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The effect of psychological intervention programme on sports related athletic coping skills of wheelchair cricketers

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Abstract
Self-talk and imagery have been extensively studied within the context of able-bodied athletes. However, there exists a limited amount of research on para-athletes, especially in India. Hence, the purpose of this study was to understand whether there would be an impact of self-talk and imagery on a para-athlete's coping skills. For the present study, a pre-test and post-test research design was used. The study sample included 8 male national-level wheelchair cricketers from the Maharashtra region. A psychological intervention program was developed to understand the effect of self-talk and imagery on the coping skills of wheelchair cricketers. The Demographic Sheet and the Athletic Coping Skills Inventory (ACSI-28) developed by Smith *et al*. (1995) was used to measure coping skills of para-athletes. The results revealed that even though the means and medians of the athletic coping skills increased after the administration of the psychological intervention programme, this change was statistically insignificant. This study will help to provide new insights about the coping skills of para-athletes in the Indian context. Hence, an effective intervention programme can be developed to deal with the sports related concerns of the Indian para-athletes.

Keywords: Self-talk, imagery, para-athletes, cricketers on wheelchair, coping skills, psychological intervention programme

Introduction
According to the database of the Paralympic Committee of India, there are 874 registered para-athletes across India (Paralympic Committee of India, 2023) [21]. Participation of the differently abled population in sports has reported significant psychological benefits such as an enhanced sense of self-esteem, an opportunity to socialise better and a high intrinsic motivation, to name a few (Martin, 2005; Jordán *et al*., 2017; Banack *et al*., 2011) [18, 13, 1]. A study conducted in the Indian context also reported that participation in sports increased the fitness and self-esteem of female para-athletes. Moreover, it enabled them to break stereotypes that were attached to disability (Seth & Dhillon, 2019) [26]. Considering these benefits to their mental health, it is necessary that they be trained in the psychological skills that can further enhance their performance and other psychological variables such as self-confidence, self-efficacy, motivation etc. However, the mental health of para-athletes, especially in India, has been consistently ignored since there has been very limited research on how psychological skills can impact their performance (Reddy & G, 2021) [25].
Wheelchair cricket is one of the most popular disability sports played in India and consists of players with polio, cerebral palsy and amputees in their team. Unfortunately, even the Indian wheelchair cricket team does not fall under the purview of the BCCI (Gupta, 2021) [7]. These factors may have a negative influence on their confidence, motivation and other sports related psychological skills and their coping skills. Sports psychology is based on the principle that these psychological skills may have a significant impact on sports performance (Smith *et al*., 1995) [27]. Hence, enhancing these sports-specific psychological skills through a psychological intervention programme becomes of prime importance.

The four most common techniques that comprise a psychological intervention program in sport psychology are imagery, self-talk, goal setting and relaxation (Zakrajsek & Blanton, 2017) [34-35].

For the research in question, the techniques of imagery and self-talk were selected. Imagery refers to the creation or a re-creation of a sensory experience in mind, in the absence of the perceptual stimuli (Eklund, 2007, 296) [5]. The implementation of this technique has been proven to enhance performance, self-efficacy, motivation and confidence (Zakrajsek & Blanton, 2017) [34-35]. The second technique that was used in the psychological intervention program was positive, motivational self-talk. Self-talk has been defined as a verbal dialogue that one engages in with oneself. In the context of sport psychology, it is an athlete's dialogue with oneself which consists of reinforcements, interpretation of feelings and self-evaluation (Eklund, 2007, 298) [5]. Positive self-talk is an inner dialogue with oneself that makes one feel good about himself/herself or about the things that he/she is doing (Pathways, 2019) [22]. Motivational self-talk is generally used when athletes want to "Psych" themselves up in stressful or challenging situations (Stenger, 2014) [30]. Both positive and motivational self-talk has been proven to improve performance, motivation and confidence (Hardy, *et al*., 2009) [10].

