best able to reduce resistances that must be overcome and best able to sustain an efficient power output to overcome those resistances.

In most of the aforementioned sports, those resistances are mainly the outcome of the combination of the contact force and the aerodynamic force acting on the athlete. The goal in order to optimise the performance consists to reduce both of them as much as possible.

❖ Fundamentals of aerodynamic

Aerodynamics in sport is basically the pressure interaction between a mechanic system (athlete and/or his equipment) and the surrounding air. The system in fact moves in still or unsteady air.

Recent research progress What follows is a survey of recent investigations into aerodynamics of sport projectiles. The summary for each sport is not meant to be anything close to a comprehensive review, but rather a pre´cis of recent significant results. Space limits discussion to a few articles for each sport. The hope is that researchers will be able to glimpse recent research successes in a given sport, and then access references for more details.

❖ Reducing the aerodynamic force to optimize the performance

Reducing the air resistance in sport events typically involved improving the geometry of the athlete/equipment system. Optimisation of the athlete postures as well as the features of his equipment is generally required since they have a pronounced impact on the intensity of the aerodynamic force. Firstly, by proper movement of the body segments (upper limbs, trunk, lower limbs) in order to minimize the frontal surface area exposed to the air flow, the posture can become more efficient aerodynamically. For example, in time trial cycling, it is now well known that four postural parameters are of primary importance in order to reduce the drag resistance i.e. the inclination of the trunk, the gap between the two elbows, the forearms inclination with respect to the horizontal plan, the gap between both knees and the bicycle frame (McLean et al., 1994). The back must be parallel to the ground, the elbow closed up, the forearms tilted between 5° and 20° with respect to the horizontal and the knees closed up to the frame (Fig.8.). Such a posture (time trial posture) can lead to average reduction of the drag resistance of 14,95 % compared to a classical "road posture" (37.8 ± 0.5 N vs. 44.5 ± 0.7 N;

$p < 0.05$) and that merely because of significantly lower frontal area ($0.342 \pm 0.007 \text{ m}^2$ vs. $0.398 \pm 0.006 \text{ m}^2$; $p < 0.05$) (Chabroux et al., 2008)

Methods for assessing the aerodynamic force applied on an athlete with or without his equipment

To assess the aerodynamic performance of an athlete and/or his equipment, two methods are available, i.e. either to perform wind tunnel testing to single out only one specific determinant of the performance in this case aerodynamic properties of the athlete or/and his equipment, or to develop and implement aerodynamic force models that can for example be apply in a real training or competitive conditions which mystifies the role of other factors such as for instance mental factors. The real question here, concern the relevance of the inferences drawn from the results obtain with this two methods according to the fact that the performance in sport is the outcome of the efficient interaction of multiple factors at the right time. Indeed, "a fact observed in particular circumstances can only be the result of particular circumstances. Confirming the general character of such a particular observation, it is taking a risk of committing a misjudgement." (Lesieur, 1996). Both approaches are further detailed below as well as their relevance according to the performance goal pursue by the principles stakeholders i.e. athletes and coaches.

❖ Wind tunnel testing

Wind tunnel tests consist in a huge apparatus used to determine the complex interactions between a velocity-controlled stream of air and the forces exerted on the athlete and his equipment. The tunnel must be over sized compare to the athlete to be assessed in order to avoid side effects that may disturb the measurement of the aerodynamic force. The athlete with or without his equipment is fasten on a measured platform (6 components balance) in the middle of the test section. The athlete is thus stationary in the flow field and the air stream velocity around him generally corresponds to the ones observed during the sport practice (e.g. 14 ms^{-1} in time trial cycling, 25 ms^{-1} and more in alpine skiing.). The aerodynamic balance enables to measure the smallest aerodynamic force imposed on the athlete/equipment system in particular its axial (drag) and normal (lift) components .

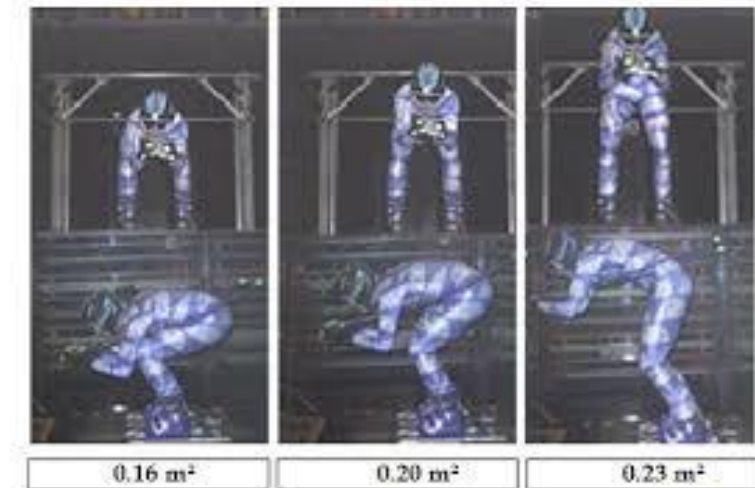
❖ Modelling methods

For numerical models, the method consists in computing correlation between postural parameters observe during the practice as well as equipment characteristics when or if needed and the value of the aerodynamic force. It requires most of the time and previously wind tunnel data of the aerodynamic characteristics of the athlete according to various postures and if necessary within a wide range of orientations relative to the air flow. Indeed, the functions are generally determined with athletes or model of athletes positioned in a wind tunnel in accordance with postures observed during competition in the field.

❖ On the relevance of aerodynamic force modelling versus wind tunnel testing

Individual and accurate optimization of the aerodynamic properties of athletes on very details modifications by means of wind tunnel measurements is essential for high performance. However, such comprehensive experiments in large scale wind tunnels lead to excessive measurement time and costs and require the disposability of athletes over unreasonably long periods. Even if accurate, wind tunnel tests have the disadvantage of not being able to be used anytime it is needed as it is required for high level sport. Moreover, the usual environmental conditions of the sport practice that can widely influence the performance are requirements that cannot be taken into account in a wind tunnel setting. Instead, the computer modelling approach if well oriented allows studying the impact of all variables, parameters and initial conditions which determine the sport performance. In terms of aerodynamic, models implemented in the years 1980 and 1990 (Shanebrook, 1976;

Watanabe & Ohtsuki, 1978; Luethi et al., 1987; Springings et al., 1990 ...), do not report the low dispersion of athletic performance neither because of the technical means available for their implementation nor because they were not designed for this purpose.



Application and valorisation: towards an optimization of downhill skiers' performances when passing over a bump

For each discipline in Alpine skiing (downhill, slalom, giant slalom ...), the difference in performance among the top world skiers is lower than one percent. Taking into account this low variability, coaches are confronted with the problem of assessing the efficiency of different postural strategies. Numerical models may provide an adequate solution. The method consists in computing a correlation between skiers' kinematics and postural parameters observed during training and each of the forces involved in the motion's equation (Barelle, 2003, Barelle et al., 2004; Barelle et al.; 2006). For postural strategies such as pre-jump or op-traken in downhill, models of the projected frontal area for the lift (Barelle, 2003) and for the drag (Barelle et al., 2004) are calculated based on postural parameters (length and direction of skier's segments).

The popularity of the book and movie *The Hunger Games* may have helped boost television ratings for archery at the 2012 Summer Olympics in London . Research into the aerodynamics of shot arrows has increased considerably in the past decade, adding many references to classic work. Novice researchers may find a suitable starting point to be a popular science book. Due to its elongated shape and sometime wobbly flight, determining an arrow's speed is a nontrivial experimental challenge. One US group used the Doppler effect to determine speed. They fitted arrows with tips designed to make high-frequency whistles, and then shot the arrows over microphones. Recent progress has also been made by researchers in Australia. After an exhaustive study of the arrow leaving the bow, the group turned to aerodynamic properties of the arrow in flight. One experiment involved a scale-model arrow in a water channel in which the transition from laminar flow to turbulent flow was seen for $Re \wedge 4.5 \cdot 10^4$. A more extensive investigation examined drag contributions from four parts of the arrow: fletch, shaft, nock, and point. Arrows were shot through a chronograph to determine speeds at particular distances. Those speeds compared well with model predictions. The comparison between predicted arrow rotations and actual rotations fared well, too. A group in Japan used both a wind tunnel and trajectory analysis to extract aerodynamic properties of arrows in flight. Arrows were fitted with both bullet and streamlined tips.

SPORTS BALL AERODYNAMICS

Lateral deflection in flight, known as swing, swerve or curve, is well recognized in baseball, golf, tennis, cricket, volleyball and soccer. In most of these sports, the deflection is produced by spinning the ball about an axis perpendicular to the line of flight which generates the Magnus effect. It has long been known that the aerodynamics of sports balls is strongly dependent on the detailed development and behavior of the boundary layer on the ball's surface. A side force, which makes a ball swing through the air, can also be generated in the absence of the Magnus effect. In one of the cricket deliveries, the ball is released with the seam angled, which creates the boundary layer asymmetry necessary to produce swing. In baseball, volleyball and soccer there is an interesting variation whereby the ball is released without any spin imparted to it. In this case, depending on the seam or stitch orientation, an asymmetric, and sometimes time-varying, flow field can be generated, thus resulting in an unpredictable flight path. Almost all ball games are played in the Reynolds Number range of between about 40,000 to 400,000. The Reynolds number is defined as, $Re = Ud/\nu$, where U is the ball velocity, d is the ball diameter and ν is the air kinematic viscosity. It is fascinating that small disturbances on the ball surface, such as the stitching on baseballs and cricket balls, the felt cover on tennis balls and patch-seams on volleyballs and soccer balls, are about the right size to affect boundary layer transition and development in this Re range. A more detailed account of sports ball aerodynamics is given in Mehta and Pallis.



BASEBALL AERODYNAMICS:

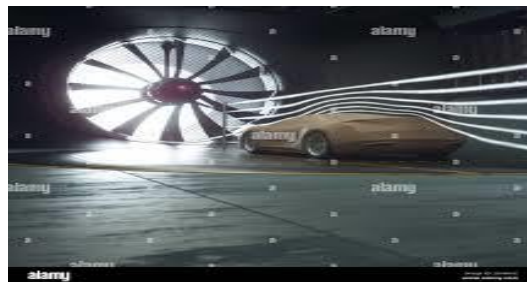
For a pitch such as the curveball, the ball is released with topspin about the horizontal axis. This results in a Magnus force that makes the ball curve faster towards the ground than it would under the action of gravity alone. In Figure 1, the flow over a spinning baseball is shown in a water channel using dyes at a relatively low Re (3400) and a spin rate parameter (S) of 2.5, where S is defined as the ratio of the equatorial velocity at the edge of the ball (V) to its translation velocity (U). At such a low Re , the flow over the baseball is subcritical, but the asymmetric separation and deflected wake flow are still clearly evident, thus implying an upward Magnus force. The extra momentum applied to the boundary layer on the retreating side of the ball delays separation while the reverse occurs on the advancing side. Note the indentation in the dye filament over the upper surface due to the seam. At higher Re , the rotating seam would produce an effective roughness capable of causing transition of the laminar boundary layer. Spin rates of up to 35 revs/sec and speeds of up to 45 m/s are achieved by pitchers in baseball.

GOLF BALL AERODYNAMICS :

In golf ball aerodynamics, apart from the lift force, the drag and gravitational forces are also important, since the main objective is to "tailor" the flight path of the ball. The lift force is generated due to the Magnus effect and the role of the dimples is to lower the critical Re .

Over the years, several dimple designs and layouts have been tried to improve the golf ball aerodynamics. Bearman and Harvey (1976) found that hexagonal dimples, instead of the conventional round ones, improved the performance of the ball since the CL was slightly higher and the CD lower. In order to try and minimize the amount of sideways deflection on an inadvertently sliced drive, a ball was designed (Polara) with regular dimples along a "seam"

around the ball and shallower dimples on the sides. The ball is placed on the tee with the seam pointing down the fairway, and if only backspin about the horizontal axis is imparted to it, it will generate roughly the same amount of lift as a conventional ball. However, if the ball is heavily sliced, so that it rotates about a near-vertical axis, the reduced overall roughness increases the critical Re , and hence the sideways deflection is reduced.



✚ TENNIS BALL AERODYNAMICS:

Some recent experimental studies of tennis ball aerodynamics have revealed the very important role that the felt cover plays (Mehta and Pallis, 2001b). Figure 3 shows a photograph of the smoke flow visualization over a tennis ball model that is held (nonspinning) in a wind tunnel. The first observation is that the boundary layer over the top and bottom of the ball separates relatively early, thus suggesting a laminar boundary layer separation. However, since the flow field did not change with Re , it was presumed that transition had already occurred and that a turbulent boundary layer separation was obtained over the whole Re range tested, thus putting the ball in the transcritical flow regime. As discussed above, a Magnus force is generated on a spinning tennis ball and the direction and amount of movement is determined by the spin axis and the spin parameter.

✚ CRICKET BALL AERODYNAMICS:

Fast bowlers in cricket make the ball swing by a judicious use of the primary seam (six rows of prominent stitching). The ball is released with the seam at an angle to the initial line of flight (Mehta, 2000). Over a certain Reynolds number range, the seam trips the laminar boundary layer into turbulence on one side of the ball whereas that on the other (nonseam) side remains laminar. The turbulent boundary layer separates later compared to the laminar layer and so a pressure differential, which results in a side force, is generated on the ball the seam has tripped the boundary layer on the lower surface into turbulence, evidenced by the chaotic nature of the smoke edge just downstream of the separation point. On the upper surface, a smooth, clean edge confirms that the separating boundary layer is in a laminar state. The asymmetric separation of the boundary layers is further confirmed by the upward deflected wake, which implies that a downward force is acting on the ball.

✚ VOLLEYBALL AND SOCCER BALL AERODYNAMICS:

In volleyball, two main types of serves are employed: a relatively fast spinning serve (generally with topspin), which results in a downward Magnus force adding to the gravitational force or the so-called “floater” which is served at a slower pace, but with the palm of the hand so that no spin is imparted to it. The floater has an unpredictable flight path, which makes it harder for the returning team to set up effectively. In soccer, the ball is almost always kicked with spin imparted to it, generally backspin or spin about a near-vertical axis, which makes the ball curve sideways. The latter effect is often employed during free kicks from around the penalty box. A “toe-kick” is also sometimes used in the free kick situations to try and get the “knuckling” effect. For both these balls, the surface is relatively smooth with small indentations where the “patches” come together, so the critical Re would be expected to be less than that for a smooth sphere, but higher than that for a golf ball. As seen in Figure 2, that is indeed the case for a non-spinning volleyball with a critical Re of about 200,000 ($U = 14.5$ m/s). The typical serving speeds in volleyball range from about 10 m/s to 30 m/s and so it is quite possible to serve at a speed just above the critical (with turbulent boundary layer separation)

and as the ball slows through the critical range, get side forces generated as non-uniform transition starts to occur depending on the locations of the patch-seams. Thus, a serve that starts off on a straight flight path may suddenly develop a sideways motion towards the end of the flight.

Conclusion

Space limitations on this article's length make it impossible to review work done on every possible sport projectile. For some projectiles, like shot-put, racquetball, lacrosse ball, squash ball, and table tennis ball, aerodynamics are described well by approximating the objects as smooth spheres. Lacrosse balls can be manufactured with rough surfaces to reduce drag and help clubs practice with fastmoving balls. Compared to its weight, drag is not a significant force on either the hammer or the shot-put, but the steel wire attached to the hammer ball makes the aerodynamics interesting enough to include here. For a long jumper, air drag is such a small force compared to the athlete's weight, that ski jumping was the only sport reviewed here with a human projectile. Other projectiles are similar enough to those reviewed here that young investigators are encouraged to review work here and then look for references in their chosen research area. For example, dart aerodynamics will share similarities with aerodynamics associated with an arrow and, to a slightly lesser extent, a javelin. Those researching Australian football will find similarities with American football and rugby.

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EFFECT OF YOGIC PRACTICES ON PHYSICAL VARIABLE OF SCHOOL STUDENTS

Dr. ANJANABAI SHARANAPPA*

Abstract : The purpose of the study was to find out the Effect of Yogic Practices on Physical Variable of School Students. It was hypothesized that there would be significant differences on Physical variable due to the effect of yogic practices among School Students. For the present study the 40 school students from Darbar Higher Secondary School, Vijayapura, Karnataka were selected at random and their age ranged from 13 to 15 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of twenty each and named as Group 'A' and Group 'B'. Group 'A' underwent yogic practices and Group 'B' has not undergone any training. The data was collected before and after Eight weeks of training. The data was analyzed by applying dependent't test. The level of significance was set at 0.05. The yogic practices had positive impact on Endurance among school students.

Keywords: Yogic practices, Endurance, School Students.

Introduction

Bhagavat Gita: Bhagavat Gita gives another technical meaning of yoga. Purity of mind is called yoga. Only a balanced (samatvam) mind can unite with the Divine. Thus Bhagavat Gita offers two definitions of yoga.

Yoga is the ancient science of Self-culture. Vedic people practiced yoga to lead a happy and peaceful life. Yoga trains the body, controls the senses, calms the mind and expands the Consciousness. The modern world uses yoga as a method for relaxation and stress management. In the yoga texts there are many definitions of yoga. But only a few are recognized as important and popular.

The term yoga has been derived from the Sanskrit word yug meaning 'to unite' or 'integrate'. The origin of this practice can be traced back to almost 5,000 years ago in northern India. The practice was gradually developed over thousands of years and the whole process is documented in sacred texts of the Rig Veda (one of the four sacred canonical texts of Hinduism). Primarily a spiritual discipline, yoga concentrates on the subtle science that focuses on achieving harmony between one's mind and body. The practice goes beyond the physical asanas that it is popularly associated with, especially in the West. It stands for the union of the mind and body with universal consciousness. The 'union' here refers to uniting individual consciousness (individual experience of reality) with divine consciousness (the essence of truth as perceived when all five senses are quiet and reconnected with the Supreme Self within). The ultimate aim of yoga is to achieve self-realization that enables the individual to overcome all kinds of suffering, eventually leading towards the state of liberation (moksha) or freedom (kaivalya). It caters to both the material and spiritual upliftment of humanity.

Objectives of the study

The core aim of the present study was to find out the Effect of Yogic Practices on Physical Variable of School Students.

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Methodology

For the purpose of this study 40 School Girls Students were selected as subjects from a Darbar Higher Secondary School, Vijayapura, and Karnataka State, India. The subjects were divided in to two groups equally with 10 each as experimental and control group. Experimental group underwent Sixty minute in the morning Yogic Practices included 10 minutes of warm-up before the Yogic Practices. The one hour Yogic Practices includes eleven yogasanas. The Yogasanas are Padmasana, Vajrasana, Sarvangasana, Halasana, Bhujangasana, Matsyasana, Chakarasana, Dhanurasana, Ardhamatsyenderasana, Vajrasana, Sirashasana and Savasana. The tests were carried out with standardized procedure. The pre and post test were conducted on selected Physical variable of Endurance. The Physical parameters were assessed through standardized Procedures (12 minute run and walk test).

Statistical procedure

The collected data of experimental and control groups were statistically analyzed by using mean standard deviation and t- test and presented in Table 1. The level of significance was fixed at 0.05 level of confidence with the table value of 2.04. The t-values of 10.180 and above were considered significant in this study. In the tables it was denoted by star (*) which indicates 0.05 significant level.

Results and Discussions

Table No.1. Shows the Mean, Standard Deviation and 't'- value of Pre-test and Post-test for Yogic Practices Experimental Group and Control Group on Endurance performance.

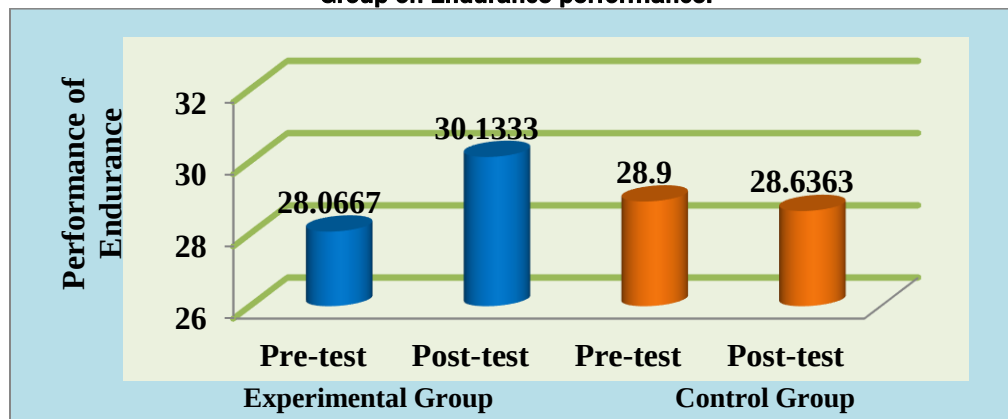
Variable	Groups	Test	N	Mean	SD	t- Value
Endurance	Experimental Group	Pre-test	10	23.3000	3.14726	10.180*
		Post-test	10	25.1500	3.03098	
	Control Group	Pre-test	10	23.3500	2.83354	.710
		Post-test	10	23.2795	3.07490	

The level of significant 0.05=Table value =2.04

Table No 1. Indicates that the 't'- value is more than the table value that is 2.04, hence it is significant.

The pre-test mean value is 23.3000 and the post-test mean value 25.1500. The post-test mean value is less than pre-test mean value. It shows significant improvement in the Endurance performance of School Girls Students owing to the Six weeks Yogic Practices. The pre-test mean value is 23.3500 and the Post-test mean value 23.2795. The post-test mean value is more than the pre-test mean value. It is shows no improvement in the Endurance performance of School Girls Students subjects control group did not undergo any kind of training Programme the same as displayed in the figure 1. (a)

Figure No.1.The Pre-test and Post-test for Yogic Practices Experimental Group and Control Group on Endurance performance.



The above figure 1. (a) Indicates that the post test values of Experimental group significantly improved the performance of Endurance and also the post-test values of Endurance were less than the pre- test values due to 8 weeks of Yogic Practices. The Control group pre- test and post- test performance of Endurance shows no improvement.

Conclusions

The results of the present study indicate the Effect of Yogic Practices on Physical Variable of School Students. In the experimental group the Physical variable were significantly improved in the teach us that Yogic Practices is useful to everyone in particularly sports persons to achieve the higher performance level because the selected variables in the study were more related to the sports men too. Further the control group post test means score indicates that the Yogic Practices not improvement.

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SPORTS OPPORTUNITIES FOR PEOPLE WITH DISABILITIES

ANITHA .S.M*

Abstract : The unique ability of sports to transcend linguistic, cultural and social barriers makes it an excellent platform for strategies of inclusion and adaptation. Furthermore, the universal popularity of sport and its physical, social and economic development benefits make it an ideal tool for fostering the inclusion and well-being of persons with disabilities. Persons with disabilities often face societal barriers and disability evokes negative perceptions and discrimination in many societies. As a result of the stigma associated with disability, persons with disabilities are generally excluded from education, employment and community life which deprives them of opportunities essential to their social development, health and well-being. In some societies persons with disabilities are considered dependent and seen as incapable, thus fostering inactivity which often causes individuals with physical disabilities to experience restricted mobility beyond the cause of their disability.

Keywords: Ensuring accountability and principles of fair play, Protection of the rights of all Athletes and Classifiers, Evaluation of Athletes, Protest and Appeals

Introduction

Sport can help reduce the stigma and discrimination associated with disability because it can transform community attitudes about persons with disabilities by highlighting their skills and reducing the tendency to see the disability instead of the person. Through sport, persons without disabilities interact with persons with disabilities in a positive context forcing them to reshape assumptions about what persons with disabilities can and cannot do.

Sport changes the person with disability in an equally profound way by empowering persons with disabilities to realize their full potential and advocate for changes in society. Through sport, persons with disabilities acquire vital social skills, develop independence, and become empowered to act as agents of change. Sport teaches individuals how to communicate effectively as well as the significance of teamwork and cooperation and respect for others. Sport is also well-suited to reducing dependence and developing greater independence by helping persons with disabilities to become physically and mentally stronger. These skills can be transferred into other new arenas including employment and advocacy work further helping to build self-sufficiency.

The power of sport as a transformative tool is of particular importance for women as women with disabilities often experience double discrimination on the basis of their gender and disability. It is reported that 93% of women with disabilities are not involved in sport and women comprise only one-third of athletes with disabilities in international competitions. By providing women with disabilities the opportunity to compete and demonstrate their physical ability, sport can help to reduce gender stereotypes and negative perceptions associated with women with disabilities.

Moreover, by improving the inclusion and well-being of persons with disabilities, sport can also help to advance the Millennium Development Goals (MDGs). For example, sports-based opportunities can help



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achieve the goal of universal primary education (MDG2) by reducing stigma preventing children with disabilities from attending school; promote gender equality (MDG3) by empowering women and girls with disabilities to acquire health information, skills, social networks, and leadership experience; and lead to increased employment and lower levels of poverty and hunger (MDG1) by helping to reduce stigma and increase self-confidence.

The UN Convention on the Rights of Persons with Disabilities is the first legally binding international instrument to address the rights of persons with disabilities and sport. Article 30 of the Convention addresses both mainstream and disability-specific sport and stipulates that “States Parties shall take appropriate measures to encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels”. It also calls upon Governments, States party to the Convention, to ensure that persons with disabilities have access to sport and recreational venues — as spectators and as active participants. This also requires that children with disabilities be included in physical education within the school system “to the fullest extent possible” and enjoy equal access to “play, recreation and leisure and sporting activities”.



Sports Opportunities

Although participation in sport for individuals with a disability has increased over the years, the number of athletes participating, particularly in competitive sport continues to lag behind that of their able bodied counterparts. Almost any sport in which able-bodied athletes can participate in can be modified for participation by individuals with a disability including archery, athletics, basketball, cycling, bowling, canoeing, equestrian, fencing, golf, kayaking, rowing, rugby, sailing, shooting, skiing, ice hockey, swimming, table tennis, tennis, water skiing, power lifting and others. Competitive sport for people with a disability is found

within Paralympic Sport structures, governed by the International Paralympic Committee and other International Sports Federations culminating in the Paralympic Games, a major international multi-sport event for athletes with a physical disability including athletes with physical impairments such as spinal cord injury, amputations, blindness, and cerebral palsy, visual impairments and intellectual impairments.

Paralympic Sport

Paralympic sports refers to competitive sporting activities organised as part of the global Paralympic movement, comprise all the sports contested in the Summer and Winter Paralympic Games. Globally, the International Paralympic Committee is recognized as the leading organization, with direct governance of nine paralympic sports, and responsibility for the Paralympic Games. Other international organizations, notably the International Wheelchair and Amputee Sports Federation (IWAS), the International Blind Sports Federation (IBSA), and the Cerebral Palsy International Sports and Recreation Association (CP-ISRA) govern sports that are specific to certain impairment groups. In addition, certain single-sport federations govern specific sports for athletes with a disability, either as part of an able-bodied sports federation such as the International Federation for Equestrian Sports (FEI), or as a sports federation specifically for athletes with a disability such as the International Wheelchair Basketball Federation and the International Wheelchair Rugby Federation.

The Tokyo 2020 Paralympic Games will have 540 Events across 22 Sports, including the introduction of new sports, badminton and taekwondo, for the first time. The Beijing 2022 Winter Paralympics will include 64 events across 6 sports. The number and kinds of events may change from one Paralympic Games to another.

Classification

Classification is a unique and integral part of disability sport. It provides a structure for competition, ensuring fair and equitable competition at all levels of sport. Paralympic athletes have an impairment in body structures and functions that leads to a competitive disadvantage in sport. Consequently, criteria are put in place to ensure that winning is determined by skill, fitness, power, endurance, tactical ability and mental focus.

In November 2007, the International Paralympic Committee (IPC) General Assembly passed the IPC Classification Code and International Standards ("the Code"), a universal code for classification that implements policies and procedures across all sports within the Paralympic movement. The intent of the Code is to bring consistency to certain aspects of the classification process, specifically as it relates to;

- Ensuring accountability and principles of fair play
- The protection of the rights of all Athletes and Classifiers
- The Evaluation of Athletes
- Protest and Appeals



The Paralympic Movement adopted the definitions for the eligible impairment types as described in the World Health Organization International Classification of Functioning, Disability and Health (2001, WHO, Geneva) Each Paralympic Sport must clearly define what impairment groups they provide sports opportunities for. This is described in the Classification Rules of each sport. While some sports include athletes of all impairment types (eg. Athletics and Swimming), other sports are limited to one impairment type (eg. Goalball) or a selection of impairment types (eg. Cycling).

Paralympic Sport incorporates opportunities for a wide range of athletes with a physical impairment, which are outlined in further detail below. The presence of an eligible impairment is a prerequisite but not the sole criterion of entry into a particular Paralympic Sport. It is not sufficient simply to have one of the below impairment types; the athlete must also meet the minimal eligibility criteria as set out by the specific sporting body. Specific and objective testing is used to determine whether a person's impairment results in sufficient activity limitation to perform the core elements of the relevant sport.

- **Impaired Muscle Power;** Impairments in this category have in common that there is reduced force generated by the contraction of a muscle or muscle groups (e.g. muscles of one limb, one side of the body, the lower half of the body). Examples of conditions included in this category are spinal cord injury, peripheral nerve injury, muscular dystrophy, post poliomyelitis, and spina bifida.
- **Impaired Passive Range of Movement;** Range of movement in one or more joint is reduced in a systematically way. Note that hypermobility of joints, joint instability (e.g. shoulder dislocation), and acute conditions of reduced range of movement (e.g. arthritis type of impairment without permanent impairment) typically will be excluded as 'eligible impairments'. Examples of conditions included in this category are arthrogryposis, osteogenesis imperfecta, and ankylosis.
- **Limb Deficiency;** There is a total or partial absence of the bones or joints as a consequence of trauma (e.g. traumatic amputation), illness (e.g. bone cancer) or congenital limb deficiency (e.g. dysmelia)

- **Leg Length Difference;** Due to congenital deficiency or trauma, bone shortening occurs in one leg. Examples of conditions included in this category are perthes disease, and dysplasia.
- **Short Stature;** Standing height is reduced due to atypical dimensions of bones of upper and lower limbs or trunk. Examples of conditions included in this category are achondroplasia, and dwarfism.
- **Hypertonia;** A condition marked by an abnormal increase in muscle tension and a reduced ability of a muscle to stretch. Hypertonia may result from injury, disease, or conditions that involve damage to the central nervous system.
- **Ataxia;** Ataxia is a neurological sign and symptom that consists of a lack of co-ordination of muscle movements.
- **Athetosis;** Athetosis can vary from mild to severe motor dysfunction. It is generally characterized by unbalanced, involuntary movements of muscle tone and a difficulty maintaining a symmetrical posture.

International Paralympic Committee

Founded on 22 September 1989 as an international non-profit organisation, the IPC is an athlete-centred organisation composed of an elected Governing Board, a management team and various Standing Committees and Councils. The IPC's primary responsibilities are to support our 200 plus members develop Para sport and advocate social inclusion, ensure the successful delivery and organisation of the Paralympic Games and act as the international federation for 10 Para sports. They can provide information on the disability sport organisations responsible for paralympic sport within each of their 200 plus member countries.

Parasport



Parasport, developed by ParalympicsGB in partnership with Toyota, is a UK based Website, to connect disabled people with more opportunities to get active than ever before. Our ambition is to create the UK's biggest fun and vibrant community for players, parents and coaches to share their experiences of para sport, and find useful hints, tips and information on what's happening near you. This includes in depth listings and all the information you need to connect to local inclusive opportunities.

Conclusion

Disability Awareness Training should be mandatory for all staff in childcare and leisure and play settings. Educate everyone for access and inclusion so that access, adapted programmes and activities that meet the needs of people with disabilities can be provided. This means training and education for all those who provide services so that they have the relevant knowledge and training on the specifics of children and adults with disabilities and special needs so that they can facilitate their participation by addressing their needs. The Irish Adapted Physical Activity Alliance (IAPAA) should be supported in the development of Inclusive Physical Activity/ Adapted Physical Activity as an academic discipline in Ireland. Third level institutions in Ireland who are pioneering the way in Inclusive/Adapted Physical Activity and have practical and theoretical expertise in Inclusive/Adapted Physical Activity could collaborate and partner other third level institutions at home and abroad in order to develop this discipline. Career guidance teachers can inform students with disabilities on careers in sport and leisure fields and can encourage those who are interested to seek training and employment in leisure and sport. Gyms, leisure centres and LSPs can actively recruit staff with a disability. It is important

that a wide range of professionals develop knowledge and expertise around the provision of individually tailored pathways in physical activity and sport. All National Coaching and Training Programmes and National Governing Body (N.G.B.) programmes should have disability awareness training including a module on coaching people with disabilities in their coaching programmes.

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WOMEN MANAGEMENT POSITIONS IN THE SPORT INDUSTRY IN GLOBAL ERA: PROBLEM AND PROSPECTS

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Abstract: Women remain minimally represented in senior leadership roles in sport, despite increased female participation in both sport, sport management education programs, and in entry level positions in the industry. Many women prematurely exit mid-level leadership positions in sport, or are often overlooked for senior leadership positions. The management positions are held by women in the world's largest organizations. Why does this "glass ceiling" continue to bar women from advancing to top positions? Corporate policies and practices in training and career development, promotion, and compensation are often identified as major components of the glass ceiling that prevent women from making it to the top. With women's continued success in the sports industry it will make it much harder for the stereotypes and old boy networks to stand in the way of women rising to the top of management within sports. The purpose of this study is to uncover the reasons why women face advancement barriers in the sports industry. This study sought to answer the following questions, specifically, this research seeks to explain the barriers women had to overcome to advance into the top positions they hold within the sports industry today. This research also seeks to serve as a "how to guide" for women of the next generation.

Keywords: Glass Ceiling, Inequality, Sports Management, Sport Organization, Women's Advancement.

Introduction

The basis of the theoretical framework for this research consisted of three theories. The theories utilized within the research were: the Feminist Theory, Gender Theory, and Social Role Theory. Each of these theories discusses the inequality between males and females. The Gender Theory and Feminist Theory promote women's rights, and focus on the challenges they have had to overcome because of their gender. Gender Theory considers gender, both male and female, as a social construction upon biological differences. Gender theory proposes to explore "ideological inscription and the literary effects of the sex/gender system". Feminist Theory aims to understand the nature of inequality between males and females.

Feminist Theory focuses on gender as a social construct, social construction vs. biological construction, and the sociology of gender. The basic theoretical questions that Feminist Theory asks are: Are women deliberately excluded? Why is this so? How can we change and improve the social world? What about differences between women? Social Role Theory was also utilized throughout the research. The Social Role Theory states that behavioral gender differences are caused by socialization. At a young age, males are encouraged and rewarded for being outgoing, and achievement oriented. Conversely, females are taught to be emotionally oriented, and reserved in their interactions with others. Social Role Theory describes the concept that men and women are allocated different roles in society due to their gender.

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Literature Review

The fight for women's advancement in the work place continues today. Despite increasing numbers of women in senior sport management positions over the past thirty years, men still remain dominant in these roles, indicating a level of gender inequity within sport management (Hoeber & Shaw, 2003). About twenty years ago, the term "glass ceiling" was coined by the Wall Street Journal to describe the apparent barriers that prevent women and minorities from reaching the top of the corporate hierarchy (Pai & Vaidya, 2009). A glass ceiling effect is evident if the magnitude of the inequality not only increases, but also accelerates, as one move up the hierarchy (Pai & Vaidya, 2009). The Civil Rights Act of 1964 barred sexual discrimination in the workplace, and more women are in the workforce today than ever.

