

Psychological Factors Associated with Injuries in Badminton

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Introduction

Given the cost of injuries, including the detraining associated with time away from the sport, injury prevention is a priority area of research. The psychological factors (i.e. personality traits and coping resources) associated with injuries is an area still lacking in substantial evidence and one that could play an important role in attempts to understand, prevent, and rehabilitate, injuries in badminton. Accordingly, this explorative study had three main aims. Firstly, to examine the differences in psychological factors between badminton players, of all skill levels, who had experienced an injury in the last 24 months and those that had not been injured. Secondly, to examine the relationship between number of injuries that a player had sustained and psychological factors. Finally, we aimed to examine whether the psychological factors associated with injuries altered depending on the type of injury, the body region effected, and the cause of the injury. This project was based around the Stress-Injury model (Williams & Andersen, 1998) and attempts to provide a start point for the development of a badminton-specific model of psychological factors associated with injury.

Method

94 participants completed an online questionnaire which included a demographics questionnaire, an injury history questionnaire, the Sport Anxiety Scale (SAS), the State Trait Anxiety Inventory (STAI), Movement Specific Reinvestment Scale (MSRS), the Athletics Coping Skills Inventory (ACSI-28), and the Risk Propensity Scale (RPS). The participant's current playing level was categorised into: recreational, local club, county, regional, national and international. The injury history questionnaire focused on the type of injury, the body region affected, and the cause of the injury. One-way ANOVAs were used to compare psychological data between players who had sustained previous injuries and those that had no previous injuries, with the data being further scrutinised by splitting the data by skill level. Correlations were used to examine the relationship between the psychological data and the number of injuries. Finally, logistic regressions were used to investigate the moderating effect of type and cause of injury on the associated psychological factor.

Results

Of the 94 participants, 56% had sustained a badminton-specific injury in the last 24 months. The majority of injuries reported were either ankle, shoulder, or knee, with either a muscle or tendon sprain or a joint or ligament sprain accounting for the injury. The causes most often cited included overuse, twist or change of direction, and overstretch. Analysis revealed that participants who reported having an injury in the last 24 months had significantly higher trait anxiety on the STAI and SAS, and significantly lower coping scores on the ACSI-28, compared to those that had not sustained an injury. Moreover, the number of injuries cited by the participants had a positive relationship with the trait anxiety scores but a negative relationship with the number of coping resources. To interrogate the data further, separate comparisons were made between the two groups of players at each skill level. It appears that psychological factors associated with previous injuries differs between skill levels. For example, for the national and international players, those who had suffered an injury showed higher scores relating to movement self-consciousness on the MSRS, compared to the players who had no previous injury. While there is a potentially direct relationship between reinvestment and injury for highly skilled players, it was shown this was not the case for all skill levels, although scores on the MSRS did show a significant positive correlation with the trait anxiety scores on the STAI and the SAS demonstrating the relationship between attentional changes (i.e. reinvestment) and anxiety. Finally, the findings from the logistic regressions revealed that the trait anxiety scores from the STAI was the only psychological predictor of injury, although this was moderated by the type, body region and cause of the injury.

Discussion

The study shows that badminton-specific injuries are prevalent in players regardless of skill level and that psychological factors are associated with these injuries. Based on the explorative data collected in this study we have developed a preliminary model of psychological factors associated with injury in badminton to enhance the understanding of this area, and offer directions for future research (see Figure 1). The two key tenants of the model are 'Personality' factors and 'Coping Resources', as per the Stress-Injury model (Williams & Andersen, 1998). Two specific traits are linked to the personality factors, trait anxiety (i.e. somatic, cognitive) and attentional changes (i.e. reinvestment). From the current study the strongest factor associated with previous injuries was trait anxiety. Moreover, trait anxiety was positively correlated with the propensity to reinvest, and negatively correlated with the number of coping resources and is therefore positioned centrally within the model. As the current study shows that the STAI and SAS are suitable for measuring trait anxiety, we strongly encourage practitioners, coaches and players to use these tools to increase awareness of anxiety in sport. With regards to coping resources, the model depicts how a lack of coping resources is associated with injuries and also with an increase in trait anxiety. Following this finding, the model provides recommendations for future research, where the focus should be on developing psychological interventions to increase the coping resources available to the individual in an attempt to reduce the levels of trait anxiety, and ultimately reduce the number of injuries.

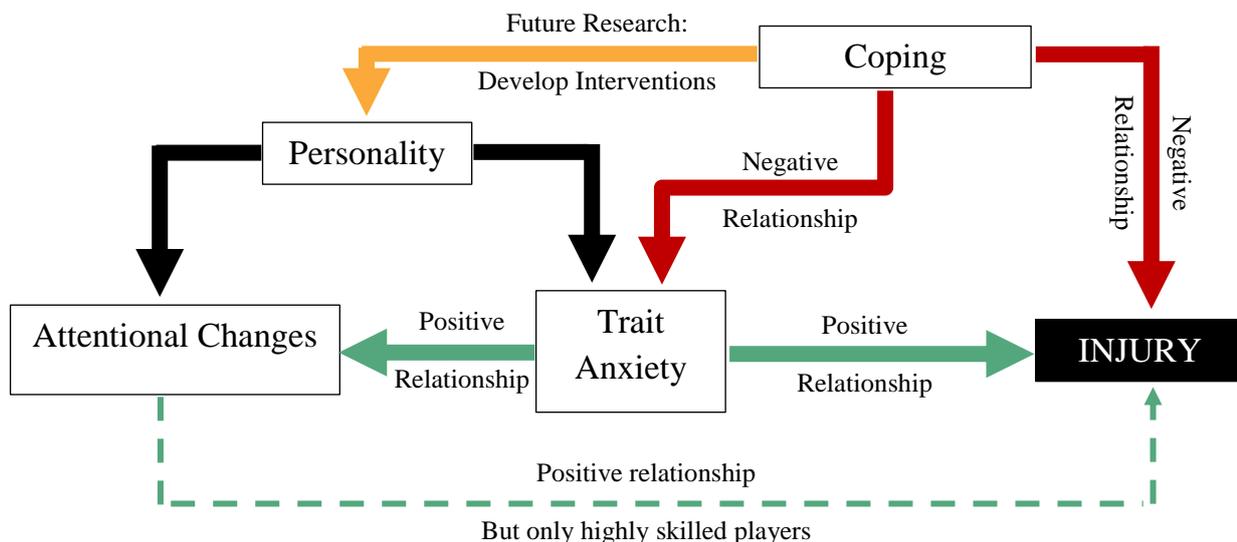


Figure 1. A preliminary model of psychological factors associated with injury in badminton based on the Stress-Injury model (Williams & Andersen, 1998)

Conclusion

Psychological factors appear to play a significant role in badminton injuries. Trait anxiety, coping resources and attentional changes are all associated with injury and are therefore factors which practitioners, coaches and players should enhance their understanding of. The findings also offer potential avenues for future research with regards to injury prevention and rehabilitation in badminton, where a priority should be the design of psychological interventions to increase the number of coping resources that an individual can access and utilise.

References

Williams, J. M., & Andersen, M. B. (1998). Psychosocial antecedents of sport injury: Review and critique of the stress and injury model'. *Journal of applied sport psychology*, 10, 5-25.