

A STUDY OF MOTIVATIONAL CHARACTERISTICS OF MALE AND FEMALE KABADDI PAYERS
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ABSTRACT

The purpose of the present study was to explore and compare the motivational characteristics of male and female kabaddi players representing their respective state in 65th Senior National Kabaddi Championships held at Hyderabad in the Year 2017-2018. Sports Motivation was assessed using Sports Motivation (SMS-6) scale constructed by Mollet et. Al. (2007) was used 240 national level kabaddi players were selected for the present study of which 120 were males and 120 were female players. The subject complete sports motivation scale to assess various factor of motivation i.e. A motivation, External Regulation, Interjected Regulation, Identified Regulation, Integration Regulation and Intrinsic Motivation. Results revealed that male kabaddi players were significantly more Interjected Regulation than females. Male kabaddi players also exhibit more external regulation. However, there was no significant difference between male and female but female kabaddi player achieved high mean scores in amotivation, identified regulation, integration regulation and intrinsic motivation which concludes that female are more intrinsic motivated than males in the group.

Keywords: Motivation, Male, Female, Kabaddi, National players

1. INTRODUCTION

Motivation is a major psychological quality word only a few have concentrated on started research is the competitive particular profile awful light players (Heyman, 1992). motivation is a key of human personality, according to I writing and motivational theories. It guides and make a human being actively more or less variation. other add a psychological quality and technique do not have nearly as big off and impression on performance when there is no expedition to succeed (Stewart & Meyers, 2004). Motivation is a key factor in rule how well a player can handle hurdle and problems. It has one of the most important effect on a sportsperson's position to succeed. Up proper motivation player has not lost his or her self-examination and strong in stressful conditions (Raglin, Morgan & Luchsinger, 1990).

Motivation is a player's internal loyalty or try to succeed of gold that they headset for themselves M. Otten (2009). Molten, for this simple reason that it allow players do achieve their goals' they are concentrated on being the top they can be. And institution which is analysis to execute actions that need motivation, begin and produces motivation. The capacity to perform well in sports essential high level of motivation (Mary D. Fry & Joan L. Duda (1989), John G. Nicholls (1989), John G. Nicholls (1989). External and says motivated would together to produce the light from of motivational allowing people to start goals and work hard to achieve them (Singer, R. O. 1986)(Singer, R. O. 1986). Effective motivation can be more you would. Players sport winning then they may believe weather player or playing for pleasure or full of position makes a great impact. If motivates them and remind them that they have the privilege to travel whenever the heart wants. Jimmy Z's to my winning anything they want as long as they remade motivated.(Taylor ,1994) viewed motivation as base of a sportsperson. Quite then quality of life's care idiomatic expressions motivation is one of the most basic essential. In other words, if an individual psychological seek to meet his requirements (Kamlesh, 1983). gaining of motivation is a mixture of two personality variables. Tendency to seek achievement and desire to avoid failure Atkinson and Feather (1966). Atkinson feather write "the urge of hard working in tough and difficult activities and develop a sense of success as a result (Biggie and Hunt ,1980).

The achievement of a certain type of girl is the focus of a particular motive. Achievement motivation or the large tendency to attempt success and follow goal orientated success or non-success, is the most significant motivator for education psychology. Student that are guide buy reaching desire and expect to succeed. And when they don't, they raise their efforts until they do. Achievement motivation is major to coaches, exercises and leaders and instructors. When set up differentiation with some standard of excellence of judging others,this competition with self would be determined by the bulk of ability impulse in a sociality cognizant contact V. M. Tammen, V. M. Tammen, V. M. Tammen (1998). Motivation has been measured in diverse ways formally by educationist as well s by psychologists in informally. According to (Ormrod, 2012, p. 426) Agnate to impulse is and intrinsic level of our brain that awakes us for action, keeps as committed in variety of activity and also liable for presuming us in a given direction. Broussard and garrison (2004), largely describe motivation as "the description that makes us to move to do something or not to do something. "motivation indicates to "the reasons underlying behaviour (Guay et al., 2010).

In sports and games, physiological and psychological element plays a major role in inclusive the achievement level (Grange & Kerr, 2010; Schilling &Hyashi, 2001). Diverse researches have indicated the effect of psychological elements on sports performance. Tailor (1994), examine the impulse as the base of a pyramid on direction of success in field of achievement motivation is a complicated area in terms of measurement and concept (Crespo,

2002). Well toughness of mentality in sports men plays major role to improve her/ his game to the top level to create last result in a championship [Crust, & Clough, (2005)]. This also involved that the essential concentration and capability to focus on the target is regulated by the toughness in mentality [Rani, Malik, & Thapa, (2012); Gucciardi, Gordon, & Dimmock, (2000)]. Mental strongness in a sports man is mostly the capability to control condition by focusing our concentrating on the incident of a specific supporting regulation and not an controlling the pressure of the condition in the match or the impression of occasion to get improved than that of the athlete [Sheard, & Lavallee, (2003); Fox, (2000); Golby, Gucciardi, (2011)].

2. MATERIALS AND METHOD

The purpose of the study was to analyze various level of sports motivation scale of national level of 240 male and female Kabaddi players representing their respective state in 65th Senior National Kabaddi Championships held at Hyderabad in the Year 2017-2018. Sports Motivation was assessed using Sports Motivation (SMS-6) scale. Sports motivation scale consists of 24 test items and further divided into 6 sub-scales containing 4 items for each sub-scale measured in 7-pointlikert scale,

All the data on selected variable related to the present study was collected by the scholar in the competitive setting during the competition. Each player was contacted for this purpose and the permission for administration of questionnaire was sought from the Coach/Manager of the concerned teams. Before actual administration of questionnaire, the scholar explained the player about the purpose of study. The time taken for data collection was about 75 minutes. Answer sheets were distributed to the players, and they responded each questionnaire one by one after reading items from the questionnaire. The responses were recorded on the answer sheet. The scholar was available for clearing the doubts and to monitor the response and make sure that no question is left blank or answered falsely.

Descriptive statistics (mean and standard deviation) and inferential statistics was used to compare male and female player on sports motivation scale and the level of significance was set at .05 level.

3. RESULTS

TABLE 1
DESCRIPTIVE STATISTICS AND COMPARATIVE ANALYSIS ON SUB-SCALES OF
SPORTS MOTIVATION BETWEEN MALE AND FEMALE NATIONAL LEVEL
KABADDI PLAYERS

Sub Scales of Sports Motivation	Gender	Mean	SD	MD	σ DM	t
Motivation	Female	15.92	2.88	0.01	0.26	0.09
	Male	15.90	2.89		0.26	
External Regulation	Female	15.63	3.02	0.12	0.28	1.25
	Male	16.09	2.75		0.25	
Interjected Regulation	Female	14.76	3.21	0.25	0.29	2.71*
	Male	15.78	2.57		0.23	
Identified Regulation	Female	15.67	3.27	0.08	0.30	0.82
	Male	15.35	2.77		0.25	
Integration Regulation	Female	15.15	3.58	0.06	0.33	0.54
	Male	14.93	2.86		0.26	
Intrinsic Motivation	Female	15.30	3.46	0.03	0.32	0.25
	Male	15.19	3.31		0.30	

*significant at 0.05 level,
t.05(238) =1.97

Data depicted in table one on sports motivation and its sub-scales between male and female Kabaddi players revealed significant differences on interjected regulation sub scales of sports motivation. Obtained mean scores for interjected regulation of male is 14.76 whereas female had mean scores 15.78, mean difference between the group was 0.25, Calculated 't' (2.71) was much higher than the required 't' value (1.97) to be significant at 0.05 level at 238 degree of freedom.

The table further reveals that remaining sub scales of motivation i.e. external regulation, intrinsic motivation, identified regulation and integration regulation did not differ significantly as their obtained 't' values were less than the tabulated value of 't' (1.97 at 0.05 significance level 238 at degree of freedom.

4.DISCUSSION

Male Kabaddi players had a higher score in Interjected regulation than female Kabaddi players, according to a comparative investigation. Regulators are motivated by partially internalized actions and ideals such as avoiding humiliation, seeking praise, and preserving the ego. Interjected regulation is frequently seen as a useful kind of motivation when it serves as the initial step in the internalization of external regulation into personally relevant and important goals in a player's life. The other sub-scales of sports motivation, such as motivation, external regulation, internal motivation, identified regulation, and integrated regulation, did not differ substantially between male and female athletes, indicating that the athlete's gender had no influence on these sub-scales.

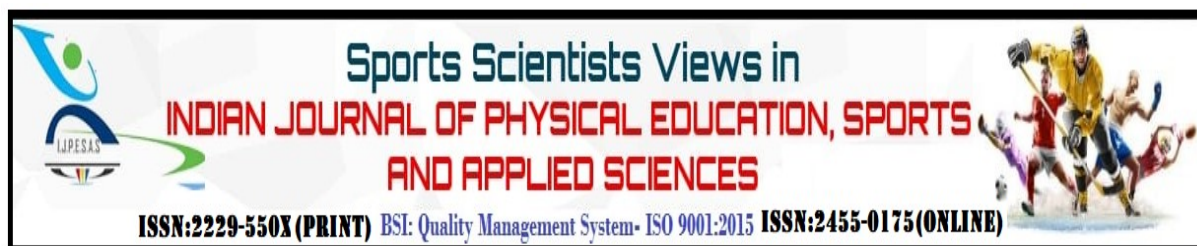
5. CONCLUSION

From the analysis it is concluded that male kabaddi players were significantly have more interjected Regulation than females. Male kabaddi players also exhibit more external regulation. However, there was no significant difference between male and female but female kabaddi player achieved high mean scores in amotivation, identified regulation, integration regulation and intrinsic motivation which concludes that female are more intrinsic motivated than male kabaddi players.

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MORE THE NUMBER OF SPORT-RELATED CONCUSSIONS,WORSE THE OUTCOME; FACT OR FALLACY: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Sport-related concussion (SRC) is a highly ubiquitous injury afflicting millions of sport-persons. Regarding underlying pathophysiology and long-term neurologic repercussions of SRC, literature encompasses a broad range of conclusions. The number of SRCs sustained and associated symptomology have been subject to conflict with mixed results. Thereby, the objective of this systematic review was to fill lacunae on implications of SRCs and determine whether concussion count has considerable adverse effects. **Methods:** Electronic literature search was developed utilizing a Peer Review of Electronic Search Strategies Checklist. Reporting conforms to Preferred Reporting Items for Systematic Reviews and Meta-Analyses checklist. Google-scholar, PubMed, Medline were systematically searched to identify articles with limits to English, published between January 2001-July 2021. Review articles, editorials, and gray literature were excluded. Articles were critically appraised using Structured Effectiveness for Quality Evaluation of Study scoring and risk of bias assessment using Downs & Black checklist. **Results:** 1679 articles were identified. 40 met inclusion criteria. They were reviewed and data were extracted. **Conclusions:** Given the dearth of available data, this systematic review includes parameters for SRC prognosis and highlights novel domains and future perspectives for SRC research. It was observed multiple self-reported SRCs have non-significant impacts in long term. Symptom reporting was related to psychiatric history, career duration, playing position, substance abuse, and lastly the number of concussions. Varying implications are attributable to premorbid cognitive-reserve, injury type, genes, concussion timing, or as-yet-unidentified factors. Concussion count doesn't impact treatment interventions response. Utilizing advanced imaging and biomarkers may provide additional understanding of by identifying changes in brain physiology.

Keywords: Sport-Related Concussion, Traumatic Brain Injury, Neuropsychological Testing

1. INTRODUCTION

Sports-related concussion is a mild head trauma subgroup where the propagated biomechanical stresses cause physiological and neurological abnormalities and initiate a complicated chain of processes. Concussions, particularly in the field of sports, are vital serious public health problems that risk millions of athletes of all ages confront.[1]The incidence rates vary across age, sex, sport, and level of competition and are increasing attributable to higher symptom reporting, awareness and regulations. It affects 300,000 young American adults annually. These are common especially in rugby with 3 incidents per 1000 exposures.[2] Pathogenesis of sports injury mediated is still widely debated and remains unclear. The absence of effective and consistent neuroimaging techniques is a challenging issue to resolve as it's driven by functional rather than a structural injury and anatomical locus is not always cortical. Amnesia, loss of consciousness, headache, dizziness, impaired vision, impaired cognition, and nausea are among the acute manifestations that have been prospectively validated in published studies.[3] Proclivity for repeated injuries is a distinguishing feature of sports-related concussions. Biomechanical stresses impart deficits in absence of overt macrostructural damage and a complicated cascade of events. Microstructural alterations determined using advanced neuroimaging have failed to produce consistent evidence of injury severity gradient.[1]It's thus difficult to pinpoint its exact cause. There is no consensus on the classification of individuals who have suffered from concussions in literature and in clinical practice unless for an unconscious athlete or someone who is significantly impaired. The criteria for assessing and managing concussion are not universal for return to athletic participation despite substantial breakthroughs. Clinical practice defies the conventional notion of head injury as a linear plot from mild to severe with neuropathological accompaniments.[4] Medical problems concerning concussion are evidently multifaceted implying a multidisciplinary approach to evaluation and management. Prospect for long-term cumulative impairments over an athlete's career is a mounting problem. Multiple sports-related concussions raise concerns about the likelihood of neurocognitive impairments and what factors raise or lessen the risk of concussion should be fully understood. What diagnostic methods and parameters are used that detect long-term early deficits and neurologic catastrophe. What factors are affected, and how long will it take for them to recover to their previous state.[5]

The rationale to carry out this systematic review was that due to methodological differences and limits in different studies, literature on this topic is quite fragmented. The sample size is typically a limiting factor so we can coalesce multiple results. Scientific literature encompasses a broad range of conclusions, with some studies suggesting no long-term effects and others alleging widespread neurodegeneration as a result of a single concussive blow to the head emphasizing multimodal assessment. Concussion has been linked to a slew of cognitive issues like reaction inhibition, working memory but the extent to which these cognitive symptoms are widespread has been the subject of conflict. Thereby, the objective was to have an imperative look over the latest research on the effects of recurrent concussions, recovery from subsequent injuries, what parameters are altered both in neurophysiological testing and computerized testing, and does the count of concussions sustained really has a significant effect on sports performance.

2. METHODOLOGY

2.1 Search Strategy

A literature search was developed by the primary author. An electronic literature search of studies published between January 2021 and July, 2021 was completed. Studies published

before 2000 were not included in this search to maintain recency. Keywords used were “neuropsychological testing”, “mild traumatic brain injury”, “sport-related concussion”, “multiple concussions”, “neuropsychological testing”. Bibliographies of full texts were surveyed for additional pertinent studies through a manual search of the citations. This was done to minimize the possibility of overlooking any studies missed in the computerized database searches. A repeat search was done in June 2021 to assess any changes. Limits were applied to the English language and dates.

This systematic review conformed to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist.[6]

2.2 Eligibility criteria

2.2.1 Inclusion criteria

(1) published between January 2001 and January 2021; (2) human subjects; (3) the use of primary, original data; (4) being available in English; (5) including a population or sub-population of participants who sustained a sport-related concussion or mild traumatic brain injury (mTBI); (6) Due to the paucity of tools and guidelines that address the specific needs of a pediatric population, only studies with participants that were the equivalent of at least 6 human years old were included. (7) have the outcome of interest.

2.2.2 Exclusion criteria-

Reviews, case series, editorials, grey literature publications were excluded. Gray literature was excluded because it does not often include the necessary level of detail that allows for a thorough examination of methodological and reporting qualities.

2.3 Information sources

The searched databases included PubMed, Google Scholar, and Medline. An electronic literature search was developed utilizing the Peer Review of Electronic Search Strategies (PRESS) Checklist.[7]. This checklist helps to improve electronic search and minimize errors.

2.4 Selection process

Once studies were identified, 2 independent reviewers examined each article’s title and abstract to determine whether the article met the inclusion criteria. If the reviewers disagreed, a third reviewer made the determination and then was confirmed for eligibility and relevance. At least 1 reviewer examined reference lists of accepted articles to identify any studies that were not retrieved through the literature search.

