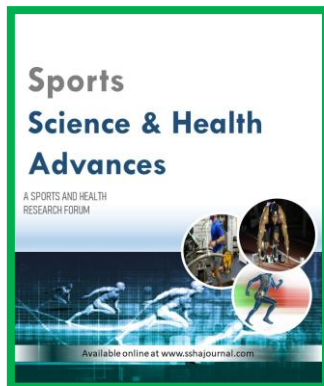
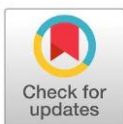


## Original Article

# Impact of Injury Duration on Sports Motivation

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## Abstract

**Purpose:** Prolonged injuries may decrease motivation and increase psychological distress and athletes may drop out but some return to the field despite adversity. The present research is an exploration of the differences in the dimensions of sports motivation in athletes who have returned to the field after varied injury duration. **Methodology:** A multivariate design with three categories of independent variable and six dimensions of dependent variable had been used. **Sample:** The sample consisted of 100 sports persons, both male and females from various sports who have suffered from injury and now have returned to field and were assigned to moderate, serious, and long-term group based on the injury duration that had been reported. **Data Collection and Analysis:** The translated version of Revised Sport Motivation Scale (SMS-II), developed by Pelletier et al. (2013), based on the Self-Determination Theory (SDT) framework having six sub-scales had been used for data collection. The data was analyzed using one way MANOVA statistical technique. **Results:** There were significant differences reported among three groups in Intrinsic, Integrated and Identified regulation. **Conclusion:** Long term injury groups had higher intrinsic, integrated and identified regulation followed by moderate and serious injury duration groups. The study underscores the need to develop interventions based on these dimensions, to reduce the drop out of athletes after long duration injuries, hence saving career, as well as financial and human resources.

**Keywords:** Injury Duration, motivation, intrinsic regulation and integrated regulation

## Introduction

Sports Motivation is one of the crucial psychological factors that drive sports persons to participate, persist, and perform in sports activities. It encompasses the reasons why athletes engage in sports, ranging from personal enjoyment and self-improvement to external rewards or pressures. Injuries are disruptive to an athlete's ability to participate, challenging their psychological needs and affecting their motivation to adhere to rehabilitation and return to sport. Motivation is crucial at the time of injury recovery process, as it directly influences adherence to rehabilitation protocols, goal setting, and overall mental well-being.

The duration of sports injury refers to the length of the time from injury onset to full recovery and return to play can significantly impact

an athlete's motivation, and Self-Determination Theory (SDT) by Deci & Ryan (2008; 2012) provides an evidence based framework explaining motivation in sports, emphasizing intrinsic, integrated and identified regulation (driven by personal choice), external regulation (driven by external pressures), and amotivation as key predictors of athletic performance, relationships, and well-being. It explained the role of social environments that support athletes' needs for autonomy, competence, and relatedness enhance motivation quality and strength. The qualitative study by Clement et al. (2015) supported the integrated model of psychological response, highlighting the need for athletic trainers to address psycho-social factors to enhance recovery. Carson & Polman (2017) emphasized that autonomy and competence support during early and late rehabilitation phases improved emotional responses and self-confidence, potentially accelerating return-to-play timelines. Haugen, (2022) mentioned psychological readiness as the main barrier among athletes in not returning back to sports. Lourenço et al., (2022) reported indirect effects of autonomy support, competence, and relatedness needs, in fostering autonomous motivation. The study conducted by Nebraska Medicine (2022) explored psychological factors related to prolonged recovery and underscored on addressing mental health of athletes to keep them motivated. Chiu et al., (2023) reported autonomous motivation as mediator of the relationship between psychological need support and reduced injury incidence. Tranaeus et al., (2024) reported significant motivation's role in rehabilitation outcomes. Machado et al., (2025) explored more motivational deficits in athletes having longer-term injuries, almost half of injury athletes reported depressive and give up thoughts and higher levels of demotivation indicating the need to focus on motivational issues.

