

COPING STRATEGIES OF INJURED ATHLETES: THE ROLE OF GENDER, TYPE OF SPORT, AND INJURY SEVERITY

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Копинг-стратегии спортсменов в ситуации столкновения с травмой: роль вида спорта, пола и тяжести травмы

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Abstract

Sports injuries can have devastating consequences and severely restrict an athlete's ability to succeed. Research into the characteristics of psychological recovery from sports injuries can make an important contribution to the development of more effective rehabilitation programs. This study aims to examine coping strategies used by injured athletes, depending on their gender, type of sport, and injury severity. The sample comprised 95 athletes of various sports with certain types of injuries, aged 16–31 years ($M = 19.40$, $SD = 2.55$; 43 males and 52 females). The study used (a) the Athletic Coping Skills Inventory and (b) the Stress Management Questionnaire. The study found that athletes' choice of coping strategies varies

Резюме

Травмы в спортивной деятельности могут оказывать разрушительное воздействие и значительно ограничивать способность спортсмена достигать успешных результатов. Изучение особенностей психологического преодоления спортивной травмы может внести существенный вклад в дальнейшую разработку эффективных реабилитационных программ. Целью данной работы являлось изучение особенностей выбора копинг-стратегий спортсменами при столкновении с травмой в зависимости от вида практикуемого спорта, пола и степени тяжести полученной травмы. Выборку составили 95 спортсменов, столкнувшихся с различными травмами, в возрасте от 16 лет до 31 года ($M = 19,40$, $SD = 2,55$): 43 мужчины и 52 женщины. В рамках исследования были задействованы следующие методики: «Тест копинг-навыков спортсмена»; «Опросник совладания со стрессом». Результаты исследования

This research was funded by the Russian Science Foundation, project # 25-18-00899.

Исследование выполнено при поддержке РФФ, проект № 25-18-00899.

depending on their gender, type of sport, and injury severity. It was demonstrated that the choice of a coping strategy chosen by the athlete depends mainly on the type of injury sustained. Athletes who have experienced a severe injury are significantly more likely to use avoidance-oriented strategies, while athletes who have experienced a mild injury are more likely to use problem-solving-oriented strategies. Thus, it is understood that the choice of coping strategies after injury may differ depending on the sport discipline, the athlete's gender, and the severity of the injury. This will allow coaches and sports psychologists to create more targeted support programs that take into account the individual characteristics of each athlete's traumatic experience.

Keywords: sports psychology, sports injury, coping strategies, coping behavior.

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показали, что выбор спортсменами стратегий совладания зависит от их пола, вида спорта и тяжести травмы. Было установлено, что выбор копинг-стратегии, избираемой спортсменом, преимущественно зависит от типа полученной травмы. Спортсмены, пережившие тяжелую травму, значительно чаще используют стратегии, ориентированные на избегание, в то время как спортсмены, пережившие легкую травму, чаще используют стратегии, ориентированные на решение проблем. Таким образом, получено понимание того, что выбор стратегий совладания после травмы может варьироваться в зависимости от спортивной дисциплины, пола спортсмена и характера повреждения. Это позволит тренерам и спортивным психологам создавать более адресные программы поддержки, учитывающие индивидуальные особенности травматического опыта каждого спортсмена.

Ключевые слова: психология спорта, спортивная травма, копинг-стратегии, совладающее поведение.

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Professional sports are characterized by emotional intensity, extremeness and a relentless pursuit of excellence (Sagova & Shaiafetdinova, 2024). One of the conditions for sports success is the need to constantly take risks and accept new challenges to stay ahead of competition. However, growing demands are also accompanied by serious consequences, including physical injuries that are at the center of attention (Heil, 1993).

In addition to the physical consequences athletes experience when they suffer from severe injuries (decreased physical activity and physical fitness), they are inevitably exposed to psychological experiences. In particular, for an athlete who devotes much time and energy to their sport and whose identity and self-esteem are closely linked to their ability to participate in sports, injuries can be a serious psychological impact that can lead to devastating consequences until the end of their career (Russell, 2000).