2.5 Data collection process

One reviewer worked independently and extracted data on a uniform abstraction template and was cross-checked by another reviewer independently, any discrepancies were sought using a third reviewer. Microsoft Excel (Student 2019) was used to extract data from the selected studies

2.6 Data items

Extracted data included author name, year of publication, population characteristics, study type and name and short summary. No assumptions were made for unclear information and were marked undetermined.

2.7 Study selection and characteristics

All the studies meeting the criteria were considered for qualitative syntheses only. 40 studies met the inclusion criteria.

2.8 Critical appraisal tools

The quality of studies was evaluated using Structured Effectiveness for Quality Evaluation of Study (SEQES) and risk of bias assessed using Downs and Black (DB) checklist

similar to one of previously published systematic-review. [8] The SEQES is a 24-item tool to evaluate methodological characteristics and rate its quality. Every question can be scored as 0,1,2, the maximum score is 48. A score between 33-48, 17-32, below 16 is considered high, moderate, and low quality respectively. A graphical representation of the quality of studies is in Figure 1. The obtained values in this systematic review, the mean score is 27.12, the median being 27, and mode 26, indicating moderate to the high quality of studies.

Original DB consists of 27-items addressing reporting, external validity, internal validity (bias, confounding), and power, all scored 0 or 1 except item 5 which can be scored 2, maximum score reaching 28. For this systematic review, it was modified to 21 applicable questions as done previously in a published systematic review. [9] The maximum score attainable was 22. Strong and moderate-quality indicated a low risk of bias. strong quality (≥ 16) represented the top 75%, moderate quality (scored 11-15) represented 50% to 74%, limited quality (6-10) represented 25% to 49%, and poor quality (0-5) represented less than 25%. 2 independent reviewers appraised studies and were blinded to each. Any discrepancies were discussed. If consensus couldn't be reached, a third reviewer arbitrated. The DB scoring of all included is graphically represented in Figure 2. The obtained values in this systematic review, the mean score is 14.62, the median being 15 and mode 15, indicating moderate to the high quality of studies and henceforth low risk of bias. The PRISMA flow diagram for the above-obtained studies is represented in Figure 3.



Figure 1: SEQES scoring for quality of studies

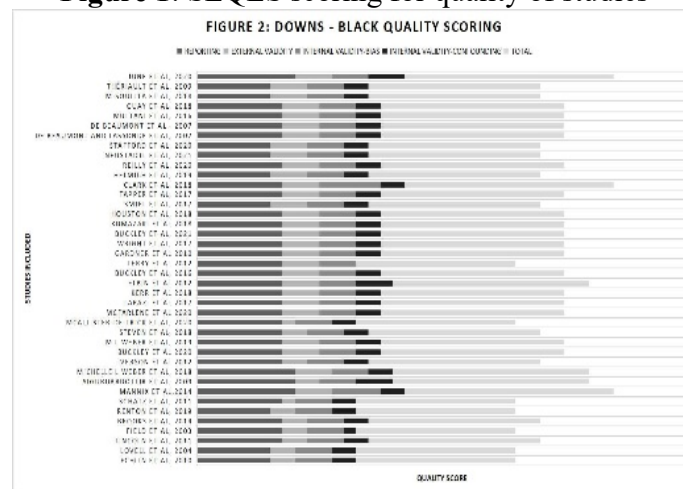


Figure 2: Downs and Black scoring for quality of studies

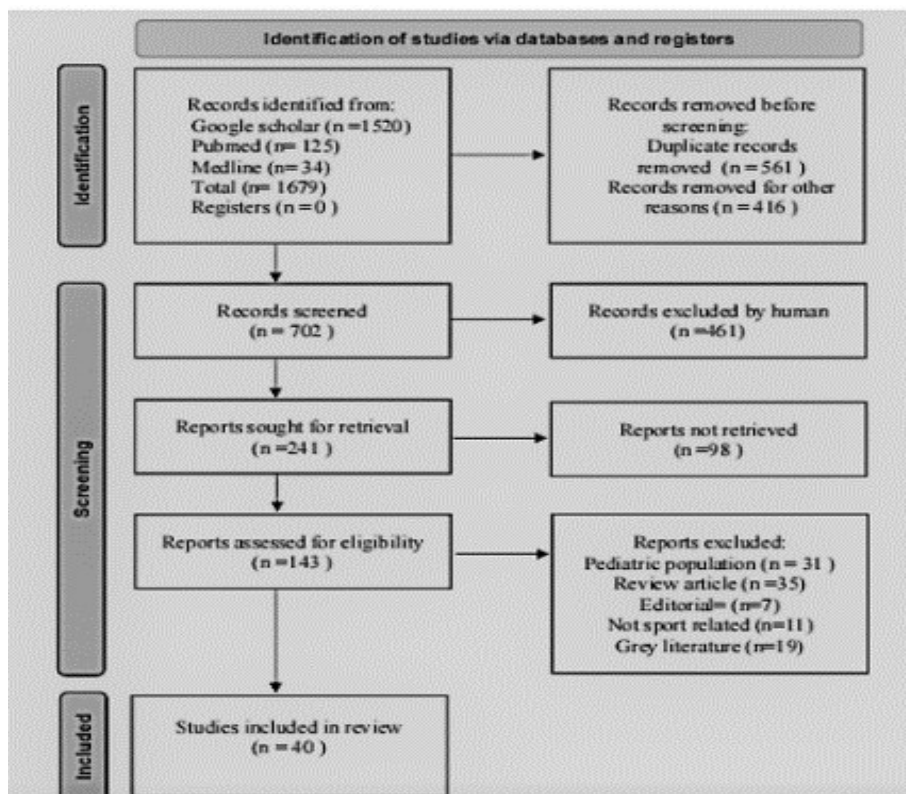


Figure 3: PRISMA CHECKLIST

3. RESULTS

1679 articles were identified. 40 met inclusion criteria.

4. DISCUSSION

4.1 Epidemiology

Contact sports, such as ice hockey, American Football, and rugby are thought to have a particularly high concussion risk.[10] There may be higher rates of concussion in high school athletes compared to adult athletes.[11] Concussions are substantially increasing globally in sports. Soccer and basketball are most dangerous for females. Females have roughly twice the rate of concussion as males in comparable sports (soccer, basketball, softball, baseball).[12] Repeat TBI rates range from 5.6 percent to 36 percent of the overall TBI population, and are likely greater in contact/collision sports.[13] No evidence of sex differences in cognitive or symptoms in adolescent athletes who have had prior concussions with no changes in neurocognition [14]. At least one diagnosed concussion is reported by around 22% of all athletes, 21.7 percent of females, and 21.8 percent of males. Recurrent concussion history is unrelated to gender. [15] These show that further studies with wide and diverse subgroups must be undertaken to reflect the extrapolation of the findings. These prospective studies should cover other sports involving contact and non-contact games along with those during training sessions with integrating sex, age, ethnicity, experience, and skill levels. Identification of incidence rates is also important to identify the population at high risk and thus helps to design strategies to combat these.

4.2 Sport-related concussion implications in high school and college athletes

A prospective cohort study by Field et al in 2003 was first to suggest that concussions have a cumulative effect in high school athletes with ≥ 3 concussions, being more likely to

experience on-field positive loss of consciousness, anterograde amnesia, and confusion after a subsequent cerebral concussion, emphasizing the need for more long-term outcome studies. In comparison to concussed college athletes, high school athletes demonstrated prolonged memory loss. Despite more severe in-season concussions, college athletes performed similarly to matched control participants by day three post-concussion, suggesting high school athletes may take longer to recover from concussions.[13] These findings were partially supported by another study where youth athletes who sustained multiple concussions experienced a variety of subtle effects, which may be possible precursors of the future onset of concussion-related difficulties. [16]In another retrospective investigation, 6075 student-athletes were recruited. Consistent association of increased concussion with composite measures for baseline neurocognitive testing was hypothesized basically indicating towards dose-response relationship. However, the association was found to be neither inconsistent nor strong, rather was associated with various demographic and clinical factors.[17]In a prospective study, 115 people were administered questionnaires like The Rivermead Post Concussion Symptoms Questionnaire (RPQ) and Hospital Anxiety and Depression Scale (HADS) to assess post-concussion symptoms and predictors. 27.8% of TBI cases developed post-concussion syndrome at 3 months and 23.6 percent at 12 months post-injury however no variations in presence of symptoms one year after injury across TBI groups were observed thus implying a resolution of symptoms irrespective of the degree of concussion.[18] Thus, findings were mixed with some showing the significant impact of concussion in both the short and long term. Concussion Assessment, Research, and Education (CARE) Consortium included 8652 collegiate student-athletes in a cross-sectional study. Baseline assessments, Standardized Assessment of Concussion, Balance Error Scoring System, psychological state assessment, Immediate Post-concussion Assessment, and Cognitive Test were all completed, revealing that individuals with a protracted history of concussions are more prone to depression and somatization and may have higher symptom score and severity at outset of the study. [19]Thus, psychiatric symptoms came into the picture but with inconsistent findings. An archival database was utilized to compare 786 male athletes, 26 with multiple-concussion and 26 with no concussion history in a case-control study. Amongst dependent variables, only verbal memory composite had a tangible effect. [20] In yet another longitudinal evaluation of performance through clinical milestones of cumulative recovery and return-to-play (RTP), a reliable change index was computed and found persistent deficiencies in postural control indicating continuous neurophysiological deficiencies despite clinical restoration.[21]Another study assessed Health-Related Quality of Life in concussed and non-concussed athletes. A mixed Analysis of variance (ANOVA) model in groups with and without concussion history was carried out. Physical (PCS) and mental(MCS) component scores were looked for amongst many parameters. Subscores returned to baseline 6 months after an injury. At no time did MCS-12 subscores differ. Scores deteriorated 24–48 hours after injury but improved gradually. [22]While modest and transient decreases are recorded, they are clinically insignificant. Evaluation of the impact of concussion by individual student-athletes may differ between individuals in the context of various other aspects.

4.3 Psychiatric symptoms post multiple SRCs

Attention-Deficit-Hyperactivity-Disorder with concussion increases anxiety and depression and scores were considerably higher in the concussion group compared to other groups.[23]Another study investigated the impact of documented sleep problems on concussion symptoms, cognition, and balance at baseline. The sleep disturbance group scored higher on the Balance Error scoring system, Brief Symptom Inventory-18, Post-Concussion Symptom Scale

while no variations in ImPACT performance between groups. [24] Rugby union players with multiple concussions have slower processing speeds and revealed distant concussion history has negligible long-term neurocognitive depreciation. [25] A pilot study was conducted to assess the effect of SRC and reported a negative effect on the ability to form cognitive maps, despite no significant differences in average response time between groups and no correlation between participants' performance as measured by SCAT5. [26]

4.4 Multiple SRCs sequelae in long term / retired

Motor function in multiply concussed former professional soccer players was assessed and there was noted considerable memory, executive, and behavioral complaints, however, the neuropsychological assessment revealed no substantial difference.[27] In a 15-year follow-up from NCAA Study on Concussion(1999-2001), associations were discovered among ≥ 3 multiply-concussed former college soccer players and adverse health outcomes. [28]

4.5 SRCs and their multi-domain ramifications

Concussion may result in altered kinematics and gait postural control, this Buckley et al assessed conservative gait strategy with concussions history. Various gait characteristics like the center of velocity, step length, and width were analyzed. Amongst these, the only center-of-velocity parameter was altered with a number of concussions, the rest all remaining being clinically incognizant changed. [29]In another study, gait initiation performance in concussed and non-concussed athletes in a cohort study was evaluated. Step kinematics and center of pressure (COP) were investigated. Acute Concussion participants performed worse than the control group for COP but with limited statistical relevance indicating minor neurophysiological abnormalities, and more research across the lifetime is needed.[30] These indicate there might be subtle deficits in gait characteristics but their effect on game performance should be further evaluated. Houston et al investigated the relationship between athlete's gender and the number of concussions and musculoskeletal injury history.468 student-athletes were recruited. Females with concussion history were more likely to report an ankle sprain or knee injury (Odds ratio = 1.88–2.54; p 0.020). No differences were observed between single or several concussions implying that there is no absolute elevated musculoskeletal risk with increased frequency of concussions. [31] Tapper et al explored deficits of executive functions like multitasking and memory in athletes. When completed alone, no differences were seen; in dual-task condition, performed significantly worse on tone discrimination task. This may be attributed to the disruption of cognitive sources. Thus executive function and divided attention tests appear to be useful for prognosis. [32] Brooks et al. uncovered athletes with preceding concussions have revealed more symptoms, but neurocognition does not differ.[14]

4.6 Neuropsychological and physiological implications of SRCs

Elbin et al evaluated brain activation patterns in a paired case-control study. The Blood-oxygen-level-dependent (BOLD) fluctuation was investigated in all respondents during the N-back working memory task. After complete resolution of symptoms hasn't any significant changes in regional brain activation are observed. For a brief period post-concussion, there may persist changes in compensatory activation, but later they resolve.[33] In order to throw light on the ubiquity of cognitive symptoms, Terry et al studied 21 athletes till 6 months post-concussion. They reported SRC lacks long-term fMRI differences. In the concussion group only at the generous quantitative threshold, the attention index score for the Repeatable Battery for the Evaluation of Neuropsychological Status (RBANS) had been less. No group differences observed in reaction time, neural activation during neurobehavioral tasks were seen. [34]

No significant association between self-reported concussion history assessed through a computer or traditional neuropsychological tests and cognitive performance was found.[25]Wright et al. investigated blood pressure and cerebral blood velocity utilizing photoplethysmography and doppler. They found numerous concussions don't confer long-term impairments to dynamic cerebral autoregulation indicating the buffering capacity of the cerebral vasculature. [35]Clark et al discovered significant subgroup differences in white matter integrity using fractional anisotropy and working memory-related functional neural activation patterns using blood oxygen level-dependent (BOLD) percent signal change in a cohort study, Athlete's exposure history, career duration career longevity, and playing position were linked to structural and functional MRI results and act as modifiers. [36] A similar investigation, the effects of multiple concussions on cognitive function and dynamic cerebral autoregulation were assessed and found no significant differences in the groups except short-term working memory thus changes at the cellular level are not in linearity with cognitive functions. [37]In a similar study, it was observed that the ability of cerebrovasculature to maintain nutrition delivery in cortical areas according to Smirl et al, is unaffected by the history of recurrent concussions. This is a significant discovery because, despite long-term neurocognitive impairment associated, transcranial Doppler evaluation of neurovascular coupling appears to be unaffected. [38]Brooks et al. uncovered athletes with preceding concussions have revealed more symptoms, but neurocognition does not differ.[14]Ingo et al examined nonverbal movements of hands in three matched groups using the Elan analysis system for Neuropsychological Gesture (NEUROGES). Duration of irregular Structure units was longer in symptomatic compared to asymptomatic athletes. Thus, neuropsychological analysis can be used as a future diagnostic parameter.[39]Reilly et al predicted concussion history may predispose lower static stability. For 30seconds under 4 conditions for variable position and number of tasks, 54 healthy adults were tracked for Center-of-Pressure. No significant variations were observed in CoP displacement or elliptical area between groups during single tasks while aggravated under dual tasks, implying diminished capability to allocate proper attention resources to multiple concurrent objectives.[40] These findings are similar to those found by Tapper et al.Neustadtl and colleagues evaluated performance following concussion to assess previously undetected subclinical abnormalities in ice hockey players. Goals, assists, points, plus-minus, time on ice, and hits were assessed and only time on ice differed insignificantly and there was a modest decline from pre to post-injury.[41] In a large cohort study, on 11 of 12 cognitive tests used, Stafford et al found no differences between post-concussion and non-concussed participants unique to the task's incongruent circumstances in the standard Stroop paradigm indicating no long-term differences in terms of cognition.[42]

In group studies, Iverson et al reported athletes recover from past concussions in terms of experienced symptoms and neuropsychological test performance in 2–28 days, with the majority of evidence indicating that recovery takes 5–10 days. De Beaumont et colleagues evaluated motor cortex in athletes using four distinct transcranial protocols for magnetic stimulation, excitation, and inhibition processes. The first dorsal interosseous muscle was employed to obtain motor-evoked potentials. When compared to normal control subjects, the duration of the cortical silent period was longer in athletes who had repeated concussions, although the difference was not significant.[43]In a similar investigation, De Beaumont et al investigated long-term electrophysiological changes using the oddball paradigm revealing the link between concussion number and P3 amplitude attenuation was weak, implying that other factors influence the size of

the P3 component in multi-concussion athletes. [44] Thus these changes may be attributable to changes in brain metabolism and neural activity post-concussion.