The prevalence of sports related injury in Haryana, India's Olympic hub was reported by Mor et al., (2025). The study revealed kabaddi (42.6%) and wrestling (31.3%) as the primary sports affected, with most injuries occurring in 16–20-year-olds showing the prevalence and duration of injury among sports persons. Prolonged injuries may decrease motivation and increase psychological distress which in turn lead to higher dropout rate. Long injuries can lead to debilitating thoughts i.e., self-doubt among athletes or fear of re-injury which might demotivate them from fully committing to comeback. Brown and Ryan (2015) focused on promoting autonomous motivation by practical strategies. The study underscored the importance of need-supportive contexts to mitigate challenges like injury recovery, where motivation impacts adherence and duration.

There exists an evidence gap in direct quantification of the impact of SDT on injury duration, focusing instead on adherence or return-to-play outcomes. Population gap exists as much of the research (e.g., rugby players, adolescents) may not be generalized to all sports or populations. The present study takes both gaps in account and explores what kind of motivation the sports persons have, who chose to return to sports even after prolonged injury so that practical strategies can be developed for the sports persons who chose to drop out.

The study aims to generate evidence-based insights that would offer valuable guidance for practitioners aiming to cultivate self-determined behaviors in athletes and beyond. This research can lead to better support systems for injured athletes, improved rehabilitation outcomes, and ultimately, higher rates of successful return to sport.

**Research statement:** Are there any differences in dimensions of sports motivation of different injury duration among the sports persons who returned to sports after injury?

**Objective:** To compare the differences in dimensions of sports motivation of different injury duration among the sports persons who returned to sports after injury.

**Hypotheses:** There will be no differences in dimensions of sports motivation and its contingencies due to different injury duration among the sports persons who returned to sports after injury.

## Material and Method

### Design

A multivariate design with three categories of independent variable and six dimensions of dependent variable is used in present study.

Independent Variable: Injury Duration; Dependent Variable: Dimensions of Sports Motivation

### Participants

After contacting many sports person using Snowball sampling method, N=100, both males and females' sports persons of age ranging from 18 to 35 years engaged in any sport activity at inter-collegiate, inter-university, professional clubs, district, zonal, state, national and international level and who have returned to sports after injury and those who consented were selected as participants of the study. The participants were assigned to moderate, serious, and long-term groups based on the injury duration that had been reported.

**Table 1** N=100 (Grouping based on International Olympic Committee (IOC, 2020) framework)

Group 1	Group 2	Group 3
(Moderate injury duration)	(Serious injury duration)	(Long term injury duration)
Duration of Injury = (8-28 days)	Duration of Injury = (>28 days-6 months),	Duration of Injury = (>6 months)
N=30	N=33	N=37

### Measures

#### Revised Sport Motivation Scale (SMS-II), developed by Pelletier et al. (2013):

The Hindi translated version of this tool was used for present study. This measure is grounded in SDT, designed to measure athletes' motivational orientations in sports contexts. It consists of 18 items, each rated on a 7-point Likert scale (1 = not at all agree, 7 = strongly agree).

**Sub-scales:** 1. Intrinsic Regulation refers to participation for inherent satisfaction and pleasure. 2. Integrated Regulation refers to participation because of the alignment of sports with one's identity and values. 3. Identified Regulation means participating for personally valued outcomes 4. Introjected Regulation means participating due to guilt or ego (internal pressures) 5. External Regulation means participating for external rewards or to avoid negative consequences. 6. Non- motivation: Lack of motivation or purpose for participation. The six sub-scales, each with 3 items, reflecting the SDT motivation continuum

**Scoring and Interpretation:** The scoring is mean score per sub-scale (range 1–7) calculated from the 3 items. Higher scores indicate stronger endorsement of that motivational type.

### Procedure

The participants were contacted using a snowball sampling method and were explained the purpose of the study. Those who consented and fit in either of the three groups of injury duration were given response sheets with instructions. After receiving filled response sheets for forty participants for each group, the scoring part was started. The response sheets were scrutinized, and invalid response sheets were removed. The final sample included thirty participants in the moderate term group, thirty-three in the serious injury group and 37 in the long-term injury group.