Lastly, the sports-specific psychological skills such as peaking under pressure, coping with adversity, concentration and confidence have been clubbed together by Smith *et al* (1995) [27] under the umbrella term of Athletic Coping skills which is a multifaceted psychological construct. Para athletes are faced with numerous challenges such as fear of failure, fear of inability to recover from injuries, comparisons with able-bodied athletes and trauma of previous accidents. Hence, the literature on sports psychology unanimously supports the idea that athletes should develop and enhance the required coping skills necessary to face and deal with the issues that they face (Cosma *et al*., 2020) [4]. According to Lazarus's stress and coping theory, coping can be defined as the "constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus, 1999) [14]. It has been found that athletes frequently use coping strategies to deal with stressful situations (Cosma, *et al*., 2020) [4]. The inability to effectively cope with stressful situations negatively impacts the performance of athletes (Lazarus, 2000) [15]. These athletic coping skills are an important outcome variable of intervention programmes since they are important in enhancing performance (Smith *et al*., 1995) [27].

Lastly, the literature on previous research about psychological skills training for para-athletes was consulted in order to keep in mind certain considerations while working with the para-athletes. Firstly, while implementing the intervention programme, the researcher should not assume that the para-athletes would be low on self-related variables such as self-esteem and self-determination. This is because in a study by Martin (2005) [18] it was found that athletes with physical disability had comparable levels of self-esteem as possessed by able-bodied athletes (Martin, 2005) [18]. Some other considerations proposed by Hanrahan (2015) [8] that need to be kept in mind while working with this population are that para-athletes benefit from learning and using psychological skills such as relaxation, self-talk, imagery and goal setting. Next, when working with para-athletes adaptations could be made in terms of the communication styles used. For example, when working with wheelchair cricketers or wheelchair basketball players, the researcher can couch or borrow a chair to sit on instead of plainly standing. However, it is not necessary that the content of the intervention programme be any different than that of a programme for able-bodied athletes. Lastly, the focus of the intervention sessions should be on the para athlete's ability and not on the disability (Hanrahan, 2015) [8].

Objectives

1. To assess the Sports Related Athletic Coping Skills of wheelchair cricketers.
2. To assess the effect of a psychological intervention programme on the Sports Related Athletic Coping Skills of wheelchair cricketers.

Hypotheses

There will be a significant effect of the psychological intervention programme on the Sports Related Athletic Coping Skills of wheelchair cricketers

Method

A pre-test post-test research design was employed for the study. The intervention programme was administered on 8 male state-level cricketers in the Maharashtra region using purposive sampling technique. Three psychological tools were used to collect the data.

1. **The Athletic Coping Skills Inventory (ACSI-28):** This scale was developed by Smith *et al*., in 1995 [27]. This scale consists of seven sports-specific subscales. The total number of items in this study was 20. The participants responded to each item using a 4-point likert scale. This scale was psychometrically sound since the Cronbach alpha value of the total scale was 0.86 and the test-retest reliability coefficient was 0.87.
2. **The Intervention Programme:** The intervention programme was conducted over a period of 2 months and comprised 8 sessions. The objective of the intervention programme was to teach the wheelchair cricketers 2 main skills: Self-talk and visual imagery. The participants were first given a theoretical orientation to self-talk. They were then asked to identify their positive and negative self-talk statements and transform the negative statements into positive ones. The same was done for the imagery skill where the performance goals of each participant were first established to make an individualised imagery script for the participant. The participants were asked to implement the taught skills in their practice sessions. Regular follow-up was being taken from the participants to check adherence to the skills.
3. **The Demographic Sheet:** This section was used to determine variables such as age, gender, religion, educational qualification, employment status, monthly family income and the language they felt the most comfortable in. Secondly, certain wheelchair cricket-related variables were also determined such as the type of physical disability, number of years the sport was practised for and the level that the sport was played at (District, State, National or International).

Procedure

Informed consent to participate in the research was taken from all the participants. This was followed by the administration of the demographic sheet and the ACSI-28. Once the baseline coping skills were determined, the

intervention programme was employed on the wheelchair cricketers. The same consisted of 8 sessions and lasted for 2 months. On the termination of the intervention programme, the post-test was administered to assess the effect of the intervention programme on the coping skills of the wheelchair cricketers.

