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An Investigation of the Current Insights of Vietnam National Athletes' Sport Injury Anxiety

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Abstract

Injury in sport training and competition is considered to be one of the critical factors that greatly affect an athlete's sport performance, training and post training outcomes. The purpose of this study is to provide insights into the sport injury anxiety currently existing among the Vietnam National Athletic Team Members. Analysis of the study's findings reports that 78% of the participants indicating at least once during their sport practice that they experienced injury. Additionally, there maintains a high level of anxiety about getting reinjury among the Vietnam National Athletes (TB = 4.54 ± 0.43). The findings also reveal that there are significantly statistical differences by gender and sports in some factor groups.

Keywords: *Anxiety, Injury, SIAS, Athlete.*

INTRODUCTION

Sport injuries refer to those that occur during the sport performance and competition, directly concerning with sport related factors, including conditions of sport exercises and training, training agenda, training exercise, training level, task performance techniques and problem-solving skills of the individuals or even the training ground surface (Sports General Department, 2017).

Fear of injury or injury anxiety is indicated in different sport psychological studies without having any specific definition (Kleinert, 2002). Injury anxiety is defined uncertainly within literature. For example, Dunn, Bouffard and Rogers (1999) refer injury anxiety as a state 'when an athlete has high concentration on sport related competition's performance which can cause injury or reinjury. Similarly, Ford, Ildefonso, John and Arvinen-Barrow (2017, p.206) define sport injury anxiety as 'an unpleasant psychological state in reaction to perceived stress concerning the performance of a task under pressure'. Reneman (2003) specifically refers injury anxiety as a state when an athlete experiences a high degree of fear which can significantly influence his or her sport related performance or physical action and response, leading to being injured due to pain or reinjury. Within this study, sport injury anxiety is referred to as 'a widely indefinite concern or worry to sustain an injury in different sport situations' (Kleinert, 2002, p.3).

Review of literature reveals different categories of sport injury. Sport injuries can be categories by reasons which include those caused by extremely physical competitive performance or those caused by outside physical effects. According to New Mexico Orthopedics (2016), there are at least ten top common sport injuries that strongly affect sport performance. These include hip flexor strain, anterior cruciate ligament, concussion, groin pull, shin splints, sciatica, hamstring strain, elbow injuries, shoulder injuries, and patellofemoral syndrome. When getting injury, the athlete will combat a range of problems such as inside, outside pressure resulting in mental, physical, and social anxiety.

According to Williams (2001), there are nearly 70 million sport injury cases in the United States which requires medical intervention, and which later results in a significant decline of sport performance. In Vietnam, many typical sport injury cases have recently occurred within the Vietnam National Athletic Team. To name a few, they are Nguyen Thi Le Dung (former swording athlete), Vu Thi Nguyet Anh (former karatedo athlete), Thach Kim Tuan (former weightlifting athlete), Le Thi Hue (former wrestling athlete), and so on. Although these

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athletes are in their peak of sport performance, they have missed the opportunities of participating in sport competitions due to sport injuries which have not received adequate medical treatment and intervention. One of the most important reasons for the limitations of sport medical system in Vietnam is lack of doctors and nurses in the field. For instance, there is only one doctor currently working at the national sport training center 2 since 1992 to present; there is no doctor, except for …sport biomedical practitioners working at the national sport training center 3 and 4; there are 12 doctors at Nhon national sport training center (Thu, 2020). As Thu (2020) emphasizes, the limitations of Vietnam sport medical system also include lack of adequate policies and regulations for encouraging medical professionals working in this field.

Review of sport psychological literature indicates that athletes cannot have full concentration on performing competitive tasks or sport training when they experience sport related injury anxiety or fear (Cassidy & Morgan, 2005; Ford, Ildefonso, John & Arvinen-Barrow, 2017; Kleinert, 2003). In other words, anxiety of sport injury (which can be resulted from one's personal experience, witness, or related information) will result in a decrease of sport performance achievement. This is affirmed by Cassidy and Morgan (2005) that, when athletes get sport injury and returning to their sport processes, they will be strongly distracted by the injury experience. As a result, they cannot obtain full concentration on their sport competitive task performance (Cassidy & Morgan, 2005). Along this line, Gould (2002) adds that such distractive thoughts can create a series of physical responses that decrease one's ability of defensive or physical response. Athletes who experienced sport injuries may have such defensive responses as shrinking in challenges or hesitation in having appropriate sport performance. Such responses can not only create a decline in athletic performance, but also a high probability of getting reinjury (Williams, 2001).