### Statistical Analysis

Scoring was done and the data was subjected to descriptive statistics (Mean, SD) and checked for all assumptions to apply MANOVA. After assumptions of normality and variance were met, one-way multivariate analysis of variance (MANOVA) and Tukey post-hoc analysis was done using SPSS.

### Results

**Table 2** Mean and SD of Three Groups (Moderate, Serious and Long-Term injury) on dimensions of Sports Motivation

Variables	Groups	Mean	SD
Intrinsic Regulation	Moderate	13.70	2.78
	Serious	15.27	2.33
	Long term	17.43	2.81
Integrated Regulation	Moderate	15.83	2.89
	Serious	16.36	3.73
	Long term	18.62	2.37
Identified Regulation	Moderate	16.32	3.59
	Serious	15.88	3.55
	Long term	18.19	2.11
Introjected Regulation	Moderate	16.13	3.36
	Serious	16.00	3.91
	Long term	16.51	3.71
External Regulation	Moderate	15.57	2.87
	Serious	15.12	3.49
	Long term	14.49	4.14
Non- Motivation	Moderate	10.60	3.36
	Serious	10.42	2.84
	Long term	10.14	3.88

Table 2 indicates that the Long-term group consistently showed higher means for Intrinsic Regulation ( $M = 17.43$ ,  $SD = 2.81$ ), Integrated Regulation ( $M = 18.62$ ,  $SD = 2.37$ ), and Identified Regulation ( $M = 18.19$ ,  $SD = 2.11$ ) compared to the Moderate and Serious groups, suggesting greater self-determined motivation in this group. Introjected Regulation means were similar across groups ( $M = 16.00$ – $16.51$ ), indicating stable internalized motivation. In contrast, External Regulation was highest in the Moderate group ( $M = 15.57$ ,  $SD = 2.87$ ) and lowest in the Long-term group ( $M = 14.49$ ,  $SD = 4.14$ ), suggesting a decline in externally driven motivation over time. Non-Motivation scores were consistently low across all groups ( $M = 10.14$ – $10.60$ ), with similar variability ( $SD = 2.84$ – $3.88$ ). These results suggest that the Long-term group exhibited stronger self-determined motivation.

**Table 3** One-way MANOVA of Three Groups (Moderate, Serious and Long-Term injury) with dimensions of Sports Motivation

Source	Wilks' $\Lambda$	df1	df2	F- value
Injury Duration	.640	12	184	3.83**

Table 3 depicts statistical value of one-way MANOVA for examine the effect of injury duration (Moderate, Serious, Long-term) on six dimensions of sports motivation: Intrinsic Regulation, Integrated Regulation, Identified Regulation, Introjected Regulation, External Regulation, and Non-Motivation. The results revealed a significant multivariate effect of injury duration, Wilks'  $\Lambda = .640$ ,  $F(12, 184) = 3.83$ ,  $p < .01$ . This indicates that the three injury duration groups differed significantly in their combined sports motivation profiles.

**Table 4** Between Subject Effects of Three Groups (Moderate, Serious and Long-Term injury) with dimensions of Sports Motivation

Variables	F- value	Sig.	$\eta^2$
Intrinsic Regulation	16.74	.000	.257
Integrated Regulation	8.33	.000	.147
Identified Regulation	5.61	.005	.104
Introjected Regulation	.184	.832	.004
External Regulation	.771	.465	.016
Non- Motivation	.160	.852	.003

Table 4 indicated significant differences in Intrinsic Regulation,  $F(2, 98) = 16.74$ ,  $p < .001$ ,  $\eta^2 = .257$ , Integrated Regulation,  $F(2, 98) = 8.33$ ,  $p < .001$ ,  $\eta^2 = .147$ , and Identified Regulation,  $F(2, 98) = 5.61$ ,  $p = .005$ ,  $\eta^2 = .104$ , indicating moderate to large effects of injury duration on these self-determined motivation types. No significant differences were observed for Introjected Regulation,  $F(2, 98) = 0.18$ ,  $p = .832$ ,  $\eta^2 = .004$ , External Regulation,  $F(2, 98) = 0.77$ ,  $p = .465$ ,  $\eta^2 = .016$ , or Non-Motivation,  $F(2, 98) = 0.16$ ,  $p = .852$ ,  $\eta^2 = .003$ , suggesting these dimensions were consistent across groups.