Results

The data was analysed in 2 parts. The first part being that of descriptive statistics and the second part being that of inferential statistics.

Descriptive Statistics

Table 1: Summary of descriptive statistics obtained from the data

Total no of Participants	8
Mean Age of Participants	36.38
No. of participants with Polio	6
No. of participants who were Amputees	2
Mean score on scale	40
Standard Deviation on scale	7.48
Median on Scale	39.5

The mean age of the wheelchair cricketers was 36.38. 6 of the 8 participants had polio and 2 were amputees. The mean score for the total scale was 40 with the standard deviation of 7.48 and median score of 39.5. Out of the 5 administered subscales, the highest scores were obtained from confidence (M = 9.12, SD = 3.44, Median = 10) and the lowest scores were obtained from freedom from worry (M = 5.62, SD = 1.3, Median = 5.5). Similarly, the mean score of the total scale for the post-test administration was 40.5 with the standard deviation of 9.97 and a median of 43. The highest score was obtained from the confidence subscale (M = 9.25, SD = 2.31, Median = 10) while the lowest score was obtained from the freedom from worry subscale (M = 6.25, SD = 2.49, Median = 5.5). Hence, it can be observed that the mean and median scores of the post-test were higher than that of the pre-test. Figure 1 shows that the mean of the pre-test scores was 40 while that of the post-test scores was 40.25.

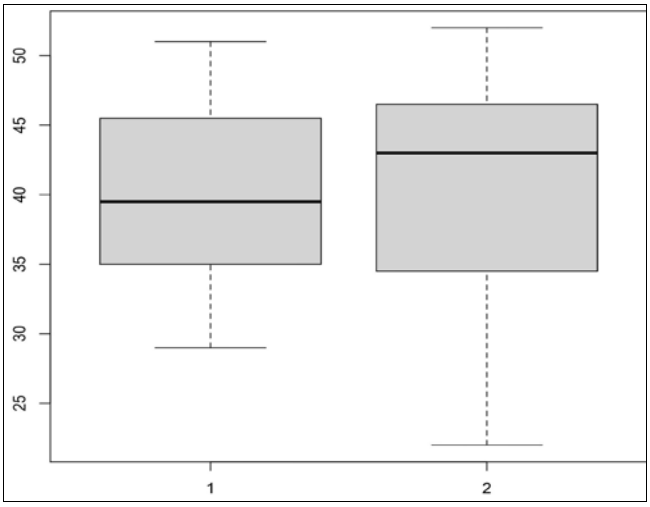

Fig 1: Comparison of means of the pre-test and post-test scores.

Inferential Statistics

The data obtained from the 8 participants did not meet the assumption of normality. For this reason, instead of using a paired-sample t-test, the Wilcoxon signed-rank test was used, which is a non-parametric test.

Table 2: Results of Wilcoxon signed-rank test for the difference in pre-test and post-test medians of ACSI-28

Scale and Subscales	Pre Test Median	Post Test Median	Z	P
Personal Coping Score	39.5	43	19.5	.886
Coping with Adversity	7.5	9	8.5	.892
Peaking under pressure	9	9	7.5	1
Concentration	8.5	7.5	13.5	1
Freedom from Worry	5.5	2.49	17.5	.606
Confidence	10	10	15	.932

Note: None of the Z values were found to be significant.

The Wilcoxon signed-rank test indicated that the differences in the medians of the total pre-test and post-test scores and those of the subscales were not significant. Hence, it can be said that as expected, the median of the post-test score was greater than that of the pre-test score, the Wilcoxon signed-rank test revealed that the median post-intervention was statistically insignificantly higher than the median pre-intervention, V = 19.5, $p>0.05$.