Given the significance of sport injury anxiety in sport performance and competition, it can be emphasized that sport injury not only has strong impact on athletes and national sport development, but also creates negative effects on a country's economic and social development as well as sport practice and training. The purposes of this study, therefore, initially include an exploration of sport related injury's factors and measurement of athletes' sport injury anxiety degree (in terms of physical, psychological, and societal aspects). Additionally, from the study's findings, it is expected that appropriate solutions and strategies for minimizing the athletes' sport injury and reinjury anxiety will be developed.

RESEARCH METHODS

Research Sample

Participants of the study are 146 members of the Vietnam National Athletic Team currently being trained at Ho Chi Minh City National Training Centre (counted for 81% of the total number of the Vietnam National Athletic Team members). Among this number, there are 56% male and 43% female athletes, coming from athletic teams of weightlifting, athletics, Chinese chess, chess, judo, karate, artistic gymnastics, Muay, fencing, boxing, gymnastics. The participants' training experiences range from 1 to 30 years.

Research Instrument

The Sport Injury Anxiety Scale (SIAS-51) and a questionnaire are employed as two critical instruments of the study. The questionnaire was developed focusing on investigating demographic information of the participants, including age, gender, ethnicity, year of study, sport types that they are following, number of injuries that they experienced during their sport process, and sport related issues (Cassidy, 2006). The SIAS-51 was developed basing on the cognitive motivational relational theory of Lazarus (1991) about emotions and the model of awareness measurement of Wiese-Bjornstal (1998). As Schmarz (1999) suggests, the measurement of sport injury anxiety needs to include the assumption that the target participants have experienced sport related injuries. This implies that the questionnaire's items developed will begin with such statement as "when experiencing injury…" (Schwarz, 1999). The SIAS aims at identifying related anxiety about the physical, psychological, and social impacts that the target participants have when getting sport injuries during their sport process.

The translation of the SIAS was undertaken as follows:

Translation of the SIAS from English to Vietnamese language. The process is accomplished by ten English language specialists of the SEAMEO RETRAC's foreign language center.

Modification and adjustment of the Vietnamese language version of the SIAS is carried out by a group of language, psychological and sport specialists.

Pretest of the SIAS for the purpose of the amendment of the SIAS' items. The pretest was conducted with the target participants.

Modification and finalization of the SIAS (the amended version after the pretest).

Pilot of the study and testing of the values, reliability, and validity of the SIAS' variables for the purpose of the SIAS' assessment probability. The pilot was conducted with 100 randomly selected athletes.

Research Results

Testing Results of the SIAS-51

The pilot study was conducted with 100 randomly selected athletes. The purpose of the pilot is to make necessary amendment of the SIAS' items to the research's participants and the research's objectives. Results of the pilot study are as follows.

Reliability of the SIAS by Cronbach's Alpha

According to Hoang Trong and Chu Nguyen Mong Ngoc (2008), internal reliability is achieved when the Cronbach's Alpha coefficient lies >0.6 and the corrected item-total correlation of the number of items lies >0.3. Consequently, 13 items were deleted from the scale whereas the rest 38 items were used for the exploratory factor analysis (EFA).

Exploratory Factor Analysis (EFA) Results

Regarding the factor extraction, the principal axis factoring (PAF) combined with the Promax in rotation method are employed as critical techniques for data analysis in this study. According to Hair et al (2019), when the factor loadings are > 0.3, it can be used for a minimum sample size of 100. Nguyen (2010) further confirms that, when a variable is rotated to two factor groups with the difference of the two factor loadings lies < 0.3, the variable should not be used.

Results of the EFA are finalized at the second rotation after deleting 12variables which have not met the above indicated requirements. The second EFA results with the KMO = 0.549 which reveals that the Bartlett's testing value is practically significant (sig = 0.00< 0.05). Basing on the factor loadings' results, all the factors are extracted into 7 groups, with the variance extract is 67.95%.

After having necessary editing, 26 variables are clustered into 7 factor groups. These 7 factor groups represent for the number of variables as follows: personal image affecting factors (3 variables), being assessed as the weak (4 variables), making others disappointed (3 variables), losing support from the society (4 variables), losing sport ability (4 variables), feeling painful (4 variables), getting reinjury (4 variables).

