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# Physiotherapy and Psychological Recovery: Examining Self-Confidence among Sports-Injured Female Athletes

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## ARTICLE DETAILS

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## ABSTRACT

Sports-related injuries not only impact athletes' physical performance but also exert a profound influence on their mental health, specifically affecting female athletes, and most notably, their self-confidence. The objective of this study was to investigate the differences in self-confidence levels among injured female athletes who underwent physiotherapy either during or following their sports-related injury compared to those who did not. For this study, a total of 100 injured female athletes were selected and divided into two groups: 50 athletes who received physiotherapy and 50 who did not. Self-confidence was assessed using a standardized questionnaire developed by Ms. Rekha Gupta, and the data were analyzed using measures such as the mean, standard deviation, independent samples t-test, and effect size. The results revealed a statistically significant difference in self-confidence between the two groups; the group of female athletes who received physiotherapy demonstrated higher levels of self-confidence ( $t = 2.99$ ,  $p < 0.04$ ). The effect size indicated a moderate level of practical significance. The findings of this research suggest that physiotherapy plays a pivotal role not only in physical recovery but also in enhancing mental aspects, such as self-confidence. This study primarily highlights the necessity of integrating physical and psychological rehabilitation strategies to assist injured female athletes in their return to sports.

**Introduction:**

Sports-related injuries are often unavoidable occurrences, and they can have a profound impact not only on an athlete's physical health but also on their mental well-being. Following an injury, as athletes prepare to return to competitive sports, they are frequently plagued by the fear of re-injury, furthermore, their focus becomes fragmented, and their self-confidence diminishes (Gkikopoulos et al., 2020). Women's participation in sports at various levels across the globe has increased rapidly. While engaging in sports offers not only physical but also psychological and social benefits, these advantages are often accompanied by a significant risk of injury. Beyond physical harm, injury-related concerns such as the fear of re-injury, diminished physical capacity, and loss of strength can become major barriers, particularly for adolescent girls (Crossley et al., 2020). Evidence suggests that female athletes may be at a heightened risk for certain types of sports-related injuries, such as breast injuries or vulvovaginal trauma. Rigorous physical training can also impact menstrual patterns, potentially leading to conditions such as amenorrhea (cessation of menstruation) or alterations in menstrual flow and associated symptom (Fardy, 1988). Female athletes are observed to be at a higher risk of stress-related issues and certain sport-specific injuries, particularly during the initial stages of adapting to the rigorous physical demands of their sport (Cox & Lenz, 1984). Womens performance is often influenced more by social expectations and cultural influences than by the innate biological differences existing between the sexes (Cox et al., 1979). It is widely recognized that regular physical activity plays a protective role in preventing various types of health problems (Meczekalski et al., 2014).

During the initial months of rehabilitation particularly within the first three to six months post-injury or surgery improvements are observed in factors such as self-efficacy and the fear of movement, however, these changes may stabilize over time. Certain circumstances such as the severity of the injury can exacerbate fear and diminish self-efficacy, thereby underscoring the critical need for specialized psychological support during the rehabilitation process (Bullock et al., 2022). Cryotherapy, a component of physiotherapy, is widely utilized in modern sports medicine. Beyond its role in treating acute injuries, cold therapy is also incorporated into rehabilitation programs to accelerate the recovery process for both recent and chronic injuries (Swenson et al., 1996). Certain specific exercises, such as balance exercises whether performed



alone or as part of an injury prevention program reduce the risk of ankle injuries during sports (Al Attar et al., 2022).

### **Review of Related literature:**

1.

In 1996, Smith conducted a research study that explored how sports injuries affect athletes both physically and emotionally, focusing particularly on their feelings, self-esteem, and overall mood during the recovery process. This research revealed that injured athletes especially those competing at high levels often experience specific emotional challenges, such as sadness, frustration, stress, and a decline in self-confidence. It was also observed that an athlete's mood is strongly linked to their perceptions regarding the progress of their recovery, which, in turn, can influence their willingness to attend and actively participate in rehabilitation sessions. To gain a better understanding of these emotional responses, the study highlighted the utility of structured assessment tools in evaluating the psychological state of injured athletes during the initial stages of recovery. Furthermore, simple psychological strategies such as positive self-talk, relaxation techniques, goal setting, and mental imagery were found to be effective in helping athletes cope better and facilitating their recovery.

2.

Kellmann et al. (2018) conducted a research study examining the relationship between recovery, fatigue, and athletic performance, emphasizing the importance of maintaining a balance between training demands and adequate recovery. A key finding emerging from this significant study was that both physical and mental recovery strategies play a crucial role in helping athletes sustain their performance and avoid negative outcomes such as overtraining, injury, and illness. The study also noted that, due to individual differences, athletes respond to training and recovery in varied ways, thereby making it essential to adopt personalized recovery approaches. Overall, the authors underscored the need for further research to systematically monitor recovery and to gain a better understanding of its impact on performance and health.