Discussion

The use of self-talk and imagery to facilitate performance, self-efficacy and other psychological skills has been excessively studied in the context of able-bodied athletes. However, despite the popularity and growth of para-sports, there has not been a parallel increase in the research consisting of this population (Harbalis *et al*., 2008) [9]. According to the best of our knowledge, this study is the first study in India to implement a multimodal psychological intervention programme on wheelchair cricketers to improve a variety of athletic coping skills. Firstly, while examining the absolute means and medians of the pre-test and post-test data, there was a slight increase in the athletic coping skills of para-athletes. However, the inferential statistics revealed that the increase in the means and medians was not statistically significant. Hence, the results of this study are not comparable with the results of other studies reviewed in the literature that employed the psychological intervention programme to improve the individual athletic coping skills in athletes. With this being the first known study to implement the psychological intervention programme on para-athletes in India, a range of possible explanations can be provided for the insignificant results obtained. Firstly, the intervention programme was so constructed that 3 days were allotted for self-talk and 3 days for imagery. However, the cricketers in wheelchairs practise the game only on Sundays. Hence, they got limited opportunities to practise the 2 skills. Secondly, the psychological intervention programme lasted only for 2 months. Research reviewed in the literature ranged from a 21-week intervention programme with badminton players ((Callow *et al*., 2001) [3] to a 12-week programme on wheelchair basketball players (Harbalis *et al*., 2008) [9]. Additionally, Walter *et al*., 2019 [32] examined the effectiveness of a short-term and long-term psychological intervention programmes on various variables such as performance, competitive anxiety, self-efficacy and volitional skills. They found out that long-term training which lasted for 8 weeks was more effective than short-term training which lasted for 1 week (Walter *et al*., 2019) [32].

Thirdly, as viewed in the Sociodemographic details of the participants, only 1 participant was comfortable in English, 1 in Hindi and the other 6 participants were comfortable in

using and understanding Marathi. Even though the entire intervention programme was delivered in Hindi and Marathi, the instrument administered (ACSI-28) was in English. This reliance on English might have posed a barrier in the effective understanding of the questions and statements in the inventory leading to distorted responses. Lastly, imagery is an internal mental representation that works like a weak form of perception (Pearson *et al*., 2015) [23] and self-talk is a subjective phenomenon and difficult to assess (Brinthaupt *et al*., 2015) [2]. Even though follow-up sessions were taken for each skill taught, since self-talk and imagery are internal mental processes, they could not be observed and monitored by the researcher.

Conclusion
It was found that even though the mean and median scores of the post-test were greater than that of the pre-test, the results were found to be insignificant. Hence, the results of the present study were not in line with the hypothesis which states that there will be a significant effect of a psychological intervention programme on the athletic coping skills of para-athletes.

Delimitations
It is important to note that the present study was not completely devoid of methodological limitations. The entire study was completed using an online mode since this was the best option available considering the pandemic and the restricted movement in Mumbai of the para-athletes. The online mode and the post-COVID impact on the wheelchair cricketers could have posed a barrier in the understanding of self-talk and imagery. A psychological intervention programme that is implemented for a longer duration would have been more effective as viewed in previous research. The instrument (ACSI-28) used for administering the pre-test and the post-test was developed in the United States of America and hence did not take into account the psychosocial factors of Indian para-athletes. Moreover, the instrument was not validated on the concerned population i.e. cricketers on wheelchairs.

Practical Implications
The study attempted to begin and contribute to the narrative of the limited research on para-athletes in India. An attempt was also made to understand the athletic coping skills used by the para-athletes in the Indian context and to determine whether and how these skills can be improved. After taking into consideration the limitations of the study, the psychological intervention programme could be extended to para-athletes playing other sports. Since the literature reviewed has shown that the use of effective coping skills can lead to an improvement in performance, the consistent use of self-talk and imagery can improve the athlete's coping skills, thereby improving their performance which would then result in a greater number of medals won by them for the country at large.

Scope for future research
Given the range of possible explanations for the results obtained and keeping in mind the limitations of the study, several future research suggestions can be proposed. This research has been one of the few researches to begin the narrative of implementing intervention programmes on para-athletes in India. The first relates to the development of a scale that is in a local language and one that has been validated on the concerned population. Next, the duration of the psychological intervention programme can be increased. The psychosocial variables concerning the para-athletes in India should be taken into consideration while administering the psychological intervention programme. To do so, qualitative research can be undertaken to understand these factors, the obstacles faced by this population and also to identify the athletic coping skills used by this population.

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Conflict of Interest
The author(s) declared no conflict of interest.

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