However, there is little doubt that women have not moved up in the ranks of corporate America because there are very few women in top leadership positions (Pai & Vaidya, 2009). As organizations such as the Women's Sports Foundation, the Canadian Association for the Advancement of Women in Sport, and Women sport Australia have attested, there is a considerable imbalance between women and men with regard to who holds influence in the management of sport organizations (Hall, 1996; Harvego, 2001; Women sport Australia, 2001; Women's Sports Foundation, 2001a).

Sport organizations are recognized as institutions that often do not welcome gender equity policies (Sport England, 2001). When women first started to enter the corporate world as managers in substantial numbers in the late 1960's and early 1970's, very few expected to pursue a career path leading to a senior management position (Hoeber & Shaw, 2003). Corporate policies at the time did not include affirmative action programs to promote women to senior management positions, which made the first generation of women managers even more wary of setting a goal to rise to the top (Morrison, 1992). The continuing reliance on male CEOs for board members is increasingly less practical and potentially dilutes quality (Luis-Carnicer, Martinez-Sanchez, & Perez, 2008). On average this implies a much lower quality than if the candidates are selected among the best from the distribution of both men and women quality (Luis-Carnicer, Martinez-Sanchez, & Perez, 2008). There has been an abundance of literature collected in the past based on women in leadership and management positions within the work place.

Several studies have shown that despite the efforts to increase diversity, women still face the glass ceiling when it comes to top management jobs (Pai & Vaidya, 2009). The higher the position, the less likely a woman will be able to fill it. The existence of the "glass ceiling" is not limited to the United States. Wirth (2001) highlighted the point by stating that only 3% of top.

The management positions are held by women in the world's largest organizations. Why does this "glass ceiling" continue to bar women from advancing to top positions? Corporate policies and practices in training and career development, promotion, and compensation are often identified as major components of the glass ceiling that prevent women from making it to the top (Oakley, 2000). Oakley (2000) states that explanations for why women have not risen to the top include: inadequate career opportunities, gender-based stereotypes, the old boy network, and tokenism. Other explanations according to Oakley (2000) include the differences between female leadership styles, and the type of leadership style expected at the top of organizations, feminist explanations for the underrepresentation of women in top management positions. Three general categories emerged in Lemons and Parzinger's (2001) study as potential barriers to the advancement of women: educational aspects and family characteristics, corporate cultures, and sociological factors. Other reasons for women's under-representation in the senior management of sport organizations are linked

to the perceived “naturalness” of men occupying those positions(Hoeber, & Shaw, 2003).

Factors that Facilitate and Hinder Career Development

An old boy’s network is an informal system by which money and power are retained by wealthy white men through business relationships .The “Old Boy’s Network” can prevent women and minorities from being truly successful in the business world. The old boy’s network establishes business relationships on golf courses, at exclusive country clubs, in the executive sky-boxes at sporting events, and in other facilities. These are facilities from which women are traditionally excluded and thus are not welcome to the truly “serious” business transactions or conversations. A business person who does not travel in these elite circles of influence will miss out on many opportunities, and many women do miss out.

Numerous studies have attempted to explain the greater representation of men in top management positions within the United States and authors have presented various reasons ranging from differing levels of commitment to discrimination. Regardless of reason, the number of women in top management positions, unfortunately, has not increased significantly. Women's share of professional jobs increased only 0.7% between 1996 and 2002 (International Labor Organization, 2002). In addition, women's share of managerial positions in 60 countries range between 20% to 40% indicating women are markedly underrepresented in top management compared to their overall share of employment agrees that while women hold many entry-level and middle management positions, they remain scarce at the top.

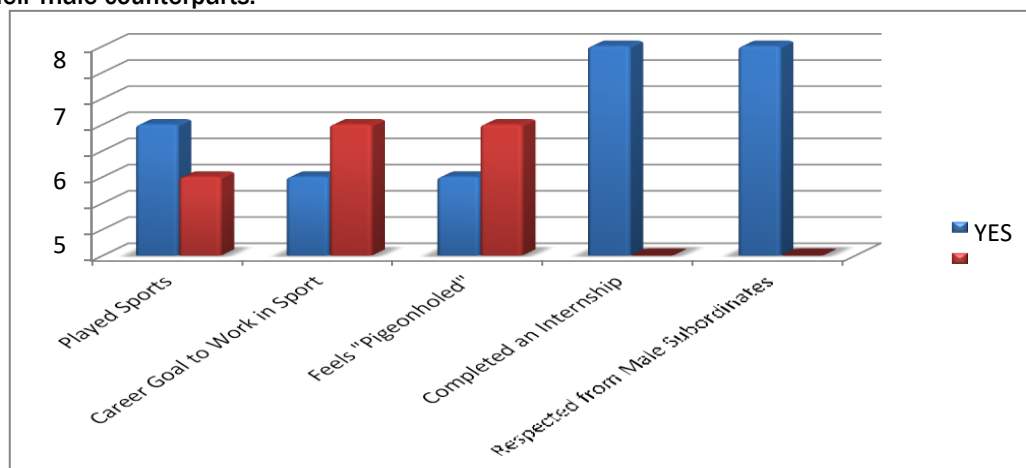
Women executives most often cite behavioral explanations such as stereotyping, whereas males executives tend to cite corporate promotional and career development practices as the primary barrier for women seeking senior management positions. A double-bind is a behavioral norm that creates a situation where a woman cannot win no matter what she does. Throughout history, double-binds have been used by those with power to oppress those without power, and most often the victims were women. Typical double-bind for women in leadership positions is that they must be tough and authoritative (like men) to be taken seriously, but they will be perceived as “bitches” if they act too aggressively.

According to Jamieson’s femininity/competency bind, one must be “un-feminine” to be competent. In other words, this means: speaking assertively, but not too assertively, and dressing “like a woman” but not dressing “too feminine” Women working in the sports industry have to be particularly careful when it comes to this double-bind. If a woman is perceived as “too feminine” she may come off as though she doesn’t know anything about sports. Also if she comes off too feminine she has to face the stereotype that she only wants to work in sports to meet the players.

Female managers are described as less self-confident, less analytical, less emotionally stable, less consistent, and possessing poorer leadership abilities than male managers (Oakley, 2000). Managers consistently associate more desirable managerial traits with men and the less desirable managerial traits with women Femininity is often associated with incompetence. Women do not fit the male stereotype of leadership in the tone and pitch of voice, physical appearance, and mode of dress Physical attractiveness is another aspect of stereotyping that seems to work against women. One study found that attractive female managerial candidates received lower ratings of their performance, lower starting salaries, and fewer promotions than did unattractive females, or attractive males The cultural stereotype of leaders is male, and presents a barrier to any woman who aspires to a leadership position, especially a position like CEO where the symbolic function of the position is particularly important.

Women are typically associated with discourses in femininity which may include cooperative work practices, consultations, or negotiation skills (Hargreaves, 1990). These discourses are largely undervalued in organizations (McKay, 1997). In general many people

think that women will leave their positions to have children. This stereotype, while valid, may not necessarily be factual for everyone woman. Women's linguistic styles are often misinterpreted or devalued by men and the less aggressive and assertive forms of communication associated with females may be particularly unacceptable ways to communicate in the upper echelons of most corporations (Oakley, 2000). In corporate life, women are less likely than men to engage in behaviors that are self-promotion, a pattern that Tennen (1994) traces back to the habits learned in early childhood socialization. Tennen's study about habits learned in early childhood socialization is essential to the research and will be further expanded upon later in this document. Tennen observes that men more often than women engage in behaviors that get them recognized with those in power, which gives them an advantage over women in the art of managing up. Women are less likely to blow their own horn, and therefore are less likely to be recognized (Howell & Butterfield, 2003). In emulating a male linguistic style, female managers run the risk of being perceived as "too aggressive" by their male counterparts.



Women Working in the Sport Industry

Gender has been identified as an influential determinant of employment roles (Acker, 2000; Acker & Van Houten, 1974). By analyzing the discourses that influence employment roles, we are able to examine how women's and men's roles are understood within sport organizations (Hoeber & Shaw, 2003). It is important to explore and critique how the creation and development of employment roles are influenced by discourses of masculinity and femininity and how these discourses may undermine most women's access to power and support men's efforts to gain influence (Hoeber & Shaw, 2003).

The vast majority of women who work in today's society are still employed in clerical positions, retail sales, and service jobs. When examining the women's roles within sports organizations, an online study was conducted using the NFL, NHL, MLB websites. This study showed that the same patterns arise in the Sport Industry. (NFL, NHL, MLB, NBA websites). Based on the information gathered, the majority of women working in the sport industry are working as receptionists, assistants, or the in service side of sports.

Olympic Committee (USOC), and Wendy Lewis, Senior Vice President of Diversity & Strategic Alliances, Major League Baseball (MLB). There are several other women working in top management positions within the sports industry. Jessica Mendoza is the Vice President of ESPNW for ESPN. Lesa France Kennedy is the CEO of International Speedway. Mary O'Connor is

the President of the Women's Sports Foundation. Julie Solwold is the Vice President of Global Sports

Marketing for Paul Mitchell. Amy Stanton is the Founder and CEO of Stanton & Company and Diane Thibert is the Director of Global Public Relations for Oakley. Each of these women has made contributions to the sports industry that has helped set the tone for women in the future.

With women's continued success in the sports industry it will make it much harder for the stereotypes and old boy networks to stand in the way of women rising to the top of management within sports. The purpose of this study was to uncover the reasons why women face advancement barriers in the sports industry. This study sought to answer the following questions:

Specifically, this research seeks to explain the barriers women had to overcome to advance into the top positions they hold within the sports industry today. This research also seeks to serve as a "how to guide" for women of the next generation.

There were six major themes that appeared in the results. Although results were expected to coincide with the ones from previous readings, the results gathered steered away from the findings of past research, which is positive. It was expected that women felt stereotyped working in the sports industry. Another expectation prior to the research was to see a relationship between the roles/titles women are given within the corporation as a manager and the characteristic of being feminine. These expectations were proven incorrect as results were received. The following six reoccurring themes appeared within the research: Belonging, Women feel respected by their subordinates, Women did not go to college for Sport Management, The importance of mentors, Internships, and Most women did not feel pigeon-holed into a position.

➤ **Belonging**

Women feel they need to be part of the group. They don't want to be segregated from men during lunches or on golf outings. Women would like to be invited to these events that men attend and included at the event. This emerged as a grouping variable because many women shared this same concept when being interviewed. Inclusion existed only in the office, and not at outside events such as lunch or golf outings. Megan stated, "I often feel left out of group lunches and outings. I feel singled out because I am a woman sometimes". This is an example of segregation of women in the Sport Industry today. Women are also feeling left out when it comes to golf outings or happy hour.

➤ **Women feel respected by their male subordinates**

In each interview that was conducted respondents were asked if they felt respected by their male subordinates. The response was unanimous, 100% of the women interviewed responded yes, they felt respected. This is a major accomplishment for women. Susan stated "All the men that work with me understand and recognize how knowledgeable I am about sports. That may have helped me with not being looked at as a "typical" girl in the office. I believe if everyone shares a passion for their job, it shouldn't matter male or female, you will have a mutual respect for each other." This is very exciting for women who are planning on entering the sport industry.

➤ **Women in the past did not go to college for Sport Management**

Two out of the eight women that were interviewed had a degree in Sport Management. Five of the other women had degrees in Accounting. One woman had a degree in Nursing. The two women that had degrees in Sport Management were the youngest women that were interviewed. The statistics gathered in this research imply that as time has progressed more women are going to school to study Sport Management today than in previous years. The more

women going to school for Sport Management could have a direct impact on the number of women working in the industry as time goes on.

➤ **Importance of a Mentor**

Four out of eight women expressed the importance of having a mentor during the interview. Out of the four women who discussed mentors, two women talked about their own specific mentor, how much having a mentor contributed to their success, and how grateful they were to have a mentor. Kristen said, "I have an amazing mentor that I use constantly to help stabilize myself if I am in question". Kristen also said, "Get a mentor! Someone in the industry that you trust and feel comfortable talking to- Needs to be someone that will constructively tell you when you do the stupid "little" things. Also, if you take the challenge of being a woman in sports out of the equation, it makes your decision making and visions so much easier." The other two women discussed how not having a mentor impacted their career. Rebecca stated, "Looking back on it I wish I was as lucky back then as you are today, I didn't have a female mentor in the industry to go to. Utilize the women that are already in the industry" *"I didn't have a role model, you can"*, said Megan. These two women both expressed a desire to have a female mentor in the sports industry, however they, themselves were the pioneers so there was no one to go to.

Internships

Unanimously, each woman interviewed responded that they had completed an internship before entering the Sport Industry. Some women even completed more than one. This was a very common theme throughout the interviews. "I took every single internship that I could find", Janet stated. Sarah said, "Just keep working. I interned as much as I could and used that time to learn what I needed to know about the sports industry. My internships helped me to push myself." Rebecca claimed, "An internship is your foot in the door with an organization". The women stressed the importance of internships to their career today and also stressed that any young woman looking to get into the sport industry must complete at least one internship.

➤ **Most women did not feel pigeon-holed into a position**

When asked if she felt pigeon holed Janet stated: "Not exactly pigeon-holed, just treated differently". Five women out of the eight that were interviewed said that they do not feel pigeonholed into a specific position because they are female. Three out of the eight women said that they have felt pigeonholed at one point in their career. However, all three of them left the jobs that made them feel pigeonholed and are now working for employers who do not make them feel that way.

Application of Social Role Theory

Aside from the original research questions, three side studies were conducted within the research linking to the Social Role Theory. As stated previously, the Social Role Theory discusses behavioral gender differences based on socialization. Also stated previously is the study about habits learned in early childhood socialization by Tennen (1994). These side studies were inspired by Tennen's study and the Social Role Theory. The first side study conducted was whether women working in the Sport Industry today had more male or female friends growing up. As you can see by the chart in Appendix E, women working in the Sport Industry have had mostly male friends as children and teenagers. Based on the research there is a direct connection between having an abundance of male friends while growing up to working in the Sport Industry as female executive. This is an important concept that can be researched more thoroughly in the future.

The third side study conducted within the research explores when the women working in management level positions within the sport industry today first showed an interest in sports.

The majority of women started showing an interest in sports at a very young age. Based on the Social Role Theory, this means that the majority of women working in the Sport Industry in Management Positions today were socialized to have an interest in sports at a very young age. Out of the eight women interviewed, 62% of them said they first showed an interest in sports from the age of 1-6. Between the ages of 12-17, 13% of the women interviewed they began to show an interest in sports and surprisingly 25% of the women interviewed did not show an interest in sports until later in life, between the ages of 21 and 30. This side study can be further expanded in future research through a larger sample size of female sport executives.

Suggestion

Finally, each woman was asked to offer a piece of advice to women pursuing a career in the Sport Industry and aspiring to a top management level. The advice offered from each woman interviewed in this research process is listed below. Women pursuing a career in the Sport Industry should find this advice vital to their own success. Janet's advice was "Be serious about work, but don't take yourself too seriously. Work hard — as hard as or harder than anyone. Think before speaking. Do what you say you're going to do- the first time. NEVER make your boss ask you to do something more than once. Be introspective.

Conclusion

The purpose of this research paper was to expose the inequalities that women face as they enter a male dominated industry, such as the Sport Industry. In attempt to uncover these inequalities, research was conducted and results proved to be more promising than expected. To conclude, it is suggested that future researchers continue to study the impacts of the Social Role Theory on women working in top management positions within the Sport Industry. It is also suggested that future researchers gather a sample size from a wide variety of Sports and States across the Country. With continuous research this study may be able to help break down the barriers and stereotypes of the past and give women the proper knowledge to continue to succeed at the top level of the Sport Industry. In summary, the results collected from this research support a promising future for women who have the desire to work in the Sport Industry. The "glass ceiling" may not be as high as we once thought.

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ASSESSMENT OF SOMATIC STATUS OF HOSTEL GIRLS (21-24 YRS) OF KARNATAKA STATE AKKAMAHEDEVI WOMEN'S UNIVERSITY, VIJAYAPURA

SAVITA HULAMANI* & NATARAJ DURGANNAVAR*

INTRODUCTION

The term adolescence means “to emerge” or “achiever identity”. Adolescence is a developmental transition between childhood and adulthood. The word adolescence comes from the Latin word adolescence which means “to grow” or “grow to maturity”. (Mala et al., 2007)

Among adolescents, girls are more vulnerable, particularly in developing countries including India, due to various adverse socio-cultural and socio-economic reasons. The young girls who are at the brink of womanhood constitute the most crucial segment of our population from point of view of the quality of our future. The young girls who are at the brink of womanhood constitute the most crucial segment of our population from point of view of the quality of our future generation. . (Maiti et.al, 2011)

Adolescence is a vulnerable period in human life cycle characterized by rapid growth and development coupled with in numerous physiological and psychological changes (NNMB, 2000). This phase of life is marked by special attributes. These include rapid physical growth and development, physical, social and psychological maturity along with sexual maturity. During this period, adolescents gain up to 50% of their adult weight, 20% or more than that of their adult height and 50% of their adult skeletal mass.(Joshi et.al., 2014).

Height and weight growth of each population are affected by factors that some of them are specific to that region. Some of these factors include heredity, race, economic status, and cultural and nutritional characteristics of that population. (Jamalikandazi et.al, 2016)

A decreasing trend in the prevalence of under-nutrition has been identified in developing countries. On the other hand, an increasing shift towards higher rates of overweight and obesity among adolescents has been reported in developed and developing countries. (Doustmohammadian et .al, 2013)

OBJECTIVES

In this paper an attempt is made to focus mainly on the following objective

- To assess the malnutrition (undernutrition/overnutrition) among the college going girls

MATERIALS AND METHODS

It was a community based study conducted during October 2019 to December 2019 in the hostel of karnnataka state Akkamahadevi Women's university, Vijayapura District. The study population comprised of all the girls aged between 21-24 years. Totally 207 subjects were participated in this study. The somatic measurements such as height, weight, waist circumference, and hip circumference were recorded to assess the malnutrition amongst the subjects.

Height: Height was measured in centimetres that were marked on a wall with the help of measuring tape. All girls were measuring against the wall without footwear and with heels to getter and their heads positioned so that the live of vision was perpendicular to the body.

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Weight: Using a bathroom scale, weight was measured to the nearest 0.5 kg. Students wore light indoor clothes and weight was measured without shoes. BMI was calculated as weight in kilogram divided by height in meter square.

Waist Circumference (cm): Waist circumference is a measurement taken around the abdomen at the level of the umbilicus (belly button). Subjects are made to stand erect with evenly balancing of weight on both the limbs placed about 25-30 cm apart, applied the measuring tape horizontally midway between the lowest rib margin and iliac crest and measured the circumference over the tape.

Hip Circumference (cm): Procedure is same as above, but the measurement was at the point yielding the maximum circumference over the buttocks with the tape held horizontal.

BMI: The body mass index of the body mass divided by the square of the body height and is universally expressed in units of kg/m^2 .

Waist-to-hip ratio (WHR): The waist-hip ratio is the dimensionless ratio of the circumference of the waist to the hips.

Statistical Analysis: Data has been coded and was entered into the MS Excel. Percentage for all variables was calculated

RESULTS AND DISCUSSION

Table 1: Percentage distribution of subjects according to Body Mass Index classification

BMI classification	N=207	Percentage (%)
Under wt	58	28.00
Normal	107	52.00
Over wt	28	13.00
Obese	14	7.00
Total	207	100.00

Table 1 represents Regarding BMI, more than half (51.69 %) were found to be under weight, among them 28.03% were in normal, 13.1% in over-weight & 6.76% in obese

Table 2: Percentage distribution of subjects according to Waist-to-Hip ratio

WHR	N=207	Percentage
Excellent (<0.75)	112	54.00
Good (0.75-0.79)	67	32.00
Average (0.80-0.86)	14	7.00
At risk (>0.86)	14	7.00
Total	207	100.00

According to Table 2 waist hip ratio classification, it depicted that 54.12 per cent are said to be excellent, is followed by 32.5 per cent, 6.76 per cent and 6.76 per cent were good, average and at risk respectively.

Table 3: Percent Distribution of subjects according to the Lean Body Mass Index

Lean Body Mass Index Classification	N=207	Percentage
Chronic Energy Deficiency (>500)	108	52.00
Normal (300-500)	97	47.00
Obese (<300)	2	1.00
Total	207	100.00

It was found that 52.27 per cent of the subjects fall under chronic energy deficiency and only 46.85 per cent of them fall under normal range as per the table

Table 4: Percent Distribution of subjects according to the Broka's index

Broka's Index classification	N=207	Percentage
Chronic Energy Deficiency(80-100)	170	82.00

Normal (100-120)	25	12.00
Obese- I (120-140)	8	4.00
Obese II (140-160)	4	2.00
Total	207	100.00

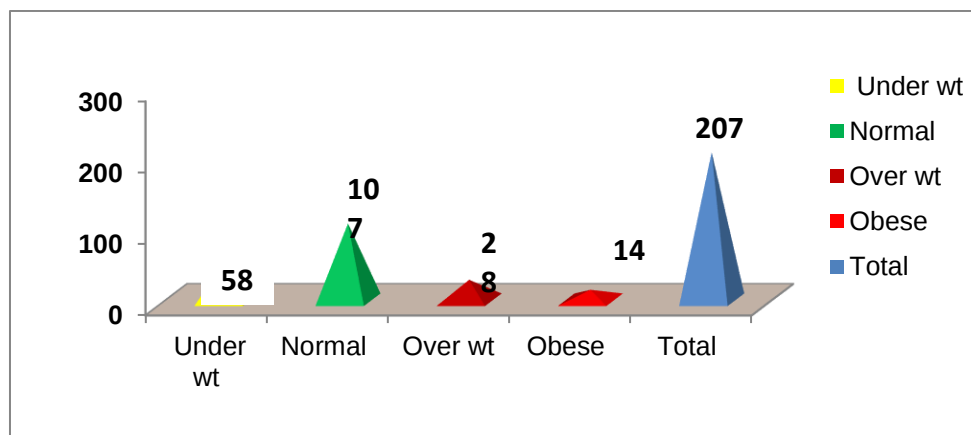


Fig:1. Percentage distribution of subjects according to Body Mass Index classification

The above table 4 revealed that the Broka's index classification majority (82.22%) of the subjects fall under chronic energy deficiency, followed by 12.07 per cent, 3.86 per cent and 1.93 per cent normal, obese-I and obese II respectively.

CONCLUSION

Lifestyle changes related to high fat diet, junk foods and low levels of physical activity results in high prevalence of overweight and obese adolescents. Both under nutrition and obesity or overweight are problems among adolescents. Under nutrition renders adolescents vulnerable to disease and early death and has lifelong health consequences. In adolescent mothers, under nutrition not only contributes to increased morbidity and mortality associated with pregnancy and delivery, but also to increased risk of delivering low birth weight babies. Adolescent growth and development is closely linked to the diet they receive during childhood and adolescence. Adequate nutrition of any individual is determined by two factors. The first is the adequate availability of food in terms of quantity as well as quality, which depends on socioeconomic status, food practices, cultural traditions, and allocation of the food. The second factor is the ability to digest, absorb, and utilize the food.

Body image is a psychological construct that is part of self-image. Issues regarding body weight, general attractiveness, breast size, complexion and acne are some of the main body image concerns for adolescent girls (Aishwarya Rai Syndrome).

Its importance increases as young people become more body conscious with the physical changes associated with puberty. Body satisfaction generally decreases with increasing age. (Ramya et., al 2017)

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AN OVERVIEW OF SPORTS NUTRITION AND ITS IMPORTANCE

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Abstract : Nutrition requirements of sports persons are different than that of normal people. In most cases nutrition of the sports persons depends on the type of sport they are involved in. Each sport has uses different parts of the body and requires different levels of physical fitness and energy requirement. This is reason why sports nutrition is a science which requires proper study based on scientifically collected data. Most of the sports persons have sports nutritionists who guide sports persons what are the immediate foods they should have after exercising as well as after their sports events. These foods generally are aimed at replenishing the lost energy to muscles. Sports nutritionists are available to guide all sports persons to educate them regarding what they should eat so that they can enhance their performance as well as maintain require fitness level. For people who train in muscle building and physical fitness, sports nutrition is readily available in the market, this nutrition addresses their requirement for daily dose of required nutrients so that they can build muscle power along with getting adequate amount of energy and strength. These sports nutrients have the power of nourishing and building muscle power with low fats and high calorie intake. These nutrients are available in the form of powders and bars. With powders you will require to mix these with water and drink after exercises and bars you can have them like any other chocolate bar. These are highly packed with nutrition.

Keywords: Iron, Minerals, Proteins, vitamins, Potassium, Supplements, Competition, Fat

Introduction

Sports nutrition is a broad interdisciplinary field that focuses on the science behind and application of proper nutrition during exercise.

- The areas of interest are: body's use of nutrients during athletic competition; the need, if any, for nutritional supplements among athletes; and the role of proper nutrition and dietary supplements in enhancing an athlete's performance.
- The psychological dimension of sports nutrition is concerned with eating disorders and other psychiatric conditions related to nutrition among athletes.

Macronutrients

Macronutrients are nutrients that provide calories or energy to the body. The purpose of macronutrients is to promote healthy cellular growth, metabolism, and to maintain normal bodily functions. The macronutrients, as suggested by the name "macro," are needed in the body in large amounts to provide the full and proper effect .

There are three types of macronutrients: carbohydrates, proteins, and lipids.

Carbohydrates are organic materials composed of hydrogen and oxygen atoms which bond together to form monosaccharides or simple sugar molecules. Carbohydrates are found to form either a simple carbohydrate, composed of one monosaccharide, or a complex (composite) carbohydrate, composed of two or more monosaccharide molecules. When broken down, both simple and complex carbohydrates form glucose, which is the body's main source of energy. In addition, carbohydrates form an important part of waste elimination and intestinal health, Carbohydrates can be found in most fruits, vegetables and grains and provide the body with 4 calories per gram.

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Proteins are nitrogenous organic compounds which are involved with many of the body's most crucial functions including:

- ❖ Providing the primary workforce in the cells
- ❖ Making hormones and enzymes
- ❖ A high involvement with tissue repair.

Proteins also provide energy when there are not enough carbohydrates available as well as sustain lean body mass. Just as carbohydrates are composed of monosaccharides, proteins are composed of chains of amino acid molecules. Also just like carbohydrates, proteins provide the body with 4 calories per gram. Proteins are most commonly found in animal products, nuts, and beans.

Fats, which are collectively referred to as triglycerides, are molecules comprised of fatty acids and glycerol. Fats provide essential elements of cell membranes and also provide the body with the ability to absorb fat-soluble vitamins A, D, and E. As fats are the most energy-dense macronutrient, they also provide the highest calorie count, providing the body with 9 calories per gram instead of the 4 provided by one gram of either carbohydrate or protein. The three primary types of fat include:

- ❖ Saturated fat
- ❖ Unsaturated fat
- ❖ Trans fat.

Saturated fat, such as that found in butter and cream, as well as trans fat, which is found in snack foods and fried foods, have been shown to increase the risk for cardiovascular disease. While in turn, unsaturated fats, which are found in olive oil and canola oil, has been shown to decrease the risk of developing cardiovascular disease .

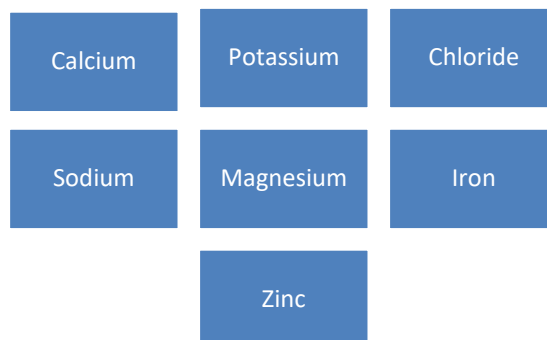
In regards to athletes, the knowledge of what carbohydrates, proteins, and fats provide the body with will allow them to make the best dietary decisions regarding their performance goals.

Micronutrients

Micronutrients are chemical elements comprised of thirteen organic essential vitamins and seven inorganic minerals. When consumed in the human body, micronutrients play an important role in energy production, haemoglobin synthesis, healthy growth, bone and immune health, and maintain normal metabolism. Despite the importance of maintaining the correct level of these vitamins and minerals in the body, as the name "micro" suggests, these chemical elements are only required to exist in the body in small amounts to provide ample effect.

The thirteen essential vitamins fall into one of two categories, water-soluble and fat-soluble. The water-soluble vitamins, the eight vitamins which compose the vitamin B complex and vitamin C, must be consumed daily as the body is unable to store what it does not immediately use. In contrast, the fat-soluble vitamins, vitamin K, A, D and E, can be stored in the body's adipose tissue and therefore does not have to be consumed on daily basis to maintain the correct levels in the body.

Minerals are inorganic nutrients that also play a key role in ensuring an athlete's health. The seven minerals needed to maintain accurate energy and hydration levels include:



These are important because proper hydration prior, during, and after an activity is crucial in the effect on an athlete's performance.

According to multiple sources, the most important vitamins and minerals for athletes include:

- ❖ Calcium
- ❖ Iron
- ❖ Zinc
- ❖ Magnesium
- ❖ The vitamin B complex

Vitamins C, D and E due to their role in the efficiency of muscle contraction; both smooth and cardiac muscle.

These vitamins and minerals can be obtained in a wide variety of food or through added supplementation.

Nutritional Recommendations for Athletes

Nutrition is very important to every athlete, and at high levels, where talent and training are relatively equal, it can be the difference between winning and losing. The American College of Sports Medicine (ACSM) published data they compiled from multiple sources on recommended nutrition for athletes in which they state, "that physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition." [9] Therefore, athletes are advised to take a careful look at their daily intake of food to make sure their body is getting the nutrients it needs to repair, maintain, and build muscle. There are many recommendations for what athletes should be eating but below we looked at the ACSM and the U.S Anti-doping Agency (USADA) official recommendations.

Overall, the most important recommendation is that an athlete needs to track the amount of energy they are expending each day and make sure they are replacing this energy with a balanced diet of carbohydrates, protein, and fat. The recommended replenishment for maintaining carbohydrate levels in the body is eating 0.68 grams per pound of bodyweight within the first 30 minutes after training and again every two hours for four hours. For example, if a 180 lb. athlete completes their training for the day they need to have a meal/snack with about 122 g of carbohydrates, which could be a multi-grain bagel with peanut butter and an oatmeal bar. Importantly, studies have shown it is not necessary for athletes who rest one or two days in between training bouts to follow this post-training carbohydrate recommendation as long as they are meeting their daily requirements, which are explained below.

The ACSM, and many other publications, recommend that an athlete should never train on an empty stomach. They recommend that an athlete eat between 200 and 300 g of carbohydrate three to four hours prior to exercising. The USADA says to add in small amounts of protein to help slow the breakdown of carbohydrates and aid in regulating energy levels by sending carbohydrates to muscles at a steadier rate throughout the training. However, they

also say this is up to the athlete and the size of the meal they can tolerate before training. Athletes should experiment with different pre-training meals to find what they feel comfortable with and eat that meal at a time consistent to when they eat the pre-training meal before a game.

Research has shown a strong benefit to endurance performance for an athlete performing in events lasting longer than one hour if they eat about 30-60 grams of carbohydrates every hour during the event. This equates to eating a banana, a food bar, or something with equal carbohydrates every hour. The ACSM takes it even further and says it is much more beneficial to the body's energy storage to eat small snacks or bites of carbohydrates every 15-20 minutes (about 10-20 grams each time) rather than waiting and eating 60-120 grams every two hours. The USADA says an athlete can intake 6-12 ounces of a sports drink that has 6-8% carbohydrates to water ratio. Anything greater than a 10% ratio increases the likelihood of cramps and an upset stomach[10]. In similar regard, research is also now showing that high-quality protein consumed pre and post-training at just 0.2 grams per pound of bodyweight, which is about 4 ounces of chicken breast, is enough for a "maximal acute anabolic effect."

For daily intake the USADA, and practically every other organization, recommends that an athlete's daily calorie should encompass about, 50-70% carbohydrates, 10-35% protein, and 20-30% fat. Therefore, an athlete needs to plan their day of meals according to these percentages so that they know their total caloric intake for a day encompasses enough of each type. Below is a detailed recommendation from ACSM of the breakdown of each nutrient an athlete needs for their specific body weight:

Carbohydrates

1 hour of training per day	2.5 grams per pound of body wt per hour of training
More than 4 hours of training per day	No more than 6 grams per pound of body wt

Proteins

Endurance training	0.54-0.64 grams per pound of body wt
Strength training (to gain muscle mass)	0.72-0.81 grams per pound of body wt
Strength training (to maintain wt)	0.54-0.64 grams per pound of body wt

Fats

20% of daily calories

They do not recommend a specific value of grams per pound of fats because of the wide variety a person can consume. Almost all athletes do not need to make an attempt to consume more because foods an athlete is eating has fat in it, so the athlete just needs to be careful that he or she is choosing foods that have an adequate amount of fat.

For the athlete looking for nutritional recommendations, the primary point of agreement between all researchers is that while there is some flexibility in the optimal timing of nutrients, the most important factor for maximizing the benefits of training is to consistently meet your daily carbohydrate, protein, and fat needs.

Nutrient Timing and Sport

Nutrient timing became popular about 15-20 years ago and is defined as intentionally eating specific foods before, during, and after training. Before this time athletes were not as concerned with their nutrition, let alone when they should eat certain foods. Ivy and Portman



state that nutrient timing “will allow you to build more strength and lean muscle mass in less time than ever before.” They set out to debunk the fact that, if protein is good for the body then more protein must be that much better to build muscle.

Ivy and Portman explain that muscles have a very specific 24-hour growth cycle that involves the muscle producing energy, recovering, and building and athletes need to provide specific nutrients at each of these phases. They break these phases down into the energy phase (occurs during training), the anabolic phase (occurs within 45 minutes after training), and the growth phase (occurs after the 45 minutes and until the next training session). During the energy phase, as explained above, the muscles use its glycogen stores so the athlete needs to already have eaten carbohydrates and protein to aid the protein synthesis after training. During the anabolic phase, the athlete needs to follow the recommendations mentioned above and eat enough carbohydrates because the “muscle cell membranes are more permeable to glucose...this results in faster rates of glycogen storage”. Finally, during the growth phase, the athlete needs to consume carbohydrate meals with increased glycemic indexes because that helps the glycogen stores for the next workout.

This new, at the time, physiological research gave athletes something scientific they could look at and convinced a lot of them that nutrition was an important aspect of training that they have been missing. However, current research is now calling into question exactly how vital the 45-minute-anabolic window is and if it can be stretched.

Fluids and Hydration

Dehydration not only negatively alters performance but also causes serious complications. Dehydration of 1% to 2% body weight negatively influences performance and dehydration of greater than 3% further decreases physiological function and increases an athlete's risk of developing exertional heat illness or worse. When intense exercise is combined with elevated temperatures or restricted heat loss, core temperature may rise by 2-3 °C and also result in exertional heat illness. Most studies agree that total water intake should be approximately in the 3.0 L (litre) range. Researchers found when dehydration increased, work capacity decreased by as much as 35% to 48%, and work capacity decreased even when maximal aerobic power did not change.

One study said water is the most important nutrient for athletic performance and the biggest component of the human body, accounting for approximately 73% of lean body mass. Trained athletes have higher total body water percentage values by virtue of high muscle mass and low body fat, because fat-free mass is roughly 75% water, while adipose tissue is only 10% water. Individual characteristics like body weight, genetics, metabolic proficiency, and heat acclimatization tendency will influence sweat rates.