3.

The research study conducted by van Niekerk et al., 2023, investigate the level of self



confidence among sports injured female athlete. In today's society, female athletes face numerous challenges beyond just physical training prominent among which are concerns regarding body image, hormonal fluctuations, and mental stress. When they sustain an injury during sports, these factors can make their recovery even more difficult and undermine their confidence regarding a return to the sport. Research indicates that, alongside physical treatment, appropriate psychological support is crucial to help them recover effectively and rebuild their self-confidence.

4.

In a 2019 research study, Khan and his colleagues investigated the level of confidence physiotherapy students felt while performing orthopedic tests on the knee. A questionnaire was utilized in this study to assess the students' own perceptions regarding their skills. The results revealed that confidence levels varied among the students, and many felt a need for greater practical experience. This study underscored the critical importance of confidence for superior clinical performance, suggesting that improvements in practical training could help students become more proficient and self-assured.

#### **Objective of the research study:**

- To assess the level of self-confidence among female athletes injured during sports activities.
- To compare the self-confidence of female athletes injured during sports activities specifically, those who have undergone physiotherapy versus those who have not.
- To investigate the impact of physiotherapy on the self-confidence of female athletes injured during sports activities.

#### **Hypothesis of the research study:**

There is no significant difference in the confidence levels of the female athletes from both groups who sustained injuries during the game, regardless of whether they underwent physiotherapy or not.



### **Methodology:**

This research study was designed to investigate differences in confidence levels among female athletes who sustained injuries during sports activities. The study focused on two groups of female athletes: those who underwent physiotherapy and those who did not. To this end, a comparative research design was adopted.

### **Participants:**

For this study, a total of 100 female athletes suffering from sports-related injuries were selected as participants. They were divided into two groups:

- The Physiotherapy Group (n = 50): Female athletes who received physiotherapy treatment following their injury.
- The Non-Physiotherapy Group (n = 50): Female athletes who did not receive any physiotherapy treatment.

All participants had sustained sports-related injuries, and they all belonged to approximately the same age group, ranging from 18 to 30 years. From Indore MP.

### **Variables:**

- Independent Variable: Physiotherapy Yes/No
- Dependent Variable: Self-Confidence

### **Tool:**

Self-Confidence measured using a standardized self-confidence scale developed by Gupta, R. (1987). Self-Confidence Inventory. Agra: National Psychological Corporation.

### **Procedure:**

Female participants suffering from any type of sports-related injury were contacted and provided with comprehensive information regarding the objectives of the study. After obtaining

their consent, a self-confidence questionnaire was administered to every available participant. To ensure accurate responses, appropriate instructions regarding the information and the questionnaire were provided to all participants. Data was systematically collected from both groups under identical conditions.