In a case-control study, how compromised tracts correspond to neuropsychological competence post-concussion was studied. Repetitive concussions in former professional football players were linked to localized white-matter tract abnormalities attributable to increased axial diffusivity, according to Multani et al, explaining neuropsychiatric symptoms and cognitive deficiencies these athletes have. [45] Guay et al examined alpha activity using time-frequency methods. Multiply-concussed athletes showed considerably less event-related perturbations time-locked to stimulus presentation as compared to non-concussed athletes Concussions sustained were strongly linked to changes in Alpha activity reflecting low-level neurophysiological differences[46] Misquitta et al. examined explored connection between brain atrophy and cognitive-behavioral symptoms in retired Canadian football players. Age had a higher impact on hippocampus volume and amygdalae. Multiple concussions may result in early localized atrophy, according to these findings, albeit longitudinal research is needed to fully understand this association.[47] Multiple concussed athletes showed considerable ERN amplitude reduction prompted by error generation, according to Debeaumont et al. Two different experimental paradigms designed to probe concussion-sensitive cognitive functions like attention and short-term memory demonstrated these cumulative effects of concussions on ERN amplitude. [48] According to Mcfarlane et al, findings provided evidence that SRC may affect the ability to familiarise with a spatial environment which is consistent with the integrity of extended neural networks required for effective spatial orientation and navigation. [26] Individuals with a history of concussion had substantially lower postural stability during dual-task conditions, as reflected by increases in average displacements and elliptical area of postural sway, as well as a reduction in CoP sample entropy, according to a study by Reiley et al.[40] Participants with previous concussions exhibited more brain atrophy in temporal lobe white matter and hippocampus according to June et al, which remained constant during follow-up visits. In terms of neuropsychological performance, there were no significant differences between groups.[49] Thus, long-term and accumulated repercussions of sport-induced concussions on activity in the brain can be determined by event-related potentials.

5. CONCLUSION

The effect of multiple concussions is an emerging research area with inconsistent findings and has garnered attention as findings remain unconcluded. The Association between frequency of concussions and neurocognitive testing was not found to be significant. Traumatic stress can act as an arbitrator between concussions and post-concussive symptom severity. The pervasiveness of symptoms is controversial with minimal differences which points to relative plasticity following concussion. Association of cognitive health and concussion history is evolving in retired athletes but there are lacunae and a lack of clarity in the context of Cause-and-effect. An insignificant number of reinjuries are observed, indicating a lack of clarity on whether the period of vulnerability exists. Whether neuroimaging changes are associated with changes in cognitive function in high school and collegiate football players has not been determined. Lack of classification for identification of sustenance of concussion warrants multifaceted assessment battery. Several factors are significantly related to symptom reporting along with concussion history. In descending order of magnitude, baseline symptom reporting was related to mental health history, headache/migraine history, gender, developmental and/or learning problems, and a number of prior concussions. Career duration, playing position, concussions occurring during practice sessions, medical and psychiatric history, substance abuse,

developmental and/or learning problems, and a number of prior concussions all contribute to sequelae. Athletes with a history of trait anxiety, depression, sleep disorders, ADHD, migraines, and substance abuse may report elevated symptom scoring and severity at baseline. Pronounced concussion history may be associated with greater depression and somatization. There's a dearth of perceptible equations between concussion history and baseline cognitive performance. No prospective exploration with adequate controls has demonstrated these declines are present outside of a highly selective sample. We should extend research and safety measures during practice sessions too as significant concussions are sustained out of a competitive environment too. Cognitive changes could be counterpoised by repeated assessment ascribable to learning effect signifying eclectic effects of concussion. Not all individuals experience some kind of prognosis attributable to various factors owing to their unique characteristics. Additionally, concussion-like symptoms aren't very specific too. The cognitive loading used in tests might be submaximal to elicit the response indicating effects of concussion are heterogeneous. Henceforth, other evaluative measures might be taken into consideration.

6. FUTURE DIRECTIONS

Potentially deleterious effects of repeated concussion warrant further study to develop scientifically valid management protocols for return-to-play. What factors impact concussive injuries and their sequelae like moderator variables. Track structural, cognitive, and behavioral progression over time can provide additional insight and study cognitive health outcomes in diverse athlete samples to delineate the long-term effects of sports participation on cognitive functioning. Incorporation of rigorous study designs inclusive of diverse ages, socioeconomic status, and racial/ethnic groups to improve behavioral outcomes around concussion prevention, reporting, and management. Use of normative data and reference tables stratified by sex and pre-existing health conditions to interpret symptoms in concussed athletes. Additional cognitive tests like N-back should be explored by researchers. A multimodal approach to concussion assessment that encompasses the assessment of multitudinous functions is consigned. More culturally appropriate concussion initiatives are needed globally to ensure that athletes around the world can identify concussive injuries and understand the dangers of continued sports participation while concussed.

7. LIMITATIONS

While these findings are persuasive, there are some limitations to this study. There's a probability of language bias. In studies of risk, prognosis, and long-term repercussions, information bias would be prevalent, explaining the heterogeneity of findings. Because respondents in all groups are subject to recall bias, memory errors may influence an individual's beliefs about his or her aptitudes, which may, in turn, influences motivation on testing time since injury isn't reported in the retrieved studies, also self-reported concussion history may affect the findings of this review. Retrospective investigations were carried out in various testing conditions that could have impacted cognitive performance. Impact test scores could be compromised by poor test taker performance, resulting in inaccurate baseline ratings. Due to a lack of literature, high-level research such as RCTs is not included. Neurophysiological evaluation measures have been used in studies, however more sensitive measures such as diffusion tensor imaging, functional magnetic resonance imaging, and magnetic resonance spectroscopy may assist uncover more useful information

ETHICAL APPROVAL

As this systematic review was compiled of already ethically approved studies, no ethical clearance was needed, moreover, it is just qualitative synthesis, not involving any human or animal subjects.

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CONFLICTS OF INTEREST

There is no potential conflict of interest that could have hampered the final version of this manuscript.

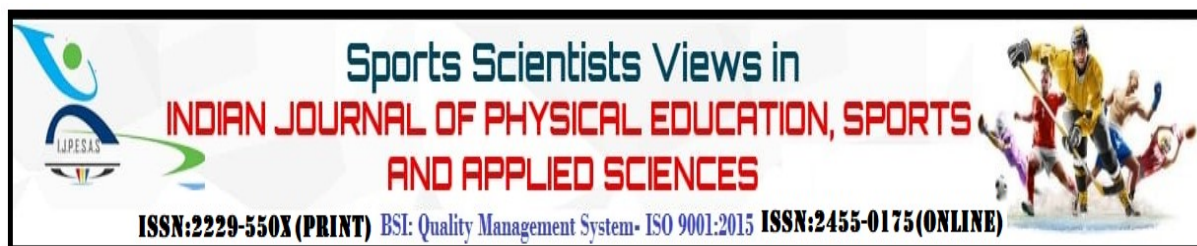
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PSYCHOLOGICAL SKILLS AS A PREDICTOR OF PERFORMANCE IN SPRINTING OF INDIAN MALE AND FEMALE SPRINTERS

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ABSTRACT

The purpose of the study was to assess the psychological skills as a predictor of sprinting performance of Indian male and female athletes. A purposive sample of one hundred and thirty male=59 and female=71 National level (sprinters), who participated in 72nd All India Inter-university Athletic Meet (M/W) held at Bangalore and 18th Federation Cup National Athletics Championship held at NIS Motibagh, Patiala and 54th National Inter State Athletics Championship held at PAC Ground, Lucknow (U.P.), and volunteered to be the subjects of study. The Athlete Coping Scale Inventory-28 (Smith et al. 1995) is a sport-specific scale consisting of 28 items that measures the psychological characteristics of athletes on seven subscales; coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coach-ability was employed. To investigate the psychological skills on seven sub-scales for National level male and female Sprinters, means, standard deviations, Multiple Correlation and Regression analysis were computed. The results of investigation revealed that the selected psychological skills do not predict 100 meter sprinting performance of male sprinters, while these psychological skills do not predict 100 meter sprinting performance of female sprinters.

Keywords: Male, Female, Predictability, Sprinting performance, Athletes

1. INTRODUCTION

Numerous factors that are believed to be contributory for an outstanding performance. Psychological factors are influencing more than other factors which is no longer a misnomer but accepted fact. Goal orientation helps an athlete to raise the level of training and competitive performance where as coping skills help protect people from being psychologically harmed by challenging experiences in their lives and finally participation motivation addresses the general questions of how & why athletes become actively involved in sport. Along with many other disciplines, psychology has recognized the importance of fairly representing individual differences such as gender in teaching and research. (Jayashree, Amina and Shailaja,2009).

Psychological skills currently most focused on in sport include arousal, mental imagery, attention, concentration, self-confidence, goal setting and motivation (Wann & Church, 1998; Weinberg & Gould, 2007).

The basic psychological skills like peaking under pressure, self confidence, concentration and motivation are qualities which can affect the player's performance. The tempo of individual and team play is largely dependent upon psychological factors for both beginner and experienced players.

Psychological skill are important determinants of sport performance, and considerable emphasis has been directed at identifying relevant skill and instructing sport consultant, coaches, and athletes in how to teach, learn, and apply them (Williams, 1993). Moreover, there is evidence that psychological skills are related to performance (Gould, Weiss, & Weinberg, 1981; Greenspan & Feltz, 1989; Mahoney, 1989; Gabril, & Perkins, 1987) and injury vulnerability. Finally, psychological skill are often important outcome variables in performance enhancement intervention program, and it is therefore important to be able to assess change in such skills as a means of evaluating program efficacy (Smith, 1980, 1989b).

Branden (1969) defined self-esteem as a standard by which a person judges her/himself, an estimate, a feeling, and an emotion. This self-evaluation is the single most significant key to behavior, which affects the thinking processes, emotions, desires, values, and goals. Self esteem affects the thinking process, emotions, desires, values and goals in a person (Sandra 2009). Positive (high self-esteem) leads to greater happiness or negative (low self-esteem) and self-doubt, potentially leads to depression (Baumeister et al,2003).

Naderi et al.(2009) was observed Gender based Self esteem and level of self esteem. It was found higher in females than their counter parts The elite athletes have a higher self esteem than non athletes. Women have a slightly higher self esteem than men (Patterson 1993). Significant differences were noticed between male and female students in self-esteem and achievement goals orientation (Rahmani, 2011). Similarity was found between men and women National Volleyball Players in regard to Self esteem Ajeesh,(2013) .Ucan & Caglayan (2012) expressed The elite athletes have a higher self esteem than non athletes. the similarity between self-esteem scores of athletes and non-athletes and between individual & team sport athletes and non-athletes. Individual sports participants have significantly higher self-esteem than participants in team-sports (Omarsson, 2013). Significant difference was observed between males and females self-esteem points (Kolayis and Sari, 2011). Similar significant difference exists between male and female elite wrestlers regarding their self esteem Khan and Ali (2011).

Athletes were more likely to have higher levels of social self-esteem (Pascarella and Smart, 1991). Athletes who have high self-esteem and therefore have a better ability to set goals that better mental preparation are able to choose specific performance goal and objectives (Gyorgy, and Moldovan, 2013). The female student-athlete's self-esteem measures will be significantly higher than the female non-athlete's self-esteem (Heinmiller, 2001). Self-esteem was found to be more positive in younger adolescent basketball players than in older players regardless of gender (Kosarkarjev, Vpliv and Starosti, 2009). Significant positive correlation was noticed between variables of going in for sport and general self-esteem (Gasic-Paviscic, Joksimovic & Janjetovic, 2010).

Male and female athletes preferred similar type of goal-setting (Cash, 2009). Athletes expected differences for the goal setting and anxiety variables between different goal groups and similarity when they performing under the different environmental conditions (Cale, 1991). Higher desire to manage impressions was positively correlated with a higher degree of goal commitment (Chin, 2006). Relationship between self-orientation of goal setting and motivation of athletes for participating in sporting activities was observed significantly positive (Asma, Rahim and Hamid, 2014).

Boroujeni & Ghaheri (2011) observed a correlation between belief in self-talk and performance. Khan and Ahmed (2010) indicated the significant differences in the skills of facing the pressures in sports in favor of the post measure. Zetou, Nikolaos, and Evaggelos (2014) & Hatzigeorgiadis et.al., (2009). The use of instructional self-talk on younger athletes seems to have positive effects on performance and learning improvement during practicing sports skills. It can enhance self-confidence and reduce cognitive anxiety. Specific training of self-talk can improve performance is controversial, Gibson, and Foster (2007) observed that task-specific self-talk appears to have a beneficial effect on physical performance. Successful athletes use more often positive self-talk in comparison to the less successful athletes (Kahrovic et.al., 2014).

In a sporting context, self-confidence is the belief that one has the ability to successfully complete an athletic event like arousal, it is experienced along a continuum. Confidence is essential for choosing a direction in life and tactical decision making in sport and in life. It can be the difference between seizing the sporting opportunity or allowing the moment to pass by (Weinberg & Gould, 2007).

Low levels of self-confidence can be caused by lack of practice, poor self-belief or faulty thought patterns. It can result in a self-fulfilling prophecy, where failure expectancy results in failure (Goldstein, 1994). On the other end of the continuum, overconfidence can cause athletes to become complaisant about their ability and result in them not wanting to practice, not listening to their coaches and not wanting to improve their skills. They may believe they know all there is to know about their sport and do not require further training.

Concentration is the ability to stay mentally in the present tense! Concentration is the ability to focus to relevant cues of the match/practice and to maintain that focus for the duration of the match/practice. Concentration is one of the first sports psychology terms that athletes hear about when they start practicing their chosen sport (Bornemann, 2000).

The athletic performance of a player or a team does not only depend on the good physical and technical preparation, but it is also the result of the combination of physical and psychological factors, perfectly placed in the frame of a training which promotes performance (Martin,Carl & Lehnertz, 2000). According to Lazarus (1991), psychological skills describe the knowledgeable, emotional and behavioral effort of a person trying to face the external and internal demands which lie ahead.

Coping with adversity as a predictor of success in elite athletes is also a substrate of experience and is consistent with previous research (Gould, Eklund, & Jackson, 1992a, Gould, et.al. 1999).

Coach-ability has become a term that coaches of all sports now use when talking about their team and potential student-athletes in regards to the recruiting process. Coach-ability is a very important attribute for any athlete. Coach-ability is listening to constructive criticism, accepting the criticism or suggestions, and using them as pin points on areas of your game that need to be improved upon in order to take you to the next level. Coach-ability is the willingness to learn, accept mistakes, as they happen at every level, and to block out the concept of being stubborn. Coaches often run into the athlete that is a quality player with a high skill set and looking to play in college (Carrozza, 2013)

Achievement Motivation achievement motivation is defined as “ a habitual desire to achieve goals through one’s individual efforts”. Individual vary quite a lot in this motivation. Managers, coaches, and many type of leaders are very keenly interested in how to maximize this type of motivation as it pays rich dividends in terms of high performance and leads to excellence (Thakur, 2014). The purpose of the study was to (a) assess the predictability of psychological skills (b) to assess the sprinting performance of 100 meter and 200 meter male and female sprinters between selected psychological skills.