Each pound of weight lost during exercise represents 1 pint (0.5 L) of fluid loss. Electrolytes regulate water distribution in various components of the body, with sodium being imperative to fluid regulation. The major electrolytes lost during exercise are mainly sodium chloride and some potassium. Researchers said sweat evaporation provides is the primary means of heat loss during vigorous exercise in hot weather. The goal of fluid replacement should be to prevent dehydration in excess of 2% body mass from occurring.

Before Exercise

The goal of hydrating before exercise is to start the physical activity hydrated with normal electrolyte levels. Researchers recommended 500-600 mL (17-20 fluid ounces (fl oz)) of water two to three hours prior to exercise and 200-300 mL (7-10 fl oz) 20 minutes before activity.

During Exercise

The goal of hydrating during exercise is to prevent excessive dehydration and electrolyte imbalances that could hinder athletic performance. Researchers recommended about 200-300 mL (7-10 fl oz) ever 10-20 minutes during physical activity. Athletes should make sure carbohydrate-loaded drinks have a 4-6% concentration.

After Exercise

The goal of hydrating after exercise is to fully replenish any fluid or electrolyte deficits. The athlete should ideally complete rehydration within 2 hours for hydration restoration, ingest carbohydrates (CHO) to replenish glycogen stores, and include electrolytes to prompt rehydration. Sodium in post-exercise beverages conserves fluid volume and stimulates thirst, while CHOs replenish glycogen stores.

Performance Implications

Recent research found:

- ❖ Dehydration has little to no effect on muscle strength or ballistic power but impairs the ability to perform aerobic exercise.
- ❖ 12-15 year-old basketball players with a water deficit of ~2% body mass made fewer shots and were significantly slower at sprinting and lateral movement tests.
- ❖ The players attempted fewer shots and were less able to make shots linked with movement when dehydration had increased to 3%. Stationary shooting was consistent up to 4% loss.
- ❖ Soccer players with modest dehydration during games perceived exercise as more difficult compared to when fluids were consumed with a higher internal temperature. Performance times were worse on running tests that mimicked play, as well.
- ❖ 66% of 139 college athletes surveyed recognized that body mass change is an effective method to evaluate hydration practices, but only 15% actually check their body mass.

Hyperhydration

Excessive hydration that surpasses sweating rate increases the potential of exercise-associated hyponatremia (EAH), a potentially lethal condition. Authors have linked EAH cases to mostly marathon participants, but the possibility remains with any athlete with low sweating rates and a copious amount of fluid.

Conclusion

It is important to realize that every individual has different dietary requirements, based on their age, gender, body type and their levels of activity and all of these factors should be taken into consideration, while planning a diet for a sports person. For example, athletes that belong to a certain field may require bulk and muscle mass, like wrestlers, weight lifters, body builders and so on. Hence their diet will contain a lot of high calorie foods, like almonds, bananas, whole milk, beef, chicken, and so on. However, some athletes need to maintain a low body weight and lean physiques or figures, like professional high jumpers and skaters. They will need to consume foods that give their body's strength and stamina, but are low in calories, like green leafy vegetables, fresh fruits, seeds, skinless chicken and turkey and low fat dairy

products. Runners, sprinters and other such athletes need to have average sized physiques and hence they will need to include foods from all the healthy food groups in their daily diet.

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A STUDY ON BIOPHYSICAL INVESTIGATION OF SPORTS PERFORMANCE

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Abstract : Biophysics is an interdisciplinary science that applies approaches and methods traditionally used in physics to study biological phenomena. Biophysics covers all scales of biological organization, from molecular to organismic and populations. Biophysical research shares significant overlap with biochemistry, molecular biology, physical chemistry, physiology, nanotechnology, bioengineering, computational biology, biomechanics, development biology and system biology. The term *biophysics* was originally introduced by Karl Pearson in 1892. The term *biophysics* is also regularly used in academia to indicate the study of the physical quantities (e.g. electric current, temperature, stress, entropy) in biological systems. Other biological sciences also perform research on the biophysical properties of living organisms including molecular biology, cell biology, chemical biology, and biochemistry.

Keywords: Asymmetry, Bilateral, Cycling, Footedness, Handedness, Kicking, Limb dominance, Running, Throwing

Introduction

The biophysical domain focuses on physical activity from the viewpoint of the sciences of biomechanics, physiology, and medicine. Areas of study within this domain include the following:

- Biomechanics is the study of the structure and function of biological systems through application of principles of physics to human motion. It helps us understand how the body uses gravity, inertia, balance, force, and motion to produce speed, power, and distance.
- Exercise physiology is the study of human systems to enhance strength, speed, and endurance in performance in pursuit of the Olympic ideal: “Faster, Higher, Stronger.”
- “Nutrition is sometimes studied as part of physiology to understand how performance is affected by food and drink. It investigates an athlete’s diet and hydration habits under varied climates, contest durations, and environmental conditions.
- Sports medicine examines the prevention, care, and rehabilitation of injuries caused by participation in physical activity and sport. Research in sports medicine may also affect recommendations for training.



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Biophysical evaluation of swimmers: a follow-up throughout a training season.

Knowing more about the athletes and their athletic potential requires organized, systematic and consistent evaluation. The evaluation and training control of swimmers give the coach information about the athlete's improvement, stagnation, or deterioration.

Assessments addressing both biological and physical aspects are usually called biophysical studies. Biophysical approach allows a deeper understanding of the determinant variables in swimming and how they interplay to enhance performance. However, few biophysical studies were carried out, and almost all of them were performed through cross-sectional design. Although this approach is relevant, it is not sufficient to describe the specific kinetics of the determinant variables in swimming and the interplay between them throughout a training period. Moreover, practical reliable protocols are necessary, as a large number of swimmers are required for statistical consistency of the results.

Thus, we aim to follow-up swimmers throughout one training season through a biophysical approach. This follow-up will consider anthropometrical, biomechanical, maturational and physiological domains, and how they interact regarding swimmer's performance.

We have explored the important connection between biomechanics and laterality in sport, with a particular focus on laterality effects on performance and injury. We have looked at the methods in which biomechanics and other practitioners assess bilateral symmetries/asymmetries, discussed dominance in cyclic movement patterns and repetitive movements, and looked into the assessment of preferred and non-preferred skills.

Throughout this section, the overriding feature is that biomechanically we are concerned if issues related to laterality affect the performance of an athlete, or predispose the athlete to injury. While improving athletic performance is identified as an essential component of practice and training, assessing bilateral asymmetries is of particular concern when trainable changes can then be made in order to decrease the risk of injury.

It is integral for biomechanics researchers and practical consultants to work with other sports practitioners to address any laterality issues in athletes. From the perspective of improving technique, it is important for biomechanists to collaborate with motor learning and skill acquisition specialists, as well as coaches, in order to provide the best form of information and instruction to athletes. Targeted interventions may be beneficial to reduce moderate laterality effects; however, the method by which this is optimized requires further research and evaluation. Where targeted technique interventions or treatment is required in order to make changes to movement patterns to reduce bilateral asymmetries, biomechanists may be required to work with physiotherapists or rehabilitation specialists, strength and conditioning coaches, or athletic trainers in order to treat any underlying issues.

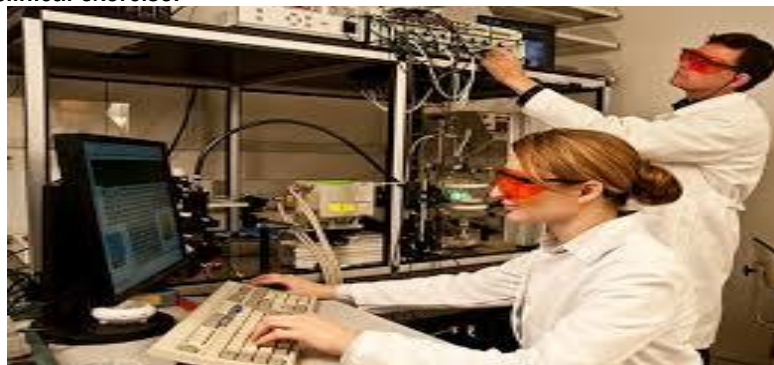
In general, the concept of mechanism in biology has three distinct meanings. It may refer to a philosophical thesis about the nature of life and biology, to the internal workings of a machine-like structure, or to the causal explanation of a particular phenomenon. In this Special Issue, we try to discuss these possible biological mechanisms that underly the beneficial effects of physical fitness and sports performance, as well their importance and role/influences on physical health.

Understanding the biological mechanisms that justify acute and chronic physiological responses to exercise interventions is determinant to sustain training principles and training methods. A strong understanding of the effects of exercise in humans may help to identify which causes may justify specific biological changes and properly identify the most adequate processes for implementing the training stimulus.

Despite the significant body of knowledge regarding the physiological and physical effects of different training methods (based on dimensions of load), some of the biological causes for those changes are still unknown. Additionally, few studies have focused on the natural biological variability in humans and how specific properties of humans may justify different effects for the same training intervention. Thus, more original research is needed to provide plausible biological mechanisms that may explain the physiological and physical effects of exercise and training in humans.

In this Special Issue, we welcome the contributions that describe and list the link between physical fitness, sports performance and human biology. Your contribution is welcome in the form of an original article, case report, commentary, and systematic review with meta-analysis. This Special Issue offers the opportunity to address the following types of topics:

- a) biological mechanisms related to acute and chronic responses to training stimulus and/or physical activity;
- b) biological variability and associations to different training methods;
- c) physiological and physical adaptations to specific training interventions;
- d) biological mechanisms of recovery after exercise;
- e) clinical exercise.



Biophysical aspects of handcycling performance in rehabilitation, daily life and recreational sports

- ✚ Health benefits: Physiological and biomechanical strain. In handcycling, the full 360, i.e., 100% of the movement cycle can be used, potentially employing most of the body musculature. The body muscles are alternately active throughout the 360 cycle during push and pull phases of handcycling and the task load is spread over time and larger alternating muscle groups, reducing local and overall peak loads. One approach to assess the risk for overuse injuries is to analyze the force acting within the joint or the strain on the muscles that are stabilizing the joint. Both the forces as well as the strain can be calculated by inverse dynamics and with the aid of a biomechanical model, based on three-dimensional anatomical information, like the Delft Shoulder and Elbow Model (DSEM). With respect to the shoulder overuse injury, which is a common problem in wheelchair users, higher mean and especially higher peak glenohumeral joint forces point to a higher risk for injuries. Additionally, high strain on the rotator cuff muscles can lead to fatigue which can result in less ability to stabilize the shoulder joint and can therefore increase the risk for shoulder injury. With use of the DSEM, handcycling is found to be less straining for the shoulder joint when directly compared to handrim wheelchair propulsion. The mean glenohumeral contact force during handcycling at 55 W is 45% of the body weight, whereas this is 75% during

wheelchair propulsion at the same intensity level. The peak glenohumeral contact force at this intensity is about 100% of the body weight for handcycling, whilst this is 195% for wheelchair propulsion. Consequently, the risk of overuse injuries associated with the repetitive nature of propulsion is lower in daily outdoor handcycle use compared to outdoor wheelchair use. In addition, handcycling has a mechanical efficiency of 10–17% at submaximal level, while this is only 5–10% during handrim wheelchair propulsion. Therefore, a switch to outdoor handcycling could be beneficial to reduce physiological and biomechanical strain of ambulation.

✚ Active lifestyle: Inactivity is a potential risk in wheelchair users, as they generally show low activity levels throughout the day. Promoting an active lifestyle within the early rehabilitation process, e.g., by handcycling, can help increase physical activity after discharge. Handcycling can be physiologically taxing when negotiating high speeds and/or power outputs. Nevertheless, given its physiological and biomechanical benefits, handcycling is also suitable as a safe training mode to regain and maintain fitness. It is also possible to safely train patients who have a very low physical capacity for instance due to a high cervical spinal cord lesion or because they are at the early start of rehabilitation. Especially for those who are undertrained or those with a relatively high body mass in relation to their available active arm muscle mass, arm crank ergometers can be useful to be able to start training at a very low power output level. Handcycling is essentially an outdoor activity and allows to commute and/or exercise outdoors, even simultaneously. Exercising in the green and natural environment has shown to have a larger effect on mood, self-esteem, blood pressure, tension, anger, confusion and depression compared to exercising in a plain laboratory environment. Exercise in the free leads to the perception of higher energy levels and positive feelings.

✚ Effects of exercising. Having a closer look on typical physiological markers predicting handcycling performance such as peak power and maximal lactate steady-state power as used in able-bodied sports seems obvious. Although not fully applicable, the general training guidelines, prescribed by the American College of Sports Medicine (ACSM) can be used as a starting point for developing training guidelines more specific for upper body exercise. The recommendation for persons with chronic diseases and disabilities is to exercise three to five times a week, for 20–60 min, at an intensity of 40–70% of the heart rate reserve (HRR%).



Conclusion

Since “exercise is medicine” is an important message, it is critical that for persons reliant on upper body exercise that suitable exercise modalities are available. This review has indicated that handcycling is an appropriate exercise modality that can be used in (early) rehabilitation, for daily outdoor ambulation and recreational sports. It has been demonstrated to be feasible and easily accessible in a variety of settings and various tests can be administered. Thus, its potential should be recognized and advocated much more widely in rehabilitation and adapted sports. To optimize performance in rehabilitation, recreation and sports, a biophysical approach should be applied, optimizing both the (mechanical) interface

and upper body work capacity. Continued and more systematic research is required to further stimulate handcycle use.

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A STUDY ON SPORTS FOR INDIVIDUALS WITH A PHYSICAL DISABILITY

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Abstract : There is a need to develop appropriate opportunities for people with disabilities throughout their life course. The provision of access for people with disabilities to quality physical activity and sporting opportunities must be addressed on an equal basis with those of their non-disabled peers. The access of people with disabilities to physical exercise, through recreational and competitive sport and physical education curricula, must be planned for and incorporated into all structures, strategies and programmes. These include community facilities, leisure and sporting venues; national, regional and local strategies and public awareness campaigns; physical activity and sports programmes in schools and in the community.

Keywords: Adaptive Sports or Disability Sports, Negative attitude in sports, Olympics, Commonwealth games

Introduction

The perception of 'Sport' and what it actually constitutes have been continually debated for decades with many definitions and concepts emerging over the years. The Council of Europe's European Sports Charter defines sport as "all forms of physical activity, which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels". In the Irish Department of Education's Sport Strategic Plan 'Targeting Sporting Change in Ireland - Sport in Ireland 1997 to 2006 and Beyond', they built on this definition in order to clarify the interpretation under three broad categories;

- ❖ Recreational Sport; An overriding emphasis on the social and health aspects of sport, with fun and friendship being 'key components'.
- ❖ Performance Sport; More structured programs that incorporate some form of competition. Usually organised around school or club structures, with ongoing coaching and involvement in competition from local to national level. Participants at this level are normally required to meet minimal standards of performance and are subject to the rules of the competition.
- ❖ High Performance Sport; Elite level sport that is highly structured with performance measured against national and international standards. This level of participation requires both internal and external qualities, which are the ability to excel at a personal level as well as on an objective level. The athlete shows a desire for achievement, to prove themselves, reach their own personal limits but also maintain high performance standards.

While historically limitations and exclusions were imposed on the participation of



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men and women with a disability in sport, namely due to the myth that sport, being representative of physical prowess, could not include those who had a physical impairment. The trend today is one of more progressive inclusion and acceptance, with opportunities for sports participation available within each of the broad categories of sport identified above.

History of Sport for Individuals with a Physical Disability

Throughout the 18th and 19th Centuries sport began to be viewed as a tool for the rehabilitation of people with a disability. But unquestionably it was Dr. Ludwig Guttmann, seen by some as the Paralympic Games equivalent to Pierre De Coubertin (Founder of Modern Olympic Games), who was the instrumental figure in establishing what has today become the International Paralympic Movement.

Guttmann founded the National Spinal Injuries Unit at the Stoke Mandeville Hospital in Aylesbury, England at the request of the British Government in 1944 to address the needs of the large numbers of civilians and soldiers injured during World War II. Guttman was a strong believer in 'purposeful, dynamic physical management', the role that sport could play in the physical and mental rehabilitation of people with a spinal cord injury. So sport was introduced to the programme at Stoke Mandeville Hospital and became a vital element in the treatment of all patients. Wheelchair Polo was the first competitive team sport developed at Stoke Mandeville but it was on the 28 July 1948, 'by chance more than by design', that the foundation of the first annual sports day, known as the 'Stoke Mandeville Games', coincided with the Opening Ceremony of the Olympic Games in London and an international movement was born. The growth of the Paralympic Movement continued with a gradual expansion of sport events, countries and other disabilities competing at the annual International Stoke Mandeville Games which were held in Aylesbury three years out of four; and in the Olympic Year held in conjunction with the Olympic Games in the fourth year of the cycle. The Paralympic Games continue to be held, with few exceptions, in the same city and, since 1988 Seoul Summer Games and 1992 Tignes-Albertville Winter Games, at the same venue as the Olympic Games every four years.

Today, the Paralympics are elite sport events for athletes with physical and sensory disabilities. They emphasize the participants' athletic achievements rather than their impairments. The movement has grown dramatically since its first days. The number of athletes participating in Summer Paralympic Games has increased from 400 athletes from 23 countries in Rome in 1960 to 4,342 athletes from 159 countries in Rio 2016, including 528 Events across 22 sports.



Sport as a Fundamental Right

The World Health Organisation endorsed the concept that health and functional ability can be influenced through physical activity and sport as a daily component of everyday life for all individuals, including those with a disability. The adoption of the Convention on the Rights of Persons with Disabilities represented a fundamental step in ensuring the rights of people with a disability worldwide were recognised and put into practice. Adopted by the General Assembly in December 2006, the Convention was one of the fastest treaties ever negotiated at the United Nations. The convention is intended as a human rights instrument with an explicit, social development dimension. As a human rights treaty it has obligations that are legally binding providing a legal framework to ensure people with a disability can access their fundamental

human rights, one of which is the right to take part in cultural life, including participation in play, recreational, leisure and sporting activities, on an equal basis with others.

United Nations Convention on the Rights of Persons with Disabilities; Article 30.5 With a view to enabling persons with disabilities to participate on an equal basis with others in recreational, leisure and sporting activities, States Parties shall take appropriate measures:

- To encourage and promote the participation, to the fullest extent possible, of persons with disabilities in mainstream sporting activities at all levels;
- To ensure that persons with disabilities have an opportunity to organize, develop and participate in disability-specific sporting and recreational activities and, to this end, encourage the provision, on an equal basis with others, of appropriate instruction, training and resources;

A rights-based approach to sport and physical activity is promoted by the Convention, which means not only the promotion of participation but more importantly of 'QUALITY' participation (Walker 2007). The central aim of this rights based approach is in the empowerment of people with a disability to demand their rightful entitlements and fully participate in society, promoting equality and challenging discrimination.

Participation in Sport for People with a Disability

There is limited descriptive and comparative data on the participation rates and physical activity patterns of people with a disability but where that data does exist, it shows that people with a disability by and large engage in less physical activity than their able-bodied peers. Global estimate's suggest that more than 60% of adults worldwide do not engage in levels of physical activity that will benefit their health and that physical inactivity is reported as being even more prevalent among both women and people with a disability.

The results of a survey carried out by the National Disability Authority show that people with a disability in Ireland are less likely to be physically active with twice as many taking no regular exercise in comparison to their able-bodied peers. Sport England, the national sports development agency, in two separate surveys on participation in children and adults with a disability show sports participation rates and frequency of participation are significantly lower than their able-bodied counterparts and this remains true for a wide range of disabilities.

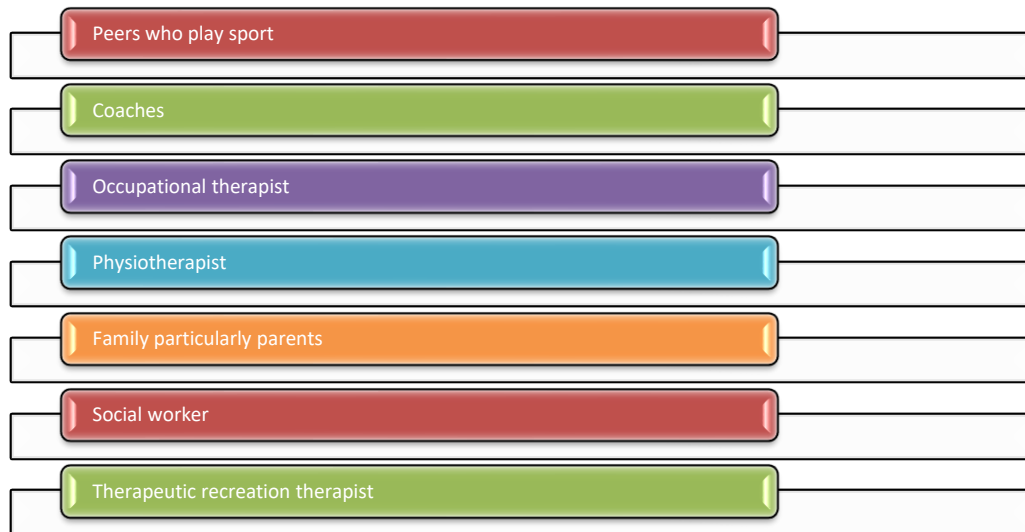


Factors which Influence Participation in Sport

Participation in sport is influenced by a wide variety of factors. These factors include the perceived benefits of participation in sport, however there are also barriers or constraints, which may hinder participation. These factors and others, influencing participation in sport have been widely explored in relation to able-bodied sport and more recently within the realms of disability sport.

Initiation into Sport

There are a number of studies that examine the socialisation of people with a disability into sport. Williams explored the issue of disability sport socialisation in relation to identity construction and identified three key factors relation to initiation into disability sport; significant others, socialising situations and personal attributes. If we look at significant others, Ruddell & Shinew suggest that multiple agents play a role in an athletes' introduction to sport, being evident that a number of key individuals can have an influence on a persons socialisation, often working simultaneously with each individual unaware of the other's influence. Theses agents included;



Williams & Kolkka and Wu & Williams discovered similar introductory agents to disability sport with both studies identifying people with a disability who play the sport as the main initial socialisation agent for both men and women. Unlike Olenik who found that family were the key agents for the socialisation of women with a disability.

If we look at the contexts in which initial participation in sport take place there is much variation depending on the personal attributes of the individual such as; type of impairment, severity, age of onset and gender. For people with a Spinal Cord Injury, an acquired disability, the rehab setting rated as a key social context for re-introduction to sport.

Motives for Participation and Sustained Involvement

There are now significantly more studies that are exploring the motives behind the participation of people with a disability in sport. Blinde and McCallister found that people with a disability when asked, participated in physical activity and sport in order to maintain body functionality, for social interaction and for the psychological benefits of sport such as stress relief and increased self confidence. Additionally Henderson and Bendini cited pleasure, fun, to feel better, to relax and reduce stress and to improve or maintain fitness as the major reasons why people with a disability chose to be physically active. Wu and Williams discovered similar reasons. This work was conducted with people with a spinal cord injury, both male and female, who saw fitness, fun, health and competition as the major reasons to participate in sport after injury. Here it was noted that rehabilitation and social aspects also influenced the participation of other participants. Both the studies by Blinde and McCallister and Henderson and Bedini also outline the importance of choice or perception of choice when it comes to ongoing participation in sport and physical activity. She found that female athletes rated friendship in sport as the major motive for participation whereas male athletes were more driven into competition for the need to achieve and obtain status.

Constraints to Participation

Research on leisure and sport participation constraints are well established within the field of leisure studies including a wide array of empirical studies and considerable theoretical developments, with three main categories in which to classify constraints to participation in leisure suggested:

- Structural, which includes facilities, time, money and transportation;

- Intrapersonal, or more specifically the psychological state of the individual such as stress, anxiety, and perceived self-skill; and
- Interpersonal which explores the interaction between individuals.

The number of studies that focus on the constraints of people with a disability in sport are still very limited. Sherrill and Rainbolt in a study on elite athletes with cerebral palsy found lack of time, inadequate equipment and facilities including access, distance and availability, no one to train with, lack of transportation, lack of adequate knowledge among coaches, and lack of a regular coach as the major constraints to ongoing, regular participation. Ferrara, Dattilo & Dattilo again identified inadequate facilities, inadequate equipment, lack of transportation and lack of coaches as major constraints to sports participation but also recognised that athletes experienced different constraints depending on their chosen sport. Blind athletes most often cited transportation as their major constraint whereas wheelchair athletes tended to have more equipment and/or financial constraints. Crawford & Stodolska also identify lack of qualified coaches, limited availability of equipment, inadequate facilities, negative attitudes towards people with a disability and lack of financial resources as the major determinants of sports participation or non-participation within a developing country context. One particular study identifies not only the barriers or constraints to physical activity but also identifies a number of factors that could facilitate participation. They identified 178 barriers in their research, which they grouped under a number of themes including barriers related to the natural environment, equipment, economic issues, information, professional knowledge, perceptions and attitudes, and policies.

Conclusion

In many of the studies these same constraints to sport continue to reappear for both adults and children with a disability. The Sport England 'Disability Survey - Young People With A Disability & Sport', found that, in children with a disability, the most common barriers to participation in physical activity were having no one to go with, unsuitability of local sports facilities, a lack of money, and health considerations. Other constraints included lack of transportation, unwelcoming staff, discrimination, children's own inhibitions, and clubs do not provide for my disability. In Ireland transportation and accessibility appear to be the major barrier to sports participation by people with a disability. The National Disability Authority Survey shows that due to problems with accessibility and transportation people with a disability in Ireland are significantly more limited in their social life, in comparison to their able bodied peers. Almost a quarter of people with a disability have reported having no access to transportation, neither public transport nor a car, compared to just 5% of the able-bodied population. The National Training and Coaching Centre Consultation Paper, 'Building Pathways' also examines the gaps in the Irish sports system and considers that there is, too often, insufficient acknowledgement of the barriers that exist to participation in sport and physical activity. The report also acknowledges that the National Governing Bodies of Sport are not proactive enough in providing opportunities for people with a disability and that a lack of knowledge and awareness of disability by mainstream coaches make them reluctant to engage with athletes with a disability.

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BENEFITS OF YOGA ON SPORTS PERFORMANCE

Dr. CHANDRASHEKAR C*

Abstract: Whatever sport you choose to practice, yoga can enhance and complement your ability. Most sports build muscular strength and stamina, often in specific areas of the body. Yoga can benefit professional sports persons, it is necessary to explore what is required to play a sport and play it well. It is well acknowledged that to play any sport, whether it be Athletics, tennis, volleyball, swimming, running etc., we must develop the basic skills and continually train the body so that we can apply the skill in a refined and polished way. Having a body that is flexible, strong and controlled is also another important consideration, if one is not able to move the body with the grace, velocity and speed required, then performance will be lackluster. So, we can say that yoga is very beneficial to everyone especially for a sportsman.

Keywords: Yoga, Sports, Performance.

INTRODUCTION

Yoga originated thousands of years ago in India as a technique to help people achieve spiritual enlightenment. Based on the idea that the mind and body are one, students believe that Yoga improves health by improving how you see the world, which calms the spirit and decreases stress. Today, people practice Yoga to improve their physical, mental and spiritual wellbeing.

There are many disciplines of yoga that emphasize different aspects of the mind, body and spirit. However, in the West, mainstream Yoga focuses largely on the physical practice, primarily Hatha Yoga. Hatha is a widespread style that incorporates a series of poses (called Asanas) that emphasize stretching, breathing (called Pranayama), relaxation and meditation techniques to help build strength, increase flexibility, Concentration, balance and improve co-ordination.

Yoga has a lot of definitions floating around in today's world; however, if we go back to the roots of the word, we find that the term 'Yoga' has its origins in Sanskrit. It means to 'unite' Yoga helps the body to unite with the other vital metaphysical aspects of the mind and spirit. It is also often defined as a lifestyle which aims to have a healthy mind within a healthy body. Most simply defined, yoga is a set of poses or 'asanas', coupled with breathing techniques, which help impart strength and flexibility to the body while helping to balance the mind and its' thinking. Unlike other physical forms of exercises, like the aerobics, by practicing yoga, one can not only achieve physical health, but also mental and spiritual wellbeing.

Athletes can benefit from these limbs just as they benefit from other tools they use to optimize their performance. Yoga is an appropriate practice for many athletes, providing physical exercise, breath control and flexibility, as well as mental focus it helps athletes gain knowledge about the mind and body connection, improving body awareness and enhancing mental clarity. Studies conducted by the National Center for Complementary and Alternative Medicine illustrate that the physical benefits of yoga for athletes are lowered heart rate, increased oxygen intake, functional strength and flexibility, but athletes also report enhanced focus and greater concentration.

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BENEFITS OF YOGA

- ❖ Improve posture.
- ❖ Boost metabolism.
- ❖ Helps in lowering blood sugar.
- ❖ Increases self- esteem.
- ❖ Balance mind and body.
- ❖ Improve body strength and stamina
- ❖ Increase total flexibility
- ❖ Increase awareness of tension in the body
- ❖ Assist relaxation through use of breath static stretching
- ❖ Improve general, mental, physical and spiritual health
- ❖ Aids in rehabilitation and healing/preventing injuries systems, making them work better.

BENEFITS OF YOGA ON SPORTS PERFORMANCE**I. Mental health**

After all, good mental health is of paramount importance for being healthy physically as well. As advised above, breathing technique forms an integral part of Yoga. Do I hear you asking 'how?' It really is very basic by breathing deep and right, something that you would be doing when you practice Yoga you are inhaling more oxygen and allowing the cells of your body to have access to that oxygen for a longer period of time.

Regular yoga practice helps children with attention deficit disorder and people suffering from anxiety, depression and mood swings. It also helps keep the mind calm and reduce stress and thereby increase the general wellbeing of the person.

II. Strength

Ever wondered, why so many of us, after a hard day's work, come and plunk ourselves, on our home sofas, with very little energy to even fetch a glass of water for ourselves. This is caused by lack of inner strength. Certain asanas of the yoga help generate inner strength. Inner strength is essential in doing day to day activities and in preventing you from injuries. This is especially useful, as we grow old and need more energy and strength to do the same activity.

III. Flexibility

The popular notion that you need to be flexible in order to do yoga is incorrect; it is really the other way round – you should do yoga so that you can be more flexible. If you have a flexible body, you find it easy to do tasks. A lot of poses in Yoga concentrate on stretching and improving your flexibility.

IV. Cardiovascular

A healthy cardiovascular system is responsible for preventing heart attacks, strokes and International Journal of Multidisciplinary Research and Development hypertension. Heart disease is a problem which has roots in an improper lifestyle, faulty diet and negative thinking. Our thoughts, emotions and feelings affect our body and negative emotions/thoughts send a series of complex and unhealthy chemical processes throughout the body, given alarms that something is amiss. Yoga tends to control these by bringing in fresh life-giving oxygen. The antioxidant properties of Yoga help in preventing the negative emotions and promote a general wellbeing in the body.

V. Joint pain and arthritis

The general tendency of people suffering from joint pain, inflammation and stiffness is to avoid exercise. Yoga helps prevent advancement of this malady by toning the muscles and loosening the joints. When a person suffering from joint pain practices yoga, the gentle

stretching and strengthening movements of the various Yogic poses, improves the blood flow to the muscles and tissues supporting the joints, thereby making it more comfortable to move.

VI. Respiratory problems

Practice of certain asanas of Yoga has helped check chronic cases of Asthma and other respiratory problems. When the nasal passages get inflamed, they start producing mucous in excess making it difficult to breathe and often have common symptoms like coughing, wheezing etc. Respiratory problems could also be caused by multiple factors like allergy, exercise, weather change etc. By practicing yoga, the lungs capacities increase and so does stamina and stress on air passages is reduced.

EFFECTS OF YOGA ON DIFFERENT FACTORS

Physical effects

1. Increase suppleness through stretching muscles
2. Improves joint mobility by lengthening ligaments to their healthy limits
3. Reduces risk of injury and assists with injury rehabilitation
4. Effective as a form of soft tissue and collagen fiber rehabilitation
5. Helps to bring the body back into alignment and improves posture
6. Enhances co-ordination and agility
7. Contributes to improved cardiovascular fitness and stamina
8. Lowers resting heart rate and increases VO2 max

Psychological effects

1. Relieves performance anxiety and stress, and frees athletes from mental distractions
2. Develops determination and self-discipline
3. Teaches athletes to challenge themselves and go outside of their comfort zone
4. Reduces stress and provides a method of relaxation
5. Breath work provides athlete with techniques they can use whilst competing to control arousal levels
6. Teaches athletes how to use imagery and relaxation
7. Helps athletes to understand the importance of relaxing, resting, and recovering

Team effects

1. Improves team cohesion
2. Increases team motivation
3. Provides an opportunity for team unity outside the demands of intense training
4. Increases trust
5. Improves player-player support

CONCLUSION

Yoga has a wealth of benefits for athletes and its worth trying if you want to gain strength, flexibility and balance it may help improve your range of motion. Mobility and co-ordination, all of which can boost your performance and prevent injury. Yoga is also beneficial to a professional athlete as it positively contributes to health and vitality of the body. Strengthen internal organs such as the heart. Lungs and liver and helps to maintain fitness and agility. Yoga also helps to reduce stress and anxiety, cultivate self – confidence and self belief.

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COMPARISON OF PHYSICAL FITNESS COMPONENTS BETWEEN URBAN AND RURAL FEMALE STUDENTS

Dr.KASTURI RAJAPUT¹ & GEETA RAJAPUT²

Abstract : The purpose of this study is to ascertain the influence of infrastructure on physical fitness of rural and urban children. To find out differences between physical fitness of children living in urban and rural district of Vijayapura, Karnataka State, India Total 40 female subjects each 20 from urban and rural primary schools of Vijayapura district were selected their age ranged from 9-12 years old. Administration of tests includes 50m dash for speed and Sit ups for abdominal strength endurance. In speed and abdominal strength endurance were significantly higher in the rural children students.

Keywords: Physical fitness, female, urban and rural

Introduction

Physical Education is a combination of two separate words, physical and education. The first word is physical which means related to body or related to any one or all of the bodily characteristics that include physical strength, physical endurance, physical fitness, physical appearance and physical health. And, the second word is education which means preparation for life or systematic instruction and training. When we look at the combined meaning of these two words, we can understand that physical education is a systematic training of an individual by using his/her own body to achieve the objectives of developing and maintaining the body, developing motor skills, physical abilities, making a habit of living a healthy lifestyle, developing the ability to control emotions for a fuller living.

Physical fitness is one of the core preconditions of health. We cannot imagine a person to be healthy without being physically fit. Physical fitness therefore needs to be appreciated in full measure. The common perception of physical fitness is the absence of ailment. If individual is not suffering from any perceptible disease, then he is considered physically fit. Is it true? Another significant issue is whether there is a universal condition of physical fitness which is uniformly applicable to all. It is not so. Physical fitness of young people is different from that of the aged. The physical fitness of a sports person is different from that of the persons working in army factory or a layman. In fact, physical fitness means different things to different people. In this lesson, let us discuss various aspects of physical fitness.

Methodology

Total twenty (N=40) female subjects out of which 20 students from urban female students and 20 from rural female students were randomly selected for the study of whom the Data were collected. The age of the subjects were ranged between 9 to 12 years. The variables selected under Physical fitness parameters were 50m dash for speed and Sit ups for abdominal strength endurance.

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Statistical Techniques

To calculate mean difference between urban and rural in relation to selected physical fitness components mean, standard deviation and independent t-test was used. Significant level was set at 0.05 level.

Results

After converting the raw data into group data, statistical test were employed to find out necessary information. The result and findings of the same are given in the table and illustration bellow.