In short, the sport injury anxiety scale used for this study is developed with two crucial parts: information about sport related injury of the athletes, and the measurement scale. Results of the study is described in the following section.

Information About Sport Injury of the Vietnam National Team's Athletes Currently Being Trained at Ho Chi Minh City National Training Center

Data analysis reports that, among 146 athletes, there are 114 athletes at least once getting injury during their sport competitive profession. The rest 32 athletes indicate that they have not experienced sport related injury or that the injury is not serious to be taken into account. Regarding the length of the injury, according to the data analysis, 7.9% of the total number of respondents (9 athletes) indicate that they experienced the sport

injury within two weeks whereas 29.8% others report that their sport injury lasted from one to three months. Details of the sport injury length are presented as below.

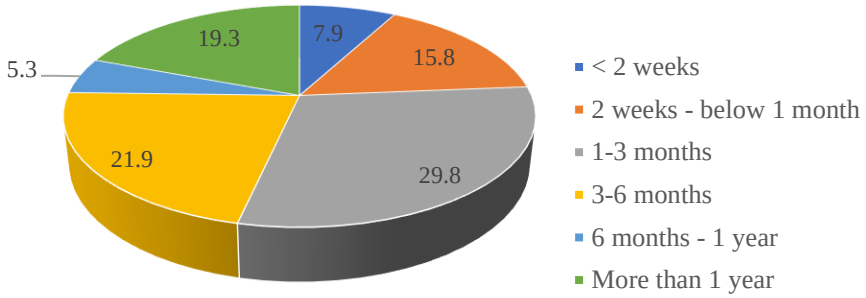

Diagram 2.1: Length of sport injury

As indicated in Table 2.1, there are 32 athletes stating that they experienced injury 21.9%). This number is mainly distributed into Chinese chess and chess. A variety of sport related injury is described by the respondents which can be grouped as follows.

Injuries related to extremital inferior (including groin pull, muscle torn, stretched, leg fracture, ankle sprain…) count for 32.9% and occurred in such sports as athletics, Karate, artistic gymnastics.

Injuries related to ligament (including pulled or broken knee ligament) count for 21.2% which occurred in such sports as gymnastics, judo, and fencing.

Injuries related to extremital superior (including broken hand, wrist dislocation…) which occurred in such sports as Muay, Boxing count for 13.0%.

Injuries related to back and hip (including back pain, slipped discale) which occurred in Judo count for 10.3% of the total sport related injuries.

Injuries related to head, with one Chinese chess player, which is the least counted group to compare with the others.

Details of the injuries categorized by sports are showed in Table 2.1. as follows.

Table 2.1. Injuries by sports

Sports	ligament		Extremitas inferior		Extremitas superior		Head and neck		Back and hip	
	Number	%	Number	%	Number	%	Number	%	Number	%
Weightlifting	1	3.2	2	4.2	2	10.5			1	6.7
Athletics	1	3.2	12	25.0					1	6.7
Chinese chess							1	100.0		
Chess					1	5.3				
Judo	6	19.4	5	10.4	1	5.3			4	26.7
Karate	5	16.1	9	18.8	3	15.8			3	20.0
Artistic gymnastics	1	3.2	9	18.8	1	5.3				
Muay	2	6.5	1	2.1	4	21.1			2	13.3
Fencing	4	12.9	6	12.5					3	20.0
Boxing	3	9.7	1	2.1	5	26.3				
Gymnastics	8	25.8	3	6.3	2	10.5			1	6.7
Total	31.0	100.0	48.0	100.0	19.0	100.0	1.0	100.0	15.0	100.0

Percentage/total	21.2%	32.9%	13%	0.7%	10.3%

Among 114 athletes getting injured, as reported by data analysis, 67% respondents indicate that they cannot have normal sport practice for two weeks (58.8%) whereas 25% respondents report that they cannot have normal sport practice for two weeks to one month (17.1%) and one respondent emphasizes that sport practice was not undertaken as normal for one year (0.7%).