**Table 5** Post-Hoc Comparisons for Sports Motivation Dimensions by Injury Duration

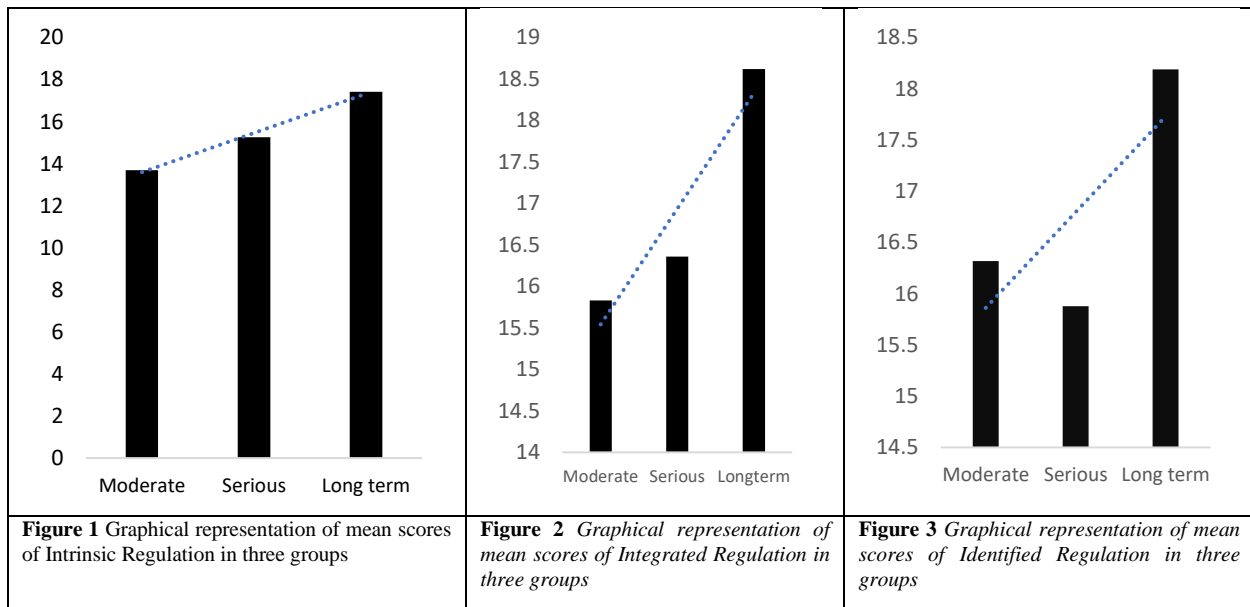
Variables	Groups	MD
Intrinsic Regulation	Moderate-Serious	-1.57
	Moderate-Long term	-3.73**
	Long term-Serious	2.16**
Integrated Regulation	Moderate-Serious	-.53
	Moderate-Long term	-2.79**
	Long term-Serious	2.226**
Identified Regulation	Moderate-Serious	.35
	Moderate-Long term	-1.96*
	Long term-Serious	2.31**
Introjected Regulation	Moderate-Serious	.13
	Moderate-Long term	-.38
	Long term-Serious	.51
External Regulation	Moderate-Serious	.45
	Moderate-Long term	1.08
	Long term-Serious	.63
Non- Motivation	Moderate-Serious	.18
	Moderate-Long term	.46
	Long term-Serious	.29