Table 1: Comparative analysis of speed and abdominal strength endurance fitness test scores

Variables	Groups	Mean	SD	t-values
50 Dash	Urban	15.9000	2.18327	8.216*
	Rural	14.4300	2.17667	
Sit-Ups	Urban	18.5000	3.26867	9.318*
	Rural	20.4000	3.47017	

*significant, $P < 0.05$, $df=19$

The rural Female Students were significantly better than urban students in speed t-value = 8.216. The rural Female Students were significantly better than urban students in abdominal strength endurance t-value = 9.318.

Fig 1: Show mean of Physical variables of urban and rural female students

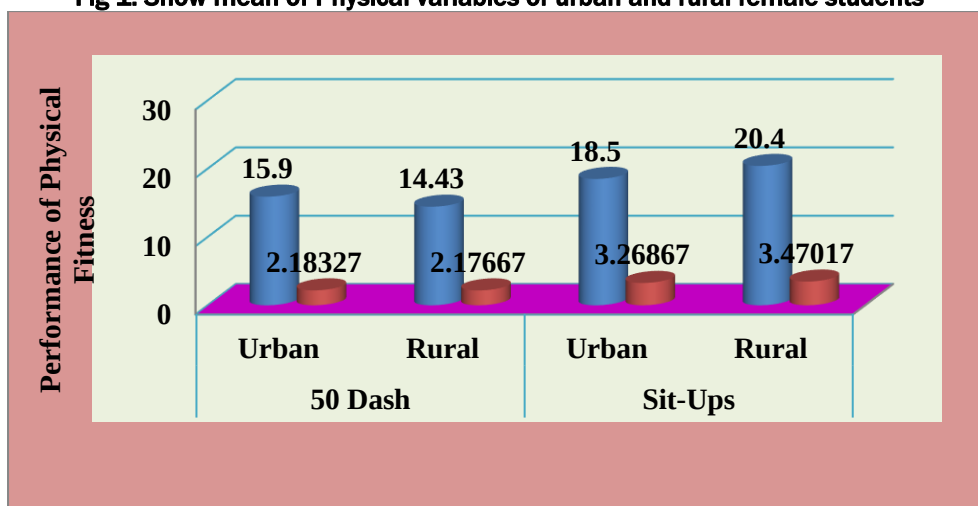


Figure 1. (a) The above figure indicates that speed and abdominal strength endurance fitness test Performance mean scores a different the graphs showing of comparison of urban and rural female students with to speed and abdominal strength endurance Performance scores.

The mean speed scores of urban and rural female students are 15.9000 and 14.4300, SD are 2.18327 and 2.17667 respectively. The mean abdominal strength endurance scores of urban and rural female student's are 18.5000 and 20.4000, SD are 3.26867 and 3.47017 respectively.

It means that the speed and abdominal strength endurance Performance of rural Female students is better than urban Female students.

Discussion

The findings that the rural female students was significantly better in speed, and abdominal strength endurance compared to urban female students, may be due to the fact that the students belonging to rural area performs various extra activities walk to school, market, various type of play, regular physical activity whereas the lifestyle of urban students are more comfortable, better transportation and lack of physical activity.

Conclusion

Comparison of Physical speed and abdominal strength endurance Components of rural Female students is better than the urban female students.

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EFFECT OF PLYOMETRICS TRAINING ON SELF-CONFIDENCE OF VOLLEYBALL PLAYERS

Dr. MAHADEVI WALI*

Abstract : The purpose of the present study was to find out the Effect of Plyometrics Training on the Self-Confidence of Volleyball Players. For this purpose, 40 subjects from Vijayapura District, Karnataka state, India, their age were ranged between 21 to 24 years were selected as subjects and they were divided into two equal groups with 20 each as experimental and control groups. The experimental group underwent selected Plyometrics training for 60- minutes including 10 minutes of warm-up and the control group was not given any special training. The training period for this study was 8 weeks in a schedule of 5 days a week. The pre and post-test were conducted prior and after the training programme on the selected Psychological variable of Self-Confidence. The mean, standard deviation, and t-value were assessed in both experimental and control groups separately and thereby significant level were analyzed. The significant level was fixed at 0.05 levels. The result of the study revealed that the experimental group showed significant improvement in the selected variable whereas the Self-Confidence and the Control group were not shown any improvement.

Keywords: Plyometrics training, Psychological variable, Self-Confidence, Volleyball Players.

Introduction

Plyometrics, also known as jump training, includes exercises that rapidly stretches the muscles and then rapidly shortens it. It is a training technique used to increase power and explosiveness. It helps improves your fast-twitch muscles, vertical jump performance, leg strength, and agility. plyometrics are designed to produce fast and powerful movements from your body. In addition, plyometrics training also aids in injury prevention.

Although the term plyometrics is relatively new, the basic concepts are old. The roots of plyometric training can be traced to Eastern Europe, where it was simply known as jump training. The actual roots of the word plyometric are a little confusing. "Plyo" comes from the Greek word plythein, which means to increase. Plio is the Greek word for "more," and metric literally means "measure." The practical definition of plyometrics is a quick powerful movement involving a prestretching of the muscle, thereby activating the stretch-shortening cycle. As the Eastern European countries began to dominate sports requiring power, their training methods became the focus of attention. After the 1972 Olympics, articles began to appear in coaching magazines outlining an unusual program of leaps and bounds used to increase speed. As it turns out, the Eastern European nations were not the originators of plyometrics, they were the ones who developed organized programs.

Objectives of the study

The aim of the present study was to find out the Effect of Plyometrics Training on the Self-Confidence of Volleyball Players.

Significance of the Study

The finding of this study is likely to provide criteria for transfer of training. It would help physical instructor to develop sound training programs. The study will help to know the better

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Self-Confidence among the players. The present study will be helpful to know the relation in training between Volleyball players.

Methodology

For the purpose of this study 40 Volleyball Players were selected as subjects from a Vijayapura District, Karnataka state, India. The subjects were divided into two groups equally with 20 each as experimental and control group. The experimental group underwent Sixty minute in the Plyometrics training included 10 minutes of warm-up before the Plyometrics training. The one hour Plyometrics training includes ten Plyometrics. The Hopping, Skipping, Jumping, Sprinting, Jump rope, Hopscotch, Jumping jacks, Standing jumps, Standing hops and Squat jumps. The tests were carried out with standardized procedure. The pre and post test were conducted on selected Psychological variable of Self-Confidence. The Psychological parameters were assessed through standardized Procedures (Self-Confidence).

Tools

For the present study the questionnaire of Self-Confidence Questionnaire Developed by M.Basavanna is used.

Statistical analysis

The paired t-test was used to evaluate the statistical difference at 0.05 significance level.

Results and Discussion

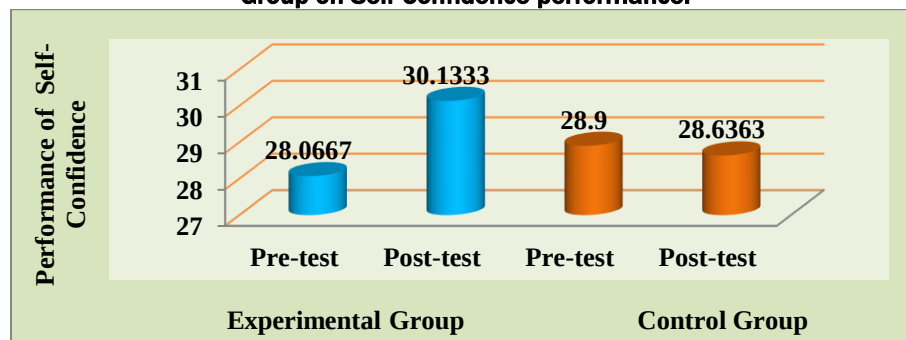
Table No.1. Shows the Mean, Standard Deviation and 't'- value of Pre-test and Post-test for Plyometrics training Experimental Group and Control Group on Self-Confidence performance.

Variable	Groups	Test	N	Mean	SD	t- Value
Self-Confidence	Experimental Group	Pre-test	10	18.9333	3.32666	12.614*
		Post-test	10	20.8667	3.52272	
	Control Group	Pre-test	10	19.6667	3.47782	.566
		Post-test	10	19.5933	3.44061	

*The level of significant 0.05=Table value 2.262

Table-1 The mean of Self-Confidence of the pre-test of Experimental group was 18.9333 and post-test of Experimental group was 20.8667, while mean of Self-Confidence of pre-test of control group was 19.6667 and post-test of the Control group was 19.5933 in scores. The t-value of experimental group and control group was 12.614 and .566 respectively. After analyzing data, results reveals an extremely significant difference between pre-test and post-test of experimental group but no significant difference found between pre-test and post-test of control group.

Figure No.1. The Pre-test and Post-test for Plyometrics training Experimental Group and Control Group on Self-Confidence performance.



The above figure 1. (a) Indicates that the post test values of Experimental group significantly improved the performance of Self-Confidence and also the post-test values of Self-Confidence were more than the pre-test values due to 8 weeks of Plyometrics training. The Control group pre-test and post-test performance of Self-Confidence shows no improvement.

Conclusion

The results of the present study indicate the Effect of Plyometrics Training on the Self-Confidence of Volleyball Players. Eight weeks of Plyometrics training has shown significant improvement on the Self-confidence of Subjects.

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INFLUENCE OF PLYOMETRIC TRAINING PROGRAMME ON LEG EXPLOSIVE POWER AMONG INTER-COLLEGIATE LEVEL MEN BASKETBALL PLAYERS

Dr.SADASHIVA KOTYAL*

Abstract : The reason of this study was to discover the influence of plyometric training programme on Leg Explosive Power among inter-collegiate level men Basketball Players. To realize this purpose of the study twenty various colleges of Bagalkot district, Karnataka state, India. The subject had past experience of at least three years in Basketball and was randomly selected as subjects. Their age ranged in between 19 and 22 years. The subjects were divided into two groups namely plyometric group and control group. The plyometric group was subjected to plyometric training (for weekly three days Monday, Wednesday, Friday) at evening session for six weeks. Leg Explosive Power was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired't' test. The level of significance was set at 0.05. The result of the present study showed that the plyometric training has significant improvement on Leg Explosive Power, of inter-collegiate level men Basketball players.

Keywords: Plyometric training, Leg Explosive Power, Basketball players

Introduction

The concept of plyometric exercise is defined as "exercises that enable a muscle to reach maximum strength in as short a time as possible". Plyometric training has become a growing necessity in most sports performance training programs. This explosive type of training got its start with mainly high level Athletes competing in various sports. Through years of development and understanding, almost any athlete in any sport can utilize the benefits of plyometric training. Plyometric training can range from low intensity hops to powerful jumps with the wide variety of drills and exercises.

Plyometrics can include different types of exercises, like pushups, throwing, running, jumping, and kicking. Athletes often use plyometrics as part of their training, but anyone can do these workouts. People who are in physical rehab after an accident or injury use plyometrics to get back into good shape and physical function.

Plyometrics, also known as jump training or plyos, are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometrics are primarily used by athletes, especially martial artists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree.

Objectives of the study

The core aim of the present study was to find out the Influence of Plyometric Training Programme on Leg Explosive Power among Inter-Collegiate Level Men Basketball Players.

Methodology

The reason of this study was to discover the influence of plyometric training programme on Leg Explosive Power among inter-collegiate level men Basketball Players. To

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realize this purpose of the study thirty various colleges of Bagalkot district, Karnataka state, India. The subject had past experience of at least three years in Basketball and was randomly selected as subjects. Their age ranged in between 19 and 22 years. The subjects were divided into two groups namely plyometric group and control group. The plyometric group was subjected to plyometric training (for weekly three days monday, wednesday, friday) at evening session for six weeks. Leg Explosive Power, was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired 't' test. The level of significance was set at 0.05.

Table I: Criterion Measures Speed Variables

Variables	Test Items	Unit of Measurement
Leg Explosive Power	Standing Broad Jump	In Meters

Training Procedure

For plyometric group underwent their training programme as three days per week for six weeks. Training was given in the evening session. The training session includes warming up and cool down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their training programmes as per the schedules such as side to side ankle hops, double leg hops, split jumps, lateral cone hops and single leg bounding under the strict supervision of the investigator. During experimental period control group did not participate in any of the special training.

Results

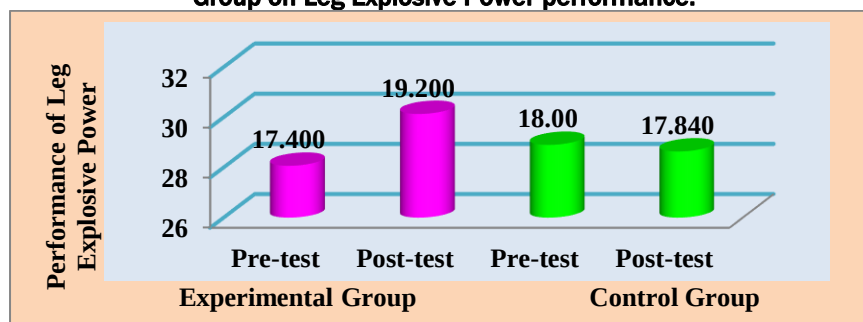
Table I: Comparison of Mean, and 't'-Values of Leg Explosive Power between Pre & Post Test among Plyometric and Control Groups

Variable	Groups	Test	N	Mean	SD	t-Value
Leg Explosive Power	Experimental Group	Pre-test	12	17.400	2.67499	9.000*
		Post-test	12	19.200	2.82056	
	Control Group	Pre-test	12	18.00	2.70801	.862
		Post-test	12	17.840	2.50120	

*The level of significant 0.05=Table value 2.262

Table-1 demonstrates the mean of Leg Explosive Power of pre-test of Experimental group was 17.400 and post-test of Experimental group was 19.200, while mean of Leg Explosive Power of pre-test of control group was 18.00 and post-test of Control group was 17.840 in scores. The t-value of experimental group and control group was 9.000* and .862 respectively. After analyzing data, results reveals an extremely significant difference between pre-test and post-test of experimental group but no significant difference found between pre-test and posttest of control group.

Figure No.1. The Pre-test and Post-test for Plyometric training Experimental Group and Control Group on Leg Explosive Power performance.



The above figure 1. (a) Indicates that the post test values of Experimental group significantly improved the performance of Leg Explosive Power and also the post-test values of Leg Explosive Power were less than the pre- test values due to 8 weeks of Plyometric training. The Control group pre- test and post- test performance of Leg Explosive Power shows no improvement.

Discussion on Finding

The results of the study indicated that the leg explosive powers were improved significantly after undergoing plyometric training. The changes in the leg explosive powers were attributed the proper planning, preparation and execution of the training package given to the players. The findings of the present study had similarity with the findings of (S. Senthil Kumaran 2018)

Conclusions

The results of the present study indicate the influence of plyometric training programme on Leg Explosive Power among inter-collegiate level men Basketball Players. In the experimental group the selected variables were significantly improved in the teach us that plyometric training is useful to everyone in particularly sports persons to achieve the higher performance level because the selected variables in the study were more related to the sports men too. Further the control group post test means score indicates that the plyometric training not improvement.

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A COMPARATIVE STUDY OF THE AGGRESSION BETWEEN INDIVIDUAL AND TEAM GAME INTER-COLLEGIATE WOMEN PLAYERS OF KARNATAKA STATE AKKAMAHADEVI WOMEN'S UNIVERSITY

Dr. SRINIVASA*

Abstract: The purpose of the study is to find out the aggression between individual and team game in women players. The success and failure of an individual athlete depend upon the physical ability, conditioning, training, mental preparation and the ability to perform well under pressure. It is not uncommon to hear coaches and athletes express disbelief on how poorly their team performed against a certain opponent or how they feel in a crucial situation. Psychology plays a vital role in the present time of advance industrialization, mechanization and sports. If you leave the mental side of performance, to channel, then you are facing vulnerable performance problems like excessive nervousness. It has helped coaches to coach more effectively and athletes to perform more proficiently. The way to use this is for the players to imagine themselves playing the game or activity you are preparing for recovering from in a warm and relaxed place.

Key words: Aggression, Psychology, sports, Progressive Relaxation Training.

INTRODUCTION

Psychology as a behavioral science has made its contribution for improving sports performance. Psychology plays a vital role in the present time of advance industrialization, mechanization and sports. Studying of Psychology gives perfect picture about the person's in that we can conduct the study on the mental aspects of players. Even the fastest, strongest, smartest and most skilled will not achieve if they concentrate on the wrong things, one unable to qualify, let go of mistakes or bad breaks, lack of self confidence or can't handle the pressure of competition. If you leave the mental side of performance, to channel, then you are facing vulnerable performance problems like excessive nervousness. It has helped coaches to coach more effectively and athletes to perform more proficiently. The success and failure of an individual athlete depend upon the physical ability, conditioning, training, mental preparation and the ability to perform well under pressure. It is not uncommon to hear coaches and athletes express disbelief on how poorly their team performed against a certain opponent or how they feel in a crucial situation.

Aggression in Sport

Aggression in sport can be caused by a number of factors. The most identifiable reasons are the rules of the game (level of physical contact), frustration, instinct, presence, arousal, environmental cues, self control and also the behavior of those around. Other factors in aggression include personality, media involvement, coaching, role models and the society we live in. The following is an insight into the term aggression in sport, using the social learning theory and environmental cues theory I will explain examples of each theory and try and contrast them. Frustration is known to play a key role in aggression. It is the view that is innate and also something that is learned (aggression). It can occur in many different circumstances and one of those can be an athlete not achieving his or her goal targets. Having a point

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disallowed or being fouled by an opponent on more than one occasion can lead to frustration. Dollard (1939) argues that aggression is innate and only occurs in a frustrating situation but Miller (1941) claimed to differ. He stated that it was frustration that made aggression more likely, he also stated that for one or more reasons athletes won't show this aggression in their profession. An example of this can be when a coach under uses a player, who out of professionalism or even out of respect for the coach won't show aggression. However, this could effect the personal life of an athlete, where they keep all there aggression out of there profession and channel it into there social life. This is related to Freud's notion of displacement, where we want to do something we know is not acceptable for instance confront the coach, but for some reason keep it channeled..

Imagery Relaxation

The way to use this is for the players to imagine themselves playing the game or activity you are preparing for or recovering from in a warm and relaxed place.

Progressive Relaxation Training (PRT)

This can be used by tensing all of your body very powerfully, then deeply relax separate muscle groups.

Self-Directed Relaxation Training

This is a very useful exercise to recuperate from aggression, it is used by breathing very deeply and slowly, focus on a single muscle group, visualize the tension being relieved from that specific muscle group until the player is completely relaxed, eventually visualize the tension flowing out of all muscle groups until completely relaxed.

Statement of the Problem

The purpose of the study was to compare the Aggression between individual and team game inter-collegiate women players of Karnataka state Akkamahadevi women's university.

Delimitation

- The study was delimited to women's players.
- The study further delimited to individual and team games.
- The study was confined to the assessment of aggressiveness by using aggression questionnaire of Buss and Perry 1992.

Limitation

- The authenticity of response given by the subjects in questionnaire technique was considered as a limitation of the study.

Hypothesis

- There will be a difference in aggression of individual and team game Inter collegiate women players.

Significance of the Study

Excellence in performance is constantly intensifying psychic stress on sports persons. The role of aggression has been noticeably and factually found much important in sports performance. Aggression is any form of behavior directed towards the goal of harming or injury another living being who is motivated to avoid such treatment. In this study effort is made to compare the aggression between individual and team game players. The present study is significant because of the following reason.

- The study will help to compare the aggression between individual and team game players.
- The result of the study will give an insight to physical educators and coaches to understand the role of aggression in individual and team game players.
- It helps to know the level of aggression of individual and team game women players.

- It helps to chalk-out psychological training programme for individual and team game women players.

Methodology

The selection of subjects criterion measures, experimental design, administration of test, statistical technique have been described. Sixty women players and thirty from each category were selected as subjects for this study during Karnataka state women's university inter collegiate tournaments. The age of the subjects ranged between 18 to 28 years. For individual games Badminton and Table Tennis players, for team events Handball and Volleyball players were selected.

Criterion Measures

The criterion measures chosen to test the hypothesis were:

1. The aggression score of the subjects will be obtained by Aggression questionnaire developed by Buss and Perry 1992.

Administration of Aggression Questionnaire

The aggression questionnaire was distributed to the players during the competition, the directions were read out by the researcher at a dictation speed to make the subjects understand about what they were exactly required to do. This questionnaire is having 29 questions measure four factors such as physical aggression (PA), verbal aggression (VA), Anger (A) and hostile aggression (H).

Statistical Procedure

To compare the aggression between individual and team game women players "t" test statistical technique was applied, the level of significance was set at .05. Data was analyzed by using statistical package for social science.

Analysis And Interpretation Of Data

Table - I : MEAN, STANDARD DEVIATION AND 't' VALUE OF PHYSICAL AGGRESSION

Sl. No	Players	Sample size	Mean	Standard Deviation	't' value
1.	Individual game	30	34.17	3.66	10.60*
2.	Team game	30	24.63	2.61	

Significant at 0.05 level.

The mean difference in physical aggression variable was analyzed by 't' test for statistical significance of inter collegiate individual and team game women players. It is evident from the table I that there's significant difference exist in physical aggression between individual and team game women players. Since the calculated 't' value 10.60 is greater than tabulated 't' value 2.04, it is significant at 0.05 level. Therefore, the significant difference exist in physical aggression between inter-collegiate individual and team game women players. The result shows that individual game women players are significantly better than team game women players in physical aggression.

The graphical representation of Physical aggression between inter collegiate individual and team game women players are shown in Fig I.

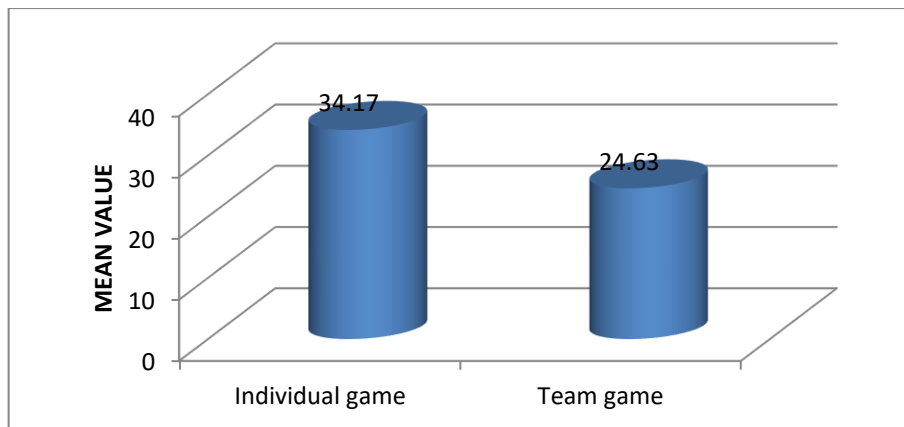


Fig. I. Mean value of Physical aggression between individual and team game women players

Table – II : MEAN, STANDARD DEVIATION AND 't' VALUE OF VERBAL AGGRESSION

Sl. No	Players	Sample size	Mean	Standard Deviation	't' value
1.	Individual game	30	10.63	2.30	3.71*
2.	Team game	30	7.97	2.94	

Significant at 0.05 level.

The mean difference in verbal aggression variable was analyzed by 't' test for statistical significance of inter collegiate individual and team game women players. It is evident from the table II that there's significant difference exist in verbal aggression between individual and team game women players. Since the calculated 't' value 3.71 is greater than tabulated 't' value 2.04 it is significant at 0.05 level. Therefore, the significant difference exist in verbal aggression between collegiate individual and team game women players. The result shows that individual game women players are significantly better than team game women players in verbal aggression.

The graphical representation of Verbal aggression between inter collegiate individual and team game women players is shows in Fig. II.

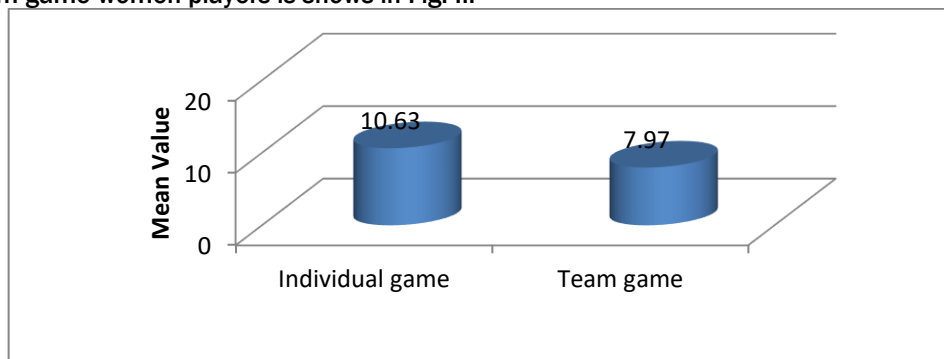


Fig. II. Mean value of Verbal aggression between individual and team game women players

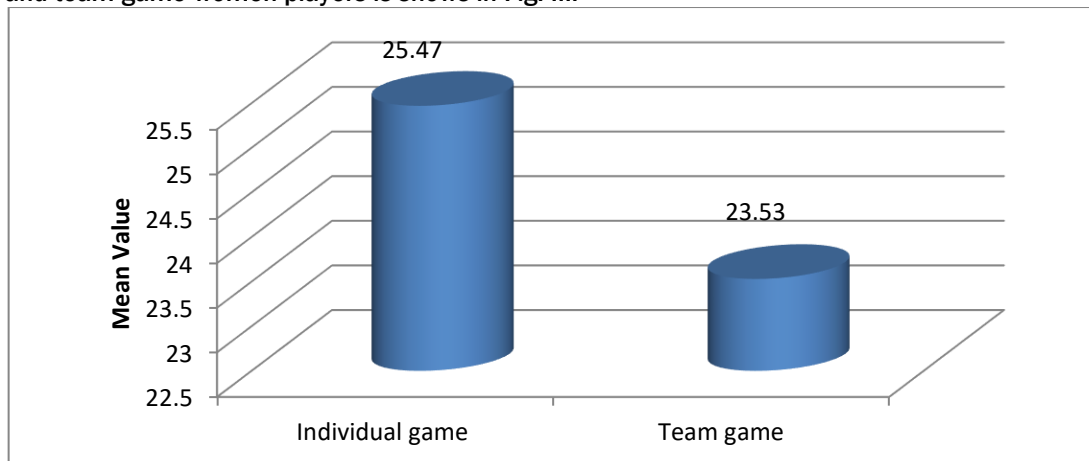
Table – III : MEAN, STANDARD DEVIATION AND 't' VALUE OF ANGER

Sl. No	Players	Sample size	Mean	Standard Deviation	't' value
1.	Individual game	30	25.47	3.75	1.60
2.	Team game	30	23.53	5.00	

Significant at 0.05 level.

The mean difference in anger variable was analyzed by 't' test for statistical significance of inter collegiate individual and team game women players. It is evident from the table III that there's significant difference exist in anger between individual and team game women players. Since the calculated 't' value 1.60 is lesser than tabulated 't' value 2.04, it is not significant at 0.05 level. Therefore, there is no significant difference exist in anger between inter-collegiate individual and team game women players. But the mean value result shows that individual game women players are more anger than the team game women players.

The graphical representation of Anger aggression between inter collegiate individual and team game women players is shows in Fig. III.

**Fig. III. Mean value of Anger aggression between individual and team game women players****Table – IV : MEAN, STANDARD DEVIATION AND 't' VALUE OF HOSTILE AGGRESSION**

Sl. No	Players	Sample size	Mean	Standard Deviation	't' value
1.	Individual game	30	25.77	5.70	3.11*
2.	Team game	30	21.80	5.31	

Significant at 0.05 level.

The mean difference in hostile aggression variable was analyzed by 't' test for statistical significance of inter collegiate individual and team game women players. It is evident from the table IV that there is significant difference exist in hostile aggression between individual and team game women players. Since the calculated 't' value 3.11 is greater than the tabulated 't' value 2.04, it is significant at 0.05 level. Therefore, the significant difference exist in hostile aggression between inter-collegiate individual and team game women players. The result shows that individual game women players are significantly better than team game women players in hostile aggression.

The graphical representation of Hostile aggression between inter collegiate individual and team game women players is shows in Fig. IV.

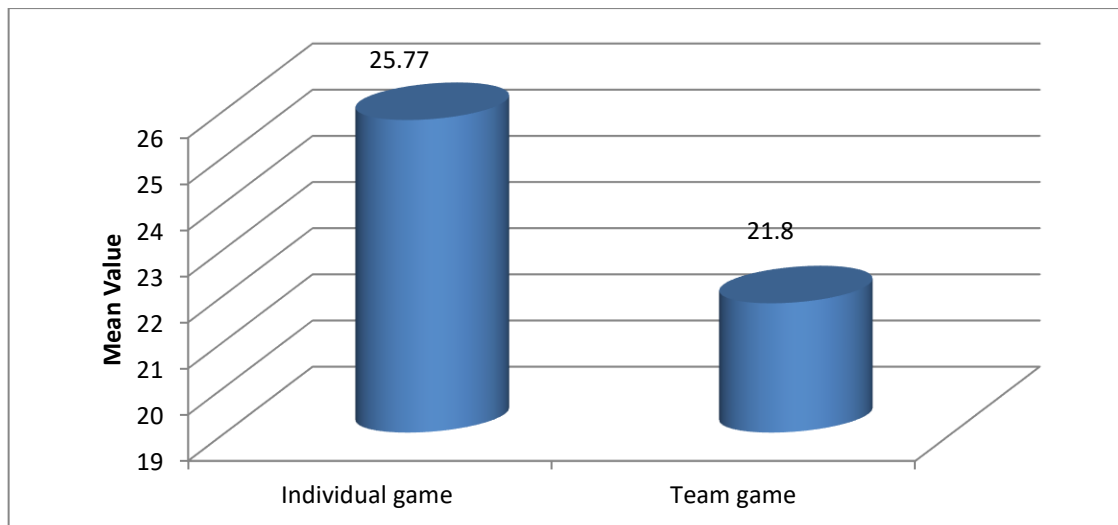


Fig. IV. Mean value of Hostile aggression between individual and team game women players

Table - V : MEAN, STANDARD DEVIATION AND 't' VALUE OF OVERALL AGGRESSION

Sl. No	Players	Sample size	Mean	Standard Deviation	't' value
1.	Individual game	30	96.03	9.17	6.79*
2.	Team game	30	78.50	12.09	

Significant at 0.05 level.

The mean difference in overall aggression variable was analyzed by 't' test for statistical significance of inter collegiate individual and team game women players. It is evident from the table V that there's significant difference exist in overall aggression between individual and team game women players. Since the calculated 't' value 6.79 is greater than tabulated 't' value 2.04, it is significant at 0.05 level. Therefore, the significant difference exist in overall aggression between inter-collegiate individual and team game women players. The result shows that individual game women players are significantly better than team game inter-collegiate women players in overall aggression.

The graphical representation of overall aggression between inter collegiate individual and team game women players is shows in Fig. V.

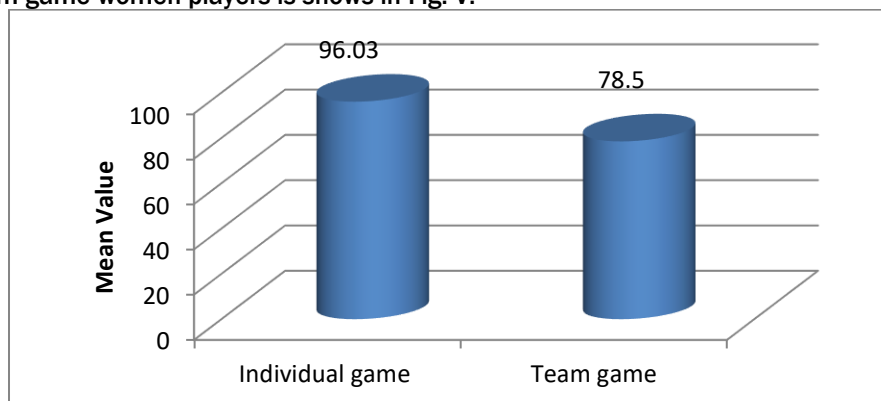


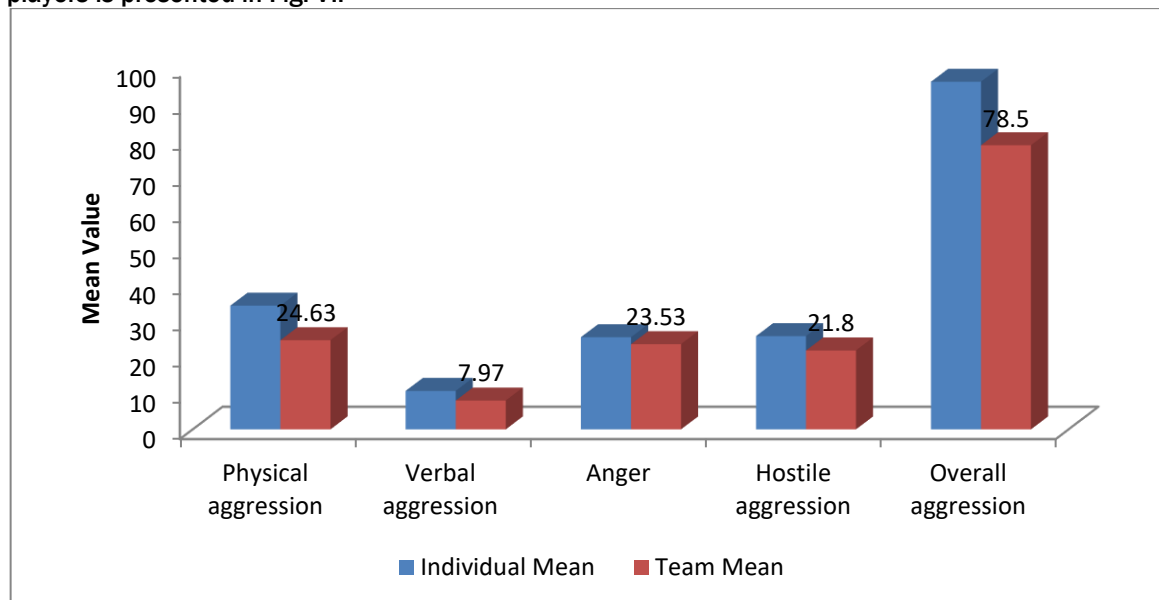
Fig. V. Mean value of Overall aggression between individual and team game women players

Table – VI. Minimum, Maximum, Mean And Standard Deviation Values Of Inter Collegiate Individual And Team Game Women Players

Sl. No.	Variables	Players							
		Individual				Team			
		Minimum	Maximum	Mean	Std. Dev	Minimum	Maximum	Mean	Std. Dev
1.	Physical aggression	26	40	34.17	3.66	18	28	24.63	2.61
2.	Verbal aggression	4	15	10.63	2.30	3	14	7.97	2.94
3.	Anger	14	31	25.47	3.75	13	32	23.53	4.99
4.	Hostile aggression	11	36	25.77	5.70	13	28	21.80	5.31
5.	Overall aggression	78	120	96.03	9.17	49	106	78.50	12.06

Table VI shows the minimum, maximum, mean and standard deviation of variables between individual and team game players. The mean and standard deviation of physical aggression of individual game are 34.17 and 3.66, verbal aggression, 10.63 and 2.30, Anger 25.47 and 3.75, hostile aggression 25.77 and 5.70 and overall aggression 96.03 and 9.17 respectively and in case of team games are 24.63 and 2.61, verbal aggression, 7.97 and 2.94, Anger aggression 23.53 and 4.99, hostile aggression 21.80 and 5.31 and overall aggression 78.50 and 12.06 respectively.