2. METODOLOGY

Selection of Subjects

A purposive sample of one hundred and thirty male=59 and female=71 National level (sprinters) ,who participated in 72nd All India Inter-university Athletic Meet (M/W) held at Bangalore and 18th Federation Cup National Athletics Championship held at NIS Motibagh ,Patiala and 54th National Inter State Athletics Championship held at PAC Ground, Lucknow (U.P.),and volunteered to be the subjects of study.

Instrument

The ACSI-28 -Athlete Coping Scale Inventory-28 (Smith et al. 1995) is a sport-specific scale consisting of 28 items. It is a multidimensional inventory that measures the psychological characteristics/processes of athletes on seven subscales; coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coach-ability. The scales are then summed to yield a Personal Coping Resources score, which should reflect a multifaceted psychological skills construct. This measure requires athletes to respond on a 4-point scale (0 = almost never, 1 = sometimes, 2 = often, 3 = almost always) to 28 items regarding psychological skills. Each factor consisted of four items. The ACSI-28 has demonstrated test-retest reliability (.47 to .87) and internal

consistency for the subscales were accepted (from .64 to .81). ACSI-28 demonstrated a full scale internal consistency of .86 with all subscales ranging from .62 to .78 (Smith et al. 1995).

Statistical Analysis

To investigate the psychological skills on seven sub-scales for National level male and female Sprinters, means, standard deviations Multiple Correlation and Regression analysis were computed. The level of significant was set at .05 level.

3. RESULTS

To assess the zero order correlation coefficients between sprinting performance and psychological skills of 100 meter male athlete were computed, For predictability of psychological skills, regression analysis by enter method was employed. The data has been presented in table 1 to 4.

TABLE 1
DESCRIPTIVE STATISTICS PSYCHOLOGICAL SKILLS OF 100 METERS MALE SPRINTERS

S.No.	Variable	Mean	SD
1	(PER)	11.40	0.52
2	(CA)	7.02	2.07
3	(PUP)	7.17	2.99
4	(GS)	7.76	1.83
5	(C)	6.20	1.82
6	(FFW)	5.02	1.98
7	(CAM)	8.46	2.59
8	CAB	8.32	2.34

TABLE 2
CORRELATION BETWEEN SPRINTING PERFORMANCE AND PSYCHOLOGICAL SKILLS OF 100 METERS MALE SPRINTERS

S.No.	Variable	PER	CA	PUP	GS	C	FFW	CAM	CAB
		1	2	3	4	5	6	7	8
1	(PER)	1	0.85	0.08	0.013	0.071	0.232	0.091	.323*
2	(CA)		1	0.09	0.068	0.098	0.006	0.044	0.091
3	(PUP)			1	0.337	.600*	0.262	.622*	0.139
4	(GS)				1	0.218	0.067	.648*	.400*
5	(C)					1	0.209	.400*	.372*
6	(FFW)						1	0.114	0.035
7	(CAM)							1	0.085
8	CAB								1

* Significant at the 0.05 level

Data in table 2 indicated that sprinting performance of male sprinters was significantly correlated only with coach ability (CAB) ($r=0.32$). All other dependent variable had insignificant correlation with 100 meters sprinting performance of male sprinters.

TABLE 3
MULTIPLE CORRELATION FOR THE PREDICTORS OF 100 METER SPRINTING PERFORMANCE OF MALE SPRINTERS

Mode	R	R Square	Adjusted Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	Df1	Df2	Sig. F Change
1	448a	.201	.031	.51212	.201	1.184	7	33	.338

Coefficients

S.NO.	Variables	B	SEB	β	t	Sig
1	Performance(time in seconds)	10.614	0.578		18.361	.000
2	Coping with adversity	0.019	0.040	0.076	.475	.638
3	Peaking under pressure	-0.019	0.041	-0.109	-.461	.648
4	Goal setting & mental preparation	-0.053	0.590	-0.187	-.901	.374
5	Concentration	0.011	0.058	0.039	.190	.850
6	Freedom from worry	0.043	0.483	0.164	1.003	.323
7	Confidence and achievement motivation	0.028	0.053	0.141	.531	.599
8	Coach Ability	0.081	0.040	0.363	1.999	.054

a. Dependent Variable: Performance

The multiple correlation Coefficient (R) using all the predictors simultaneously, is 45 ($R^2=0.20$) and the adjusted R^2 is 0.03, meaning that only a negligible 0.03 % of variance in 100 meter sprinting performance of male sprinters can be predicted from selected psychological skills.

TABLE 4
ANOVA FOR REGRESSION ANALYSIS FOR 100 METERS MALE SPRINTERS

Model	df	Sum of Squares	Mean Square	F-ratio
Regression	2.175	7	0.311	1.184*
Residual	8.655	33	0.262	
Total	10.829	40		

* Insignificant at .05 level

The ANOVA in table 4 shows that $F=1.184$ is statically insignificant at 0.05 level indicating that combination of predictors i.e. selected psychological variable did not significantly predict 100 meter sprinting performance of male sprinters.

4. DISCUSSION

Analysis of data of 100 meter male sprinters on sprinting performance and psychological skills indicated that sprinting performance of male sprinters was significantly correlated only with coach ability (CAB) ($r=0.32$). All other dependent variable had insignificant correlation with 100 meters sprinting performance of male sprinters.

The multiple correlation Coefficient (R) using all the predictors simultaneously is 45 ($R^2=0.20$) and the adjusted R^2 is 0.03, meaning that only a negligible 0.03 % of variance in 100

meter sprinting performance of male sprinters can be predicted from selected psychological skills.

The ANOVA showed that $F=1.184$ is statically insignificant at 0.05 level indicating that combination of predictors i.e. selected psychological variable did not significantly predict 100 meter sprinting performance of male sprinters.

5. CONCLUSIONS

With in the limitations of present study following conclusions were drawn.

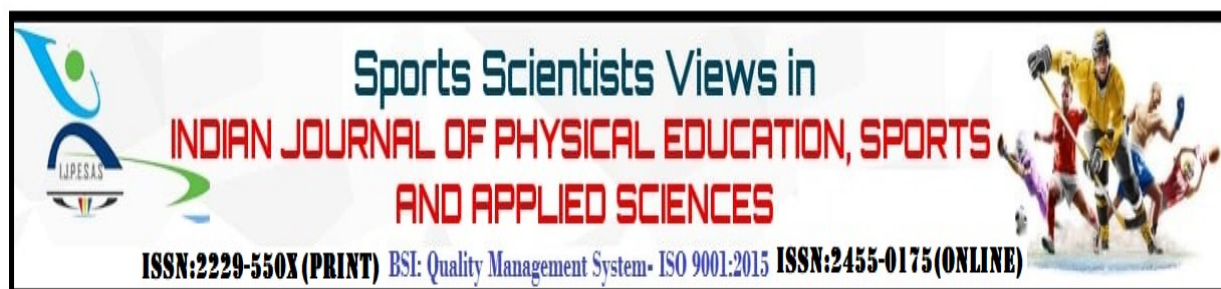
1. The selected psychological skills do not predict 100 meter sprinting performance of male sprinters
2. The selected psychological skills do not predict 100 meter sprinting performance of female sprinters

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**EXTREME EXERTIONS AND CONGENITAL HEART ABNORMALITIES
LEADING TO COMMOTIO CORDIS AMONG ACTIVE SPORTS-
PERSONS: A REVIEW ON EMERGENCY
OUTBREAK ON-FIELD**

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ABSTRACT

Sports are meant for fun and health benefits with minimal injury and damage risks. Unfortunately, it is during some occasions that athletes, coaches, and even spectators go through serious life-threatening medical emergency situations. It is very important for everyone to know when an event is considered an emergency and what could be the reasons behind it. Injuries are always a part of an athlete's life, but one should not risk their life to fulfill the demand of the game. Accidents may happen during sports and it is very important to limit the degree and number of injuries with preventive measures. First priority is to avoid any mistake which can result in an injury or a sudden and painful fall of an athlete on-field. Instances of sudden cardiac death are becoming the leading cause of death among young athletes. No obvious symptoms are being known before an actual incident takes place on-field. The most common causes behind sudden cardiac arrest leading to a life-threatening moment are abnormal heart rhythm, cardiomyopathy, and acute myocarditis or inflammation of the heart muscle. Also, extreme exercise load and vigorous training can increase the risk of a serious emergency. If any additional stress is put on the heart from dehydration, heat, or a recent illness, that could have an impact and lead toward seriousness. The study is to review the causes behind the outbreak of emergency situation on-field due to extreme exertions and congenital heart abnormalities leading to Commotio Cordis among active sportspersons.

Keywords: Cordis; Death, Heart Rhythm, sportspersons, Abnormality.

1. INTRODUCTION

It is a big challenge to avoid and overcome the sudden death of athletes during training and on-field due to cardiac arrest. Most causes are related to cardiovascular problems without any symptoms noted before the fatal event. The common symptom is fainting or near-fainting during activity or training. The victims may belong to various professional sports. Commotio Cordis is a fatal mechano-electric syndrome that is the second most common cause behind sudden cardiac death of athletes. Mostly, connected with those sports where there are more chances of high-velocity contact between an object and an athlete, especially in the chest area. As a result of this impact, malignant arrhythmias consequently develop leading to the individual's immediate death (Menezes et al. 2017).

The heart is a muscular pumping organ made up of cardiac muscle that generates the force required for blood circulation throughout our body. Blood circulation is very important for survival; our cells need a continuous supply of oxygen and nutrients, consequently maintaining all metabolic activities in our body. Blood is the connective tissue, is the transportation medium, the heart keeps the blood moving through the vessels and various parts of the body. A normal heart (in the case of an adult) pumps around 5 liters of blood per minute throughout. Losing the pumping effectiveness for a few minutes results in the individual's life under threat.

The Human Heart Beat: An electrical stimulus is generated by the sinus node (sinoatrial node or SA node) which is located in the right upper chamber(atria) of the heart. An electrical stimulus is generated by the sinus node regularly at a rate of approximately 60 to 100 beats per minute under normal conditions. The electrical stimulus travels down through the conduction pathways and enables the heart's ventricles to contract and pump blood. Firstly, two upper chambers are stimulated, and secondly the two lower chambers. Then the electrical impulse travels from the sinus node to the atrioventricular node or AV node, here impulses are slowed down for a very short period. Each contraction of the ventricles is termed as one heartbeat. The special pacemaker cells generate electricity in the upper chamber or atrium of the heart. This electrical spark is carried through the pathways in the heart so that all the muscle cells contract at once and produce a beat that is heard and felt as a heartbeat. This mechanism helps to pump blood through the heart valves into all the organs of the human body. The body collapses when the heart muscle cannot supply blood to the brain and other parts of the body.

The most common reason for sudden death among patients is Ventricular fibrillation, which is treated with an electrical shock within less than 4-6 minutes to minimize the brain damage and effectiveness. Automatic External defibrillators (AEDs) can be used by anybody to treat themselves by themselves. The sudden death of a person is most often caused by heart disease or heart problems. There may be many types of injuries, illnesses, or environmental conditions that might cause an athlete to collapse on-field or during training.

Exercise Associated Collapse (EAC): Athletes unable to stand or walk without support as a result of lightheadedness, faintness, and dizziness or syncope causing a collapse that occurs after the completion of an exertional event or stopping exercise.

Sudden Cardiac Death (SCD): Sudden Cardiac Death (SCD) is a cardiovascular cause that occurs when the heart stops beating or not beating sufficiently to maintain perfusion and life.

2. REVIEW OF RELATED LITERATURE

The diagnostic tests to screen for cardiovascular abnormalities are ineffective and inefficient. The most prudent and effective methods of pre-participation screening for cardiovascular abnormalities at this time are history and physical examination in accordance with the American Heart Association guidelines. Also, suggested for sports trainers and coaches

check and ensure that every sports training institute should maintain these minimum standards for athletes (Koester, 2001).

The exercise acts as a trigger for sudden cardiac death in people with cardiovascular disease. Sudden death among young athletes who are diagnosed with a medical history of cardiovascular disease is predicted to be 2.5 times higher than that among non-sportspersons. 90% of the cases due to sudden cardiac attacks resulting in death mainly occur during or immediately after training. Concluded that the incidence of sudden cardiac death in any population including athletes varies depending on multiple parameters including sex, age, ethnic group, nationality, screening methods to reveal sudden death, and attempts to prevent or avert sudden death. It also depends upon the definition used and how the diagnosis is made (Farzin, Tohid, and Reza, 2011)..

Sports-related SCD could be prevented and minimized by understanding the causes and mechanisms of such events. Suggested for the young athletes to undergo pre-participation screening along with family medical history i.e. parents, a physical fitness test, and an ECG report. This will help to identify those athletes who are at high risk for SCD and also a detailed evaluation by a cardiologist should be mandatory for all (Amit et.al., 2017).

Karin B. et al. (2006): Found in their study that SCD occurs more frequently among young athletes less than 18 years of age, and the suspected cause behind is a pre-existing congenital cardiac abnormality. Premature atherosclerotic disease is another cause among young adults.

Sudden death is very rare among fit young individuals. But, their deaths cause widespread public attention as they are considered the epitome of physical health and fitness. A histopathologist can go for a detailed examination of the heart to find the cause of death whether it was due to a CAD, cardiomyopathy, valve abnormality, major vessel rupture, or ion channelopathy mechanism. Looking at the present scenario of various incidents taking place in the field of sports, the cases must be properly examined by an expert cardiac pathologist (Sheppard, 2012).

According to the Sudden Cardiac Arrest Association, a heart attack stems from circulation, or "plumbing," problem of the heart; which happens during a sudden blockage takes place in the coronary artery severely reducing or cutting off the blood flow towards the heart resulting damaged heart muscle. A sudden cardiac arrest takes place due to an electrical problem in the heart. As a result, the heart may beat very fast, causing the heart's ventricles to quiver or flutter instead of pumping blood in a coordinated fashion (Katherine, 2014).

3. OBSERVATION

It is a very well-known fact that exercise is good for all. But, chronic extreme exercise training and competing in endurance events can lead to heart damage and rhythm disorders. Due to the emerging growing standards of competitive sports, athletes are forced to push harder beyond the limits and undergoing extreme training sessions is a cause behind the sudden breakdown of athletes.

A study was conducted on marathon runners and it was being found that even after finishing extreme running events, athletes' blood samples contain biomarkers that are associated with heart damage. These damage indicators normally get away by themselves, but when the heart is pushed towards extreme physical stress, again and again, the temporary damage may lead to thicker heart walls and scarring of the heart. Moreover, further research found evidence that high-intensity exercise can acutely increase the risk for sudden cardiac arrest or sudden cardiac death in individuals with underlying cardiac disease. This in turn increases the risk of

heart rhythm disorders, especially for young ones who have hypertrophic cardiomyopathy or coronary heart disease.

Researchers also found that people who have exercised well over the National Physical Activity (USA) guidelines for many years were more likely to develop Coronary Artery Calcification (CAC) by middle age. CAC can be measured with CT scans which indicate that calcium-containing plaques are present in the arteries of the heart indicating heart disease.

The U.S. Department of Health and Human Services “2008 Physical Activity Guidelines for Americans Trusted Source” recommend for adults to do at least 150 minutes of moderate-intensity aerobic activity (walking, hiking, golfing, home exercises, and gardening) a week, or 75 minutes of vigorous-intensity aerobic activity (running, biking, swimming, exercise or dance classes, and strenuous sports) a week. People who have exercised three times higher than the recommended amount or the equivalent of 450 minutes of moderate aerobic activity a week had a 27% higher risk of developing CAC compared to those who exercised less.

Christian Eriksen, 29-year-old Denmark’s footballer (midfielder) collapsed during the Euro 2020 football match against Finland in Copenhagen on June 12, 2021, due to a heart attack as per doctors. Good health and physical fitness are not enough to ward off cardiac problems. Christian Eriksen was lucky enough to survive because First-Aid was on hand and the support from the medical team. Sudden cardiac arrest is a leading cause of death among sportspersons and there are no warning signs, and athletes collapse in the middle of training or during matches in most cases.