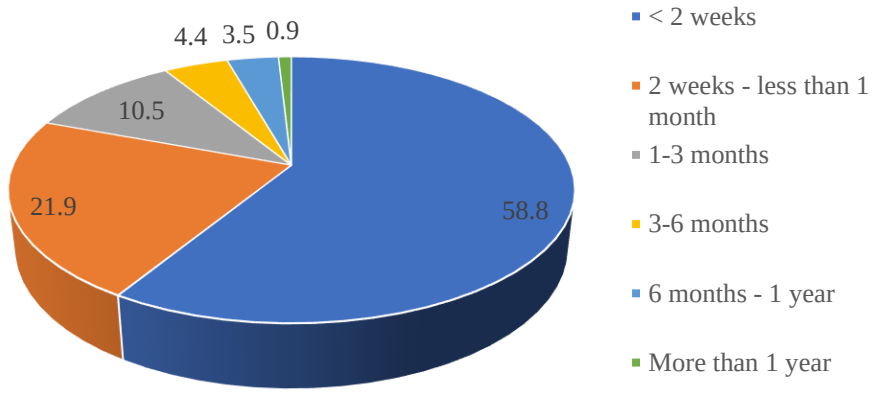

Diagram 2.2: Length of injuries that does not allow normal practice of sport

In addition, finding analysis shows that 62.3% of the respondents believe that the injuries they got were serious and very serious, and that, among this group, there were only 9 injured athletes received medical treatment and intervention (6.2%). Results of data analysis related to the respondents' attitudes towards the injuries' seriousness level are presented in Table 2.2. as follows.

Table 2.2. Attitudes towards the injuries' seriousness level

Injury	Completely not serious		Not serious		Sometimes serious		Very serious		Extremely serious	
	No.	%	No.	%	No.	%	No.	%	No.	%
Legiment							4	2.7	27	18.5
Extremitas inferior	3	2	3	2	12	8	23	15.8	7	4.8
Extremitas superior			1	1	4	3	10	6.8	4	2.7
Head & neck									1	0.7
Back & hip								6.8	5	3.4
Total	3	2%	4	2.7%	16	11%	47	32.2%	44	30.1%

Anxiety About Sport Injury of Vietnam National Athletic Team's Members Who Are Currently Being Trained at Ho Chi Minh City National Training Center

Statistical analysis of the findings shows that the number of athletes who are concerned about getting reinjury counts the highest percentage in the groups (TB=4.54 ±0.43), seconded by those who are anxious about "the feeling of pain" (TB=4.49 ±0.49), followed by those who are concerned about "losing sport practice ability" (TB=4.27 ±0.56).

The t and ANOVA testing methods are used to analyze the differences of sport related injury anxiety by gener, sports as well as injury supports.

Difference By Gender

Regarding sport injury anxiety, data analysis' results show a statistical difference between male and female athletes in the factor group of "being assessed as the weak", with sig.=0.00. Within this group, male athletes (TB=3.91 ±0.73), are more anxious about injury than female ones. The factor group related to "getting reinjury"

is seconded in having difference by gender, with sig.=0.01<0.05, among which female athletes (TB=4.58 ±0.4) are more anxious about getting reinjury than male ones (TB=4.51 ±0.44). Details of the differences in sport injury anxiety by gender are presented in Table 2.3 as below.

Table 2.3: Testing of difference in sport injury anxiety by gender

Factor group	average	Standard deviation	Gender	Trung bình	Lệch chuẩn	Sig.
Being assessed as the weak	3.72	.77	Male	3.91	.73	.00
			Female	3.48	.75	
Feeling painful	4.49	.49	Male	4.52	.53	.42
			Female	4.46	.43	
Losing support from the society	4.22	.52	Male	4.28	.42	.11
			Female	4.14	.62	
Getting reinjury	4.54	.43	Male	4.51	.44	.01
			Female	4.58	.40	
Personal image affect	3.54	.72	Male	3.64	.71	.05
			Female	3.41	.71	
Losing sport practice ability	4.27	.56	Male	4.26	.60	.89
			Female	4.27	.50	
Making others disappointed	4.03	.68	Male	4.05	.73	.62
			Female	3.99	.62	

Difference by Sports

Data analysis by using ANOVA shows that there is a statistical difference by sports, with Sig.<0.05 occurring in three factor groups as follows.

Group of being assessed as the weak: the fencing has the highest degree of anxiety within this group, with the average of 4.27, followed by Chinese chess, Judo, gymnastics. The lowest degree of anxiety lies in the weightlifting, with the average of 3.21.

Group of getting reinjury: respondents in Muay group have the highest degree of anxiey within this group, with the average of 4.92, followed by Chinese chess, Judo and Boxing. The lowest degree of anxiety lies in the gymnastics, with the average of 4.25.