The graphical representation of variables between individual and team game women players is presented in Fig. VI.

**Fig. VI. Mean values variables between individual and team game women players**

Summary :

The purpose of the study was to compare the aggression between individual and team game Karnataka state women's university Inter collegiate women players. The subjects for the study were sixty (n=60) individual and team game women players who had participated in the Karnataka state women's university. inter collegiate tournaments. The aggression questionnaire was used to collect data to measure the aggression of individual and team game inter-collegiate women players. Aggression questionnaire was administered to all the subjects during the competition. On the basis of key answers given by Buss & Perry, 1992 for aggression, score were given to the subjects.

Conclusion:

To compare the aggression of individual and team game players, the 't' test was applied and it shows that there is a significant difference exist between individual and team game women players in all the aspects of aggression except in anger. With in the limitation of the study following conclusion were drawn.

- In physical aggression Individual event player are better than team game players.
- In verbal aggression also Individual event players are better than team game players.
- In anger individual event players shown more anger than team game players.
- Hostile aggression individual event players are better than team game players.
- In overall aggression also Individual event better than team game players.

Recommendations:

In the light of conclusion drawn the following recommendations were made,

- It is recommended that a similar study may be undertaken to individual and team game women players as subjects
- Study may be conducted in a different sports for comparing their performance.
- The same study may be conducted at different levels.
- Similar study may be conducted on larger sample.
- It is recommended to conduct on the psychological variables which were not considered in this study.
- Similar study may be conducted on the variables other than psychological variables.

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A STUDY ON MARKET SURVEY, ACCEPTANCE AND CONSUMPTION LEVEL OF BROWN RICE (*ORYZA SATIVA L*) IN VIJYAPURA DISTRICT

GANGUBAI ABBIHAI¹ & SAVITA HULAMANI²

Abstract: Brown rice is whole grain rice with intact bran layer and the inedible outer hull removed. Although it has several health claims, it is consumed by a limited number of health conscious and nutritionally aware people. Brown rice contains more nutritional components such as dietary fibre, phytic acid, B vitamins and gammaaminobutyric acid (GABA) due to the presence of outer bran layer being the main source for the nutritional elements. In this paper, a survey was conducted to know the consumption level of brown rice among people of vijayapur district using a questionnaire method. The brown rice preparation requires more water and takes longer to cook. The positive feed back was that brown rice is more filling has good aroma and mild taste. And brown rice consumption helps to reduce weight and taste is the major attribute that influence the consumption of brown rice and brown rice can be stored for upto six months at room temperature. Awareness about the nutritive properties of brown rice was poor and was cited as a major barrier to its acceptance.

Keyword: Survey, brown rice, consumption level, preference

INTRODUCTION:

Rice(*Oryza Sativa L*) is a main staple food and a major source of nutrients of citizens in many parts of the world.(Parnsakhorn et al.,2012) World rice production has grown from 468.5 million tons in the year 2010 to 482.7 metric tons in 2011(2.6% increases). India is the second largest producer of rice in the world next to china.(Mohan et al.,2014)

Brown rice is unpolished whole grain rice that is produced by removing only the hull or husk using a motor and pestil or rubber rollers. Brown rice is one of the most popular health products due to its nutrients and bioactive components, which can prevent a variety of diseases.(Daomukda et al., 2011) The brown rice consist 0.34mg of thiamine , 0.05mg riboflavin, 4.7mg niacin, 1.9 mg iron, 187.0 mg magnicium /100g, where as polished rice contains 0.07 mg thiamine, 0.03 mg riboflavin, 1.6mg niacin, 0.5 mg iron, 13.0 mg magnicium/100g showing its richness in nutrients compared to white rice. An alternative to white rice would be to consume brown rice, since it lowers insulin and glycemic indices and may confer other health benefits.(Marimuthu et al.,2014)

The health benefits of brown rice continue with its fibre; a cup of brown rice provides 14% of daily value for fibre, which has been shown to reduce high cholesterol levels, one more way of brown rice helps to prevent atherosclerosis. Fibre also helps out by keeping blood sugar levels under control, so brown rice is an excellent grain choice for people with diabetes. The fibre in brown rice can also help to protect against colon cancer since fibre binds to cancer-causing chemicals, keeping them away from the cells lining the colon, plus it can help normalize bowl function, reducing constipation.(Danquah et al., 2014)

In recent years, interest in the consumption of germinated brown rice has increased due to increased awareness of its health benefits- mainly the amplified levels of GABA.

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Germinated brown rice is made from brown rice which has been germinated by soaking in water for up to one or two days. The germ produces the physiologically active substances and enzymes to improve the texture of brown rice. During germination, nutrients in the brown rice change dramatically. Nutrients that increase in content include GABA, dietary fibre, inositol, ferulic acid, phytic acid, tocotrienol, magnesium, potassium, zinc, gamma-oryzanol and prolendopetase inhibitor. (Kaosa-ard et al., 2012)

METHODOLOGY:

In the vijayapur district 50 families were selected randomly. Detail information regarding the consumption level of brown rice were collected using questionnaire. The questionnaire includes personal information, family details, dietary pattern, food habits, knowledge based questions and practice based questions.

RESULT : Table 1: General information of the subjects

Particulars		Subjects	Percentage
Age group-	30-40	20.00	40.00
	40-50	25.00	50.00
	50-60	05.00	10.00
Education-	Primary	12.00	24.00
	Highschool	15.00	30.00
	Puc	13.00	26.00
	Degree	10.00	20.00
Occupation-	Government sector	02.00	4.00
	Private sector	09.00	18.00
	House-wife	39.00	78.00
Total		50.00	100.00

This table shows the subjects belong to different age groups varying between the age group of 30-60 years. About 50% were of 30-40 years, 40% of them were between 40-50 years and 10% of them belonged to 50-60 years. And the academic information pertaining to the class to which each subject belong to was taken. Most of them were from highschool about 30%, and 20% of the subjects were from degree, 26% of the subjects were from puc, and 24% of them were from primary. And the occupation of the each subject was noted. Among the 50 subjects 78% are house-wives and 18% were working in private sector and only 4% of the subjects are government job holders.

Table 2: Percent distribution of dietary pattern, meals per day and family history of diabetes:

Particulars		Subjects	Percentage
Dietry pattern	vegetarian	35	70
	Non-vegetarian	15	30
Meals per day	03	42	84
	02	08	16
Family history of diabetes	Yes	03	06
	No	47	94
Total		50.00	100.00

Table shows that 70% of the subjects were vegetarian and 30% of the subjects were non-vegetarian. 84% of the subjects were consuming 3 meals per day and 16% of the subjects were consuming 2 meals per day 94% of the subjects were non-diabetic and rest 6% of the subjects were diabetic.

Table 3: Staple cereals consumed by the family:

Cereals	Subjects	Percentage
Rice	45.00	90.00
Wheat	30.00	60.00
Jowar	20.00	40.00
Bajra	5.00	10.00
Total	50.00	

This table shows 90% of the subjects were consuming rice, 60% of subjects were consuming wheat, 40% of subjects were consuming jowar and 10% of subjects were consuming bajra.

Table 4: Frequency of Consumption of brown rice among subjects

Category	Subjects	Percentage
Regularly	3.00	6.00
Occasionally	5.00	10.00
Total	50.00	100.00

This table shows 6% of subjects are consuming brown rice regularly where as 10% of the subjects are consuming occasionally. Type of rice varieties consumed:

Table 5: Type of rice varieties consumed by the subjects

Rice varieties	Subjects	Percentage
Rasion rice	25.00	50.00
Sonamasuri	18.00	36.00
Jeera rice	36.00	72.00
Bismillah	06.00	12.00
Panchamrut	02.00	04.00
Basamati	24.00	48.00
Dawat	04.00	08.00
Kesarkali	07.00	14.00
Brown rice	08.00	16.00
Double goda	02.00	04.00
Apple rice	01.00	02.00
Delhi rice	03.00	06.00
Total	50.00	100.00

This table shows 72% of subjects were consuming jeera rice , only 2% of subjects were consuming apple rice and 16% of subjects were consuming brown rice.

DISCUSSION: In terms of consumption of brown rice only 16% of the subjects are consuming it as a staple food and they were consuming brown rice in the form of rice and 84% of the respondents were unaware about brown rice.

SUMMARY AND CONCLUSION: In the present study it was found that brown rice contains more nutritional components such as dietary fibre, phytic acid, B vitamins and gamaaminobutyric acid (GABA) due to the presence of outer bran layer being the main source for the nutritional elements.

The survey conducted on the consumption level of brown rice reveled that the brown rice preparation requires more water and takes longer to cook. The positive feed back was that brown rice is more filling has good aroma and mild taste. And brown rice consumption helps to reduce weight and taste is the major attribute that influence the consumption of brown rice. and brown rice can be stored for upto six months at room temperature.

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A STUDY OF ACHIEVEMENT MOTIVATION AND ANXIETY AMONG KABADDI PLAYERS

Dr. HANUMANTHAYYA PUJARI*

Abstract : The purpose of the study was to find out the relationship between Anxiety and Motivation of intercollegiate kabaddi players and to evaluate their levels of intensity and direction of the competitive state anxiety in players. Anxiety and Motivation are important psychological variables in sports and it needs to achieve high level of competition. Without knowledge of these two variables players cannot give best in competition. The total sample consisted of thirty players aged 25 years. Sport Competition Anxiety Test (SCAT) and Sports Achievement Motivation Test were administered to collect the data. Mean, standard deviation, and Pearson Product Moment Correlation were computed to analyze the data. It was found that significant negative relationship between Achievement Motivation and Anxiety.

Keywords; Achievement Motivation, Anxiety, Kabaddi

Introduction

A sport is a psycho-social activity. It has both psychological and social dimensions besides physical, physiological and technical aspects. Most of the nations share a common interest in sports competitions especially at certain times during the Olympic games where people from all nations focus their attention on that drama of competition. But the quality of the participation of the athletes and sportsmen is determined by their psychological factors

Today's world is the world of sports and sports psychology has given great height to it. A central issue in sports psychology is motivation. Motivation influence the performance of an athlete and practice is more effective and efficient when athlete is highly motivated. In this regard it can be expected that performance will improve favorably in the sports of interest. Achievement is also an important factor in sports psychology which means the successful completion of some task, goal, objective or motive.

Grange & Kerr (2010) also opined that 'in the games and sports, psychological and physiological factors play an important role in determining the performance level.' In sports field achievement motivation can be defined as the athlete's predisposition to approach or avoid a competitive situation. In a broader sense achievement motivation can be defined as including the concept of desire or desire to excel.

Achievement motivation and Anxiety have been two of those factors under consideration. The relation between anxiety and achievement motivation has been the subject of many thorough researches (Crespo, 2002). Weiss & Chaumeton (1992) argued that players have multiple motives for continued participation, such as competence, friendship skill improvement and competition. There are many studies conducted in the aspect of achievement motivation and its effect on performance. Motivated students try hard to achieve their goals and are curious about their performance. Studies suggest that achievement motivation is most significant predictor of performance and essential to participate in a competition (Huschle, et. al. 2008; Carey, et. al. 2000). Several motivation theories in the academic area have been adopted in the quest for greater understanding of achievement motivation in sport (Ames, 1984, 1992; Dweck, 1986; Nicholls, 1989).

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Motivation is an essential element of human personality. It directs a person's activity and makes it more or less dynamic. Without the desire to succeed other psychological abilities do not provide much influence on performance. Bohranil (2004) stated that 'those who are motivated internal, set goals for themselves and are trying to reach it'. Achievement motivation influences other factors affecting performance in sport like: physical preparation, technique, tactics and even life style.

Role of Achievement Motivation In Sports Performance

Achievement motivation is relatively a new concept in the world of motivation. It is essentially a type of motivation that is personal in nature. In the sports /games activities the desire to improve his performance in game situation or to get a good job, in anywhere or to become the team captain and so in as known as achievement motive.

In general achievement motive is expectancy of finding satisfaction in mastery of difficult and challenging performance whereas in the field of education or sports in particular its stands for the pursuit of excellence.

Achievement motivation has a research tradition that provides insights applicable to sport. Competition is the most common achievement situation in sport, but achievement also occurs in non competitive situation when individuals compare their performances to personal standards.

Anxiety can be described as the tension and worry that results from distress. Anxiety is a negatively charged emotional state characterized by discomfort and nervousness. Anxiety is considered as one of the contributing factors or forces for achievement motivation. Studies of Mc Donald (2001),

Zeidner (1991) found that students of high school level experience uncomfortable levels of Anxiety. Anxiety as one of the most important aspects of achievement motivation acting as a negative force will affect the total performance .Aiken (1970 and 1976) highlighted the poor performance is due to anxiety, motivation and self-confidence. According to 'Athletic Insight', a journal of sports psychology, anxiety can be classified in two ways; trait anxiety and state anxiety. State anxiety is situational stress induced by situations in the game.

A sports person's autonomic nervous system is aroused in this state which is the natural reaction of any individual. On the other hand, trait anxiety can be thought of as a world view that an individual uses when coping with stress. In sports, individuals who are state anxious and low on the trait anxiety in tough situations, often deliver good performances consistently. Whereas, athletes who have higher levels of trait anxiety, added with the state anxiety, tend to perform below expectations.

Anxiety before or during athletic competitions can hinder the performance of an athlete. A certain level of physical arousal is helpful and prepares us for competition. But when the physical symptoms of anxiety are too great, they may seriously interfere with your ability to compete. Similarly, a certain amount of worry about how you perform can be helpful in competition, but severe cognitive symptoms of anxiety such as negative thought patterns and expectations of failure can bring about a self-fulfilling prophecy.

If there is a substantial difference between how you perform during practice and how you do during competitions, anxiety may be affecting your performance. One of the factors that are believed to have a significant effect on athletic performance is the level of state anxiety experienced prior to an athletic contest. This is referred to in the literature as pre-competitive anxiety.

Athletes cannot perform at their best like they usually do because of anxiety. Anxiety being a negative motive influences the emotion and impede with the performance of students. Hence it is necessary to take measures to control Anxiety as a motive for need for achievement

among kho-kho players. Consequently, their performance is affected during the competition and they seldom achieve victory. (Papanikolaou, et al. 2008)

Therefore, there is a need to give a positive thinking and better mental skills to solve the problems that may arise because of anxiety. If it is not handled well or misinterpreted, the athlete will lose control and their performance will decrease

The relation between anxiety and performance has been the subject for many researchers (Craft, et. al. 2003; Parfitt & Pates, 1999). Studies showed that the high experienced player would show lower levels of anxiety than the low experienced player. The purpose of the present study was to evaluate the relationship between competitive trait anxiety and achievement motivation in inter collegiate level kho-kho players.

Sample:

The sample of the present study was drawn from vijayanagara srikrishnadevaray university Bellary District degree Colleges Intercollegiate kabaddi tournament held at Nandihalli . For the purpose of the study 30 intercollegiate level players were randomly selected from the tournament.

Tools:

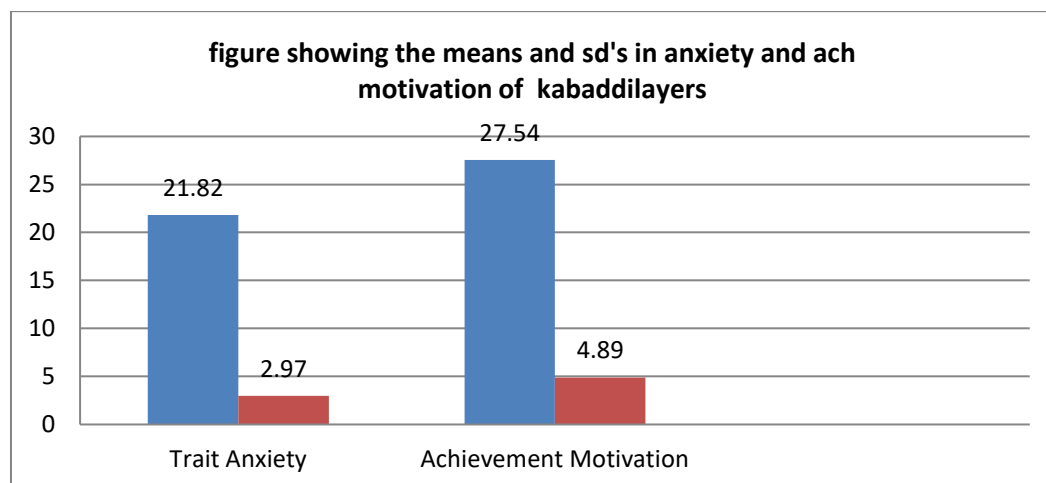
Sports Competition Anxiety Test (SCAT) developed by Martens (1977), to measure the sport competition Anxiety and Sports Achievement Motivation Test developed by Kamlesh (1990) was used to measure the achievement motivation of the players.

Statistical techniques:

Mean, standard deviation, and Pearson Product Moment Correlation were computed to analyze the data.

Table shows the Relationship between achievement motivation and trait anxiety of kabaddi players

S.N	Variables	N	Mean	S d	Coefficient of correlation
1	Trait Anxiety	30	21.82	2.97	-0.4838
2	Achievement Motivation	30	27.54	4.89	



Data shows that there is a significant negative relationship between Trait anxiety and Achievement Motivation so Achievement motivation and Trait Anxiety are negatively correlated to each other.

Conclusion:

The result of the study it was concluded that there was significant negative relationship between Achievement Motivation and Trait Anxiety .i.e. Study showed that increase or decrease of level of Achievement Motivation does effect on the Increase or decrease of level of Anxiety and vice-versa. Therefore we can say that players who have high level of Anxiety should also have low level of Achievement motivation or vice-versa. Result of the study endorses the findings of Bawa and Kalpana (2001) who conducted the study on male national level Gymnasts and found that higher level performance group has moderate level of anxiety than the low level performance group.

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PHYSICAL FITNESS AND PLAYING ABILITY OF HOCKEY PLAYERS

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Abstract: The purpose of the study was to study physical fitness and playing ability of Hockey players. There were four selective physical fitness components which were used as a criterion measures for this study. For analysis the data and to find out the relationship between selective physical fitness and playing ability Pearson product moment correlation ship was applied. Level of confidence was set at .05 levels. Firstly, selective fitness components were evaluated. The result of the study clearly discloses that physical fitness had considerable relationship with the playing ability of the University Hockey players of Bengaluru University. On the basis of results and associated discussion it may be concluded that physical fitness and playing ability had low correlation. There might be some reasons of the low correlation in the perspective of good scientific coaching. There was the possibility of the lack of coaching aspects, which shows clearly in the findings that the physical fitness was less correlated with playing ability.

Introduction:

Physical ability variables have been considered as important prerequisite for sportsman to secure the top level performance in the game. There is a general agreement among athletic that general physical abilities and specific physical abilities play a decisive role in determining ones level of performance in a wide range of Physical abilities. Physical ability is used to obtain achievement in physical skill. It denotes immediate state of the individual to perform in a wide range of physical skill. The components of fitness each work together to contribute to the ability of the body to handle physical demands. The more efficient the body functions, the higher the level of their fitness. Optimal fitness is a combination of life style, nutrition, habits, but it cannot be reached without an appropriate level of physical activity. According to my perspective, in the game of Hockey there are many conditions which are in unbalanced manner during play. We all know that how the Hockey becomes as a Power game from the last 2-3 decades, Previously Hockey is the game of skill, it is a well-known concept of ancient Indian or Asian hockey which elaborate the importance of master of skills. Physical fitness in the modern Hockey needs more strength specifically in the fore-arm and wrist. Endurance to play the game at top form for the whole duration. Speed, movement speed and acceleration for short distance are all the contributing factors to seek efficiency in Hockey.

The cohesion in team sports is the secret to success. A cohesive team which is comprised of skilful and physically fit players is bound to achieve success. Coaching in the modern sports would be based on scientific and systematic information derived from research. With regard to physical fitness there are several factors that a number of overlapping activities and of course, individual preferences are to be taken into account, so as to achieve the same goal. The components of skill-related fitness are agility, balance, coordination, speed, power and reaction time. Health related fitness includes regular exercise in combination of proper diet and abstention from smoking and using potentially dangerous drugs and it will increase greatly one's quality of health. The components of health-related fitness are cardio respiratory endurance, muscular endurance, muscular strength, body composition and flexibility. Physical

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ability has been defined as “the present acquired innate ability to perform physical skills of general of fundamental nature exclusive of highly specialized sports techniques.

Methodology:

Total 20 Subjects were selected for this study. The subjects were selected by random sample selection. These are the Bengaluru university players. Their age ranged between 18-25 years. Physical fitness assessment:

1. Speed was measured by 50 m Dash
2. Agility was measured by 10x4 Shuttle run.
3. Power was measured by standing broad jump.
4. Coordinative ability was measured by Alternate hand wall test.

To assess playing ability of players, researcher used 10 different skills which are scored by the 3 experts through subjective judgment.

Playing ability assessment:

1. Dribbling
2. Hitting
3. Goal shooting
4. Scooping
5. Receiving
6. Defensive tactics and strategies
7. Offensive tactics and strategies
8. Inter-communication
9. Team-coordination
10. Respect to rules and regulations

These 4 selective fitness components which belong to playing ability have been measured. The tests were administered to measure the fitness components of the selective subjects of sports group. Firstly, selective fitness components were evaluated. Next day these 20 hockey players were played a friendly hockey match, where 5 experts were observed this match and gave their subjective judgement. In order to find out the relationship between physical fitness ability and playing ability.

Analysis of the data

Table 1: Relationship of physical fitness and playing ability

Variables Correlated	Coefficient Of Correlation
Physical Fitness and playing ability	0.37

Significant at 0.05 level of significance $0.05 = 0.37$

The obtained value of $r = 0.37$ from table –I clearly indicated low correlation between physical fitness and playing ability, which is not significant because the required value at 0.05 level of significance with 18 degree of freedom is 0.37. Because of the total 20 subjects, degree of freedom was 18; it could have significant in 0.44 correlation coefficient. That indicates that there is low correlation between physical fitness and playing ability of Bengaluru University Hockey Players.

Discussion of Findings:

The result of the study clearly discloses that physical fitness had considerable relationship with the playing ability of the Bengaluru University Hockey players. Result contraindicate with the earlier researchers, which have shown the significant relationship of these two variables i.e. physical fitness and playing ability. The other fact might be that if the playing ability was scored after end of the match, then the players got fewer score comparative to the considered scores by influencing the various factors. i.e. Fatigueless, Psychological pressure, Rush of the game, match situation etc. It was possible that, Players were fresh in the

starting part of the game so definitely they will perform all the skills very well as compare at the last minute of the game, therefore somewhere the difference in scoring of all individual skills and playing abilities. The present study shows that relationship of Physical fitness & Playing ability was below average the reason might be due to the fact that the players was belongs to different-different places therefore players had lack of coordination during the match. The other reason was also for low correlation that players have also the burden of their academic courses, that's why they didn't get sufficient time for practice in whole year.

Conclusion:

On the basis of results and associated discussion it may be concluded that physical fitness and playing ability have low correlation. How ever from the earlier research, literature and the experience the physical fitness must be significant relationship with playing abilities but in this study there is the outcome of Low Correlation between them. This might be because of many influencing factors which are described in the discussion of findings. So lastly it concluded that the physical fitness of the BengaluruUniversity Hockey players was no significant relationship with the playing abilities, and had Low Correlation between them.

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THE EFFECT OF YOGIC EXERCISES AND AEROBIC EXERCISES ON PSYCHOLOGICAL VARIABLES OF SECONDARY SCHOOL CHILDREN

JAYAMMA¹ & DR. K.P. MARTIN²

Abstract : The purpose of the study was to Effect of 16 -Weeks Yogic Exercises and Aerobic Exercises on psychological variables of Secondary School Children. For the purpose of the study One hundred fifty (50 in Yogic Exercises group, 50in Aerobic exercises group, 50 in control group) Morarji Desai Minority Residency School vijayapura, Karnataka. were selected as the subjects for this study. The age of the subjects was between 14 to 16 Years. In order to investigate the existence of significant difference among Yogic Exercises group, Aerobic Exercises group and Control group on Depressions of Secondary School Children. Emulate data was collected after the Experimental period was collected data was statistically Examined to find out the significant improvement using and analysis of whenever the 'F' ratio was found to be significant, Scheff's Post-Hoc test was used as post-test to determine which of the paired means differed significantly.

In all cases, the criteria for statistical significance were set at 0.05 level of confidence 0.05. Later yogic exercises and Aerobic exercises is given for experimental group. For the 16 weeks by keeping the control group constant. Finally, all the psychological variables such as Depressions tested scores are recorded. Later, collected data was put into the statistical using Analysis of Covariance (ANCOVA) to find out the significant mean differences. The result showed that there was significance difference on Depression among Yoga group, Aerobic group and Control group. The result also showed that there was significance difference.

Keywords : YogicExercisesandAerobicExercises and Psychologicalvariables.

INTRODUCTION

Yogasana is a term for the different postures that consist the central point of workout of yoga. There are different postures for a different system of yoga training yoga engulfs a holistic aspect of an athletics health and not just postures. Yogasana consists of two Sanskrit words yoga and asana. Yogasana emphasizes on the physical body and stands for the various postures. This is called hatha yoga but hatha yoga is not just about postures along with the postures, with constant practice flexibility can be achieved through yoga and prove to be a great asset for athletes. The athletes also need to stretch their body beyond normal during sports and hence yoga provides them an opening to practice against gravity and hold postures for an extended amount of time. Doing so gives the athletes an upper hand in a Muscular workout and increases their muscle endurance as well.

Statement of The Problem

The purpose of the present study is to find out the "Effect of Yogic Exercises and Aerobic Exercises on Motor Fitness and Psychological Variables of Secondary School Children."

Objectives of the study

- The major objective of the study was to determine the changes on selected motor fitness variables due to the effect of yogic exercises and aerobic exercises training.

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Significance of the study

- The study would to explore the effectiveness yogic exercises and aerobic exercises on selected psychological variables of the Secondary School Children.
- The study may help to the physical educationists and coaches to build the best method of training to develop the psychological variables.
- The study will promote research and growth in applying choreography in the field of yogic exercises and aerobic exercises training.

Hypotheses

- It was hypothesized that; there is a significant improvement in selected psychological Variables due to the influence of Yogic Exercises and Aerobic Exercises training may improve the selected motor fitness variables of the secondary school children.

Delimitation of the study

- The study was confined to one hundred and fifty (150) girls' students of Morarji Desai Residential School Vijayapura, Karnataka. Selected for the study.
- The age group of the subjects ranged from 14 to 16 years.
- The subjects were selected randomly (N= 150) divided into three equal groups of fifty. Group-I underwent Yogic exercises Training, group-II underwent aerobic exercises training, and group-III will act as a control group.

Limitations of the study

- The change in climatic conditions such as temperature, atmospheric pressure humidity, act. During the training as testing period could not be controlled. By the Research their influence on the results of the study was considered as one of the limitations.
- The daily routine work of the subjects influenced Results. Hence, this was considered as limitation.
- The general mood, environmental factor and performance in the test by the subject was recognized as limitation of the study due to varied social, cultural and environmental factors were not taken into consideration.
- No motivational technique was used for the collection of data.

METHODOLOGY

The purpose of the study was to find out the "Effect of Yogic Exercises and Aerobic Exercises on psychological variables of secondary school children." For the present study the experimental research design was employed where in training is applied to study the cause and effect of the training. To carry out the study, 150 subjects were selected at random from Morarji Daisy Residential school of vijayapura city. The having their age in the range of 14 to 16 years. The subjects are classified into their groups I is control group which is not exposed any training and other two is experimental group which is exposed to yoga training. Before carry out the, all the subjects were to and their initial scores measured are and recorded on the variables of the subject. Later yogic exercises and aerobic exercises is given for experiment Psychological group. For the 16 weeks and by keeping the control group constant. Finally, all the scores are recorded. Later, collected data was put into the statistical using Analysis of covariance (ANCOVA) to find out the significant mean differences.

Selection of tests

The test items were selected for this study after thorough review of literature as well as consultation with experts, physical education professionals, and also Research supervisor. The selection test and the criterion variables are presented in the Following table.

Analysis of Covariance for pre-test and post-test on Depression of Yogic exercises, Aerobic exercises and Control Group of Secondary School Children.

Type of test	Yogic exercises	Aerobic exercises	Control group	Source of variance	Sum of the squares	Df	Mean square	F-ratio
Pre-test mean	12.5800	12.9400	12.5400	Between	4.853	2	2.427	.605
SD	1.5919	2.7136	1.4598	Within	589.420	147	4.010	
post-test mean	9.7800	11.4600	12.5800	Between	125.173	2	62.587	16.782
SD	1.7058	2.1590	1.5919	Within	548.220	147	3.729	
Adjusted post-test means	9.806	11.398	9.376	Between	112.606	2	56.303	16.016
SD	3.12	2.112	1.963	Within	513.245	144	3.515	

*Significance at =0.05 Table value =4.08

Dictation of findings

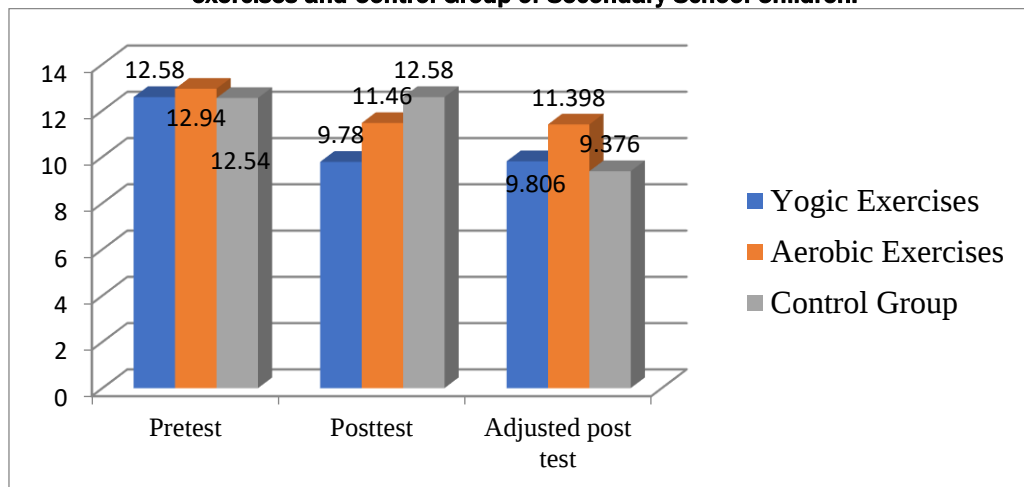
Suggests that the post-test mean scores of Depressions of Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children. It was observed that mean scores of pre-tests of Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children were 12.5800, 12.9400 and 12.5400 and their standard deviation were 1.5919, 2.7136 and 1.4598 respectively. The obtained 'F' Ratio value is ($F=.605, 2, 147, \alpha = 0.05$) at 5% degree of significance, which is less than the desk price ($F=4.08$), hence the null hypothesis is accepted. It shows that the Stress among the Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children is found almost similar.

Further, shows that the post-test mean scores of Depression of Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children. It was observed that mean scores of post-tests of Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children had been 9.7800, 11.4600 and 12.5800 and their standard deviation have been 1.7058, 2.1590 and 1.5919 respectively. The received 'F' Ratio value is ($F=16.782, 2, 147, \alpha = 0.05$) at 5% stage of significance, which is more than the table value ($F=4.08$), as a result the null hypothesis is rejected. It indicates that Depression of Yogic Exercises, Aerobic Exercises and Control Group of Secondary School Children were found different. This indicates that Depression is less among the Yogic Exercises and Aerobic Exercises group when compared to the control group. Finally, it can be concluded that yogic exercises and aerobic exercises treatment given to the secondary school children have made a significant impact on the Depression of the secondary school children.

The adjusted post-test mean scores of Depression of Yogic Exercises, Aerobic Exercises and Control Group were 9.806, 11.398 and 9.376 respectively and their standard deviation were 3.12, 2.112 and 1.963 respectively. The obtained 'F' Ratio value is ($F=16.016, 2, 144, \alpha = 0.05$) 16.016 at 5% stage of significance, which is larger than the table value ($F=4.08$), as a result the null hypothesis is rejected and alternative hypothesis is accepted. It can be concluded that there is significant difference is located between the Yogic Exercises Aerobic Exercises Group with respect to Depression level of Secondary School Children.

The result of the present study shows that the Depression is significantly improved in both experimental training groups than control group. Yogic exercises group had better improvement than aerobic exercises group after sixteen weeks of training.

Analysis of Covariance for pre-test and post -test on Depression of Yogic exercises, Aerobic exercises and Control Group of Secondary School Children.



This gives a clear picture of the adjusted mean of three training groups. Thus, it is inferred that Yogic Exercises and Aerobic Exercises training is more effective in decreasing the Depression among the subjects. Yogic Exercises were significantly better than Aerobic Exercises in decreasing Depression of the Secondary School Children compared to the Control group.

Conclusion

It was concluded that yogic exercises training and Aerobic exercises training made a significant decrease in Depression of the secondary school children, in comparing that the Aerobic training and yoga training it is clear evident that aerobic training helps to develop Depression in comparing with yogic exercises training. It was concluded that yogic exercises training and Aerobic exercises training made a significant decrease in Depression of the secondary school children, in comparing that the Aerobic training and yoga training it is clear evident that Yogic training helps to develop Depression in comparing with Aerobic exercises training.

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EFFECT OF YOGA ON SELECTED PHYSICAL FITNESS COMPONENT OF FOOTBALL PLAYERS

Dr. JYOTI. AWATI (PDF) *

Abstract : The paper is importance the yogic benefits for reaching best level of physical fitness of football players. The humanoid body needs sound relation of nature and natural medicines which are available in physically fit. Yoga is a procedure to control and advance the psyche and figure to upsurge great health, adjust of psyche and self-acknowledgement. The very spirit of yoga lies in presence mental peace, better concentration powers, a relaxed Stste of living and harmony in connection. Even practice of asana, pranayama and meditation can help such varied, illnesses such diabetes, blood pressure, digestive disorders, chronic fatigue, asthma, varicose veins and heart conditions. The study was undertaken with the aim of observe the effect of yoga (asana & pranayama) on selected physical fitness component of football players. For the training total 40 male football players designated as subject from Vijayapur Football, Players. Their age between 14 to 16 years. Players were given the treatment of selected Yogic asana for 12 week Result shown that the regular practice of yoga improved physical fitness component (strength endurance and flexibility) significantly.

Keywords: Yoga, physical fitness, football players

Introduction

Yoga is considered, both in East and the West, as one of the best exercise for physical fitness. Indians have given great importance to “yoga” and “physical exercise” not only to prevent cures the physical ailments disease but to keep fit also. Yoga is an ancient science of physical, mental and spiritual development. Yoga has become increasingly popular in western cultures as a mean of exercise and fitness training. Yoga is perhaps the best known way to bust stress, which is the root cause of chronic diseases such as reproductive problems, heart problems, immune system problems, arthritis, depression, and anxiety. Because yoga also helps in healing the mind, the healthy mind can lead to greater physical fitness, and a fit body leads to a healthy life. The effect of yoga on the mind and body's fitness are amazing. The muscles are exercised by stretching and relaxing. Breathing and Blood circulation also improve. One develops stronger muscles, and consequently a stronger body, which makes it more resistant to illness, Weather viral or related to Stress. Relaxation of the body and its fitness are achieved by yoga through breathing techniques known as Pranayama, and strong but gentle Asanasa. The exercise targets the parasympathetic nervous system, a component of the autonomic nervous system that deals with rest-and- repos mechanism of the body. By focusing on these vital elements, yoga can be a great thing to do to recover from a series of tough workouts. Some of the most popular yoga movements directly improve the range of motion at your joints, which helps to stay on the field longer and move more fluidly. We all know yoga is not as easy as it may seem which why it is great for those who need a new or different challenge in their training programs. And lastly, when we are feeling the most pressure about the big game or try out, yoga of football players and its emphasis on breathing and relaxation can really boost the mental energy, focus and concentration.