Sudden cardiac arrest generally comes without a prior warning, immediate medical attention is very necessary, or else severe causality may occur. A person can feel sudden fibrillation instead of a steady contraction and expansion (the rub-dub rhythm)owing due to a disruption in the electrical rhythm causing a cardiac arrest. Structural or electrical abnormalities can cause sudden cardiac arrest in sportspersons. Exercise can be a trigger for some athletes with an abnormal heart condition. In some sports where there is a possibility of direct contact, a hard blow to the chest can result in sudden cardiac arrest, and it is called “Commotio Cordis.” Nowadays, due to more physical exertion cardiac arrests strike people who are very fit and follow a healthy active lifestyle. The heart has its capacity for a certain level of exertion and the chances of thickening of the heart muscle are higher if an athlete constantly overworks it (**Dr. (<https://gulfnews.com/uae/health/why-super-athletes-like-christian-eriksen-suffer-heart-attacks-1.1623932875687>)**).

All athletes must be medically evaluated constantly without differentiating them on basis of their levels or categories. And since medical evaluations may not help uncover certain underlying health issues, experts insist on Electrocardiogram (ECG) screenings for detecting heart abnormalities that could minimize the risk of sudden cardiac arrest through a pre-signal. Automated Electric Defibrillator (AED) devices should be installed in public places such as malls, gyms, schools, community hot-spots, and others. But it is also very essential to have adequate knowledge of CPR and defibrillation to save a life (**<https://gulfnews.com/uae/health/why-super-athletes-like-christian-eriksen-suffer-heart-attacks-1.1623932875687>**).

The warning signs of a sudden cardiac arrest include; Fainting spell during exercise; Chest pain while exercising; Excessive shortness of breath during exercise; unexplained palpitations; and unexplained seizures. According to a report, one or two in every 100,000 active sportspersons experience sudden cardiac arrest each year where males dominate at the greater risk zone than the females. Also, it was found that the risk of cardiac arrest prevails among

African American athletes than the Caucasian athletes (Sports Institute at UW Medicine, University of Washington, Seattle).

5. DISCUSSION

Pheidippides' story inspired the famous modern sporting event which we call the marathon race. Pheidippides ran from Marathon to Athens to deliver the news of the victory of the battle of Marathon. He ran continuously from Marathon to the Court of Athens and collapsed as immediately after conveying the message to the court. Marathon event is organized and continuing till date in remembrance of the great running legend Pheidippides. Pheidippides' cause of death is extreme continuous stress on the heart resulting in heart failure.

The year 2006 marked a historical record in the field of sports in India when Budha Singh (4 years) boy from Odessa ran a total distance of 65 km continuously covering between Puri and Bhubaneswar in just seven hours. He became an instant sensational sporting phenomenon in India as a small boy capable to run a Marathon event with just a 4-year young heart. Budhia's 65 km run is recorded in the Simca Book of Records'. Further, he also ran 48 Marathons. The running era of Budhia came to an end after a controversy erupted over allegations that his coach was exploiting the child as medical health science suggests that the four-year boy's heart is too young to run a marathon, which is true (Debabrata, 2021).

Sports and Sudden Cardiac Death: There are a number of cardiovascular abnormalities which represent the most common causes of sudden death in competitive sports. The specific pathologies which are responsible for athletic field catastrophes vary with regard to the type of sport, age, and gender. These deaths occur mostly in team sports such as basketball and football, which have the highest levels of participation. The main cause of death is coronary artery disease among athletes who exceed 35 years of age. The general population may be having:

- i. Hypertrophic Cardiomyopathy.
- ii. Congenital Coronary Artery Anomaly.
- iii. Arrhythmogenic Right Ventricular Dysplasia (ARVD).
- iv. Marfan syndrome.
- v. Myocarditis.
- vi. Wolff–Parkinson–White syndrome (WPW).
- vii. Congenital long QT syndrome.
- viii. Brugada syndrome.
- ix. Commotio Cordis.

Some of the sports which have a risk for this cause of trauma are; Baseball, American Football, Association Football, Ice Hockey, Polo, Cricket, Softball, Pelota, Fencing, Lacrosse, Boxing, Professional Wrestling, and Martial Arts. Mainly, children are vulnerable because of the mechanical properties of their thoracic skeleton.

The Physical Burnout: The American Heart Association (AHA) recommends an adult to engage in either ≥ 150 minutes/week of moderate-intensity aerobic exercise, 75 minutes/week of vigorous aerobic exercise, or a combination of both for optimal overall health and well-being. Maintaining a physically active lifestyle has offered a number of health benefits; including increased productivity, improved sleep, reduced stress, greater heart health, and enhanced immune system support. On the contrary, too much exercise can have serious detrimental effects on our health. Exercising exceeding 300 minutes/week could trigger a “physical burnout,” and maybe jeopardize our health.

The Overtraining Syndrome (OTS): One of the cardinal signs of overtraining is decreased athletic performance, regardless of increased training intensity or volume. This performance decrease can be related to (Naveed Saleh, 2020):

- i. Impaired agility.
- ii. Slower reaction times.
- iii. Reduced running speeds.
- iv. Decreased strength or endurance.

The cellular mechanisms of Commotio cordis are still not understood properly, but could probably be related to the activation of mechano-sensitive proteins and ion channels. These trigger extra electrical excitation waves which can increase ventricular fibrillation. The human heart has an upper limit to absorb the impact of energy applied on it; the excess amount of energy will create structural damage to the walls of the heart as well as an electrical malfunctioning.

TABLE 1
SHOWING THE SUDDEN CARDIAC DEATHS OF 387 AMERICAN YOUNG
ATHLETES BELOW 35 YEARS OF AGE WERE ANALYZED DURING
A MEDICAL REVIEW IN 2003.

Causes of Sudden Death in Young Athletes	
Cause of Sudden Death	Percentage of Death
Hypertrophic cardiomyopathy	26%
Commotio cordis	20%
Coronary artery anomalies	14%
Left ventricular hypertrophy of undetermined origin	7%
Myocarditis	5%
Ruptured aortic aneurysm (Marfan syndrome)	3%
Arrhythmogenic right ventricular cardiomyopathy	3%
Tunneled coronary artery	3%
Aortic valve stenosis	3%
Atherosclerotic coronary artery disease	3%
Other diagnosis	13%

Source:https://en.wikipedia.org/wiki/Sudden_cardiac_death_of_athletes

Most cases of sudden cardiac death are related to acquired cardiovascular disease. Commotio Cordis is an exceptional case during which the heart is structurally normal but loses the rhythm. The fatality rate is near about 65% with prompt cardiopulmonary resuscitation and defibrillation and found more than 80% without cardiopulmonary resuscitation and defibrillation. Mid 30 of an individual is very crucial as it serves as an approximate borderline for the likely cause of sudden cardiac death. Before the age of 35 years, congenital abnormalities of the heart and blood vessels predominate and after the age of 35 years, acquired coronary artery disease predominates (80%) regardless of the athlete's former level of fitness. Consumption of various 'Performance-Enhancing Drugs' (PED's) by athletes can also increase the chances for cardiac risk.

6. CONCLUSION

Sudden cardiac arrest is one of the leading causes of death among young athletes which is typically a result of a congenital heart abnormality or a blow to the chest which the heart may be unable to cope with extreme exertion on it, resulting in a Commotio cordis. Athlete should be

monitored on regular basis without any failure to detect any abnormality such as arrhythmic heartbeat.

Sudden cardiac death (SCD) associated with athletic activity is generally rare but also a devastating event. Victims may be young ones and apparently healthy but many of the cases are unexplained and undiagnosed. As a result, there is a great importance and need for early identification of such at-risk individuals or athletes for whom an appropriate activity restriction can be imposed to minimize the risk. In most cases of SCD among athletes are due to Malignant Arrhythmias, Ventricular Tachycardia (VT) or Ventricular Fibrillation (VF). Among those individuals with certain cardiac disorders (e.g. Hypertrophic Cardiomyopathy, Arrhythmogenic Right Ventricular Cardiomyopathy etc.), vigorous athletic activity and training may increase the chances of VT/VF:

- i. A prolonged vigorous physical training may induce changes in cardiac structure (for example: interstitial fibrosis, disruption of normal myocardial architecture, dilation of right and left ventricle) among individuals those who are suspected with a pathologic arrhythmogenic substrate.
- ii. Intensive physical training can trigger various physiological demands such as hemodynamic overload, catecholamine release, and electrolyte imbalance. Also it can trigger malignant arrhythmias among those individuals who are suspected with some cardiac abnormalities.

The heart adapts to the stress of exercise and superior physical fitness does not guarantee for protection against exercise deaths. Vigorous and strenuous exercise and activity temporarily raises the risk of sudden cardiac arrest. But on the other hand, exercising on a regular basis has some good effect on other cardiac risk factors like reducing and controlling high blood pressure, obesity, and high cholesterol level. Further experimental research studies are recommended to figure out the failure of heart among young active sportspersons around the globe. Sport always meant for the betterment of humanity and upcoming bright and peaceful future on earth, not in sacrificing human lives.

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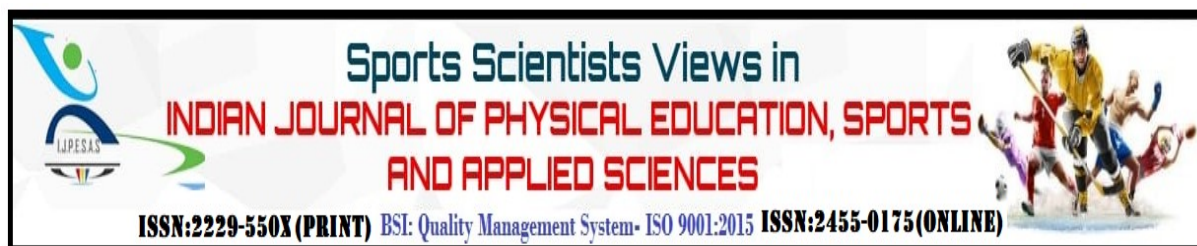
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A STUDY ON INTENTION OF AGGRESSIVE BEHAVIOR AND GOAL ORIENTATION OF NATIONAL LEVEL KABADDI PLAYERS.

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ABSTRACT

The aim of the present study was to study and compare the level of intention of Aggressive behavior and foal orientation of national level male and female kabaddi players. To attain the objective of the research 240 kabaddi players were selected as the subject. Out of 240 kabaddi players 120 were female and 120 were male players participated 65th Senior National Kabaddi Championships held at Hyderabad in the Year 2017-2018. The Task and Ego Orientation in Sports Questionnaire by Duda & Whitehead, (1998) was used to assess depositions towards Task and Ego Orientation. To measure the Intention of Aggressive Behavior, a tool constructed by Buss and Perry (1992) was used. Results concluded that the male Kabaddi players are high on intention of physical aggression and verbal aggression in comparison to female Kabaddi players. Overall, the research concluded that male kabaddi players possess moderate level of are more violent than female kabaddi players. Comparative results on task and ego oriented found that male kabaddi players proved to be higher in ego orientation when compared to female kabaddi players in the present study.

Keywords: Intention, Aggressive Behaviour, Goal Orientation, Kabaddi, National Players

1. INTRODUCTION

Aggression as a proficient response to major events a waking from an ambition to harm others' lives is a convoluted method that can be viewed from various viewpoints aggressive behavior exclusively among adolescents, is a major consideration. In extension a developing body of research in psychology, education and sociology has originate new observation into association development in a various social content. A dimension of factors among with teacher's conflicting uncertain approach, family inconvenience mis treatment of child bereavement our separation, chronic diseases or injury can all play a role in the endorse to enlist in violent behaviour's **(Bushman, & Huesmann, 2006)**. approach in which aggressive behavior in the midst of times expressed may be determined by a dimension of characteristics along with temporary went developmental stages home and school adaption and coping quantities including the categories of their stress **(Liu, Jianghong & Wuerker)**. Association can also show connective difficulties with schoolmates, family and colleagues as well as low scholar accomplishment observable relapse to an initial level of growth and development as well as psychological diseases like phobias **(Stadelmann , Perren , Groeben, et al; (2010)**.

Firstly, goal orientation was defined as situated orientation for effort in success task **(Ames, 1992; Nicholls, 1984)**. Approach of goal orientation was practiced by government officials' politicians and administrator abode post-war shocks. The minor consideration regarding goal orientation would be impaired to every particular conditions of society to boost maximum compensation package or achievement of the assets including individua **(Biyawila & Perera, 2018)**. The player is situated by approach of personal task **(Garcia-Mas, et.al., 2014)**. Goal orientation indicates normal disposition and goal and ego involvement invoke to go levels in specific conditions **(Nicholls, 1989)**. Also, goal orientation authorities are derived through affiliating with peers and having positive social interaction with adults that revolves around the mutually shared sport experience **(Scanlan & Lewthwaite, 1986)**.

According to studies on goal orientation, there are two sovereign intelligence about achievement task-oriented goals and ego-oriented goals. These two orientations are attended to perform how players describe and experience good and bad times as well as how they apart their extent of assurance. When a player is task oriented, he is motivated first and at the leading edge to a convinced task, overcomes disincentive via skill development, and advertise capability. **Dogan-Ates (2010)**. achievement is approximated based on the perception of true individual aptitude when contrast to earlier achievements. Another goal orientation is ego orientation. **(Dufton, et. al. (2011)**. The conclusion for deciding personal aptitude is that one's own ability are compared to those of others to regulate achievement and defeat. A person's assumption motivation is to indicate regulating competence-oriented player exhibits.

A task-containing motivational conditions concludes self-reported dissent behaviors, either straightly or treated by task orientation. An ego-including motivational conditions considers self-reported inconsistent, either straightly or treated by ego orientation **(Moreno-Murcia, et. al)**. Task orientation was connected to ego orientation ($r = 0.29, p < 0.01$). Multiple relapse analysis showed internal motivation, external motivation and amotivation assumed for 30.5% of the variances in task orientation **(Chin, et. al., 2012)** Players' task direction can be a major factor for procuring flow in competitive sport, feeling maximum skillful and guessing the upcoming

championship as challenging (Stavros, 2015). Sports motivation performs a psychological variable that should be assumed in anti-doping policies, projects, and interventions targeted at the adolescent population because motivation was connected to the doping-related attitudinal variables and also partially concluded the impact of success task orientations in this regard (Mudrak, 2018).

Researches on task orientation have found positive effect for state learning and state performance goals, in which the objectives are affected by conditional cues, on achievement goals, depending on the task different researches have established goal orientation description based on the behaviours that players may occupy in order to promote their manifesto. (Pintrich, 2000). Based on these differences, the bulk of analysis intent on two basic direction that can be seen in contact to flexible and maladaptive involvement. (Kaplan & Maehr, 2007). According to Ames (1992), there arrive to be a consent among exploration on these two aims, which he trademarks "performance" and "mastery" In their four-factor model of aim direction, Elliot and McGregor (2001) recommended that capability is the foundation of achievement objectives. The four entrails are progress along two important dimensions: description of capability and creativeness of capability (approach/avoidance) (Elliot & McGregor, 2001). Both conditions are analytical entrails of people's self-administrative achievement when it comes to completing their goals. agnate to ability motivation information sustained by performance goal inspection, reactions may be rupture into two global approach: ego orientation and task orientation (Duda, 1992). Task Orientation is self-referential, and it compose a concentration on elaborating one's skills and offering one's best performance.

2. MATERIALS AND METHOD

2.1 Sample

The purpose of the study was to analyze Intention of aggressive behavior and goal orientation of national level kabaddi players representing their respective state in 65th Senior National Kabaddi Championships held at Hyderabad in the Year 2017-2018.

2.2 Description of Instruments

The Task and Ego Orientation in Sports Questionnaire by Duda & Whitehead, (1998) was used to assess depositions towards Task and Ego Orientation. To measure the Intention of Aggressive Behavior, a tool constructed by Buss and Perry (1992) was used. The test consists of 29 questions divided into four factors i.e. Physical Aggression, Verbal Aggression, Anger and Hostility.