Group of losing sport practice ability: Judo athletes have the highest degree of anxiety with this group, with the average of 4.62, followed by those in the Chinese chess, Judo and Boxing. The lowest degree of anxiety lies in the gymnastics, with the average of 3.82.

Details of the data analysis by using ANOVA showing differences by sports are presented in Table 4.2 as follows.

Table 2.4: Difference by sports from ANOVA analysis

Factor group	Sig.	Post Hoc Tests (Scheffe)
Being assessed as the weak	.010	9>3>5>……..>11
Feeling painful	.235	
Losing support from the society	.891	
Getting reinjury	.027	8>3>5>….....>11
Personal image affecting	.070	
Losing sport practice ability	.014	5>8>7>……...>1
Making others disappointed	.305	

Note: 1. Weightlifting 2.Athletics 3.Chinese chess 4. Chess 5. Judo 6. Karate

Artistic gymnastics 8. Muay 9. Fencing 10. Boxing 11. Gymnastics While the above analysis results show significant differences in sport injury anxiety by both gender and sports, they also suggest future research in investigating differences in related factors such as medical treatment and intervention, types of injury, injury length, degree of injury seriousness, number of injuries, and participating factors of injury support.

CONCLUSION AND RECOMMENDATION

Injuries in sport practice and competition is considered one of the important factors that directly affect the athletes' sport process and post-practice process. As described in the previous sections, a sport injury anxiety scale (SIAS-51) has been modified and adjusted, with seven factor groups representing for 26 variables, to investigate issues related to the target group of athletes' anxieties of sport injury.

Data collection and analysis show that, among 146 athletes, there are 114 athletes at least once experiencing injuries while the rest 32 athletes, most of whom come from intellectual sports including Chinese chess and chess, have not experienced injuries. The findings' analysis also report that length of injuries ranges differently, with nine athletes experiencing injuries for two weeks (7.9%) when the study started, and that there are 67 athletes who can not have normal sport practice for 2 weeks after having injuries (58.8%). Regarding the sport injury categories, as revealed by the results of data analysis, injuries related to extremitas inferior count the highest percentage of 32.9% among the group, legiment injuries count for 21.2%, extremitas superior injuries count for 13%, injuries related to back and hip count for 10.3%. Furthermore, the study's findings report a great concern among the athletes about getting reinjury (TB=4.54 ±0.43). When there are statistical differences between male and female athletes in indicating anxiety about "being assessed as the weak" and "getting reinjury", such differences by gender also occur in the factor group of "being assessed as the weak", "getting reinjury", "losing sport practice ability" among sports.

This study's findings provide current insights of the national athletes' anxiety about sport related injury, including negative effects of sport injury anxiety on the athletes' performance achievement, they reveal some limitations in the sport training system management currently existing at the Ho Chi Minh City National Training Center. First, although data analysis results indicate the athletes' great concern about getting injury and reinjury, there seem not much appropriate medical intervention and treatment to be provided to the athletes. Additionally, when the athletes' anxiety of getting injured and reinjured is at such high degree, adequate solutions, especially those related to psychological treatment to assist the athletes in returning to their normal sport process, have not been taken into adequate consideration. This might be one of the critical reasons for the high degree of the athletes' anxiety of getting reinjury (TB=4.54 ±0.43). Finally, findings from the study related to the current state of the sport injury treatment indicate a lack of professional medical resources provided to the training Center, including both professional experts and medical facilities.

The above identified limitations in the sport training system management suggest crucial implications for the overall improvement of the national athletes' performance. At the governmental and/or ministerial level, it is essential to develop appropriate policies and regulations on encouraging qualified professional experts and practitioners in the field of sport medication working at the National Training Centers. These policies and regulations need to include those related to financial support and convenient working conditions for the professionals to work at the Centers. In the meantime, it needs to have a critical review of the current facilities of medical support and treatment at the national athletic training centres for upgrading purposes. This will help ensure that the athletes will be immediately intervened with appropriate treatment when getting injury from the sport practice or competition.

At the training center level, insights provided from the study findings imply to have immediate psychological solutions to reduce the athletes' sport related injury anxiety degree and enhance their motivation in achieving sport competitive performance and objectives. These should include solutions offered to the athletes during their sport practice, after they get injury and when they return to normal sport process after getting injury from sport practice. Specific and practical solutions and strategies, however, may be developed only when further research in issues related to sport injury anxiety, including those which are not investigated within this study's scope.

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