Purpose of the study

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The purpose of the present study was to find out the effect of yoga on selected physical **Variables of football players.**

2. Methodology

2.1 Subjects

Total 40 male subjects were selected sample for this study from vijayapur football Players. The age range between 14 to 16 years.

Variable

2.1 Physical Measures

- Muscular strength
- Speed and agility
- Explosive strength of legs

Tests: Following tests were utilized for present study:

2.3 Test used for physical variables

2.3.1 Muscular strength and: Bent-knee sit ups

2.3.2 Speed and: Shuttle-run

2.3.3 Explosive strength of legs: Standing board jump

Data collection

All data were collected, in month of August and September 2021 when they were attending their daily practice camp. The researcher him-self specialize in yoga and administered the yoga programme. The subjects were participated in yoga programme six days in a week, only for 12 weeks. Necessary instruction was given by yoga instructor, to the subject before the administration of programme. The required data in different components was collected from the players during morning session. Aaper youth physical fitness test and sit & reach test for measuring physical fitness variables organized at 1st, 2nd and 3rd day. After collection of pre-test scores on all the selected variables, subjects participated in yoga programme. After 12-week yoga programme, post-test was conducted and all data were collected on all health variables.

Statistical Procedure

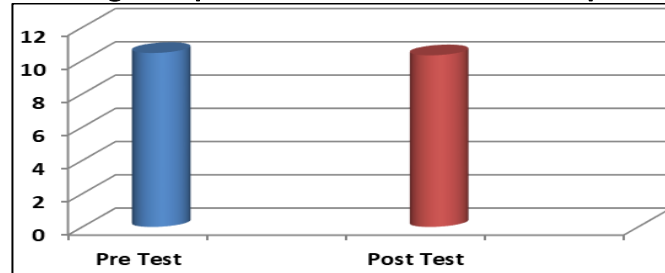
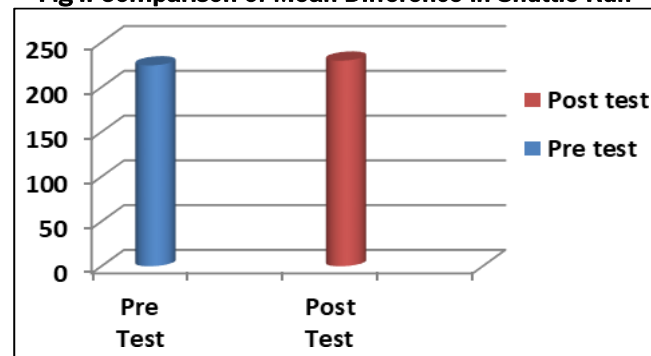
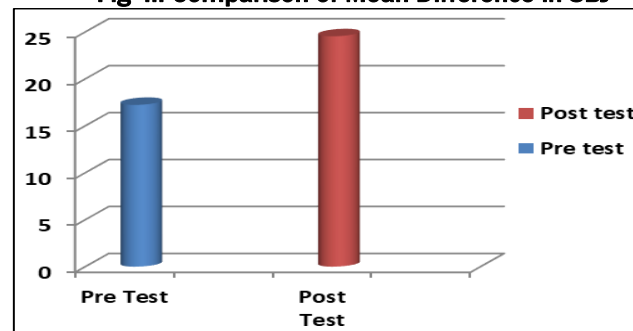
For analysis of the data collected, Mean and SD was computed. To find out the effect of yoga on selected physical fitness component of football players, 't' test was applied and significance level 0.5.

Discussion and Findings

Table 1 shows the comparison of means of selected physical variables of pre-test scores. In bent-knee value of pre-test is 38.42 and post-test is 43.31. In shuttle-run mean value of pre-test is 10.46 and post-test is 10.32. In standing broad jump mean value of pre-test is 224.36 and post-test is 229.7. In flexibility value of pre-test is 17.23 and post-test is 24.54.

Table 1: Compression of Means of Selected Physical fitness Component variables of pre & post test scores

Components	Group	Mean	SD
Muscular strength & endurance (Bent-knees sit ups)	Pre-test	38.42	9.35
	Post-test	43.31	8.3
Speed and agility (Shuttle-run, in sec)	Pre-test	10.46	2.48
	Post-test	10.32	3.28
Explosive strength (Standing board jump, in cm)	Pre-test	224.36	25.4
	Post-test	229.7	28.9

Fig-I Comparison of Mean Difference in sit-ups**Fig-II Comparison of Mean Difference in Shuttle Run****Fig- III Comparison of Mean Difference in SBJ****Conclusions**

Twelve weeks Yoga training is beneficial for improvement in Muscular strength & endurance of improvement in Muscular strength & endurance of football players.

Twelve weeks Yoga training is not beneficial for improvement of speed and agility; Explosive strength of legs of football players.

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A STUDY OF KABADDI PLAYING ABILITY OF AGGRESSION VARIABLE AMONG STATE LEVEL WOMEN KABADDI PLAYERS

JYOTI SAVALAGI* & Dr. Jyoti. A. UPADHYE*

Abstract : The purpose of the study was to “A study of kabaddi playing ability of selected Aggression variable among state level women kabaddi players”. The subjects for this study were selected from state level kabaddi competitions who had participated in state level kabaddi competition. 50 (fifty) subjects from state level female kabaddi players were selected for the present study. The ages of the subjects were in the age ranging between 17 to 19 Years. In the study, the data were collected on the various psychological variable (Aggression). The appropriate statistical methods have been performed and used such as descriptive statistics including mean, standard deviation and 95% confidence interval. The Karl Pearson's product moment correlation coefficient analysis was applied to assess the linear relationships or magnitude and direction of relationship between the variables. The multiple linear and step wise linear regression analysis was performed to assess the cause-and-effect relationship and also predicting. Followed by correlation analysis and linear regression analysis with interpretations. The principle of the usefulness, the different sections of this chapter of the study has been organized under different headings.

Keywords: kabaddi playing ability of selected psychological variable (Aggression).

INTRODUCTION

The positive aspects are numerous, which reveals the true beauty of sport. Sport teaches children the important lesson of team-spirit and it gives them the experience of working with different kinds of people in different situations. Playing sports enables children to create friendships they otherwise might not have formed. Sports and games can be a great lesson in time management and they provide the spirit of competition that drives them to give extra effort. Through sports children learn to respect authority and rules. Sport increases self-esteem, mental alertness and it reduces Aggression.

STATEMENT OF THE PROBLEM

A study carried out “A study of kabaddi playing ability of selected Aggression variables among state level women kabaddi players.

OBJECTIVES OF THE STUDY

1. To assess the relationships between Aggression variables with playing ability of state level women Kabaddi players
2. To find out the significant predictors of playing ability of state level women Kabaddi players by overall analysis of selected psychological variable (aggression);

Hypotheses

- There is significant influence of psychological variables on the performance of kabaddi players.
- There may be significant influence of Aggression variables in improving the on predication the performance of the players.

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- psychological variable is aggression would not be significant predictors of playing ability of state level women Kabaddi player.

DELIMITATIONS OF THE PRESENT STUDY

- 1) This study was confined only 50 state level kabaddi players who participated in the state level kabaddi competition of Karnataka state India.
- 2) The study was only women kabaddi players.
- 3) The study is further delimited to a sample 50 players form kabaddi game.
- 4) The subjects selected were in the age ranging between 17 to 19 years.
- 5) The study was delimited to psychological variables like aggression only.

SIGNIFICANCE OF THE STUDY

- The analyze of the study may be helpful in designing appropriate training program to enhance required psychological characteristics of state level female kabaddi players.
- The study may be helpful to the female to develop their personality.

METHODOLOGY

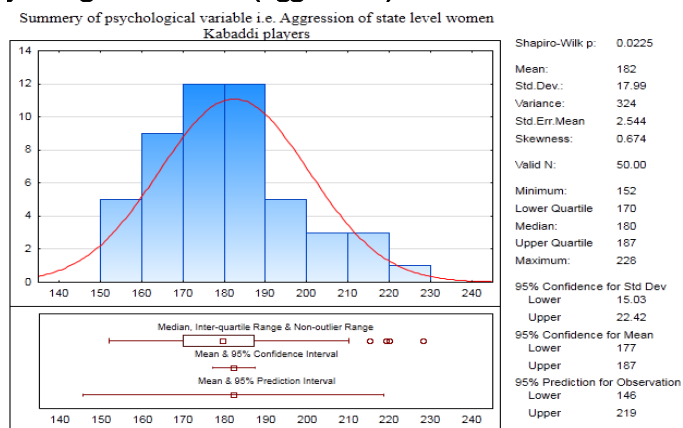
The following methodology was used to establish the nature of the kabaddi playing ability of selected psychological variable Aggression among state level women kabaddi players. The subjects selected were in the age ranging between 17 to 19 years. The Experimental method was used in the present study. The normative survey method was used to collect the data. The subjects for this study subjects were selected from state level kabaddi competitions who had participated in state level kabaddi competition. 50 (fifty) subjects from state level female kabaddi players were selected for the present study.

Summary Of Psychological Variables (Aggression) Of State Level Women Kabaddi Players.

Psychological variables	Min	Max	Mean	SD	Variance	95% CI for mean	
						Lower	Upper
Aggression	152.00	228.00	182.16	17.99	323.69	177.05	187.27

The above table depicts the range, mean, standard deviation and variance of the psychological variable (Aggression) of state level women Kabaddi players. The considerable and smaller value of standard deviation and variance (dispersion measures) were seen in all the psychological variable (Aggression) in state level women Kabaddi players. It means that, they have least variability. The summery and nature of distribution of all psychological variable (Aggression) of state level women Kabaddi players are also presented in the following figures.

Summary of Psychological Variables (Aggression) Of State Level Women Kabaddi Players.



Pearson's Correlation Co-Efficient Between Psychological Variables (Aggression) With Playing Ability of State Level Women Kabaddi Players

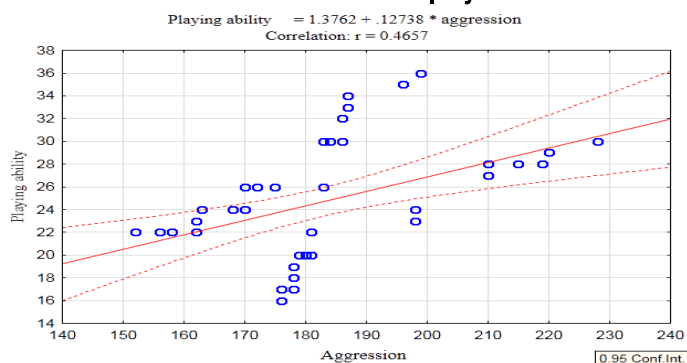
Psychological variables	Correlation between playing ability scores of state level women Kabaddi players with				
	Revalue	r ²	Df	t-value	p-value
Aggression	0.4658	0.2170	48	3.6469	0.0007*

* Indicate 5% level of significance (p<0.05)

It is evident and clearly seen from above table that

A significant and positive correlation was observed between playing ability and aggression (r=0.4658, t=3.6469, p<0.05) of state level women Kabaddi players at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the aggression scores are increases (or decreases) with linearly and significantly increase (or decrease) the playing ability scores of state level women Kabaddi players.

Scatter diagram showing correlation between aggression scores with playing ability of state level women Kabaddi players



- **Null hypothesis:** There is no significant relationship between playing ability and psychological variable (Aggression) of state level women Kabaddi players presents
- **Alternative hypothesis:** There is a significant relationship between playing ability and psychological variables (Aggression) of state level women Kabaddi players presents. To test the above null hypothesis, the Karl Pearson's product moment correlation coefficient was performed and results are presented in the following table.

Conclusions

The aggression scores are increases (or decreases) with linearly and significantly increase (or decrease) the playing ability scores of state level women Kabaddi players. The playing ability of state level women Kabaddi players is not influenced by Aggression. Aggression contributes better towards playing ability of state level women Kabaddi players than other variables.

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IMPLICATIONS OF MEDITATION AND PRANAYAMA ON FEMALE ATHLETES PHYSIOLOGICAL VARIABLES

Dr.KIRAN G.N*

Abstract : The Impact of Meditation and Pranayama Practice on Physiological Variables on University Level Athletes has been investigated. Fifteen female athletes were chosen from the Karnataka State Akkamahadevi Women's University and were subjected to six weeks of meditation and pranayama, including Shitali Pranayama, Ujjayi Pranayama, Bhastrika Pranayama, Bhramari Pranayama, Kapalbhathi Pranayama, Anuloma & Viloma Pranayama. Resting heart rate and Breath Holding Time are the physiological factors. There was a substantial change between the pre-test and post-test, according to the findings. As a result, it was clear that meditation and pranayama have a considerable influence on physiological parameters such as Resting Heart Rate and Breath Holding Time in female athletes.

Introduction

Ancient Yoga scriptures for entire physical, mental, emotional, social, and spiritual growth served as the foundation for establishing the integrated approach (Lokeswarananda, & Taittiriya, 1996; Nagarathna, & Nagendra, 2003). Physical practises (Kriya, sans, and a healthy Yogic diet), breathing practises with body movements and Pranayama, meditation, Yoga lectures, stress management, and life-style change through notional modifications for blissful consciousness under all circumstances (action in relaxation) are some of the techniques used (Amaranath, Nagendra, & Deshpande, 2016).

Athletics

To better understand the history of athletics we must go way back into the past, to ancient Greece, the motherland of the Olympics. Even though the ancient Greek Olympic Games were significantly different from the ones conducted today, there are some similarities. The earliest competitions were conducted in the eighth century B.C., and they incorporated some of the contemporary civilization's activities. Boxing and equestrian sports were included in the tournament, but the majority of the focus was on what we now call athletics. Throwing discus and javelin, leaping, and sprinting were among the track and field events. They were done separately, but they were also combined with wrestling to make the pentathlon. There were various categories for running events. The amount of "stades" that the athlete had to run determined the category. A stade consisted of a 190-meter sprint from one end of the arena to the other. As a result, there were two-stade races as well as more difficult seven- and 24-stade events. There were two-stade and four-stade races for the boldest and most persevering competitors, during which the participant had to wear armour.

In 1912, the International Amateur Athletic Federation was created by 17 national athletic federations that identified the need for a regulatory body, an athletic programme, standardised technical equipment, and global records. The IAAF abandoned the conventional idea of amateurism in 1982 and established athlete trust funds in 1985. Larger groups of very skilled athletes were given access to high performance. The transition from so-called amateurs to financially motivated and secure athletes at the highest levels has been gradual, and this trend has continued with the introduction of the IAAF Competition Awards in 1997, which for the first time in the history of IAAF competitions provided prize money to successful athletes.

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Athletics enjoyed its time of glory every four years at the Olympic Games until the late 1970s. World Championships, World Junior Championships, World Youth Championships, World Indoor Championships, Continental Cup, World Cross Country Championships, World Race Walking Cup, World Half Marathon Championships, the international Diamond League and World Challenge series, Combined Events Challenge, Race Walking Challenge, Hammer Throw Challenge, Road Race Labels, and Permit circuits for indoor and cross country running are now part of the official IAAF Competition Program. A number of big contests at the continental level also show the IAAF's growing programme. On all continents, fourteen multi-sport and Area Games tournaments, including the Olympic Games, are held using athletics as the fundamental sport. Thousands of additional national and local events are also included. Mountain Running was added to the IAAF's list of governing disciplines in 2003 at the IAAF Congress. Mountain Running has its own Grand Prix circuit and World Championships.

The IAAF Headquarters, which began as the General Secretary's study, today comprises of three beautiful buildings in Monaco. Around seventy full-time multi-national professional staff members currently work for the organisation. The International Association of Athletics Federations was overwhelmingly adopted as the new name of the organisation.

Today, athletics encompasses 25 indoor events and twice as many outdoor events. Some events now form part of school programs, while others have been modified. Nevertheless, the athletics still remains what it was even all those centuries ago – a thrill for the audience and a passion for the athletes.

Methodology

The purpose of the study was to find out implications of meditation and pranayama on female athletes physiological variables. To achieve the purpose of this study thirty Female Athletes were selected from Karnataka State Akkamahadevi Women's University, Vijayapura, Karnataka, India, at random and their age ranges from 18 to 22 years and all of them healthy and normal. They were divided into two groups and designed as Experimental and Control group with Fifteen Female Athletes in each group. The experimental groups underwent a six weeks of training were given. The control group were not allowed to participate in any of the integrated yoga modules training programme. The collected data were analyzed by using statistical 'T' test. The results of the study showed that implications of meditation and pranayama can be an effective training programme to increase the physiological variables of female Athletes.

Dependent Variables

Physiological Variables

1. Resting pulse rate
2. Breath holding time

Independent Variables

Meditation and Pranayama

SELECTION OF TEST

Sl. No	Variables	Tests	Units of Measurement
1	Resting Pulse Rate	Radial Pulse	Beats Per Minute
2	Breath Holding Time	Nostril Clip Method	In Seconds

Analysis of Data for significant improvement between pre and post-test of experimental and control groups on selected dependent variables

To examine if there were any statistically significant improvement of experimental and control groups on selected dependent variables were discussed separately. Present pre and post-test means, and the results of the paired sample t-test of Control group on selected dependent variables.

Paired Sample 't' test of Control group on selected dependent variables

Name of the Group	Name of the Variable	Pre Test Mean + SD	Post Test Mean + SD	t test
Control group	Resting Pulse Rate	76.56	2.28	76.38
Control group	Breath Holding Time	38.50	7.71	38.75

*Significant of.05 level. Table value required for significant with df 14 is 2.145

Control group

The paired sample 't' was computed on selected dependent variables. The results were presented in the above Table, Resting heart rate is 76.38 and Breath holding time is 38.75 respectively All the 't' values are significantly lesser than the required table value of df 24 at 0.05 level of confidence was 2.145. The result of the study shows that control group had no significantly improved the performance of all the selected dependent variables.

Paired Sample 't' test of Experimental group on selected dependent variables

Name of the Group	Name of the Variable	Pre Test Mean + SD	Post Test Mean + SD	t test
Experimental group	Resting Pulse Rate	76.53	2.50	71.33
Experimental group	Breath Holding Time	38.80	1.86	47.67

*Significant of.05 level. Table value required for significant with df 14 is 2.145

Experimental Group

The dependent 't' was computed on selected dependent variables. The results were presented in the above Table, Resting heart rate is 71.33 and Breath holding time is 47.67 respectively. All the 't' values are significantly higher than the required table value of df 14 at 0.05 level of confidence was 2.145. The result of the study shows that experimental group significantly improved the performance of all the selected dependent variables.

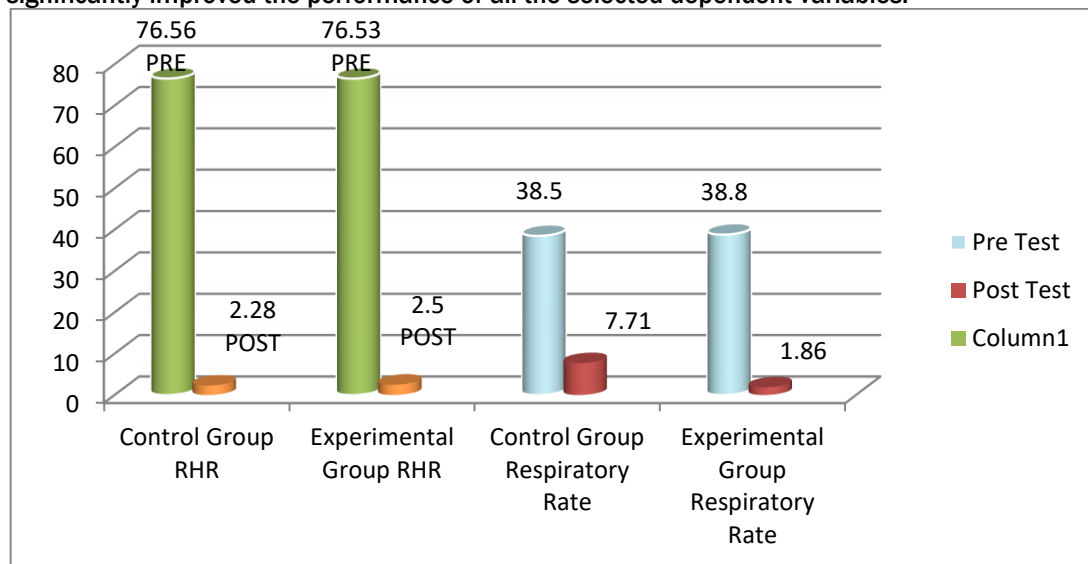


Fig: Mean values of Pre-test and post-test of resting heart rate and Breath Holding Time on experimental and control groups.

Conclusion

1. There was a significant improvement among experimental group on resting pulse rate due to the effect of six week of meditation and pranayama.
2. There was a significant improvement among experimental group on breath holding time due to the effect of six week of meditation and pranayama.

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A COMPARATIVE OF PHYSICAL FITNESS AMONG ATHLETES AND NON-ATHLETES

MAHADEVI.S.INJANGEREI*

Abstract : The win at-all-costs approach is well-documented in the literature of sports psychology. Vallerand and Losier (1994) suggest, "Playing to win at all costs may lead an athlete to cheat in order to reach his or her goal" (p.230). Furthermore, studies have shown that athletes point to their coach as having a heavy influence on their decisions to win-at-all-costs (Guivernau & Duda, 2002; Stephens & Bredemeier, 1996). The win-at-all-costs approach may lead athletes to sacrifice all for (his cause (Rudd & Mondello, 2006). The Canadian Sport for Life movement, which tries to improving the quality of sports and physical activity in Canada, published a 7-stage Canadian model of Long-Term Athlete Development (LTAD). They argue, "Athletes' environment is geared to the short-term] outcome winning-and not to the process, and as an outcome there are bad habits developed from over competition focused on winning" (p-17). Indeed, professional athletes will endanger their health and sometimes their future by competing when injured¹. Some professional athletes are w

Keywords: A Comparative of Physical Fitness among Athletes and Non-Athletes

Introduction:

The win at-all-costs approach is well-documented in the literature of sports psychology. Vallerand and Losier (1994) suggest, "Playing to win at all costs may lead an athlete to cheat in order to reach his or her goal" (p.230). Furthermore, studies have shown that athletes point to their coach as having a heavy influence on their decisions to win-at-all-costs (Guivernau & Duda, 2002; Stephens & Bredemeier, 1996). The win-at-all-costs approach may lead athletes to sacrifice all for (his cause (Rudd & Mondello, 2006). The Canadian Sport for Life movement, which tries to improving the quality of sports and physical activity in Canada, published a 7-stage Canadian model of Long-Term Athlete Development (LTAD). They argue, "Athletes' environment is geared to the short-term] outcome winning-and not to the process, and as an outcome there are bad habits developed from over competition focused on winning" (p-17). Indeed, professional athletes will endanger their health and sometimes their future by competing when injured¹. Some professional athletes are willing to use drugs in order to improve their performance and increase their chance of winning. Using drugs puts the athlete's health and future reputation at risk". In 1999, the Department of Industry, Science and Resources in Australia published a report on professional sports in Australia. The report mentions the common use of drugs in professional sports and the Australia's anti-drugs in sport programs.

Methodology:

Aim and Objective of the study;

To find out the physical fitness among athlete and non-athlete.

Hypotheses:

Athlete has significantly better physical fitness than the non-athlete.

Sample: For the present study 100 Sample were selected from Govt.First Grade College Bagalakot 50 subjects were athlete and 50 subject's non-athlete. The age range of subjects was 18-26 years Ratio were 1:1;

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Tools: Physical Fitness: Govt. First Grade College Bagalakot Physical Fitness test was used for measuring Physical Fitness.

Procedures of data

Collection for data collection first permission has been taken from respective sources than the despondence has been selected for data collection. Personal data sheet (PDS) has been given to collect the preliminary information with respect to subject's related variables then standardized test administered to the subjects. Before that rapport was established with subjects- And they have been told that their responses were kept confidential and the information is used for research purpose only.

Variable: Independent variable: 1) Players a) Athlete b) Non-Athlete

Dependent Variable: 1) Physical Fitness

Statistical Analysis and Discussion Athlete and non-athlete, Shows the mean S.D and t value of Physical fitness

Players	Mean	SD	SEM	N	DF	t	P
Athletes	54.83	3.74	0.54	50	98	7.31**	<0.01
Non Athletes	49.68	3.29	0.47	50			

Of the athlete is 54.83 and that of the non highly significant 't' = 7.31, df= 58, P< 0.01. Thus the first hypothesis is confirmed athlete have significantly better physical fitness than the non athlete

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EFFECT OF YOGIC TRAINING ON SELECTED SPEED AMONG FOOTBALL PLAYER

*Dr.MAHANANDA SHARANAPPA .H & *Dr.JYOTI .A. UPADHYE

Abstract : Materials and Methods: The purpose of the study was to find out the influence of aerobic training on selected speed football players. To achieve the purpose of the study thirty football players from Vijayapur- were selected at random and their age ranged from 14 to 16 years. The subjects were divided into two equal groups of fifteen each. Group I Experimental Group yoga training and Group II Control Group. The requirement of the experiment procedure testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a post test only random group design. The duration of experimental period was 8 weeks. After the experimental treatment, all the subjects were tested on speed. This final test scores formed as post test scores of the subjects. The post test scores were subjected to statistical analysis using analysis of co-variance. In all case 0.05 level of confidence was fixed to test hypotheses. The yoga training has been established as an effective means to improve on speed and cardio respiratory endurance among college men football players after undergoing Aerobic training for a period of 8 weeks. Results: The result of study shows that, there was significant improvements take place on speed football players. Conclusions: Improved speed after regular practice of yoga training is beneficial of football players.
Keyword: Yoga Training, Football Player

Introduction

Aerobic fitness refers to endurance, or the ability to sustain work for prolonged periods. The term "aerobic" implies that the oxygen necessary to accomplish the work is taken up by the individual during the activity. With longer exercise time, more aerobic metabolism is involved, and exercise lasting more than 12 minutes is mostly accomplished by aerobic metabolism. Aerobic exercise is not only helpful for reducing cardio vascular disease risk but there is also evidence that strongly supports the conclusion that physically active individuals have higher survival rates and live longer, Paffenberger et. al, 1984. Aerobic fitness is important for soccer players. A high maximal aerobic power has been correlated with work-rate during a game and a high aerobic capacity is reported to aid recovery during high-intensity intermittent exercise, typical of soccer performance and training. Yoga training on physical fitness and objective of match performance in soccer. Small-sided games and running are equally effective modes of aerobic interval training in junior soccer players.. An increase in the capacity of the oxygen transport system leads to a higher aerobic contribution to the energy expended, taxing the anaerobic energy system less and, consequently, reducing fatigue through sparing glycogen and preventing the decrease of muscle. The relevance of aerobic fitness for soccer players has been also confirmed by some relationship between aerobic power and competitive ranking, team level, and distance covered during the match Impellizzeri, F. M., Rampinini 2005. According to Baumgartner and Jackson 1991, the belief that exercises are good for one's health has been the topic of scientific debate for years. Serious scientific

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research designed to examine the role of exercise on mortality and morbidity was started in the 1950s and data now show that regular amounts of aerobic exercises reduce the risk of heart diseases and extend life expectancy. Ghislaire 1995 tells us that both theory and practical experience support the view that while engaging in activities which are intrinsically valuable we can at the same time seek certain extrinsic benefits with some certainty of success

Methods

The purpose of the study was to investigate the Influence of aerobic training on selected speed and cardio Respiratory Endurance measure among men College football player. To achieve the purpose of the present study, thirty football players were selected as subjects from Vijayapur random and their ages ranged from 14 to 16 years. The subjects were divided into two equal groups. Experimental group I (N=15) Aerobic training and Group II acted as control Group (N=15). The experimental groups were treated with their respective training for one hour per day for three days a week for a period of eight weeks. Speed measures in seconds and cardio respiratory endurance measures by metres.

Training Program: The training program was conducted for 60 minutes for session in day, three days in a week for a period of eight weeks duration. These 60 minutes included 15 minutes warm up, yoga training and 10 minutes warm down. Every weeks of intensity 5 % of intensity of load was increased from 60 % to 95 % of work load. The volume of yoga training prescribed based on the number of sets and repetition.

Statistical Analysis:

The collected data before and after training period of 8 weeks on the above variables due to influence of aerobic training was statistically analyzed with dependent 't' test to find out significant improvement between pre and post test. In all cases the criterion for statistical significance was at 0.05 level of confidence. ($P < 0.05$)

Table - I Selection of variables and criterion measures

S. No	Criterion Variables	Test Items	Units of Measurement
	Speed	50 Yards Run In Seconds	In Seconds

Table - II : THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON SPEED OF YOGA TRAINING AND CONTROL GROUPS

Group	Variables	Mean	N	S.D	"t" ratio
Yoga Training	speed	Pre 7.10	15	0.05	14.75*
		Post 7.00		0.04	
control		Pre 7.07	15	0.05	1.66
		Post 7.08		0.04	

*Significant at 0.05 level.

Table II shows that mean, standard deviation and 't' ratio on selected variables namely speed and cardio respiratory endurance experimental group. The obtained 't' ratio speed were 14.75*. The required table value was at the 0.05 level of significance. Since the obtained 't' values were greater than the table value. It was found that to be statistically required table value was 2.14 for DF 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value. It was found that to be statistically significant. Further the computation mean, standard deviation and 't' ratio on selected variables namely speed control group. The obtained 't' ratio speed were 1.66.

Conclusion

1. There was a significant improvement on selected dependent variable such as speed on influence on Yoga training on college men football players.
2. There was a significant differences between experimental and control group on speed football players.

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ASSESSMENT AND EVALUATION OF NUTRITIONAL REQUIREMENTS TO IMPROVE PERFORMANCE AMONG YOUNG ATHLETES

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Abstract : Nutrition can play an essential role in the health of young athletes as well as performance. Children and adolescents need adequate energy intake to ensure proper growth, development, and maturation. Young athletes have more nourishing needs than different young people in light of physical action and physical improvement. In this way, more research is required in the years to come to give better counsel to these young athletes. Nourishment can assume a basic part in the wellbeing of athletes and additionally execution. There are an extensive number of inquiries still unanswered and games nourishment counsel to the young athletes is to a great extent extrapolated from the grown-up populace. For instance, more youthful competitors for the most part depend more on fat as a fuel, have littler and restricted.

Methods- 30 subjects, between the ages of 10 and 18 years, participated in this study.

Results: Mean intake of energy, starches, proteins and fat were taken by prescribed dietary recompenses (RDA) and prerequisites were assessed. While a large number of the suggestions can fittingly be repurposed for the more youthful competitor consideration should be taken towards the distinctions in metabolic requirements and physiological contrasts. Dietary admissions of smaller scale and full scale supplements will be gathered by eye to eye meet, organized nourishment recurrence survey (FFQ)

Conclusions: On the premise of our outcomes, nutritious training for development of execution given to these subjects for advancing adhering to a good diet propensities.

Introduction

Optimal athletic performance results from a combination of factors including training, body composition, and nutrition.[1] Nutritional needs are higher during adolescence than at any other time in the lifecycle, regardless of the level of activity, because of rapid gain in height and weight.[2,3] Young athletes have more nutritional needs than other adolescents because of physical activity and physical development, especially those athletes who exercise strenuously in order to maximize their performance .[4]

Comprehensive reassessment of nutrient intakes and dietary behaviors is warranted at the present time because there is a strong emphasis on the importance of nutrition and body composition to enhance performance in young athletes' programs. Also young athletes have become more competitive, particularly boys, and this increased pressure to win could motivate athletes to alter their body weight and diet to improve their performance. [5]

Despite the increased interest in nutrition and use of dietary supplements to enhance performance.[5-7] some athletes might be consuming diets that are less than optimal.[8-9] Some athletes purposefully restrict their dietary intake to lose weight and maintain low body weight.[9-10]

Proper nutrition is a fundamental component of athletes' training and performance plan. Proper nutrition ensures that an individual is amassing the fuels necessary for the energy

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production needs related to activity and recovery. One of the areas needing to be addressed is the unique nutritional needs associated with intense exercise stress. However, our understanding of the effects of strenuous physiological training and nutritional variations in combination with exercise stress in youth athletes is greatly limited. This limited knowledge is most likely due to the ethical considerations of withholding nutrients and physiologically overstressing a vulnerable population such as children and adolescents still in the process of growth and development.

Our knowledge regarding the nutritional needs of youth is based on the needs related to proper growth and development in healthy children or those suffering from illness. Most of the knowledge we possess related to the physiological adaptations to training, exercise performance, and sports nutrition is based on research conducted in college aged, middle aged, and older adult populations. Therefore, most sports nutrition recommendations promoted in youth sport are actually based on findings in adult populations. While this is a starting point, research has shown that adolescent energy expenditure and metabolism can differ from those of their adult counterparts so many of these recommendations may not provide ideal insight into the nutritional needs of the youth athlete [11-13].

Methods

Dietary intakes of micro and macro nutrients were collected by face-to-face interview with structured food frequency questionnaire (FFQ). A dietitian provided verbal and written instructions on how to record food consumption. The use of food models helped the subjects to measure the quantity of foods.

The food frequency questionnaire categorized food items into five food groups: 1) mixed dishes (cooked or canned); 2) grains (different types of bread, cakes, biscuits and potato); 3) dairy products (dairies, butter and cream); 4) fruits and vegetables; and 5) miscellaneous food items and beverages (including sweets, fast foods, nuts, desserts and beverages) and was designed to obtain qualitative information about the usual food consumptions patterns with an aim to assess the frequency with which certain food items or groups are consumed.

The frequency response categories for each food item were defined separately in a row against the food list. For all frequency response categories, we mentioned the portion size repeatedly, to simplify responding. The number of frequency response categories was not constant for all foods. For foods consumed infrequently, we preferred to omit the high-frequency categories, while for common foods with high consumption, the number of multiple choice categories increased.

In addition to energy, dietary intake of carbohydrates, fats and proteins was evaluated. For the above, total grams and percentage of total energy were calculated.

ENERGY REQUIREMENTS

Basic nutrition is important for growth, achieving good health and scholastic achievement, and providing energy[14]. Sports nutrition enhances athletic performance by decreasing fatigue and the risk of disease and injury; it also enables athletes to optimize training and recover faster[14]. Balancing energy intake with energy expenditure is crucial to prevent an energy deficit or excess. Energy deficits can cause short stature, delayed puberty, menstrual dysfunction, loss of muscle mass and increased susceptibility for fatigue, injury or illness [15-16]. Energy excess can result in overweight and obesity [17].

Before puberty, minimum nutritional and energy requirements (caloric needs) are similar for boys and girls. Energy requirements for adolescents are more variable, depending on age, activity level, growth rate and stage of physical maturity (Table1)[14]. These recommended energy allowances are the minimum necessary to ensure proper growth and bodily functions.

Extra calories are needed during growth spurts and to replenish energy expended during athletic endeavours (14,18,19). For example, a 30 kg girl playing soccer for 60 min would expend an average of 270 calories, or a 60 kg boy playing ice hockey for 60 min would expend an average of 936 calories (19).