### Statistical technique:

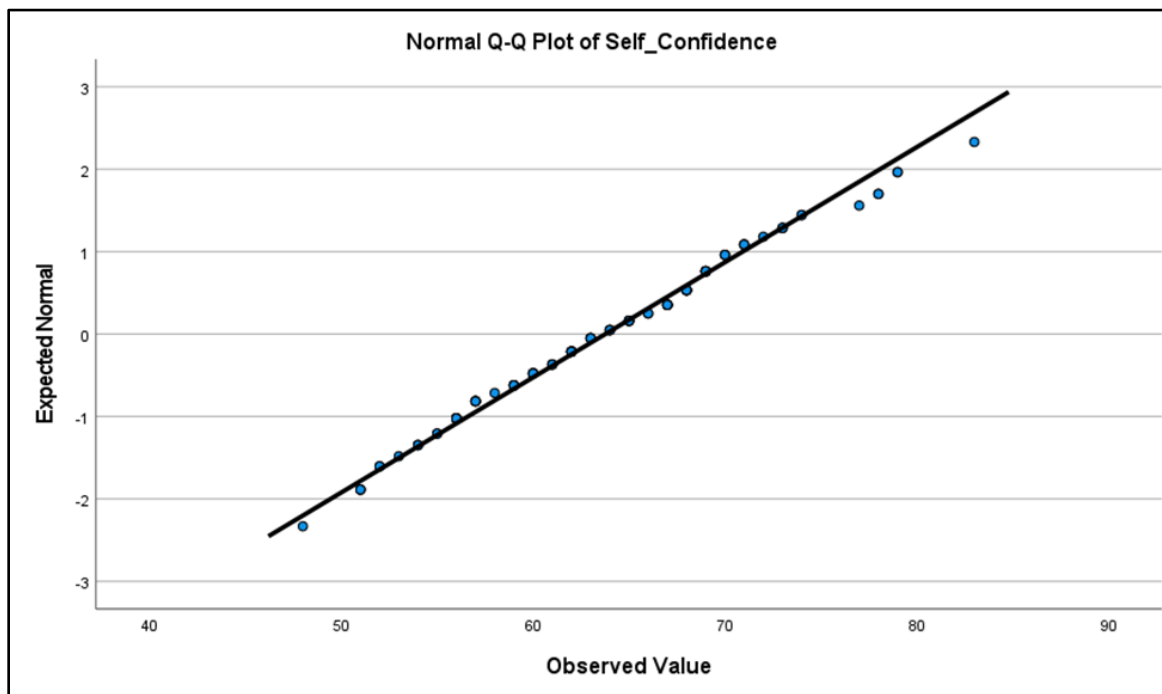
For the statistical analysis of this research study, two primary types of techniques were employed: descriptive and inferential to ensure that the data could be clearly understood and the objectives of the study could be examined. First, descriptive statistics were computed to summarize the overall level of confidence and to facilitate a clear description of the characteristics of both groups. Furthermore, skewness and kurtosis were analyzed to assess the normality of the data, thereby ensuring the appropriateness of applying parametric tests. To compare the levels of confidence between the two groups—the physiotherapy group and the non-physiotherapy group—an independent samples t-test was utilized, as it is suitable for analyzing differences between two independent groups. The level of significance was set at 0.05. Additionally, to understand the practical significance of the observed differences, the 'effect size' was calculated using 'Cohen's d,' which quantified the magnitude of the difference between the groups.

### Results:

**Table;1 Descriptive Statistics Related to self-confidence score.**

Variable	Mean	Std. deviation	Skewness	Kurtosis
Self-Confidence	63.76	7.16	.19	-.25

The descriptive statistics presented in Table 1 indicate that the participants' mean confidence score was 63.76, with a standard deviation of 7.16. This suggests a moderate level of variability among the respondents. The skewness value (0.19) and kurtosis value (-0.25) demonstrate that the data are approximately normally distributed, indicating that this dataset is suitable for further parametric analysis.



**Figure :1 Normality distribution of self-confidence score**

Figure 1 illustrates the distribution of confidence scores among the participants. The pattern of the graph indicates an approximately normal distribution, with most values clustered around the mean and very few values at the extremes. This confirms that the assumption of normality for the data is met.

**Table:2 Group-wise descriptive statistics of self confidence scores.**

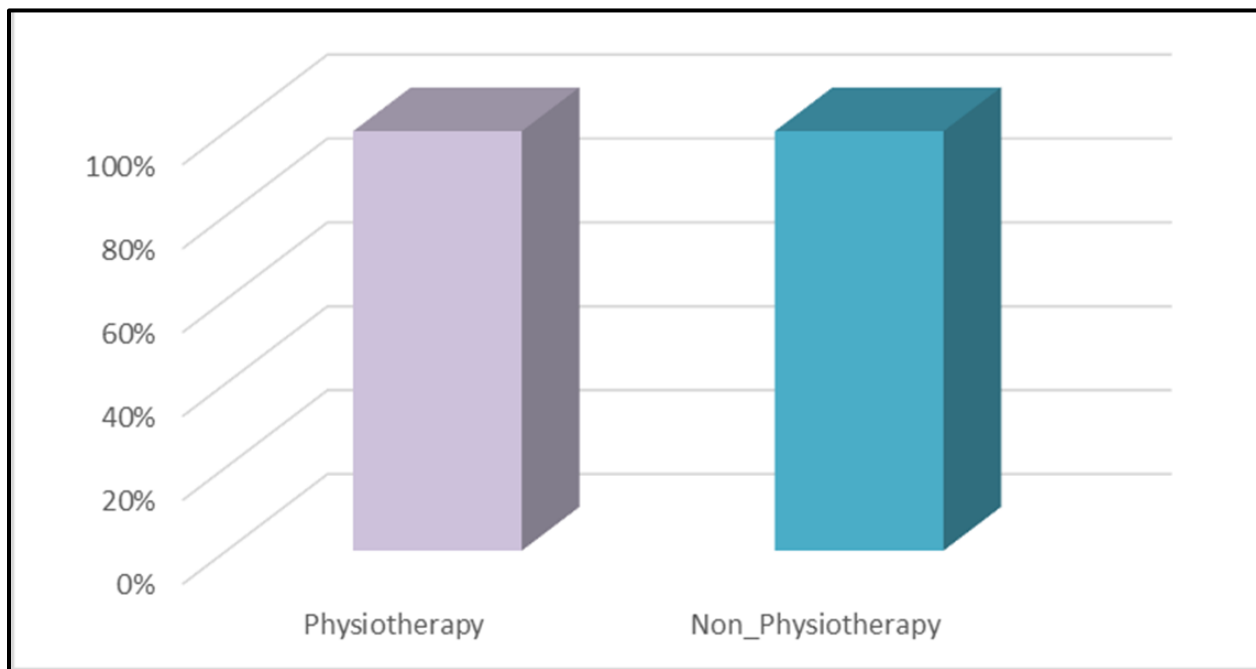
Group	N	Mean	SD
Physiotherapy	50	65.82	6.75
Non-physiotherapy	50	61.70	7.02