2.3 Administration of Instruments

All the data on selected variable related to the present study was collected by the scholar in the competitive setting during the competition. Each player was contacted for this purpose and the permission for administration of questionnaire was sought from the Coach/Manager of the concerned teams. Before actual administration of questionnaire, the scholar explained the player about the purpose of study. The time taken for data collection was about 75 minutes. Answer sheets were distributed to the players, and they responded each questionnaire one by one after reading items from the questionnaire. The responses were recorded on the answer sheet. The scholar was available for clearing the doubts and to monitor the response and make sure that no question is left blank or answered falsely.

3. RESULTS

TABLE 1
DESCRIPTIVE STATISTICS AND COMPARATIVE ANALYSIS OF TASK
ORIENTATION AND EGO ORIENTATION FEMALE AND MALE
NATIONAL LEVEL KABADDI PLAYERS

Gender	N	Factor of Goal Orientation	Mean	SD	MD	σ DM	t
Females	120	Task	24.33	3.311	5.525	.302	15.031*
	120	Ego	18.81	2.291		.209	
Males	120	Task	25.49	3.837	5.775	.350	12.40*
	120	Ego	19.72	3.361		.307	

*Significant at 0.05 level, $t_{.05(238)} = 1.97$

Data depicted in table no. 1 on task orientation and ego orientation of female kabaddi players revealed significant differences between the groups in both task and ego orientations. Obtained results on task orientation showed mean scores 24.33 whereas ego orientation score was 18.81 and the calculated 't' (15.031) was much higher than the required 't' value (1.66) to be significant at 0.05 level 118 degree of freedom. Similarly, in Male Kabaddi players, task orientation in males had higher mean scores 25.49 in comparison to ego mean scores of males 19.72. As the obtained 't' value (12.40) was much higher than the required 't' value (1.97) to be significant at 0.05 level 238 degree of freedom. Male and female Kabaddi players are task orientated.

TABLE 2
ANALYSIS OF LEVEL OF INTENTION OF AGGRESSION BETWEEN MALE AND FEMALE
NATIONAL LEVEL KABADDI PLAYERS

Level	Aggression (Total)					
	Female	%	Male	%	Total	%
High	0	0.00%	0	0.00%	0	0.00%
Moderate	117	97.50%	92	76.67%	209	87.08%
Low	3	2.50%	28	23.33%	31	12.92%

Table no. 2 determines the level of intention of aggression of kabaddi players. Obtained data revealed that most of the players (87.08%) are under moderate level of intention of aggression followed by 12.92% players under low level. Further analysis showed that 97.50% of females are under moderate level of intention of aggression and 76.67% of males are under moderate level of intention of aggression whereas 2.50% female and 23.33% male kabaddi players possess low level of intention of aggression.

TABLE 3
DESCRIPTIVE STATISTICS AND COMPARATIVE ANALYSIS OF INTENTION OF AGGRESSION
BETWEEN MALE AND FEMALE NATIONAL LEVEL KABADDI PLAYERS

Factor of Intention of Aggression	Gender	Mean	SD	MD	σ DM	t
Physical	Female	25.70	3.78	1.16	0.35	2.11*
	Male	26.86	4.68			
Verbal	Female	13.89	2.21	0.74	0.20	2.13*
	Male	14.63	3.10			
Anger	Female	20.05	3.05	0.69	0.28	1.53
	Male	20.74	3.92			
Hostility	Female	23.69	3.35	0.57	0.31	1.21
	Male	24.27	4.00			

*Significant at 0.05 level, $t_{.05(238)} = 1.97$

Data on intention of aggressive behaviour in table 3 indicate statistically significant difference on sub-scales of intention of aggression on their Physical aggression and Verbal Aggression. Male kabaddi players had high mean scores 26.86 and 14.63 on these sub-scales respectively. Whereas female players had mean score 25.70 on physical aggression and 13.89 on verbal aggression with an MD of 1.46 and 0.74 respectively as the obtained 't' value (2.11) on physical aggression was much higher to be significant at 0.05 level 238 degree of freedom. In case of verbal aggression obtained 't' (2.13) was also much more than the required 't' value (1.97) to be significant at 0.05 level 238 degree of freedom. Rest of the two sub scales namely anger and hostility did not differ significantly as their obtained 't' values were less than the required 't' value (1.97) at .05 level.

4. DISCUSSION

Analysis on level of intention of aggressive behaviour among male and female kabaddi players was found to be high. As the results revealed that female players 86.67% and 78.33% percent males are having high level, while 13.33% female kabaddi players and 21.67% male kabaddi players are having moderate level of attitude to aggressive behaviour. The data indicated significant gender difference in physical and verbal aggressiveness between male and female kabaddi players. Due to numerous factors such as biological, social, racial, home environment, attitude, and others, gender-based aggressiveness may be effective. There are numerous techniques now pointing out that a lot of factors exist owing to diverse causes of male and female kabaddi players displaying distinct violent behaviour.

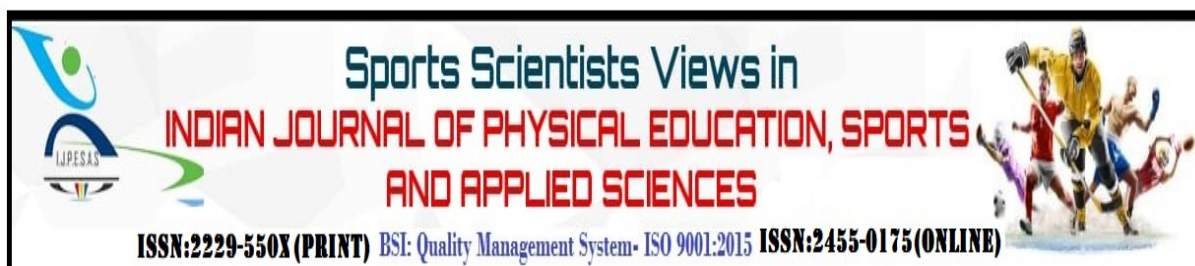
5. CONCLUSION

Analysis findings concluded that the male Kabaddi players are high on intention of physical aggression and verbal aggression in comparison to female Kabaddi players. Overall, the research concluded that male kabaddi players possess moderate level of are more violent than female kabaddi players. As a result, the characteristics used to predict male kabaddi players are more aggressive than those used to predict female kabaddi players. In a comparative analysis of males and female kabaddi players on task and ego oriented found that male kabaddi players proved to be higher in ego orientation when compared to female kabaddi players in the present study.

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ASSESSMENT OF KNOWLEDGE AND HYDRATION AWARENESS AMONG SWIMMERS.

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ABSTRACT

Hydration plays an important role in performance of the swimmers. Swimmers are in water hence many times they don't realize the need of water but they have massive energy expenditure and need proper intake of water and nutritional fluid to remain hydrated (Raph Teller, 2011). The study was conducted to check the knowledge of hydration among the swimmers. Responses were collected from the swimmers of various age group who are the professional swimmers and participate in the State, National and International swimming competitions regularly. A self-administered questionnaire was shared among the swimmers to collect the responses. Based on those responses the awareness of water consumption and nutritional fluid was analysed. It was observed that the swimmers lack the knowledge of hydration they rely on coaches, media, internet to get hydration knowledge which is not sufficient. The amount of water consumption during a day was studied in which it was found that only 10% swimmers in the age group of 19 years and above consume the right amount of water (3-4 litre) as recommended by Institute of Medicine (Joe Buchanan, 2017). It was also observed that few swimmers consume excess water in a day (>5 litre) due to which the sodium present in the blood may get diluted. It was also observed that 50% swimmer of various age group never consumed nutritional fluid during the training and many swimmers face the dehydration symptoms like tiredness, fatigue, muscle pain and cramps.

Keywords: Hydration, Swimmers, Water, Nutritional Fluid

1. INTRODUCTION:

Swimming is a high endurance sport which include pool swimming and open water swimming. The duration and practice for both is different. Swimming requires developing a high aerobic and anaerobic capacity for strength and technical efficiency. Because of massive energy expenditure proper water consumption is very much essential to re-build, recovery and inhibit the performance. Apart from nutrition and dietary intake a swimmer always needs to intake sufficient water to stay hydrated. (E Jéquier and F Constant, 2009) The dehydration during pool swimming is lower than the open water swimming, but still a swimmer has to intake 2-3 litres of water in a day to stay hydrated. The Institute of Medicine has recommended 3.7 litres of water a day for men age 19-30, and 2.7 litres of water a day for women age 19-30. A common thumb rule that is often stated for remaining hydrated is to take one's body weight, divide it by two, and drink that much water in ounces.(Joe Buchanan, 2017)

The swimmers are in water hence they do not realize that they are still sweating losing fluid and as they are surrounded by water the brain is tricked as per the surrounding environment and does not signal mouth and throat to be thirsty. (Swimmo.inc)

It has been observed that intensive and long-distance swimming requires lot of fluid intake and need additional hydration, water is not sufficient to rehydrate the body. (Raph Teller, 2011) Hence in training apart from water intake the swimmers need to be provided with replenish electrolytes, power energy drink to maintain the body fluid balance and avoid the dehydration. The swimmer during the competition day is provided with more electrolytes and sports drinks to stay hydrated (Archive team, 2011). A 2% loss in body weight due to water loss leads to dehydration a condition that can reduce strength by 2 percent, power by 3 percent and endurance in athletes by 10 percent. According to the National Academy of Sports Medicine, dehydration can affect cognition, coordination, response time, tracking, short-term memory, attention, focus and fatigue. (Orlando Health,2020)

Maintaining the proper hydration is very much essential for a swimmer. Hydration helps to optimize carbohydrate and ensures best performance during competitions (Andrea Boldt, 2020). Drinking water before and after the training regulates the body temperature, delivers nutrients and oxygen to body cell and removes waste from the body. The proper fluid balance in body improves circulation, regulates body temperature and promotes proper digestion and absorption of nutrients, supplies nutrients and oxygen to body cells. There are various symptoms of dehydration commonly observed in the swimmers, reduce in energy or apathy, infrequent urination or dark urine, sudden decline in strength and co- ordination. Apart from this the dehydration also affects the muscles and joints which leads to cramps, cartilage wear and friction in the joints. (Rob S Williams,2019)

2. METHOD

A self-administered questionnaire was prepared to assess the level of hydration knowledge and drinking habits of swimmers. Various swimming club were approached which were affiliated with Thane District Swimming association (TDSA) and Swimming Federation of India (SFI) in Thane region and professional swimmers were analysed who participate in the State, National and International swimming competitions regularly. The participants for this study were of various ages groups and signed consent was obtained from both the participants and their parent/legal guardian.

2.1 Procedures

A self-administered questionnaire was prepared based on the various questions which consisted of hydration knowledge and was utilized to assess the level of hydration knowledge,

drinking habits of swimmers. Various swimming club were approached in Thane region and swimmers who are the professional swimmers and participate in the State, National and International swimming competition regularly were analysed.

2.2 Data analysis

The analysis was carried out through a Statistical Package of Social Sciences (SPSS). Descriptive statistics- Frequencies, percentages, measures of variability were computed, cross tab were used to show the relationship between variables and finally the data was concluded.

3. RESULTS:

The data was analysed by circulating the self-assessed questioner and the observation were noted based on the responses provided by the swimmers. Among the total swimmers 76% were the male participants and 24% were the female participants of the various age group. The age groups and participation as per the age group are mentioned in the Table1.

**TABLE 1
PROFILE OF POPULATION**

	Classification	Frequency	Percentage (%)
sex	female	6	24
	male	19	76
Age range	Under 8	3	12
	9-12	5	20
	13 - 15	3	12
	16 -18	4	16
	19 and above	10	40

3.1 Nutritional Knowledge:

It was observed that knowledge of hydration is gained in various ways by the swimmers. 44% swimmers get knowledge of hydration from Coaches. 32% get knowledge of hydration from parents/relatives/friends, 16% get knowledge of hydration from Media /Internet/Websites/ Articles and only 8% get knowledge of hydration from professional consultant.

3.2 Amount of water consumed during a day:

The amount of water consumed by the swimmers throughout the day differs as per the age group hence the consumption of water is calculated as per the age groups. Details mentioned in Table 2. It was observed that in the age group of 19 years and above 70% swimmers consumed 2-3 litres of water in a day, in 16-18 years age group 50% swimmers consumed 3- 4 litres of water, in 9-12 years 60% consumed 2-3 litres of water, in under 8 years 66.70% consumed 1-2 litres of water. While in the age group of 16-18 years 33.30% swimmers were found consuming more than 5 litres of water in a day.

**TABLE 2
AMOUNT OF WATER CONSUMED BY THE SWIMMERS DURING A DAY.**

Amount of water consumed in Litre (L)	Age					Total
	Under 8 Years	9 to 12 years	13 to 15 years	16 to 18 Years	19 years and above	
1-2 L	66.70%	40.00%	0.00%	25.00%	0.00%	20.00%
2-3 L	33.30%	60.00%	0.00%	50.00%	70.00%	52.00%
3-4 L	0.00%	0.00%	33.30%	0.00%	10.00%	8.00%
4-5 L	0.00%	0.00%	33.30%	0.00%	10.00%	8.00%
More than 5 L	0.00%	0.00%	33.30%	25.00%	10.00%	12.00%

3.3 Amount of water consumed during the training:

The swimmers have 3-4 hours of training session during a day and the amount of water consumed during the training is described in Table 3. In all the age groups more than 50% swimmers consumed 500 ml of water, except in the age group of 9-12 years 60% swimmer consumed 250 ml of water which is very less than the recommended consumption of water during the training.

TABLE 3
AMOUNT OF WATER CONSUMED BY THE SWIMMERS DURING TRAINING.

Amount of water consumed during the training. (ml/L)	Age					Total
	Under 8 Years	9 to 12 years	13 to 15 years	16 to 18 Years	19 years and above	
250 ml	33.30%	60.00%	0.00%	0.00%	10.00%	20.00%
500 ml	66.70%	0.00%	0.00%	75.00%	50.00%	40.00%
500-1000 ml	0.00%	40.00%	66.70%	0.00%	30.00%	28.00%
More than 1 litre	0.00%	0.00%	33.30%	25.00%	10.00%	12.00%

3.4 Nutritional fluid consumed during the training:

As per the details mentioned in Table 3, It was observed that more than 50% of swimmers in the various age group never consumed any nutritional fluid except the age group of 13-15 years in which 66.70% swimmers consumed nutritional fluid.

TABLE 4
NUTRITIONAL FLUID CONSUMED BY THE SWIMMERS DURING TRAINING SESSION

Nutritional Fluid consumed during training session	Age					Total
	Under 8 Years	9 to 12 years	13 to 15 Years	16 to 18 Years	19 years and above	
Always	33.30%	0.00%	66.70%	0.00%	10.00%	16.00%
Mostofthetimes	0.00%	0.00%	0.00%	50.00%	0.00%	8.00%
Never	66.70%	40.00%	0.00%	50.00%	50.00%	44.00%
Sometimes	0.00%	60.00%	33.30%	0.00%	40.00%	32.00%

3.5 Tiredness fatigue and muscular cramps observed after training:

It was observed that most of the swimmers felt tired, fatigue and also had muscular cramps sometimes after training, 60% swimmers of age group 19 years and above,50% swimmers of age group 16-18 years, 66.70% swimmers of age group 13-15 years and 60% swimmers of age group 9-12 years sometimes feel muscle pain and cramps after the training. The observations are mentioned in the table 5 and 6.

TABLE 5
TIREDNES AND FATIGUE OBSERVED BY SWIMMERS AFTER TRAINING SESSION.

Feel tired or fatigue after training session	Age					Total
	Under 8 Years	9 to 12 years	13 to 15 Years	16 to 18 Years	19 years and above	
Always	0.00%	0.00%	0.00%	0.00%	10.00%	4.00%
Most of the times	0.00%	20.00%	0.00%	25.00%	10.00%	12.00%
Never	66.70%	0.00%	33.30%	0.00%	0.00%	12.00%
Sometimes	33.30%	80.00%	66.70%	75.00%	80.00%	72.00%

TABLE 6
FREQUENT MUSCLE PAIN/ CRAMPS OBSERVED BY THE SWIMMERS AFTER TRAINING SESSION.