MACRONUTRIENTS

Macronutrients, such as carbohydrates, protein and fats, provide the fuel for physical activity and sports participation

Carbohydrates

Carbohydrates are the most important fuel source for athletes because they provide the glucose used for energy. One gram of carbohydrate contains approximately four kilocalories of energy. Glucose is stored as glycogen in muscles and liver. Muscle glycogen is the most readily available energy source for working muscle and can be released more quickly than other energy sources (14). Carbohydrates should comprise 45% to 65% of total caloric intake for four- to 18-year-olds (14,20). Good sources of carbohydrates include whole grains, vegetables, fruits, milk and yogurt.

Proteins

Proteins build and repair muscle, hair, nails and skin. For mild exercise and exercise of short duration, proteins do not act as a primary source of energy. However, as exercise duration increases, proteins help to maintain blood glucose through liver gluconeogenesis (15). One gram of protein provides four kilocalories of energy. Protein should comprise approximately 10% to 30% of total energy intake for four- to 18-year-olds (7). Good sources of protein include lean meat and poultry, fish, eggs, dairy products, beans and nuts, including peanuts.

Fats

Fat is necessary to absorb fat-soluble vitamins (A, D, E, K), to provide essential fatty acids, protect vital organs and provide insulation. Fat also provides the feeling of satiety. It is a calorie-dense source of energy (one gram provides nine kilocalories) but is more difficult to use. Fats should comprise 25% to 35% of total energy intake for four- to 18-year-olds (20). Saturated fats should comprise no more than 10% of total energy intake (14,16). Good sources of fat include lean meat and poultry, fish, nuts, seeds, dairy products, and olive and canola oils. Fat from chips, candy, fried foods and baked goods should be minimized.

MICRONUTRIENTS

Although there are many vitamins and minerals required for good health, particular attention should be devoted to ensuring that athletes consume proper amounts of calcium, vitamin D and iron. Calcium is important for bone health, normal enzyme activity and muscle contraction. The daily recommended intake of calcium is 1000 mg/day for four- to eight-year-olds and 1300 mg/day for nine- to 18-year-olds (20,21). Calcium is contained in a variety of foods and beverages, including milk, yogurt, cheese, broccoli, spinach and fortified grain products.

Vitamin D is necessary for bone health and is involved in the absorption and regulation of calcium. Current recommendations suggest 600 IU/day for four- to 18-year-olds (21). Normal values of vitamin D also vary depending on geographical location and race. Athletes living in northern latitudes or who train indoors (eg, figure skaters, gymnasts, dancers) are more likely to be vitamin D deficient (2). Sources of vitamin D include fortified foods, such as milk, and sun exposure. Dairy products other than milk, such as yogurt, do not contain vitamin D.

Iron is important for oxygen delivery to body tissues. During adolescence, more iron is required to support growth as well as increases in blood volume and lean muscle mass (14). Boys and girls nine to 13 years of age should ingest 8 mg/day to avoid depletion of iron stores and iron-deficiency anemia (20). Adolescents 14 to 18 years of age require more iron, up to 11

mg/day for males and 15 mg/day for females (20). Iron depletion is common in athletes because of diets poor in meat, fish and poultry, or increased iron losses in urine, feces, sweat or menstrual blood (15). Therefore, athletes, particularly female athletes, vegetarians and distance runners should be screened periodically for iron status (15). Iron-rich foods include eggs, leafy green vegetables, fortified whole grains and lean meat.

FLUIDS

Fluids, particularly water, are important nutrients for athletes. Athletic performance can be affected by what, how much and when an athlete drinks. Fluids help to regulate body temperature and replace sweat losses during exercise (21,22). Environmental temperature and humidity can affect how much an athlete sweats and how much fluid intake is required (14,22,23). Hotter temperatures and higher humidity make a person sweat more, and more fluid is needed to maintain hydration. Dehydration can decrease performance and put athletes at risk for heat exhaustion or heat stroke (14,22,23).

Proper hydration requires fluid intake before, during and after exercise or activity. The amount of fluid required depends on many factors, including age and body size (23,24) (Table 2). Before activity, athletes should consume 400 mL to 600 mL of cold water 2 h to 3 h before their event (14,15,23). During sporting activities, athletes should consume 150 mL to 300 mL of fluid every 15 min to 20 min (14,15,23). For events lasting less than 1 h, water is sufficient (17). For events lasting longer than 60 min, and/or taking place in hot, humid weather, sports drinks containing 6% carbohydrates and 20 mEq/L to 30 mEq/L of sodium chloride are recommended to replace energy stores and fluid/electrolyte losses (16,17,18,22). Following activity, athletes should drink enough fluid to replace sweat losses (Table 2). This usually requires consuming approximately 1.5 L of fluid/kg of body weight lost (14,23). The consumption of sodium-containing fluids and snacks after exercise helps with rehydration by stimulating thirst and fluid retention (14,15,23). For non-athletes, routine ingestion of carbohydrate-containing sports drinks can result in consumption of excessive calories, increasing the risks of overweight and obesity, as well as dental caries and, therefore, should be avoided (17)

RECOVERY FOODS

Recovery foods should be consumed within 30 min of exercise, and again within 1 h to 2 h of exercise, to help reload muscles with glycogen and allow for proper recovery. These foods should include protein and carbohydrates (15,19). Examples include graham crackers with peanut butter and juice, yogurt with fruit, or a sports drink with fruit and cheese (19)

MEAL PLANNING

One of the trickiest things to manage is meal planning around athletic events. The timing of meals is very important and needs to be individualized. It is important for athletes to discover which foods they like that also help to maximize performance. They should not experiment with new foods or new routines on the day of competition.

General guidelines include eating meals a minimum of 3 h before an event to allow for proper digestion and to minimize incidence of gastrointestinal upset during exercise. Meals should include carbohydrates, protein and fat. Fibre should be limited. High-fat meals should be avoided before exercise because they can delay gastric-emptying, make athletes feel sluggish and thereby adversely affect performance (15,19). For early morning practices or events, having a snack or liquid meal 1 h to 2 h before exercise, followed by a full breakfast after the event, will help ensure sufficient energy to maximize performance (15,19).

Pre-game snacks or liquid meals should be ingested 1 h to 2 h before an event to allow for digestion before start of exercise (15,19). Snacks can include fresh fruit, dried fruit, a bowl of cereal with milk, juice or fruit-based smoothies. During an event, sports drinks, fruit or

granola bars can be ingested to help refuel and keep energy levels high.

REACHING THE FINISH LINE

A well-balanced diet is essential for growing athletes to maintain proper growth and optimize performance in athletic endeavours. An ideal diet comprises 45% to 65% carbohydrates, 10% to 30% protein and 25% to 35% fat. Fluids are very important for maintaining hydration and should be consumed before, during and after athletic events to prevent dehydration. Timing of food consumption is important to optimize performance. Meals should be eaten a minimum of 3 h before exercise and snacks should be eaten 1 h to 2 h before activity. Recovery foods should be consumed within 30 min of exercise and again within 1 h to 2 h of activity to allow muscles to rebuild and ensure proper recovery.

Results

Table 1 shows (RDA) the energy and macronutrients' intake of the athletes. Mean intakes of energy, carbohydrates, proteins and fat were higher than recommended dietary allowances (RDA) value (108.6, 129.8, 190.6 and 106.3 percent, respectively).

Table 1 - RDA for athletes

NUTRIENT	DAILY REQUIREMENTS
calories(kcal)	3000-5000
proteins(g)	60-90
fat(g)	80-150
calcium(g)	0.6-0.8
Iron (mg)	20-30
Vitamin A	750-1000
Thiamine (mg)	2.0-3.0
riboflavin(mg)	2.0-3.2
Nicotinic acid(mg)	26-36
Ascorbic acid(mg)	50-80
Folic acid(micro gm)	50-100
Vit B12 (micro gm)	2-4
Vit D(I.U)	400

Table 2 : Mean intake of energy, starches, proteins and fat will be taken by prescribed dietary recompenses (RDA)

VARIABLES	MEAN	SD	MEAN RDA%
Carbohydrates	472.7	168.6	129.8
protien	121.4	35.3	190.6
fat	103.2	25.3	106.3
energy	3162.35	946.2	108.6

DISCUSSION

The current study is the first assessment of the nutrition status of young male wrestlers in Iran. The findings of this study identify important nutrition inadequacies in young wrestlers. Although there is a paucity of research on these athletes with which our findings can be compared, the result of this investigation can be used to inform future research in this population and development of specific nutrition guideline.

Research regarding the nutritional needs of young competitive athletes is sparse and is primarily composed of investigations of youth-adult differences. In addition to the limited research, the majority of our current knowledge in the adult population is based on differences between typical adults compared to their more active counterparts. Research to date suggests similarities in the caloric and macronutrient needs of active adults and their younger

counterparts; however, youth-adult differences in fuel utilization have also been clearly demonstrated. In addition to the energy needs of highly active youth, nutritional intake plays a critical role in the growth and development of young athletes and should be a principal emphasis at this stage in their lives.

CONCLUSIONS

On the basis of our results, nutritional education should be given to these subjects and their families for promoting healthy eating habits. Also, we recommend that the nutritional status of these athletes should be corrected for achieving optimal performance.

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ROLE OF SPORTS PROGRAMS OF KANNADA 24X7 NEWS CHANNELS IN PROMOTING SPORTS ACTIVITIES AMONG YOUTH: A STUDY OF UDUPI CITY

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Abstract : Sports have been one of the significant content of mass media for the past several years. From the live coverage of sports events to the special discussions, sports analysis, Interviews of sports personalities are becoming popular among the TV channels. Today, not only the sports channels but also the 24x7 news channels are distributing the sports contents by reserving a specific time in a day for sports news. Today almost all the leading Kannada 24x7 news channels are telecasting the sports programs on regular basis following the same patterns of national channels. Since Youth are the primary targets of these sports programs, the present study focuses on the role of Sports Programs of Kannada 24x7 News Channels in Promoting Sports Activities among Youth. Udupi city of Karnataka state is selected to study the problem. The primary data collected from 220 respondents from the city randomly through structured questionnaire. SPSS will be used to analyze the data.

Key words: Sports Programs, Kannada News Channels, Sports and Media, Sports Journalism, Udupi

Introduction:

The mass media is playing significant role in disseminating news and information in the present days. Digital media along with the traditional mass communication devices are working all around the clock to collect, edit, and distribute the news contents to the mass audience. In the earlier days politics was the major components of news in majority of the media, but today due to the diversified audience almost all the media reserved separate sections and time slots for other category of news. Sports, cinema, entertainment, crime, business etc. are the other leading categories of news which has its own specialized group of viewers and audience.

With the expansion of 24x7 news channels in the country in almost all the regional languages gave more scope to the news and information in different categories, today sports news has become an inseparable components of these 24x7 news channels. Due to the increasing popularity of league sports and international games in the country, especially among youth, the news channels are also working hard to deliver quality and updated sports contents to the target audience. To make the sports components more attractive and interesting the news channels are also conducting special sports discussions with sports experts, Sports analysis, interviewing the sports personalities and experts, special stories on sports and sports persons etc.

Kannada news channels are also not lagging behind in delivering the sports contents through news and other programs. Today almost all the leading Kannada news channels reserved a specific time in a day for sports programs. These sports programs contain news on major development in the sports and games in national and international level. These

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programs not only increase the popularity of the sports, but also contributing positively to the TRP of the news channels.

League sports such as Indian Premiere League (Cricket), Pro Kabaddi League (Kabaddi), Indian Super League (Football), Hockey India League (Hockey), Premiere Badminton League (Badminton) etc. along with state leagues of different sports have brought the new trends in the sports and games in India. The sports lovers are keen to watch the news and analysis of these leagues and sports in their regional languages. As a result many regional news channels have launched special programs for sports and games.

Review of literature:

Ajay Somra and Amit Kakkar (2020) examines that the sports columns in newspapers have become extremely popular. There is probably more universal reader interest in the sports pages, than in any of the other parts of the newspapers. Sports throughout the world have assumed an importance beyond the recreational aspect. As a result readers are demanding more & more reading matter on sports events that's why newspapers creating a major role in the propagation & promotion of sports therefore this study is helpful to find out space devoted to a particular sport and the importance given to National and International sports. This study primarily builds on the quantitative content analysis of selected mainstream dailies of Jaipur to track down the trends in coverage of sports in Indian main stream print media and bring out the comparative analysis between them.

Mahesh Kumar (2018) reported that sports and media have both a global and a local operation. They are bound to work together. The value of sport to the companies has increased very much and companies are investing a lot in the sport. The companies raise from time to time, the different issues relating to sports and that is beneficial to the sports. The media has influenced the sport very much and it has been also accepted by the sports bodies and athletes. Sports media has promoted the values associated with capitalism, nationalism and racism. The media has also promoted the viewers, dramatization and personalization.

Norm O'Reilly, Milena Parent, Ida Esther Berger and Benoit Seguin (2012) indicate that online discourse related to sport participation among youth is very limited. When discussion does take place, five themes emerge: benefits, advice-seeking, finding common interests, learning new sports, and challenges. This research provides impetus for future work in the content area and in the use of the netnography method. It is limited by the lack of online content on the topic area by the target group. The results provide important understanding, direction and guidance to sport administrators working for government, sport organizations and organizations who market their products and services to youth through sport.

Kirsten Lange M. (2002) the aim of his research project was to construct a profile of Australian Internet sport journalists within the context of recent developments in the field of sport and new media. In terms of print journalism, some researchers have previously examined the educational background, working practices and self-assessment of print sport journalists. Similar themes were explored in this thesis, using semi-structured interviews with thirteen Internet sport journalists. This thesis provides important insights into the working practices of Australian Internet sport journalists and the online environment, an occupational field that is currently in a considerable state of flux.

Statement of the problem:

The study entitled "Role of Sports Programs of Kannada 24x7 News Channels in Promoting Sports Activities among Youth: a study of Udupi City" tries to understand the how sports programs of Kannada news channels are influencing Youth

Objectives of the study:

- To study the popularity of sports programs of Kannada news channels
- To understand the opinion about the contents of Sports Programs of Kannada News Channels
- To study the role of sports programs in promotion of sports events
- To understand the importance given to regional sports events

Methodology:

Descriptive research design is adopted for the present study. Descriptive research design collects data that are used to answer a wide range of questions pertaining to a particular population or group. For this study Udupi city of Karnataka state is selected to study the problem. The primary data was collected from 220 respondents from the city randomly through structured questionnaire. SPSS will be used to analyze the data.

Findings and Discussion:**Table 01: Gender**

Gender	Frequency	Percentage
Male	112	55.45
Female	88	44.55

Table 01 shows that among the total respondents 55.45% (N=112) are Males and 44.55% (N=88) are females.

Table 02: Age

Age	Frequency	Percentage
12 to 18 years	52	23.64
18 to 24 Years	71	32.27
24 to 30 Years	97	44.09

The data organized in Table 02 reveals that 44.09% (N=97) respondents belongs to the age group of 24 to 30years, 32.27% (N=71) respondents belongs to the age group of 18 to 24 years and 23.64% (N=52) respondents are belongs to the age group of 12 to 18 years.

Table 03: Education

Occupation	Frequency	Percentage
SSLC or Less.	13	5.91
PUC	22	10.00
Under Graduation	45	20.45
Post Graduation	94	42.73
Other	46	20.91

Table 03 denotes that educational qualification of the respondents, a great majority i.e. 45.73% (N=94) of the respondents are completed post graduation, followed by 20.91% (N=46) holds other degrees, 20.45% (N=45) are completed under graduation, 10% (N=22) are completed PUC and very less number of respondents i.e. 5.91% are qualified only SSLC or less.

Table 04: Monthly Income

Income	Frequency	Percentage
Less than 15000	24	10.91
15000 to 25000	37	16.82
25000 to 35000	102	46.36
35000 and above	57	25.91

Table 04 categories the respondents on the basis of their monthly income, Majority of the respondents earn 46.36% (N=102) Rs. 25000 to 35000 in a month, followed by 25.91%

(N=57) earn Rs. 35000 and above, 16.82% (N=37) earn Rs 15000 to 25000, only 10.91% (N=24) respondents earn less than Rs 15000 in a month.

Table 05: Occupation

Occupation	Frequency	Percentage
Student	57	25.91
Private Sector	59	26.82
Govt. Sector	28	12.73
Self Employment	57	25.91
Other	19	8.64

Table 05 divides the respondents on the basis of their occupation, 26.82% (N=59) respondents working in private sector, same number of respondents i.e. 25.91% (N=57) are students and doing self employment, 12.71% (N=28) respondents are working in government sector, 8.64% (N=19) respondents are doing other occupation.

Table 06: Watching Sports programs on Television

Sports Programs	Frequency	Percentage
Watching	188	85.45
Not Watching	32	14.55

Table 06 denote the sports program watching habits of the respondents, a great majority of the respondents i.e. 85.45% (N=188) are watching sports programs on television whereas, very less i.e. 14.55% (N=32) are not watching sports programs on television.

Table 07: Favorite Sports

Sport	Frequency	Percentage
Cricket	138	62.73
Football	32	14.55
Hockey	7	3.18
Tennis	11	5.00
Kabaddi	30	13.64
Other	2	0.91

Table 07 explains the favorite sports of the respondents, more than half of the total respondent i.e. 62.73% (N=138) said cricket is their favorite sport, followed by 14.55% (N=32) likes football, 13.64% (N=30) likes kabaddi, 5% (N=11) and 3.18% (N=7) likes Tennis and Hockey respectively, very less respondents i.e. 0.91% (N=2) said that they like other sports.

Table 08: Watching LIVE coverage of sports events in TV

Live Coverage in TV	Frequency	Percentage
Regularly Watching	97	44.09
Sometimes	89	40.45
Not Watching	34	15.45

Table 08 depicts the habits of watching live sports coverage in television among the respondents, majority of the respondents i.e. 44.09% (N=97) regularly watch, 40.45% (N=89) sometimes watches the live coverage and only 15.45% (N=34) respondents said that they don't watch the live coverage of sport events.

Table 09: Watching Kannada News Channels

Watching Kannada News Channels	Frequency	Percentage
Always	119	54.09
Sometimes	71	32.27
Rarely	30	13.64

Table 09 shows the habits of watching Kannada news channels among the respondents, more than half of the respondents i.e 54.09% (N=119) always watch Kannada news channels, followed by 32.27% (N=71) sometimes and only 13.64% (N=30) rarely watch Kannada News Channels.

Table 10: Frequency of Watching Kannada News Channels

Frequency of Watching Kannada News Channels	Frequency	Percentage
Less than one year	13	5.91
1 to 3 years	44	20.00
3 to 6 years	75	34.09
More than 6 years	88	40.00

The information depicted in Table 10 explains the frequency of watching Kannada News Channels, Majority of the respondents i.e. 40% (N=88) said they have been watching it for more than 6 years, followed by 34.09% (N=75) watching from 3 to 6 years, 20% (N=44) watching from 1 to 3 years, and 5.91% (N=13) said that they have been watching it from last one year.

Table 11: Habits of watching sports programs on Kannada News Channels

Sports Program watching Habits	Frequency	Percentage
Very often	32	14.55
Often	83	37.73
Sometimes	67	30.45
Rarely	29	13.18
Never	9	4.09

Table 11 indicates respondents' habits of watching sports programs on Kannada News Channels, 37.73% (N=83) often watch sports programs in Kannada news channel, followed by 30.45% (N=67) sometimes, 14.55% (N=32) very often, 13.18% (N=29) rarely watch sports programs whereas only 4.09% (N=09) said that they never watch sports programs in Kannada news channels

Table 12: Purpose of Watching Sports Programs in Kannada News Channel

Purpose	Frequency	Percentage
To get Knowledge on Sports	132	60.00
News and Information	109	49.55
Sports Analysis from Experts	74	33.64
Entertainment	39	17.73
Time Pass	57	25.91
Other	7	3.18

In the present study the researcher made an attempt to understand the purpose of watching sports programs among respondents, To get knowledge on sports is the main purpose to watch sports programs i.e. 60%, followed by 49.55% watch sports program for news and information 33.67% to listen sports analysis from experts, 25.91% for spending time, 17.73% for entertainment, and 3.18% watch sports programs for other reasons.

Table 13: Favorite Sports Program

Sports Program	Frequency	Percentage
Boundary Line (TV9 Kannada)	117	53.18
Run Bhoomi (News First)	22	10.00
Sports Time (Suvarna News)	48	21.82
Sports Club (Digvijaya)	15	6.82
IPL Dhamaka (BTV)	13	5.91
Other	5	2.27

Table 13 explains the favorite sports programs of the Kannada news channel among the respondents, more than half of the respondent i.e.53.18% (N=117) said Boundary line is their favorite sports program, followed by 21.82% (N=48) like to watch Sports Time, 10% watch Run Bhoomi, 6.82% watch Sports Club, 5.91% and 2.27% said IPL Dhamaka and 2.27% said other sports programs are their favorites.

Table 14: News Channel giving good coverage to Sports News

News Channel	Frequency	Percentage
TV9 Kannada	93	42.27
Suvarna News	70	31.82
News 18 Kannada	19	8.64
Public TV	19	8.64
News First Kannada	8	3.64
BTV Kannada	3	1.36
Digvijaya TV	8	3.64

The data represented in the table 14 shows the opinion of the respondents regarding the coverage of sports in Kannada News Channels. Majority of the respondents i.e. 42.27% (N=93) says TV9 Kannada is giving good sports coverage, followed by 31.82% (N=70) says Suvarna News, same number of respondents i.e. 8.64% (N=19) says News 18 Kannada and Public TV is giving good sports coverage, very less number of respondent said News First Kannada, Digvijaya TV and BTV news is giving good sports coverage.

It is clear from the study that in viewers' perspective TV9 Kannada and Suvarna News are the two channels giving good coverage of sports.

Table 15: Coverage to the Sports events in Kannada News Channels

Sports Event	Frequency	Percentage
Cricket	169	76.82
Football	13	5.91
Hockey	9	4.09
Kabaddi	21	9.55
Tennis	4	1.82
Other	4	1.82

Table 15 explains the opinion of the respondents about the coverage given to different sports events in Kannada news channels. A great majority of the respondents i.e. 76.82% (N=169) opined that more coverage is given to cricket, followed by 9.55% (N=21) said Kabbadi, 5.91% (N= 13) said football, 4.09% said Hockey, only 1.82% (N=4) said coverage is given to Tennis and Other sports.

Table 16: Opinion about Kannada News Channels giving more coverage to Cricket and Ignoring Other Sports

Opinion	Frequency	Percentage
Strongly agree	129	58.64
Agree	33	15.00
Neutral	38	17.27
Disagree	7	3.18
Strongly Disagree	13	5.91

Table 16 examines the opinion of the respondents about "Kannada News Channels giving more coverage to Cricket and Ignoring Other Sports" more than half of the respondents i.e. 58.64% (N=129) strongly agreed the statement, followed by 15% (N=33) agreed, 17.27%

(N=38) remains neutral, 3.18% (N=7) disagreed and 5.91% (N=13) strongly disagreed the above statement

Table 17: Preferred Sports program format

Program Format	Frequency	Percentage
Sports news	62	28.18
Sports Discussion	90	40.91
Sports Interview	34	15.45
Sports Special Stories	28	12.73
Other	6	2.73

Table 17 depicts the program format preference of the respondents, majority of them i.e. 40.91% (N=90) preferred to watch Sports discussions, followed by 28.18% (N=62) prefer sports news, 15.45% (N=34) prefer Sports interviews, 12.73% (N=28) prefer special stories on sports, and only 2.73% (N=6) prefer to watch other types of sports contents in Kannada news channels.

It is clear from the study that more number of people likes to watch sports discussion than other types of programs in Kannada News Channels.

Table 18: Opinion about sports programs of Kannada News Channels

Opinion	Good		Average		Poor	
	Frequency	%	Frequency	%	Frequency	%
Quality	88	40.00	98	44.55	34	15.45
Content	92	41.82	102	46.36	26	11.82
Presentation	77	35.00	107	48.64	36	16.36
Graphics	109	49.55	104	47.27	7	3.18
Language	77	35.00	121	55.00	22	10.00

Table 18 tries to explain overall opinion of the respondents towards the sports programs of Kannada news channel, Majority of respondents i.e. 44.55% (N=98) opined that quality of the program is average, followed by 40% (N=88) said it is good and only 15.45% said quality is poor. Nearly half of the respondents i.e. 46.36% (N=102) opined that contents of sports program are average, followed by 41.82% (N=92) said it is good and only 11.82% (N=26) said it is poor. Nearly half of the respondents i.e. 48.64% (N=107) said that presentation of information in sports programs is average, followed by 35% (N=77) said it is good and only 16.36% (N=36) said it is poor.

According to majority of the respondents i.e. 49.55% (N=109) graphics in sports programs is good, followed by 47.27% (N=104) said it is average, and only 3.18% (N=7) said it is poor. The researcher also tried to collect opinion about the language used in sports programs of Kannada news channels, a great majority of the respondents i.e. 55% (N=121) said it is average, 35% (N=77) said it is good, and only 10% (N=22) said that the language used in the sports program is poor

Table 19: News Channels giving more updated news

News Channels	Frequency	Percentage
TV9 Kannada	98	44.55
Suvarna News	29	13.18
News 18 Kannada	15	6.82
Public TV	23	10.45
News First Kannda	29	13.18
BTV Kannada	7	3.18
Digvijaya TV	19	8.64

The researcher made an attempt to find out which Kannada news channel is delivering more updated news to the viewers, data arranged in table 19 explains that majority of the respondents i.e. 44.55% (N=98) said that TV9 kannda is giving more updated news, followed by same number of respondents i.e. 13.18% (N=29) said Suvarna news and News First Kannda, 10.45% (N=23) said Public Tv, 8.64% (N=19) said Digvijaya TV, 6.82% (N=15) said News 18 Kannada 3.18% (N=7) said BTV Kannada is giving more updated sports news

Table 20: Convenience of Time of telecasting Sports programs

Language	Frequency	Percentage
Convenient	187	85.00
Not Convenient	33	15.00

Table 20 indicates the time convenience for the respondent to watch sports programs, A great majority of the respondents said that the time of telecasting sports program in Kannada news channel is convenient to them, whereas only 15% (N=33) said it is not convenient to them.

Table 21: Opinion about coverage given to regional sports and games

Coverage	Frequency	Percentage
Good Coverage	22	10.00
Average Coverage	95	43.18
Poor Coverage	103	46.82

Respondents' opinion on regional sports coverage in Kannada news channel is organized in the table 21, which shows that nearly half of the respondents i.e. 46.82% (N=103) are saying Kannada news channels are giving poor coverage to regional sports and games followed by 43.18% (N=95) said it is average and only 10% (N=22) opined that regional sports coverage is good in Kannada news channel.

Conclusion:

The present study is conducted to study the role of sports programs of Kannada news channels in promoting sports activities among youth. Udupi city of Karnataka state was selected for the study. The data collected from 220 youths are analyzed in various categories. It is clear from the study that Sports programs of Kannada news channels are playing significant role in disseminating sports news and information, majority of the youth in Udupi city watch sports programs in Kannada news channels and the time of telecasting these sports programs is convenient to them. Since majority of the Youth's favorite sports is cricket, the TV channels also giving more news about cricket, at the same time majority of the respondents are strongly agreed that the Kannada news channels are ignoring other sports. Among the other Kannada news channel sports programs' Boundary Line of TV9 Kannada is the popular among youth because it is giving more updated news and good coverage to the sports. The present study also revealed that in respondents' opinion about the quality, content, presentation and language used in sports programs is average and graphical representation in sports programs are appreciated by the respondents. When it comes to the coverage of regional sports, a great majority of the youth said that the Kannada news channels are not giving enough coverage to the regional sports and games.

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EFFECT OF BRAMARY PRANAYAMA PRACTICE ON SYSTOLIC AND DIASTOLIC BLOOD PRESSURE OF SPORTS PERSONS

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Abstract: To study the effect of Bramary Pranayama practice on selected physiological variables of sports person. Subjects- 20 male, healthy different sports patient's volunteers in the age group of 17 to 19 years athletes selected this study. Subjects were divided randomly into two groups of 20 individuals act as subjects and control. Interventions- Bramary Pranayama training will be conducted 45 minutes daily for 6 week. Outcome Measures- Cardiovascular efficiency will be tested by using parameters like 1. Before exercise systolic blood pressure 2. After exercise systolic blood pressure 3. Before exercise diastolic blood pressure 4. After exercise diastolic blood pressure. **Results-** Bramary Pranayama training for six week resulted in significant different to post and pre test of physiological variables, its effect on systolic and diastolic blood pressures. **Conclusion-** Our study shows that Bramary Pranayama training Under consideration of all comparisons, the Before exercise systolic blood pressure, After exercise systolic blood pressure, Before exercise diastolic blood pressure and After exercise diastolic blood pressure significantly decreased more in the exercising groups compared to the control groups

Keyword : Diastolic, cardiovascular, systolic, blood, physiology etc...

Introduction

world health report The modern life styles of the individuals pose to get risk of cardiorespiratory diseases and disabilities, blood pressure, heart diseases especially in developing countries where lack of health awareness and resources. In India, CVD is affecting the heart or blood vessels, cardiovascular diseases are the leading cause of death and more than 80% of CVD is due to ischemic heart disease(Deaton C et.al. 2011). The death rate due to CVD in India is approximately 300 per one lakh population which is higher than global average death rate, approx. 250 per one lakh population (Murray CJ et.al. 2020) . It is reported that leading life style such as lower socioeconomic background, tobacco use, low consumption of fruits and vegetables are the major risk factors associated with cardiorespiratory diseases Yusuf S et.al. 2004. The yogic practice like pranayama can be the solution to overcome the situation by significantly reducing the risk of developing cardiorespiratory diseases and eventually to reduce the risk of morbidity and mortality, pranayam practice can be reduce the so many diseases (Al-Mallah MH et.al. 2018). *Bhrāmārī Prāṇāyāma* practice is effective in improving the pulmonary function among the adolescents, practice of bramary pranayam effect to cardiovascular function Kuppusamy (2016.) pranayam is improvement of lung volumes and capacities in healthy and diseased of restrictive & obstructive respiratory diseases . this study selected bramari pranaya 6week practice andbramari pranayam practice effect on blood pressure, before and after exercise. systolic blood pressure, measures the pressure in your arteries when your heart beats. The second number, called diastolic blood pressure, measures the pressure in your arteries when your heart rests between beats.

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Methodology

Present study the “effect of Bramary Pranayama practice on Before exercise systolic blood pressure, After exercise systolic blood pressure, Before exercise diastolic blood pressure and After exercise diastolic blood pressure of sports persons”.

Selection subject

20 different sports person from JS athletic sports club Bangalore age range between 17 to 19 Subjects were divided into two equal groups one group under underwent Bramary Pranayama as experimental second one divided practice any kind of yoga practice control.

Training program

The scientifically design Bramary Pranayama program was given the subject of experimental group duration of training for 6 days per week was 80 days for the subject there went respect to training underwent strictly supervision through out of the study.

Statistical procedure

The following statistical used to find the impulse of the 80 days pranayama practice effect on physiological variables to test significant for the different between pre and post the period t test was used. This using software is SPSS.

Statistics Analyzed Of Bramary Pranayam Practice Effect On Systolic And Diastolic Blood Pressure Of Sports Persons

Before exercise pre test and post test							
ITMS		Mean	N	Std. Deviation	Std. Error Mean	T	Sig. (2-Tailed)
Pair 1	Before Exercise, Systolic Blood Pressure Pre Test	117.8000	10	10.41153	3.29242	-2.409	.039
	Before Exercise, Systolic Blood Pressure Post Test	116.4000	10	10.03549	3.17350		
Pair 2	Before Exercise, Diastolic Blood Pressure Pre Test	67.2000	10	6.01480	1.90205	-7.060	.000
	Before Exercise, Diastolic Blood Pressure Post Test	64.8000	10	5.67255	1.79382		

Pair 1. Result show that there is significance difference between pre test and post test of before exercise Systolic Blood Pressure. Bramari pranayama training effect on systolic blood pressure of before exercise. we have mentioned data like Bramari pranayama training group pre test mean was 117.8000 (SD=10.41153), after the 6week Bramari pranayama training post test, we have got mean level 116.4000 (SD = 10.03549). The information related to bramari pranayama training effect before exercise, systolic blood pressure graphically depicted in figure 1

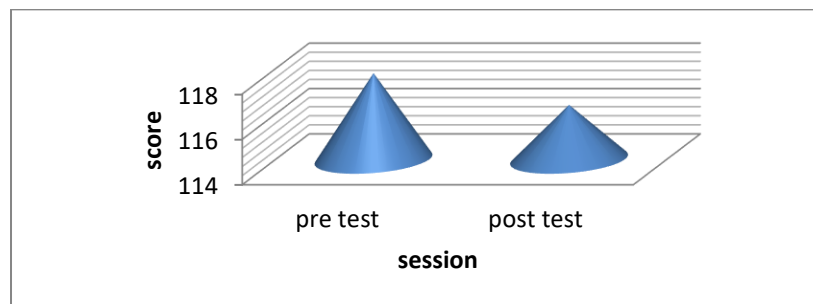
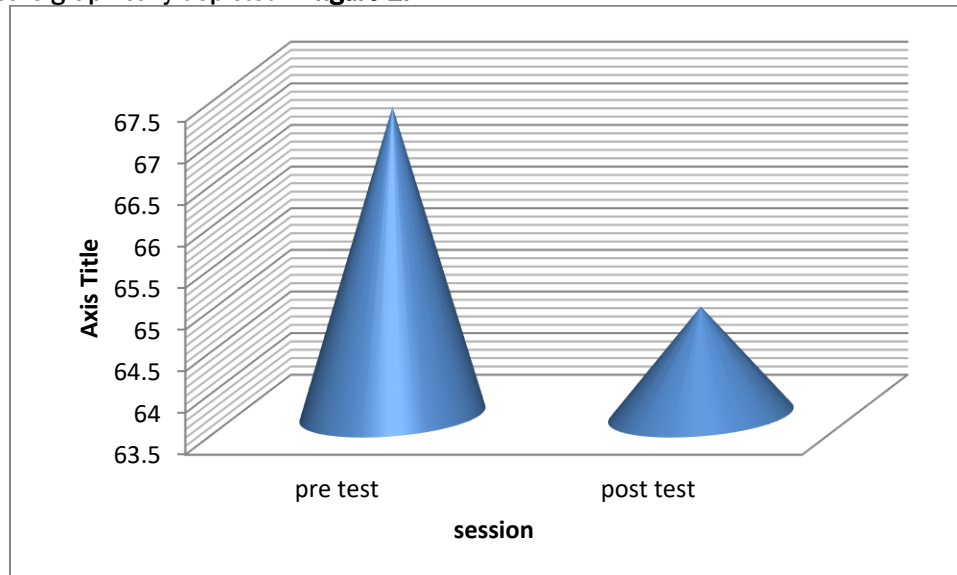


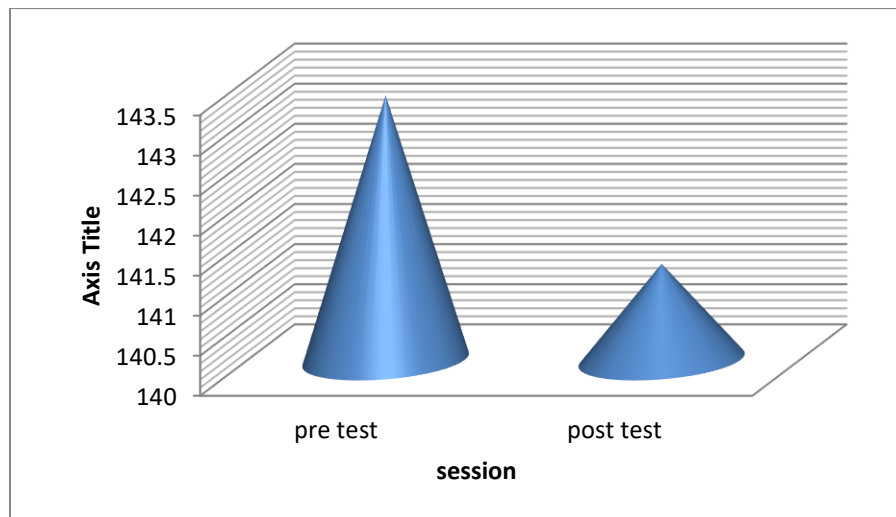
Table 1. Pair 2. Result show that there is significance difference between pre test and post test of before exercise, Diastolic blood pressure. Bramari pranayama training higher effect on before exercise of Diastolic blood pressure. we have mentioned data like bramari pranayama training group pre test mean was 67.2000 (SD=6.01480), after the 6week bramari pranayama training post test, we have got mean level 64.8000 (SD = 5.67255). The information related to bramari pranayama training effect on before exercise, Diastolic blood pressure graphically depicted in figure 2.