The group-wise descriptive statistics presented in Table 2 indicate that the mean confidence score of the physiotherapy group ( $M = 65.82$ ,  $SD = 6.75$ ) is higher than that of the group that did not receive physiotherapy ( $M = 61.70$ ,  $SD = 7.02$ ). This suggests that female athletes who sustained injuries during sports and received physiotherapy exhibit higher levels of confidence compared to those who did not receive physiotherapy.

**Table :3 Statical comparison of self-confidence with effect size estimation.**

Variable	t	df	p-value	Mean difference	Cohens d	95% Confidence Interval	
						Lower	Upper
<b>Self-Confidence</b>	2.99	98	0.04	4.12	0.60	.19	.99

The results of the independent samples t-test presented in Table 3 indicate a statistically significant difference in confidence between the physiotherapy and non-physiotherapy groups ( $t = 2.99, df = 98, p < 0.05$ ). An average difference of 4.12 suggests that the confidence scores of the physiotherapy group are higher. Furthermore, the effect size (Cohen's  $d = 0.60$ ) indicates that this difference is of moderate practical significance. The 95% confidence interval (0.19 to 0.99) does not include zero, which further corroborates the reliability of these findings.



**Figure :2 Comparison of mean scores of self-confidences between physiotherapy and non-physiotherapy.**

Figure 2 presents a visual comparison of the average confidence scores between the both groups. The graph clearly demonstrates that the average score of the physiotherapy group is



higher than that of the non-physiotherapy group, this confirms the statistical findings that physiotherapy is associated with higher confidence in female athletes injured during sports.

### **Discussion of Findings:**

The findings of this research study indicate that female athletes who sustained injuries during sports and underwent physiotherapy demonstrated significantly higher levels of self-confidence compared to those who did not receive physiotherapy. This disparity can be attributed to the combined physical and psychological benefits of rehabilitation. As an athlete recovers through physiotherapy, improvements in her strength, mobility, and functional capacity help her regain faith in her abilities, thereby directly boosting her self-confidence. This point is directly corroborated by Kellmann et al. (2018), who emphasized that appropriate recovery strategies are essential for maintaining both performance and psychological well-being. Furthermore, injuries often give rise to emotional challenges such as fear, anxiety, and diminished self-confidence particularly when the recovery process appears slow or uncertain; Smith (1996) highlighted that such emotional responses can negatively impact an athlete's engagement in the rehabilitation process. By providing a systematic and gradual recovery framework, physiotherapy helps mitigate these negative emotions, fostering in athletes a sense of control over their situation and a perception of progress. Additionally, female athletes may face unique psychological pressures including stress and body-image concerns which can further compromise their self-confidence following an injury (Van Niekerk et al., 2023). In this context, physiotherapy plays a crucial supportive role by assisting them in regaining both physical fitness and mental resilience. Findings from similar studies conducted by Khan et al. (2019) also suggest that self-confidence improves through a combination of appropriate training and practical experience. Therefore, the results of this study clearly demonstrate that physiotherapy not only aids in physical recovery but also makes a significant contribution to boosting the confidence of injured female athletes.

**Conclusion:**

Based on the findings of this research study, it can be concluded that physiotherapy has a significantly positive impact on the self-confidence of female athletes injured during sports activities. Athletes who underwent physiotherapy were found to possess higher levels of self-confidence compared to those who did not receive physiotherapy or any form of physical activity-based treatment. This research study emphasizes that rehabilitation should not be limited solely to physical recovery; rather, it must also fully address the mental health of the athletes. Through appropriate rehabilitation, enhancing psychological variables specifically self-confidence can facilitate a smoother and more successful return to sports for athletes. Furthermore, it can assist the athlete in regaining their previous performance levels much more rapidly. Therefore, to optimize both the physical and mental outcomes for female athletes, it is imperative to incorporate physiotherapy and physical activity-based exercises as an integral component of injury management.

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