Frequent muscle pain/cramps after the training session	Age					Total
	Under 8 Years	9 to 12 years	13 to 15 years	16 to 18 Years	19 years and above	
Most of the times	0.00%	20.00%	0.00%	25.00%	0.00%	8.00%
Never	66.70%	20.00%	66.70%	25.00%	40.00%	40.00%
Sometimes	33.30%	60.00%	33.30%	50.00%	60.00%	52.00%

4. DISCUSSION

In this study it was observed that swimmers gain the knowledge of hydration from parents, friends, media, internet, 44% swimmers gain knowledge of hydration from coach and only 8% approach the professional nutritional consultant. After observing the water consumption during day and during training it was found that the swimmers have insufficient knowledge about hydration. As hydration is very important for swimmers to maintain the body fluid balance the observations indicates that the swimmer should follow proper hydration consumption. The Institute of Medicine recommend that the adult swimmers aged 19 years and above need to consume 3-4 litres of water during the day but only 10% swimmers of age group 19 years and above consume 3-4 litres of water. Drinking excess water is also not good for the swimmers as per Orlando Health (2020) after drinking excess water the sodium that is naturally found in the blood gets diluted. Sodium is an electrolyte, which helps to maintain blood pressure and helps nerves, muscles and body tissues to work correctly. In 19 years and above 10% swimmers and in 16-18 years age group 33.30% swimmers consume more than 5 litres of water, which was observed as an excessive water consumption during a day. During training 500- 1litre amount is recommended for swimmers of all age group as per the Orlando Health (2020). It was observed that in age group of 9-12 years 60 % swimmers consumed only 250 ml of water during the training, which was less than the recommended water consumption.

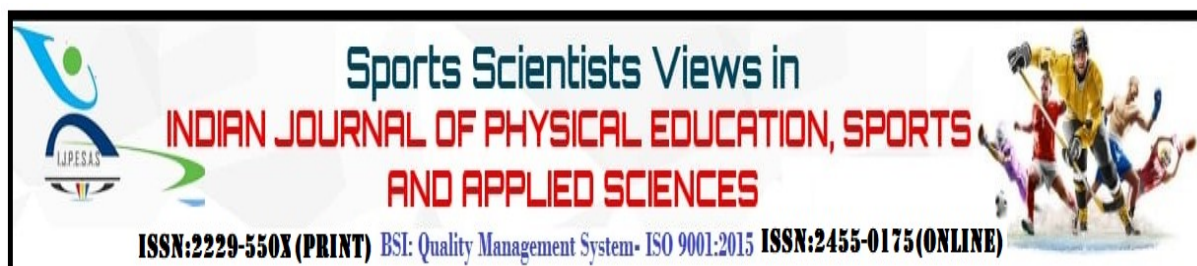
The swimmers need to be hydrated during training; hence consumption of nutritional fluid is very much essential. Nutritional fluid helps to balance the electrolyte contents in the body and keeps body hydrated for longer durations. During training 50% swimmers of age group 19 years and above and 16-18 years never consumed any nutritional fluid/energy drink. Due to low or never consumption of nutritional fluid the swimmers may lose the electrolytes and face the dehydration symptoms like tiredness, fatigue, muscle pain and cramps. 25% swimmers in age group of 16-18 years most of the time face muscle pain and cramps and 60% swimmers of 19 years and above face the muscular pain and cramps sometimes. This frequent muscle pain and cramp is observed due to lack of electrolytes (sodium, potassium, magnesium, calcium, and chloride) in body which supports the normal muscle contraction. The consumption of nutritional fluids helps the body to replenish the electrolytes.

5. CONCLUSION:

The swimmers strive hard to perform the best at competitive level and they undergo tremendous pressure for best performance hence they should be always supported and guided with the proper knowledge of hydration and intake of water. The proper hydration plays a crucial role in the swimmer's performance hence apart from water they should also regularly consume nutritional fluids and juices. It will help swimmers to balance the electrolyte and avoid muscle pain, cramps during and after training and tiredness and fatigue after the training session.

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A COMPARATIVE STUDY ON SELECTED PHYSICAL FITNESS COMPONENTS BETWEEN RURAL AND URBAN AREA COLLEGE STUDENTS

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ABSTRACT

The purpose of the present study was to compare physical fitness components namely power, agility and strength in between Rural and Urban Area College Students. For this study 30 college students (15 male and 15 female) were randomly selected from Sanjay Gandhi Post Graduate (SGPG) College, Sarurpur Khurd, Meerut which is purely situated in rural area of Meerut District and other 30 college students (15 male and 15 female) from Meerut College, Meerut which is purely situated in Urban Area of Meerut District. Age range of the subjects for this study was between 18-23 years. Selected Physical Fitness Components (Power, Agility and Strength) through standing broad jump (for power measurement), zigzag run (for agility measurement) and medicine ball put (for shoulder strength measurement). Fitness component test were designed according to Barrow Motor Ability Test and 't' test was used to test the hypothesis. On the basis of statistical analysis it was concluded that there was a significant difference in power, agility and strength between Rural and Urban Area College students.

Keywords: Physical fitness, power, agility, strength.

1. INTRODUCTION

Physical fitness provides us with a basis for optimal physiological health and capacity to enjoy the life. As we regularly need food, rest and sleep so do we need daily exercise for the maintenance of our physical capabilities (**Boudard C., Shepherd R.J., 1994**). It is very difficult to define precisely that we generally relate it to the accomplishment of a particular task assigned to a person. If he is able to do job, we declare him fit for the job, otherwise not. The task may be easy or difficult. If the task is easy, it can be performed with a little effort but if the task is tough, then great amount of effort is needed to accomplish it. Therefore a person may be fit to do an easy task, but unfit to do a heavy task (**Johnson B.L., 1982**).

“A measure of the body’s ability to function efficiently and effectively in work and leisure activities resist hypo-kinetic diseases (diseases from sedentary life style) and to meet emergency situations”. It depend on ten major factors namely Body Composition, Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Flexibility (these five factors are health related and can be developed through proper training methods) Agility, Balance, Power, Speed and Co-ordination ability. The last five factors are skill related and can be improved through regular practice and motor skill, but two factors namely Power and Speed require in both (**Kumar Gulshan, 2013**).

Physical fitness is different in different environment. Personal and environmental factors to consider when aiming to improve participation in physical activity in children with Spina Bifida : a qualitative study. The motor ability has been defined as the present acquired and innate ability to perform motor skill and a general and functional nature, exclusive of highly specialised sports techniques. The motor fitness is the limited phase of physical fitness. We can measure the motor ability of individual put the measure of fitness element. Considering it as a single innate ability, the early researchers defined motor ability as a general physical efficiency, the immediate capacity of individual to perform various students (**Kaur Ramanjit, 2010**).

2. MATERIAL AND METHODS

2.1 Subjects:

To achieve the purpose of the study 30 college students (15 male and 15 female) were randomly selected from Sanjay Gandhi Post Graduate (SGPG) College, Sarurpur Khurd, Meerut which is purely situated in rural area of Meerut District and other 30 college students (15 male and 15 female) from Meerut College, Meerut which is purely situated in Urban Area of Meerut District. Random sample technique was applied to select the subjects. Age Group of the subjects ranged from 18-23 years. The study was conducted in the month of October, 2021.

2.2 Selection of Variables and Test:

Three selected components of physical fitness namely Power, Agility and Shoulder Strength were tested in this study through Standing Broad Jump, Zigzag Run and Medicine Ball Put designed according to Barrow Motor Ability Test:

	VARIABLES	TEST
A.	Power	Standing Broad Jump
B.	Agility	Zigzag Run
C.	Shoulder Strenght	Medicine Ball Put

2.3 Testing Procedure:

2.3.1 Standing Broad Jump – with the feet parallel to each other and behind the starting line, the subject hands the knees and swings the arms and jumps as forward as possible within three trial highest score were recorded in feet & inches.

2.3.1 Zigzag Run – the subjects performed the test in drawing field as prescribed for Zigzag run test in Barrow Motor Ability Test and time were recorded in seconds.

2.3.3 Medicine Ball Put – the subject stands between two restraining lines which are 15 feet apart, subject attempts to propel the sixteen pound (for male) and eight pound (for female) medicine ball put as far as possible without over stepping on the restraining line. But subject hold the ball at the junction of his neck and shoulder and try to put the ball at the body approximately 45 degree. Within three trials highest were recorded in feet and inches.

2.4 Statistical Techniques

For statistical analysis of the collected data mean and standard deviation were first calculated and then ‘t’ test was used to find the significant difference. The level of significance was set at 0.05 level.

3. RESULT

The calculated data on standing Broad Jump, Zigzag Run and Medicine Ball Put of both college students have been statistically analyzed and presented in tabular form:

**TABLE 1
COMPARISON OF THE SCORES OF ALL THREE COMPONENTS OF RURAL AND URBAN MALE SUBJECTS.**

Variables	Rural Area		Urban Area		‘t’ value
	Mean	S.D.	Mean	S.D.	
Power	7.21	0.46	6.32	0.87	3.52
Agility	23.24	0.81	24.87	2.45	3.95
Strength	25.53	2.36	20.07	1.79	7.15

*Significant at 0.05 level ‘t’ 0.05 (28) = 2.04

It is observed from Table – 1 that the calculated ‘t’ value of Power (3.52) is more than the tabulated ‘t’) 2.04), the calculated ‘t’ value of Agility (3.95) is more than the tabulated ‘t’ (2.04) and the calculated ‘t’ value of Strength (7.15) is also more than the tabulated ‘t’ (2.04). hence it may be considered that there was significant difference found between the Rural Area Male College Student’s and Urban Area Male College Student’s physical fitness.

. FIGURE – 1

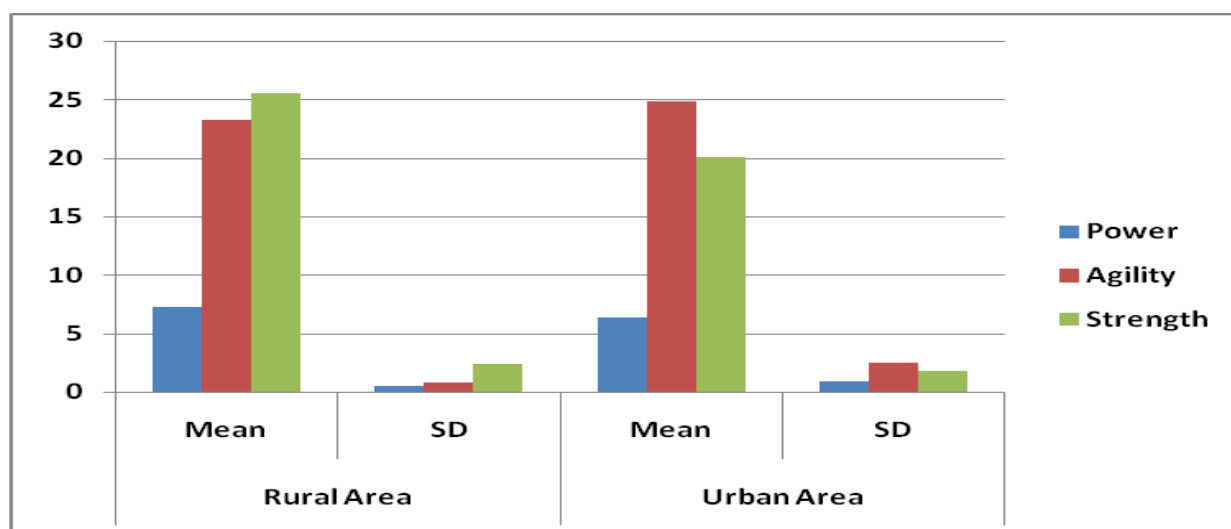


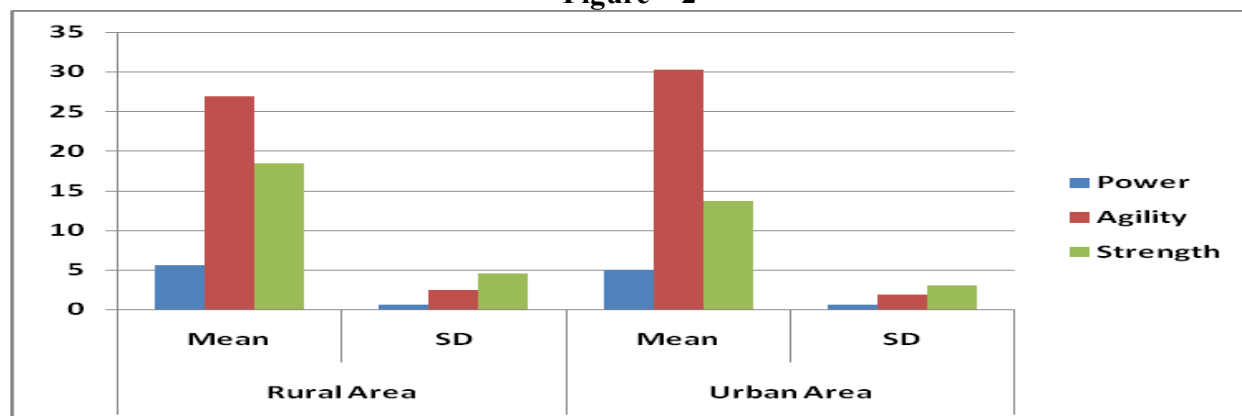
TABLE 2
COMPARISON OF THE SCORES OF ALL THREE COMPONENTS OF RURAL AND URBAN FEMALE SUBJECTS.

Variables	Rural Area		Urban Area		't' value
	Mean	S.D.	Mean	S.D.	
Power	5.55	0.56	4.95	0.60	2.81
Agility	26.83	2.38	30.21	1.90	4.31
Strength	18.40	4.54	13.63	2.96	3.41

*Significant at 0.05 level 't' 0.05 (28) = 2.04

It is observed from Table – 2 that the calculated 't' value of Power (2.81) is more than the tabulated 't' 2.04), the calculated 't' value of Agility (4.31) is more than the tabulated 't' (2.04) and the calculated 't' value of Strength (3.41) is also more than tabulated 't' (2.04). Hence it may be considered that there was a significant difference found between the Rural Area Female College Student's and Urban Area Female College Student's physical fitness.

Figure – 2



4. DISCUSSION

According to health and exercise science in order to keep healthy, a person must sweat out at least 30 minutes in a day for 5 days in a week. A healthy and fit person has an influence on the risks of morbidity and mortality, and therefore can reduce these risk. Disease prevention and health promotion should be implemented as early as possible both in childhood and adolescence. Previous studies have focused on specific health behaviour. Regular physical activity prevents or limits weight gain, and gain in body mass index (BMI). The above mention tables shown that there have significant on selected students. Rural Area's both Male and Female College Students have better fitness level than Urban Area's Students.

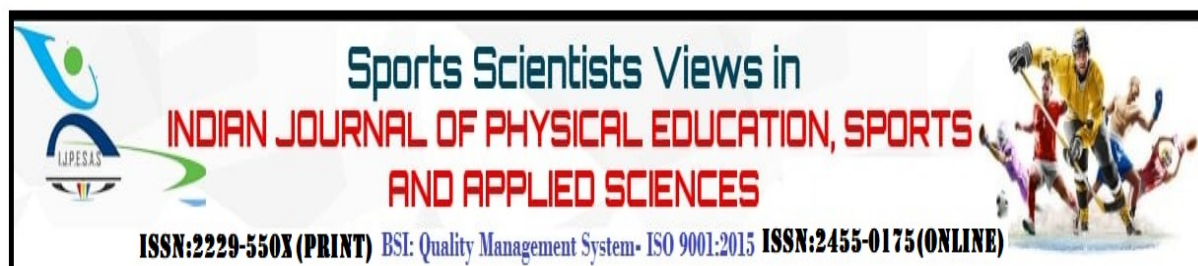
Sajay Gandhi Post Graduate (SGPG) College, Sarurpur Khurd, Meerut is situated in Rural Area of Meerut district and Meerut College, Meerut is in the mid of city. This result is consistent with the findings of similar study conducted by **Mehtap and Nihal (2005)** who conducted a study on physical fitness in Rural children compared with Urban children in turkey and found that children living in the Urban Area were more inactive and obese than Rural children. **Manmeet Gill, Nishan Singh Deol and Ramanjit Kaur (2010)** were conducted a study on selected fitness component of Rural and Urban Female Student's of Punjab University and found the Female's of Rural Area are comparatively better than Urban's.