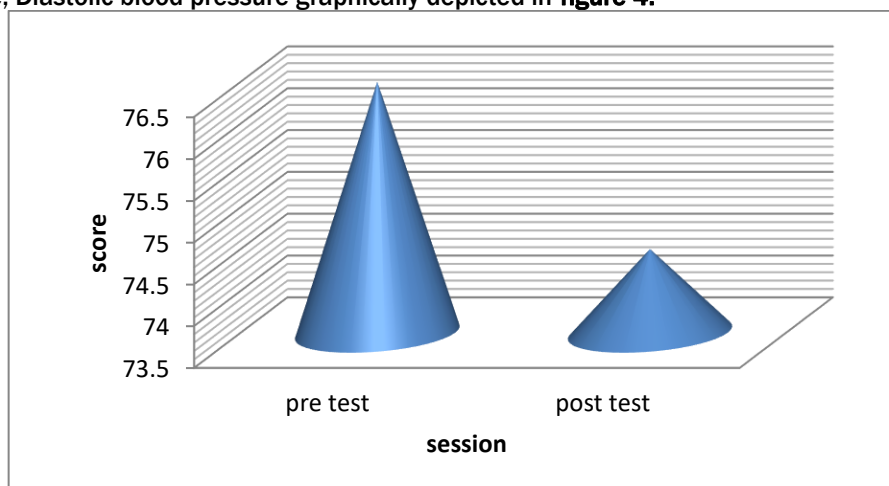
After exercise pre test and post test							
		Mean	N	Std. Deviation	Std. Error Mean	T	Sig. (2-Tailed)
Pair 3	After Exercise Systolic Blood Pressure Pre Test	143.3000	10	22.08594	6.98419		
	After Exercise Systolic Blood Pressure Post Test	141.2000	10	22.29001	7.04872	-11.699	.000
Pair 4	After Exercise Diastolic Blood Pressure Pre Test	76.5000 ^a	10	8.10007	2.56147		
	After Exercise Diastolic Blood Pressure Post Test	74.5000 ^a	10	8.10007	2.56147		

A. The Correlation And T Cannot Be Computed Because The Standard Error Of The Difference Is 0.

Pair 3. Result show that there is significance difference between pre test and post test of after exercise, systolic blood pressure. Bramari pranayama training higher effect on after exercise among systolic blood pressure. we have mentioned data like Bramari pranayama training group pre test mean was 143.3000 (SD=22.08594), after the 6week Bramari pranayama training post test, we have got mean level 141.2000 (SD = 22.29001). The information related to bramary pranayama training effect after exercise, systolic blood pressure graphically depicted in figure 3



Pair 4. Result show that there is no significance difference between pre test and post test of after exercise, Diastolic blood pressure. above result is one of null hypothesis. we have mentioned data like bramari pranayama training group pre test mean was 76.5000^a (SD=8.10007), after the 6week bramari pranayama training post test, we have got mean level 74.5000^a (SD = 8.10007). The information related to bramari pranayama training effect after exercise, Diastolic blood pressure graphically depicted in **figure 4**.



Discussion and finding:

This study result show that bramari pranayam effect on systolic blood pressures of before and after exercise groups and bramari pranayam effect on diastolic blood pressures of before and after exercise groups. So many results related this study such as, Nehe Sanjay and Harsoda J M (2019) Effects of pranayamas on cardiorespiratory variables among healthy individuals. A total of 181 students were screened for Cardio-respiratory parameters and there was significant reduction in Pulse Rate, Systolic blood pressure, Diastolic blood pressure, and Respiratory rate. **Shinija 2018** conducted to assess the Effectiveness of Bhramari

Pranayama on Hypertension among Adults residing in Kannanoor Community at Kanyakumari District. This study result show that Data pre- test level of systolic blood pressure, majority of samples 17 out of 30 had mild level of Hypertension, diastolic blood pressure and there was a significant association in reduction of systolic and diastolic blood pressure. with Age, Sex, Height. Pramanik T et.al. (2010) evaluated the immediate effect Bhramari pranayama, a slow breathing exercise for 5 minutes on heart rate and blood pressure. The result indicated that slow pace Bhramari pranayama for 5 minutes, induced parasympathetic dominance on cardiovascular system.

Conclusion:

Bramary pranayam is effect on blood pressure in this study indicate, Before exercise systolic blood pressure, After exercise systolic blood pressure, Before exercise diastolic blood pressure and After exercise diastolic blood pressure significantly decreased more in the exercising groups compared to the control groups,

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POLYMETRIC TRAINING AND ITS BENEFITS

NAGARAJA.D* & VIRUPAKSHA.N.D*

Introduction

The concept of "Plyometrics" is derived from the Greek word "Pleythyein" (to augment or increase). Dr. Yuri Verkhoshansky, regarded as the "father of Plyometrics," created the technique of Plyometrics as a training approach in the former Soviet Union in the 1970s. Dr. Verkhoshansky's workouts helped the Soviet Bloc countries dominate the Olympics and other sports events in the 1970s. This drew the attention of Fred Wilt, an American track and field coach who sought to look into how the Soviets were training. Wilt returned to the United States after studying their tactics, coining the term 'Plyometrics' in 1975, and immediately implemented the training approach with his athletes.

Plyometric training is one of the most frequently overlooked forms of exercise. It involves jumping, bounding, and other forms of rapid force production. Plyometric exercises are mainly beneficial for all athletes, but Plyometric are beneficial for nearly everyone.

Plyometric training in contrast to gradual movements aimed at increasing muscle strength and power consists of rapid, explosive movements aimed at increasing speed and power. This may be accomplished by executing a variety of workouts that train our bodies and minds to activate more muscle fibres faster in order to improve the efficiency and speed of our muscular contractions. As a result, we will gain more power in the long run. To get a bit deeper into this, we'll go over the stretch-shortening cycle (SSC), which is the foundation of all plyometric activities.

Benefits of Plyometric training

- 1) **Increases the Strength in muscles and fast-twitch fibres** : Plyometric training purpose is fast maximise muscular contraction. In athletics, having a high degree of physical power is obviously desired, but increasing and strengthening the muscle fibres responsible for translating strength into speed is also necessary. Fast-twitch fibres are what they're called, and plyometric exercise can help strengthen them and enhance the ratio of fast-twitch to slow-twitch fibres in your body. Faster muscular contractions result from stronger fast-twitch a fibre, which leads to increased power.
- 2) **Increases the strength of tendons** : Increase the strength of your tendons to aid in the production of power by your muscle fibres. Additionally, stronger tendons result in fewer injuries. By putting stress on the tendons in a controlled situation, plyometric strengthen and enhance their suppleness. Numerous studies show that plyometric and dynamic stabilization/balance exercises can improve movement biomechanics and minimise the risk of ACL damage in neuromuscular training.
- 3) **Plyometric Increases the Heart Rate** : We usually assume that cardio workouts such as running, rowing, swimming, and elliptical trainers are the only ways to enhance cardiovascular fitness, but resistance exercises such as squats and jumping exercises such as plyometric are also beneficial. After a rigorous set of box jumps or depth jumps, your heart will soon race and your lungs will burn. Heart and lungs strengthening is an excellent strategy to lower your risk of heart disease, stroke, and high blood pressure.

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- 4) **Plyometric exercises burns calories** : Plyometric are metabolically challenging, most plyometric activities are total-body workouts, which means you'll burn a lot of calories in a short amount of time because virtually every major muscle is engaged at the same time. Raise your heart rate, allowing you to burn calories after you've finished (a process known as extra post-exercise oxygen consumption) and reap the advantages of a supercharged metabolism.
- 5) **Plyometric Improves the Athletic Performance** : Plyometric training can help you enhance your athletic abilities. Because they train your anaerobic system, boost cardiovascular fitness, and build strength more effectively than bodyweight exercises, plyometric training helps you leap higher, run faster, lift heavier, and produce more power.
- 6) **Plyometric Improves Coordination** : Most plyometric exercises are repetitive and involve simultaneous movements of the upper body and legs. In this way, Plyometric, train the neuromuscular system to integrate movement patterns, which improves coordination and balance.

Conclusion

Plyometric training involves the usage of jumps, hops, bounds, Jump squats, burpees, bounding drills, and clapping push-ups are all of functional plyometric exercises. As plyometric activities are highly-coordinated and skill full movements that get your heart are pounding and muscles working with just your body weight and increasing the athletics performance. This training modality appears to be very effective for improving athleticism in both youth and adult populations.

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IMPACT OF SELECTED ANATHROPOMETRIC VARIABLES ON SKILL PERFORMANCE OF RUNNERS

NAGAVENI. T.H* & N. CHANDRAPPA*

Abstract : The purpose of the research was to investigate the Impact of selected Anthropometric on Skill performance of Runners. Anthropometric variables are Standing Height, Weight, leg length and arm length. This study was conducted on 20 boy athletes of Haveri District, Karnataka State. The age group of athletes range from 12 to 16 years. Pre-test and post-test were conducted after pre-test training programme was conducted for runners.
Keywords: Height, Weight, Leg Length and arm length, Running.

Now a days anthropometric an Important role in maximum field. ex:- Industrial design, clothing design, ergonomics, architecture and sports also. Anthropometric is the measurement of body parameters to indicate nutritional states. It can be measure individual to determine if they need nutrition.

Anthropometric variables are vastly related to physical performance, being used for the sway and monitoring of athletes in all sports. Though, whether anthropometric features of female and male athletes accept a different outcome on fitness must be resolute. Anthropometric is the Science of obtaining systematic measurements of the physical properties of human body. Mainly dimensional signifiers of the body shape and size. Its first developed in the 19 centuries as a method employed by physical anthropologists for the study.

Anthropometric is the branch of the human science that studies the physical measurements of the human body particularly size and shape. It has a special importance because of the emergence of complex work systems. Where information of the physical proportions of man with accurateness is important.

Anthropometric is the science of measuring the proportions and size of the person body. In every game's weight, height and other Anthropometric variables play a vigorous role in the player's performance. The physical structure especially the height and arm length, have positive and significant benefit in various games.

The early Egyptians also used to shove type of Anthropometric during the retro from the thirty fifth to tenth century B.C. The study of "Body types has significant role in the field of sports. Anthropometric measurement has revealed correlation between body structure physical features and sport competences. In all the games, height, weight and other Anthropometric variables play a vital role in player's performance. The physical structure especially the height and arm length, have definite and pivotal advantage in many games similarly segmental length of individual body parts, the arm length definitely is of substantial advantage in selected events in athletics and in certain games.

Athletics covers a varied variety of sports, but one of the main sports for athletics is running's and if you're on the taller side of life you may be superior at both sprinting and hurdling. Being taller allows sprinters to have longer strides. Which helps them in the second half of the race.

Body weight can affect an athlete's endurance, speed and power. Whereas body composition can affect an athlete's strength, agility and appearance. As a rule, runners move

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most efficiently when they're at what's measured a healthy body-mass and body -fat percentage. Body weight affects performance in running more than it does in other sports.

Running is a method of worldly movement allowing persons and other animals to move quickly of foot. Running is a type of walk characterised by an aerial segment in which all bases are above the ground.

Instruments: - The instruments used for collection of data were stadiometer, weighing machine and measuring tape.

Variables: - Height measurements were taken by stadiometer, weight were weighing machine, leg length and arm length measured by measuring tape.

AIM OF THE STUDY

The purpose of the study was to find out the impact of selected anthropometric variables on skill performance of runners.

SIGNIFICANCE OF THE STUDY

1. This research helps us to understand the Impact of Anthropometry measurements such as height, weight, leg length and arm length on Skill Performance of Runners.
2. The finding of the study may also help physical trainers, coaches and physical education teachers as motor abilities and Anthropometric variables underlining the performance can be recognized in athletes.
3. This research can help athletes and their trainer choose the events based on their body composition.

HYPOTHESIS

There would be impact of selected anthropometric variables on skill performance of runners.

METHODOLOGY

Based on random sampling 20 runners were selected from Haveri District. The age of the subjects ranged between 12- 16 years boys.

- Pre-test and post test were conducted.
- Anthropometric variables like height, weight, leg length and arm length were measured. The data is then analysed using statistical parameters mean and standard deviation.

Criterion measures

The criterion measures of selected anthropometric measurements variables adopted in this study are as below.

Anthropometric

- a. **Height:** - To measure height stadiometer was used, and measurement was taken in centimetres
- b. **Weight:** - To measure weight in weighing machine and measurement was taken in kilograms
- c. **Leg length:** - To measure leg length measuring tape was used and measurement was taken in centimetres.
- d. **Arm length:** - To measure arm length measuring tape was used and measurement was taken in centimetres

DETA AND ANALYSIS

Mean and Standard Deviation values of Pre and Post training of Anthropometric variables

Sl. No	Variables	Test	Mean score	Standard deviation value
1.	Height	Pre test	147.9 c.ms	6.64
		Post test	148.3 c.ms	6.72
2.	Weight	Pre test	37.95 kilogrms	6.36

		Post test	38.42 kilograms	6.33
3	Leg length	Pre test	86.2 c.ms	3.38
		Post test	87.5 c.ms	3.25
4	Arm length	Pre test	63.5 c ms	3.332
		Post test	64.25 c.ms	3.338

INTERPRETATION

For all 20 runners' anthropometric measurements were taken and mean and standard deviation was calculated (displayed above) according to which Height has increased its mean from 147.9 c.ms to 148.3 c.ms. weight has increased its mean 37.95 kilograms to 38.42 kilograms, leg length has increased its mean 86.2 c ms to 87.5 cms and arm length has increased its mean from 63.5 to 64.25 cms However, the above table indicates that skill performance of runners significantly improved in relation to Anthropometric.

Based on the data collected and analysed it can be said that post training Anthropometric variable like Height, weight, leg length and arm length has shown a significant improvement when compared to pre training schedule, which in turn has improved the skill performance of runners.

CONCLUSION

Following conclusions were drawn from the present study.

Sports is conserver of fitness. It contributes greatly to the overall development and wellbeing of a person. So, it has great importance on each stage of our life. However, every sports activity desires a specific type of body structure that along with training that is daily routine of motor exercises contributes immensely on the athlete's performance.

Based on the statistical findings in the study It can be concluded that Anthropometric variables like Height, weight, Leg length and arm length has significant impact on the skill performance of runners.

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NUTRITIONAL STATUS OF TUBERCULOSIS PATIENTS: A CROSS SECTIONAL STUDY IN VJAYAPURA DISTRICT OF KARNATAKA

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Introduction

Tuberculosis (TB) a disease caused by *Mycobacterium tuberculosis* complex remains the cause of highest mortality in humans, leading to three million deaths annually, about five deaths every minute. Pulmonary tuberculosis (PTB), the commonest form of TB is characterized by the involvement of lung parenchyma resulting in nodule formation in the lungs (WHO, 2011).

TB is primarily a lung disease with systemic involvement. Pulmonary tuberculosis is acquired through air borne spread of droplet nuclei produced by an infected person. Although the treatment of TB is free; but the free treatment does not cover up the management of these complications. There is need for early diagnosis and initiate treatment in order to minimized or completely prevent the complications. TB affects the lungs causing severe cough, fever and chest pain (Keshavjee, 2012).

India is the country with highest burden of TB. In India, each year approximately 220,000 deaths are reported due to tuberculosis. This public health problem is the world's largest tuberculosis epidemic. India bears a disproportionately larger burden of the world tuberculosis rates, as it continues to be the highest TB burden country with World Health Organization (WHO) statistics for 2011 giving an estimated incidence of 2.2 million cases of TB for India out of 9.6 million cases globally.

Apart from India, seven other countries that alone accounted for two-thirds of the world's new infections are china (9%), Indonesia (8%), Pakistan (5%), Nigeria (4%), Bangladesh (4%) and South Africa (3%).

Tuberculosis is a leading killer of HIV-positive people. "Ending the TB epidemic by 2030" is among the health targets of the sustainable development goals.

TB mostly affects adults in their most reproductive years. However, all age groups are at risk. Malnutrition and tuberculosis are both problems of considerable magnitude in most of the underdeveloped regions of the world. Malnutrition can lead to secondary immunodeficiency that increases the host's susceptibility to infection. In patients with tuberculosis, it leads to reduction in appetite, nutrient malabsorption and altered metabolism leading to wasting. Both protein-energy malnutrition and micronutrient deficiencies increase the risk of tuberculosis. Poverty and food insecurity are both cause and consequences of TB.

An adequate diet is necessary for the well-being and health of all people, including those with TB infections or TB disease. Because of the clear two-way link between under nutrition and active TB, nutritional assessment and counseling are vital parts of the TB treatment and cure.

Thus, the effective management of diseases including TB, therefore requires detailed evaluation of the nutritional status since this can help prevent or modify many complications of diseases and also help in making projection of the interaction of nutritional status on the clinical course of the disease. There is limited insight into the studies that combines socio-

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economic factors with nutritional status among TB subjects. The study therefore designed to document the nutritional status of the TB subjects in Vijayapura district.

Materials and Methodology

This is a quantitative cross sectional study conducted between February 2019 to June 2019 at the District Hospital of Vijayapura City. The study population consisted of adult's aged 18 years and above who were diagnosed with TB and were registered for treatment at Government Hospital of Vijayapura district. About 100 subjects with confirmed diagnosis of TB and on treatment were randomly selected for the study.

A structured questionnaire was developed to elicit the information on basic demographic data, socio-economic data, type of TB etc. The updated Kuppuswamy scale of 2016 was employed to classify the subjects into different socio-economic strata. The nutritional status was assessed through anthropometric measurements such as height, weight, mid upper arm circumference (MUAC), skinfold thickness (SFT), waist and hip circumference. The anthropometric indices were derived later to classify the subjects into different categories of nutritional status.

Data analysis

The data was analysed using SPSS 10.1 for windows. The heights and weights were used to calculate the body mass index (BMI). The waist and hip circumference was used for arriving at waist to hip ratio (WHR).

Results and Discussion

Socio-demographic profile of the subjects

The data regarding the socio-economic and demographic features of subjects is presented in Table 1. Among the studied subjects, 51 per cent were male and rest were female (49.0%). About 49 per cent of the female subjects were found to be in the age group of 18-30 years with the mean age of 34.7 years whereas nearly 49.0 per cent of the male subjects were in the age group of 31-45 years with the mean age of 39.3 years. Thirty eight per cent of the subjects had income level in the range of Rs. 1500 to 2249 per month followed by 31.0 per cent in the income range of Rs. 900 – 1499 per month.

With regard to the socioeconomic class, 51.0 per cent of the subjects come under lower/upper lower (class IV) status followed by 26.0 per cent in the middle/lower middle (class III) status.

The study conducted in Ethiopia showed the results of socio-demographic features where the majority of the populations were from rural area and half of the people were from accessible regions. The age ranged from 15-49 years. About 41.6 per cent of the participants had no formal education and 40.9 per cent had only primary education (Sifrassh Meseret, 2016).

In another study conducted by Arun Mohan *et al.* (2016), majority of the adults for the study were from low socio-economic background and most were educated from primary and high school. Most of the patients belonged to Hindu religion, lives in nuclear family and come from urban slum. Among women, 58 per cent were house wives (unemployed.)

Table 1: Socio-demographic characteristics of TB patients (N=100)

Characteristics	Male (n=49)		Female (n=51)		Total (N=100)	
Age (years)	No	%	No	%	No	%
18-30	13	26.53	25	49.01	38	38.0
31-45	24	48.97	06	11.76	30	30.0
>45	12	24.48	20	39.21	32	32.0
Mean age (years)	39.3±13.7		34.7±14.6		37.0±14.3	

Type of family						
Nuclear	44	89.79	48	94.11	92	92.0
Joint	5	10.20	3	5.88	8	8.0
Education						
Professional	0	0	0	0	0	0
Degree	03	6.12	02	3.92	05	05.0
Intermediate	05	10.20	04	7.84	09	09.0
High school	24	48.97	26	50.98	50	50.0
Middle school	00	00	05	9.80	05	05.0
Primary school	03	6.12	04	7.84	07	07.0
Illiterate	14	28.57	10	19.60	24	24.0
Occupation						
Professional	00	00	00	00	00	00
Semi-professional	04	8.16	03	5.88	07	07
Clerical, shopkeeper	00	00	00	00	00	000
Skilled worker	28	57.14	12	23.52	40	40
Semi-skilled worker	08	16.32	02	3.92	10	10
Unemployed	09	18.36	34	66.66	43	43
Religion						
Hindu	28	57.14	27	52.94	55	55
Muslim	21	42.85	24	47.05	45	45
Family income per month (In Rs.)						
Above 60000	07	14.28	09	17.64	16	16
30000-5999	03	6.12	05	9.80	08	08
2250-2999	04	8.16	03	5.88	07	07
1500-2249	17	34.69	21	41.17	38	38
900-1499	18	36.73	13	25.49	31	31
Socio-economic status						
Upper (Class I)	0	0	0	0	0	0
Upper Middle (Class II)	10	20.4	13	25.4	23	23.0
Middle/Lower Middle (Class III)	22	44.8	04	7.84	26	26.0
Lower/Upper Lower (Class IV)	19	38.7	32	62.7	51	51.0

Disease specific information

The percentage of subjects with pulmonary TB was found to be higher compared to the subjects with extra pulmonary TB (74.0% vs. 26.0%) (Table 2).

Comparative analysis of pulmonary and extra pulmonary TB, showed that pulmonary tuberculosis was the most common presentation than extra- pulmonary TB. Men were more frequently affected by PTB (59.6%) while EPTB was more commonly detected in women (52.2%) as reported in the study conducted by Aysel Sunnetcioglu *et al.* (2015)

Selma Ates *et al.* (2014) reported that 48.2 per cent of the subjects were having EPTB and were males. Pulmonary involvement was more common among men (n=146; 71.6%) than among women (n=58; 28.2%). Similar results were found in the present study.

Table 2: Classification of subjects according to type of TB present

Type	Male (n=49)		Female (n=51)		Total (N=100)	
	No.	%	No.	%	No.	%
Pulmonary	38	77.5	36	70.5	74	74
Extra pulmonary	11	22.4	15	29.4	26	26

Assessment of Anthropometric Measurements

Table 3 shows the mean anthropometric measurements of the subjects. It was found that, mean height and weight of the male subjects were 159.9 cm and 47.4 kg respectively. In case of females, it was found to be 153.5 cm and 46.0 kg respectively. The mean BMI was found to be slightly higher among female subjects compared to male subjects (19.5 vs. 18.5). The mean waist circumference was found to be higher among male subjects whereas mean hip circumference was higher among female subjects (Waist: 85.0 cm vs. 83.0 cm; Hip: 85.7 cm vs. 84.7 cm). However, the mean WHR was found to be same in both the gender (1.0cm).

The mean TSF was found to be 10.7 mm and 10.4 mm in male and female subjects respectively. With regard to MUAC, female subjects had higher MUAC values (22.7 cm) compared to male subjects (21.3 cm).

Table 3: Mean Anthropometric measurements of the subjects

Anthropometric measurements	Male (n=49)	Female (n=51)
	Mean $\pm$ SD	Mean $\pm$ SD
Height (cm)	159.9 $\pm$ 9.1	153.5 $\pm$ 9.0
Weight (kg)	47.4 $\pm$ 9.4	46.0 $\pm$ 12.5
BMI	18.5 $\pm$ 3.3	19.5 $\pm$ 4.9
Waist (cm)	85.0 $\pm$ 8.1	83.0 $\pm$ 9.8
Hip (cm)	84.7 $\pm$ 8.3	85.7 $\pm$ 9.5
WHR	1.0 $\pm$ 0.0	1.0 $\pm$ 0.0
TSF (mm)	10.7 $\pm$ 0.6	10.4 $\pm$ 1.1
MUAC (cm)	21.3 $\pm$ 1.4	22.7 $\pm$ 4.1

According to BMI classification, it was found that nearly 50 per cent of the subjects were undernourished (Male: 48.9%; Female: 49.0 %). The percentage of subjects being in normal category were found to be higher in males (42.8%) compared to female subjects (27.4%). The percentage of female subjects being overweight was nearly double when compared with the male subjects (6.1% vs. 11.7%). Only 2.0 per cent of the males had obesity whereas 11.7 per cent of females were obese as per BMI classification (Table 4).

With regard to LBMI, 65 per cent of the subjects were found to have chronic energy deficiency and 35 per cent of them were normal. Cent per cent of the subjects was found to be obese as per the WHR classification.

When body fat per cent was considered, higher percentage of males (75.5%) had less than 19 per cent of the body fat compared to females (15.6%). More than 30 per cent of the females had body fat per cent between 19 to 23 which was higher compared to males (16.3%). Overall, 45 per cent of the study subjects had body fat (%) of less than 19 per cent which was classified as group I.

Similar findings were reported in the study conducted by A.R.Mohamed-Hussein *et al.* (2016) wherein significant decrease in BMI and IPW% ($P<0.01$) were observed in TB patients. The lean body mass using AMA and FFMI is significantly lower in TB patients than in controls (54.2 $\pm$ 6.9 vs. 61.9 $\pm$ 4.7 and 34.3 $\pm$ 5.0 vs. 35.8 $\pm$ 3.4 cm, respectively), loss of fat in TB patients is indicated by significant reduction in mid-arm circumference, skin-fold thickness and fat mass index ($P<0.01$) which was evident in the present study.

The evidence regarding the association between BMI and mortality in TB patients is limited and inconsistent. When gender difference on the association of BMI with mortality were considered, only underweight significantly increased the risks of TB specific and non-TB-specific mortality during treatment in male patients but not in female subjects,(Yung-Feng Yen *et al.*, 2015).

Table 4: Gender wise distribution of subjects according to anthropometric indices

Anthropometric indices	Male (49)		Female (51)		Total (N=100)	
Body Mass Index	No	%	No	%	No	%
Under nourished (<18.5)	24	48.97	25	49.01	49	49
Normal (18.5-22.9)	21	42.85	14	27.45	35	35
Overweight (23.0-27.0)	03	6.12	06	11.76	09	09
Obese (>27)	01	2.04	06	11.76	07	07
Lean Body Mass Index						
CED (>500)	34	69.38	31	60.78	65	65
Normal (300-500)	15	30.61	20	39.21	35	35
Obese (<300)	00	00	00	00	00	00
Waist to Hip ratio						
Normal	00	00	00	00	00	00
Obese	49	100	51	100	100	100
Body fat (%)						
<19 (Group I)	37	75.51	08	15.68	45	45
19-23 (Group II)	08	16.32	16	31.37	24	24
24-29 (Group III)	02	4.08	12	23.52	14	14
>30 (Group IV)	02	4.08	15	29.41	17	17

Men: Normal <0.90 cm, Obese ≥0.90 cm | Women: Normal <0.85 cm, Obese ≥0.85 cm

Conclusion

The study concluded that TB was witnessed in low-socioeconomic strata with poor nutritional status. It was evident from the study that the malnutrition persist among TB subjects with presence of lower BMI, LBMI and Body Fat percentage. Therefore, there is a need to supplement the diet of the TB subjects with nutrients to improve their nutritional status and thereby accelerate the recovery from the disease.

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COPING STRATEGIES OF SPORTS PERSONS

NAWAZ BASHA .C* & VIRUPAKSHA .N.D*

Introduction:-

Many times during a game, athletes of all levels and from all sports must not only fight physical exhaustion, but also psychological pressure and bad sentiments. Stress is an unavoidable aspect of life for everyone. It can be brought on by both positive and negative circumstances, and there are numerous strategies to deal with it. In this paper, we'll look at the ins and outs of coping, as well as what coping tactics look like and how to rely on others to make coping efforts more effective. Coping refers to the athlete's conscious and effortful cognitions and activities that he or she employs to deal with the perceived demands of a circumstance. Sport and exercise psychologists are interested in coping because athletes are continuously under pressure to succeed. Coping skills in athletes are essential predictors of performance; these skills should be taught, exercised, and improved because they have a direct impact on athletes' personal and professional lives. When it comes to performance athletes' mental health, they may encounter issues relating to their own skills and performance that overlap with everyday issues. Athlete performance is influenced by a variety of factors, in addition to physical, technical, and tactical training. A strong mentality and stress resilience can frequently distinguish between equal opponents. An important part of sports performance is the capacity to perform well under severe stress.

Coping: - Coping is a major component in the transaction stress process; It defined as an "individual's ability to cope with his/her environmental stimuli and personal responses". The ability to cope with stress-related reactions depends on the individual. Coping has been also defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". In sports, athletes frequently deal to alleviate undesirable nervousness or performance worries.

"The ability to perform successfully under pressure is a crucial aspect of sport performance." (Mesagno, 2010). A major problem for elite athletes is to deal with the feeling of 'choking' under pressure. What causes stress varies from athlete to athlete, since it is governed by one's perception of a situation's expectations, as well as their ability to handle associated obstacles and challenges. When an athlete believes they lack the "required" tools to adequately cope with a problem, unpleasant sentiments may occur. Coping skills kick in at this point and can be quite beneficial in stress management. It's important to keep in mind that not every athlete will find the same situation unpleasant. Two athletes can have comparable experiences but react to stress in totally different ways. This is because what matters most are the athlete's perceptions of available resources/abilities and the threat level of the situation. This will certainly vary from sports person to sports person.

Coping strategies of Sports persons (Athletes):-

Coping strategies are being used as a way of eliminating an athlete's level of stress and arousal before a game (Morgan, 2010). Coping refers to conscious and effortful cognitive and behavioral efforts to deal with the perceived demands of a situation. Every athlete uses coping mechanisms, but some athletes aren't aware of when or how they use them. This is

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because, unlike coping methods, coping actions are frequently automatic; the individual does not always make a conscious decision about how they address situations. They are more than likely to engage in unconscious and instinctual acts in order to escape stress or relieve unpleasant emotions. As a result, these activities might be beneficial or harmful. Negative coping strategies, on the other hand, are generally maladaptive and include avoidance, risk taking, and aggressive or damaging acts in sports.

The fundamental difference is that a coping technique usually entails a more deliberate and direct approach to difficulties. While confronted with a stressful or unpleasant scenario, or when striving to change one's behavior in such a situation, it could be a single action, a sequence of actions, or even a thinking process.

Coping strategies used are self-talk, mental imagery or visualization, pattern breaking or breaking bad, positive reframing, regularly practice self-soothing techniques, practice good sleep hygiene, maintain a balanced diet, and give yourself regular breaks.

1. **Self-talk:** Hardy et al. (2011) defined self-talk as "a dialogue we have with ourselves, sometimes spoken, sometimes engaged in internally." Self-talk is often used to motivate and enhance confidence levels in athletes prior to or during a sporting situation (Hall, 2009). Self-talk is the process of which an individual may guide him/herself to accomplish a goal. Whether or not the goals are specific or broad, all goals are important to keep in realistic, attainable, measurable and specific. It is the internal discussion you have with yourself. Your subconscious mind influences it, and it reveals your thoughts, beliefs, questions, and ideas.
2. **Mental imagery or Visualization:** - Imagery is a form of cognitive restructuring. The idea is that athletes "re-interpret previous negative experiences by seeing the 'silver lining' in the cloud." (Shaw, 2005). Mental imagery, often known as visualization or mental rehearsal, is a widely used approach. Athletes utilize this strategy to become comfortable with their competitive surroundings, a tough pattern of play, or even to visualize the course route multiple times. Mental imagery, in particular, can be utilized to eliminate negative ideas, allowing you to tunnel and focus just on positive prospects. Some athletes become overly concerned with their anxiety or nervousness, maybe focusing only on a potential blunder or the worst-case scenario for their performance. This is frequently something that cannot be adjusted, such as their opponent's strength or the track's condition. Instead, athletes should try to focus on ways to enhance and/or maintain their current strong performance abilities, thereby shifting their negative mindset to a more positive facilitative one.
3. **Pattern breaking or Breaking bad:** - When an athlete's mental state becomes bad owing to uncontrolled mental imagery, 'pattern breaking' routines are utilized. A 'pattern breaker' is a statement or phrase that an athlete can say to themselves or that their coach or significant other can say to them out loud. Whatever works best for you is the greatest option. There is no such thing as the "correct" word, but this example is one of my favorites for drawing your attention away from unpleasant ideas. Consider your sport's role model and what they would do if they were in your position. Instead of considering their 'superior' abilities, consider how they would react if they were in your place.
4. **Positive reframing:** - Positive reframing involves thinking about a negative or challenging situation in a more positive way. This could involve thinking about a benefit or upside to a negative situation that you had not considered. Alternatively, it can involve identifying a lesson to be learned from a difficult situation. Finding something to be grateful about in a challenging situation is a type of positive reappraisal. For example, after a break-up you could think about the opportunities to meet new people, the things you learned from the relationship, and the gratitude you feel for the time you spent with the person.

5. **Regularly practice self-soothing techniques:-** Consider your five senses to gain insight into how you can provide comfort for yourself. What has proven to be effective for you. The extensive list of possible techniques to self-soothe includes listening to music, taking a bath, watching a movie, getting a massage, relaxing, and yoga. Make an attempt to include these tactics into your everyday routine because they will assist you in dealing with stress and preventing further stress.
6. **Practice good sleep hygiene:** - One of the easiest strategies to set you up for better sleep is to pay attention to sleep hygiene. Strong sleep hygiene entails a sleeping environment as well as daily routines that promote regular, uninterrupted sleep. Having a consistent sleep schedule, a comfortable and distraction-free bedroom, a soothing pre-bed ritual, and developing healthy behaviors during the day can all help you achieve optimal sleep hygiene.
7. **Maintain a balanced diet:-** Many people find that when their minds are full of anxieties and pressures, they fall into the habit of "mindless eating" (eating whatever is available at the time, the vending machine phenomenon or wanting carbs and sweets for a momentary but unsustainable surge of energy). Maintaining a balanced diet of foods that give a more consistent supply of energy (rather than a sugar spike) can be a fantastic first line of defense against stress's negative effects. It will also assist you in maintaining a connection to your long-term objectives.
8. **Give yourself regular breaks:-** Allow your thoughts to relax and rearrange. Taking breaks, contrary to many people's first reactions when they're stressed, makes you more productive, energetic, and more ready to face the problems ahead of you.

CONCLUSION:-

Coping is a complex topic that involves athletes' stressor assessments, objectives and values, emotions, beliefs, and identity, as well as their resources and ability to deal with the demands of sport. Because of the complexity of the coping process, various antecedents and consequences must be considered. Athletes' coping skills evolve through time and can be enhanced through interventions and training, making this a critical area for improving athletes' performance and overall experience in sport.

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