The Tukey HSD test results in Table 5 revealed significant differences in self-determined motivation dimensions. For Intrinsic Regulation, the Long-term group ( $M = 17.43$ ,  $SD = 2.81$ ) scored significantly higher than both the Moderate ( $M = 13.70$ ,  $SD = 2.78$ ; mean difference =  $-3.73$ ,  $p < .01$ ) and Serious groups ( $M = 15.27$ ,  $SD = 2.33$ ; mean difference =  $2.16$ ,  $p < .01$ ). Similarly, for Integrated Regulation, the Long-term group ( $M = 18.62$ ,  $SD = 2.37$ ) outperformed the Moderate ( $M = 15.83$ ,  $SD = 2.89$ ; mean difference =  $-2.79$ ,  $p < .01$ ) and Serious groups ( $M = 16.36$ ,  $SD = 3.73$ ; mean difference =  $2.26$ ,  $p < .01$ ). For Identified Regulation, the Long-term group ( $M = 18.19$ ,  $SD = 2.11$ ) scored significantly higher than the Moderate ( $M = 16.32$ ,  $SD = 3.59$ ; mean difference =  $-1.96$ ,  $p < .05$ ) and Serious groups ( $M = 15.88$ ,  $SD = 3.55$ ; mean difference =  $2.31$ ,  $p < .01$ ). No significant differences were found between Moderate and Serious groups for any dimension, nor were there significant differences for Introjected Regulation, External Regulation, or Non-Motivation.

Figure 1 displays a graph illustrating the trend of Intrinsic regulation across three groups (Moderate, Serious, Long-term), with a slight upward trajectory from Moderate to Long-term, indicating potential differences in the Intrinsic regulation.

Figure 2 displays a graph illustrating the differences of Integrated regulation across three groups (Moderate, Serious, Long-term), Long-term injury duration with high mean score and moderate with lowest, indicating potential differences in the Integrated regulation.

Figure 3 displays the highest mean scores in the long-term injury duration group followed by moderate and least mean scores of the serious term injury group, the graph illustrates the trend of Identified regulation across three groups.



### Discussion

The study aimed to investigate and compare the levels of dimensions of sports motivation of different injury duration among the sports persons who returned to sports after injury. The hypotheses framed are not suitable to be accepted on the basis of results. Results of the study conveyed that the individuals who returned to the field even after long term injury were scoring high on intrinsic regulation followed by serious and moderate term injury duration, which implies genuine commitment for pleasure and satisfaction. The Long-Term injury duration group has higher integrated regulation followed by moderate and serious term group, the sports persons in long term injury group have internalized the external factors that motivates them into their identity and value system. The perception of sports is congruent to their self and is an integral part of their lifestyle (Scilia, 2018). The differences in identified regulation continuum of identified regulation dimensions suggest that the athletes with long term injury duration chose to return to sports because of the conscious recognition of the value of sports to them and it is personally important to them to enhance their skills, performance and sense of belonging (Zamarripa, 2018). Long term injury duration group had the highest mean score in identified regulation followed by the moderate group, whereas the serious term group was low in identified regulation in comparison. Research by Ryan and Deci (2017) supports the idea that intrinsic motivation is a critical factor in sustaining long-term engagement in sports, particularly after setbacks like injuries. Athletes with high intrinsic motivation are more likely to persist through rehabilitation due to their genuine enjoyment of the sport Pod log and Eklund (2010) found that athletes returning from injury often report increased appreciation for their sport, which fosters intrinsic motivation. Pelletier et al. (2001) demonstrated that identified regulation is associated with goal-directed behavior, such as skill enhancement and performance improvement, which aligns with the study's observation that long-term injury athletes value sports for personal development. The study's results also resonate with the concept of post-traumatic growth in athletes. Galli and Vealey (2008) found that athletes recovering from serious injuries often experience psychological growth, including a strengthened sense of purpose and commitment to their sport. This could explain why long-term injury athletes in the study exhibited higher autonomous motivation, as the recovery process may have deepened their connection to sports.

### Conclusion

The study provides valuable insights into how injury duration influences sports motivation, with long-term injury athletes demonstrating high levels of intrinsic and integrated regulation, reflecting a deep commitment to their sport. These findings are



supported by SDT and research on resilience and post-traumatic growth but face potential contradictions regarding the motivational impact of severe injuries and external pressures. Future research should address these contradictions by exploring individual differences, standardizing injury classifications, and adopting longitudinal designs. For practitioners, the results underscore the importance of fostering intrinsic, integrated, and identified dimensions of motivation during rehabilitation to support athletes' successful return to sport.


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### Conflict of Interest

There is no conflict of interest among authors.

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