5. CONCLUSION

On the basis of 't' test the present study it was conclude that there is a significant difference in Power, Agility and Strength. It also conclude that Rural Area both Male and Female College Student's have better fitness than Urban Area's College Students.

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THE ROLE OF SPIRITUALITY ON SUICIDE PREVENTION AND WELL-BEING: AN EXPLORATORY INQUIRY

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ABSTRACT

In India, the suicide rates among the youth have been growing rapidly. There has also been a significant rise during the Covid-19 pandemic when individuals were isolated, socially distant and felt uncertain about the future. This study aims to explore the role of spirituality on suicide prevention among young adults in India. The recruitment of 50 young adults (18- 25 years) using counselling centres in universities and social media was done. The individuals eligible were then invited for an in-depth interview based on a semi-structured guide with open-ended questions. A phenomenological approach was used to derive the themes and emerging constructs related to suicidal ideation, understanding spirituality and its techniques as well as the effects it has on an individual. Our results show that spirituality does act a buffer against suicidal ideations and helps in improving an individual's well-being. This paper is a humble attempt by the authors to get a deeper understanding of spirituality and its techniques implemented by them to deal with stressful situations and negative thoughts. The implications mention that interventions implementing spirituality or some aspect of it can help people tackle negative thoughts.

Keywords: spirituality, well-being, suicidal thoughts, college students

1. INTRODUCTION

Suicide remains a global issue with over 800,000 people dying from suicide every year (WHO, 2014). It has been found to be one of the leading causes of death among young people. The number of suicides had also witnessed a rise during the Covid-19 pandemic especially in India (National Crime Records Bureau, 2019). Suicidal behaviour which is usually a precursor to suicide is a public health and social cause of concern globally (Kolves & De Leo, 2016). India is reporting a high prevalence of suicidal behaviour among young people, including college students.

WHO in one reports showed that (2020) in India, per 100,000 population there are 0.3 psychiatrists, 0.12 nurses, 0.07 psychologists, and 0.07 social workers, while the desirable number is anything above 3 psychiatrists and psychologists per 100,000 population. There is emphasis in suicide research to understand the risk and protective factors of it due to the lack of mental health professionals in the country. It is of essence therefore that basic and simple strategies be incorporated in one's life to help us tackle problems at an early stage. Spirituality comes under the umbrella of positive psychology (Seligman, 2002) which aims to develop and promote a person's strengths but at the same time be consciously aware of our weaknesses. Positive psychology interventions have been designed in such a way that they are self-reinforcing and therefore can be easily implemented with the help of initial guidance from a professional or an intervention. It is a practice that has been around for centuries and inculcated in the Eastern culture too.

Researches have shown how spirituality can help in promoting overall well-being of an individual and can equip them to tackle with stressors in the future. They have a multi-dimensional effect on various aspects of an individual's life, namely social, psychological, physical, emotional. They have also stated how it can help in the reduction of suicidal behaviour (Colucci 2008, 2009a, 2009b; Colucci and Lester 2013) and promote overall well-being.

Through this study, we aim to understand how spirituality can act as a buffer against suicidal thoughts by interviewing individuals who have incorporated spirituality into their daily lives.

It also helps us understand how spirituality has the potential to prevent suicide and therefore should be incorporated in intervention strategies aiming to reduce suicidal behaviour.

2. METHODOLOGY

2.1 Sample

Informed consent was taken from the participants who were university students from Maharashtra. For the study, a total of 150 participants were screened for suicidal ideations who were 18 years and above. This was a voluntary participation study. They were intimated about this study through the university counselling centres and social media. Out of these 50 students with no suicidal ideations who practise spirituality were contacted by the researcher for an in-depth interview. They were given a brief introduction of the nature of the research after which the consent was taken to conduct the interview.

A qualitative approach was selected for this study as it is crucial to understand the potential of spirituality on reducing suicidal behaviour and improving an individual's well-being. We used this approach to explore how spirituality and its practices can help in overall well-being of a person and be a potential buffer against suicide. (Colucci and Martin 2008).

2.2 Data Collection

The aim of the study was to explore and understand the meaning of spirituality and their effects on university students who have inculcated it into their routine and lives and how it

affects their well-being and if it has the potential to act a buffer against suicide. To get an in-depth understanding into this we used a semi-structured interview procedure to understand the various aspects of it.

2.3 Data Analysis

The interview consisted of open-ended and was recorded and later transcribed. Thereafter the coding of the transcriptions was done verbatim and organised into meaningful primary themes and their sub-themes were generated following the guidelines of Barun and Clarke (2006).

3. RESULTS

TABLE 1
SOCIO DEMOGRAPHIC DETAILS OF THE PARTICIPANTS

		FREQUENCY	PERCENTAGE
RELIGION	Hinduism	30	60%
	Buddhism	10	10%
	Islam	10	10%
EDUCATION	Undergraduate	25	25%
	Postgraduate	25	25%
SES	Low	5	5%
	Middle	35	35%
	Upper	10	10%
FAMILY STRUCTURE	Nuclear	27	27%
	Joint	13	13%
	Single Parent	10	10%

TABLE 2
THEMES AND SUB-THEMES

S.No.	Themes	Sub Themes
1	Perceived reasons for suicidal ideations	<ol style="list-style-type: none"> 1. Equate it with peace 2. Escape from reality 3. Perceived worthlessness, helplessness and hopelessness
2	Understanding of Spirituality	<ol style="list-style-type: none"> 1. Calmness 2. Positive emotions 3. Belief in something powerful in the universe 4. Self-awareness
3	Effects of spirituality	<ol style="list-style-type: none"> 1. Psychological 2. Physical 3. Cognitive 4. Social
4	Techniques to practice spirituality	<ol style="list-style-type: none"> 1. Meditation 2. Mindfulness techniques

3.1 Thematic Analysis: It was done for the generation of themes and sub-themes.

THEME 1- PERCEIVED REASONS FOR SUICIDAL IDEATIONS

The reasons for suicidal ideations differed from individual to individual. It ranged from equating it to peace, few of them said it was an escape from reality and perceived feelings of being worthless, helpless or hopeless. The perceived reasons were mainly seen in these three ways.

1.1- Equate it with peace

The individuals stated that the perceived reasons for suicidal ideations differed in various ways. Most of them had a perception that suicide was the answer to end one's stress, suffering and psychological pain. They felt this was the way out for to be at peace with oneself and end the negativity which was a distortion.

"I think some people feel lost sometimes and think suicide is easier that way sometimes. I feel they are looking for solutions suicide is that solution to all their problems and that gives me peace. That there is some solution to the pain" (21/F, Interview 1).

1.2 – Equate it with escape from reality

It was found that thinking about ending one's life was associated with the perception of escaping the pain. It didn't necessarily mean that a person wants to die, but that they must be feeling so overwhelmed emotionally that suicide seemed like the only plausible solution to their problems. This also gives an insight into how important it is for an individual to have healthy thinking patterns.

"I've seen individuals who want instant relief from their problems and are looking for an easy escape just to ease the pain. More than ending their life they just want to run away or escape from the pain." (24/M, Interview 6).

1.3 – Perceived worthlessness, helplessness and hopelessness

Another reason why individuals experience suicidal thoughts is due to feeling helpless, hopeless or worthless when stressful situations occur. They tend to internalize their pain and experience negative emotions. They may also find it difficult to find healthy coping strategies due to which they feel trapped.

"Feelings of being not being good enough or adequate enough tend to make a person think about ending it all. They tend to view themselves in a very negative manner" (24/M, Interview number 10).

THEME 2- UNDERSTANDING OF SPIRITUALITY

This theme gave us an understanding of how the current generation or youth view and describe spirituality. What does it mean to them and the experiences, emotions associated with their spiritual practices which gives it meaning.

2.1. – Calmness

Spirituality was described as experiencing a sense of calmness, peace and reduced negative thoughts and feelings of fulfilment. The participants realised how spiritual practices made them feel more grounded, less overwhelmed and in control of their thoughts and emotions.

"I equate spirituality to feeling calm and embracing the little things around me which I would earlier take for granted" (22/F, Interview number 2).

2.2. – Positive Emotions

Spirituality was also described as when one experiences positive emotions, like happiness, calmness, hope and optimism about the present and future.

"I started feeling like my life had meaning to it. I enrolled in a course and was also dedicating time to myself so I felt better, more positive, happier and more optimistic for what the future holds." (23/M, Interview number 7).

2.3 – Belief in something powerful in the universe

Another meaning given to spirituality was describing it as a force that one believes in or experiences that comes from the cosmos and universe, something intangible that cannot necessarily be seen or touched but can be felt.

“I feel there is a force which no one can see but just experience and can help bring about positive changes in oneself, if we consciously make an effort to look within ourselves, that for me explains spirituality” (24/F, Interview number 27).

2.4. – Self-awareness

Another way in which spirituality was explained was having an increased sense of self knowledge and awareness. Understanding who they are as a person and their emotions, thoughts. Being conscious about their triggers and how to manage them effectively.

“For me spirituality would mean having an insight and knowledge about yourself, your thoughts, emotions, triggers and actively doing something to help oneself” (23/M, Interview number 31).

THEME 3 – EFFECTS OF SPIRITUALITY

There were many positive effects stated by the participants which affected various domains of their life, namely, psychological, physical, cognitive and social. It was found that spirituality improved the well-being in all these aspects of their lives in varying degrees.

3.1 – Psychological effects

It was found that spirituality has positive effects on the participants psychological and emotional well-being. It was reported that stress levels were reduced and there was an increase in positive emotions.

“You feel this ease and lightness emotionally, meaning there’s no heaviness, I wake up feeling fresh and ready to seize the day” (23/F, Interview number 1).

3.2. – Physical effects

One aspect that was described reduced physical problems like, stomach pains, headaches, profusely sweating during stressful situations due spirituality.

“My digestion has significantly improved, I used to have a lot of problems related to it but after chanting verses on a regular basis, I get relief and feel less drained” (23/M, Interview number 8).

3.3 – Cognitive effects

Another aspect where individuals found significant improvement was in their cognitive abilities like their memory, attention and thinking due to spiritual practises.

“Paying attention, or even concentrating in class seemed like a task, earlier but I’ve noticed a shift in my concentration levels and to be mentally present in the moment. My memory has improved a lot too” (23/M, Interview number 9).

3.4. – Social effects

Spirituality was found to help in reducing feelings of isolation, help promote feelings of belongingness, which is a crucial element to reducing suicidal ideations as described by Joiner (2005).

“Even when I was surrounded by my friends at a party, I still felt extremely alone and distant, like I couldn’t connect with them. But after practising meditation, I experience more positive emotions and feel better about myself which gives me the motivation and confidence to talk to others too” (24/F, Interview number 4).

THEME 4 – TECHNIQUES TO PRACTISE SPIRITUALITY

These talk about the various methods of implementing spirituality in our lives. Simple, basic methods that do not require too many resources to practise but just time and patience to be dedicated to. Some individuals also stated that as they started noticing an improvement in their well-being they automatically made sure to practise their spirituality technique on a regular basis as it helped them achieve their goals.

4.1.- Meditation

One of the most common techniques for practising spirituality as stated by the participants was found to be meditation. They found deep breathing exercises, helped in their attention and concentration and be more present in the moment. It also helped them gain control of their emotions and accept them and finding healthy ways to channel them out or deal with them.

“I joined an online meditation class during the lockdown and it made so much of a difference, I felt more at peace, less isolated and started having a more positive outlook to life and changes around” (25/F, Interview number 11).

4.2. – Mindfulness techniques

Mindfulness is a term gaining popularity among the GenZ or current generation, and the essence of it lies in the fact that it can be implemented at anytime and anywhere. It has been found to be a calming, relaxing technique of helping one understand, recognise and be in control of their emotions or behaviour. Mindfulness can be practised in the form of meditation, cooking, cleaning, or walking.

“Simple things like being aware of what I am doing in the moment, what I’m thinking and feeling helps me feel more in control and less overwhelmed. I love cooking, it’s the time I feel most happy so I enhance on that feeling by consciously being ore present while adding ingredients to the dish and then enjoying the outcome with my family” (24/M, Interview number 39).

4. DISCUSSION

The current study explores the student’s understanding and experience of spirituality, its practices as well as the effects of the spiritual practices in their lives. The responses of the participants revealed important components like perceived reasons for suicide, how spirituality was associated with the meaning of calmness, self-awareness, positive emotions and adding more meaning to life. There were various themes that emerged which showed that spirituality practices helped in reducing feelings of isolation and negative thinking patterns and improve cognitive abilities which have been recognised as protective factors against suicide (Colucci 2008, 2009a; Lenzi et al. 2012; Poll and Smith 2003).Through this section, we will discuss how spirituality can act as a buffer against suicidal behaviour.

Majority of the participants stated that inculcating spiritual practices and mindfulness techniques in their lives enhanced their well-being in various domains of their lives. Improved well-being automatically helps a person have more positive thoughts, emotions and behaviour and in turn can tackle stressors effectively. This acts as a buffer against suicidal behaviour.

There are several theories given by psychologists which highlight the variables and factors that lead to a person in displaying suicidal behaviour or feeling suicidal (Joiner, 2005), lacking the ability to handle stressors in a healthy manner, challenges and emotional difficulties which become difficult to manage cause a person to contemplate about suicide.

It is of absolute essence that a person should learn basic coping strategies to deal with these emotional difficulties so they can develop or build their perseverance. Through this character strength they can learn how to deal with problems in a healthier manner rather than resorting to suicide as the only solution.

One important domain that spirituality impacted for our participants was their social life and support as mentioned by them. During the Covid-19 pandemic, due to restrictions and a lockdown being imposed, many people felt socially isolated. Social isolation has been an indicator of suicidal thoughts (Durkheim [1897] 1951; Van Orden et al. 2010). However, due to

joining online mindfulness classes, meditation or even chanting, it has increased a sense of belongingness to the community, social connectedness and positive emotions of interacting with people who have shared common interests i.e. spiritual practices which act a protective factors against suicidal behaviour (Seybold and Hill 2001).

Previous research has also stated spirituality contributes to the development of positive emotions and well-being (Larson et al, 1998). The participants reported experiencing positive emotions like happiness, perseverance, hope, optimism, calmness, capability about their present and future after practising spirituality for some time. They stated instances where stressful situations which earlier caused unpleasant emotions can now manage the situation in an efficient manner maintaining the positive outlook they have developed.

5. CONCLUSION

The 50 students who took part in this study have actively been practising spirituality in their daily lives in some form or the other. These practices have helped them in tackling negative thoughts and stressful situations that they have encountered or might encounter in the future by building resources and tools to deal with emotions which affects their well-being. In conclusion, because of the positive effect spirituality and its practices have on our mental health, it needs to be incorporated in some form through intervention programs to facilitate suicide prevention which is a rampant social issue. Through the data obtained the authors were able to establish a positive relationship between spirituality and the overall mental health and well-being of an individual. This gives more support to the notion that spirituality can help reduce suicidal behaviour through spiritual therapy or interventions which researchers have been trying to prove since a long time

6. IMPLICATIONS

1. Spirituality can be incorporated in future suicide interventions to reduce suicidal behaviour and enhance overall well-being
2. It can be incorporated in the daily routine of students in schools and universities to deal with stress and help build resilience

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