Given the frequency of injuries in sports activities and their destructive impact on the psychological state of an athlete (Brewer, 1998), it seems relevant to study strategies of coping with injuries to maintain an athlete's emotional well-being and ensure a harmonious continuation of their engagement in sports.

Lazarus and Folkman define "coping" as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). At the same time, "coping strategies" determine the response repertoire of a person to a stressful situation (Sahler & Carr, 2009; Aslanova et al., 2023; Vets, 2023) and generally fall into the following categories: problem-focused coping strategies (actively overcoming a stressful situation); emotion-focused coping strategies (regulation of situation-related emotions); and avoidance-focused coping strategies (distraction, avoidance of a stressful situation) (Amirkhan, 1990; Endler & Parker, 1994; Nicholls & Polman, 2007; Flores-Mendoza et al., 2024).

We should note that psychological coping with sports injuries is as important as physical therapy and other rehabilitation measures (Russell, 2000), because sports injuries have a major impact on the mind. In particular, an injured athlete feels the loss of basic goals due to a lack of training opportunities, which results in a loss of self-control and autonomy, and significantly affects his/her self-esteem (Klenk, 2006). Furthermore, physical injuries in athletes' lives can result in social withdrawal, a loss of independence and self-confidence, a loss of income, and negative emotional reactions that complicate the recovery process (Ford & Gordon, 1999). In turn, the athlete's coping strategies are factors that mitigate negative experiences resulting from physical injuries and are important resources for the athlete's successful recovery and his/her return to productive activities (Wiese-Bjornstal et

al., 1998). The use of injury prevention strategies accelerated the treatment process, increased the sense of responsibility and control over the rehabilitation process, and resulted in a greater life satisfaction and a more complete recovery (Chárthaigh et al., 2017).

In the study of specific coping strategies to optimize the psychological condition of injured athletes, some researchers have identified strategies such as active internal dialogue and the establishment of short-term recovery objectives (Ievleva & Orlick, 1991), visualization (Green, 1992), positive thinking and general confidence in the ability to recover (Brewer, 2009a), and emotional support from the loved ones (Ford & Gordon, 1999).

Furthermore, the choice of a specific coping strategy by an athlete in a stressful situation may also be influenced by factors such as the athlete's subjective assessment of the situation, circumstances of the situation, the athlete's professional level, and the athlete's personal resources (Dovzhik & Nartova-Bochaver, 2015). Some authors also point out that the athlete's choice of coping strategies can be influenced by the athlete's gender. It was found that male athletes use problem-focused and active strategies when faced with problems, while women focus more on emotion-focused strategies, searching for social support, and avoidance-focused strategies as well (Anshel et al., 1998; Anshel et al., 2009; Dollen et al., 2015).

In addition, it has been shown that depending on the type of sport an athlete participates in, he/she can also use various coping strategies. In particular, individual and non-contact sports athletes are more likely to use avoidance-focused strategies, compared to team and contact sports athletes, who are more likely to use active coping strategies (Philippe et al., 2004; Thornton et al., 2021).

However, the factors affecting the choice of a specific coping strategy in the context of sports injuries that are common in sports activities have not yet been adequately studied. In particular, the impact of injury severity on the choice of coping strategies is poorly understood, whereas injury severity appears to be an important factor that has a significant impact on the psychological state of an athlete and his/her ability to deal with the consequences of the injury (Wiese-Bjornstal et al., 1998).

Consequently, this study is relevant because there is a lack of research on the differences in gender, type of sport, and injury severity in the use of coping strategies in the unique stressful situation of facing physical injury.

The aim of this study was therefore to investigate the specificity of the use of coping strategies by injured athletes, depending on their gender, type of sport, and injury severity. The hypothesis of our study was that the choice of coping strategies used by injured athletes depends on their gender, type of sport, and injury severity.

Methods

To identify information about athletes' injuries (their nature, severity, and rehabilitation period), they were asked to answer the following open-ended questions: Describe the type of injury you have suffered. Describe how long it has been since the injury. Is it current?

To identify the repertoire of coping strategies used by athletes to overcome injuries, the Athletic Coping Skills Inventory (Dovzhik & Bochaver, 2020) and the Stress Management Questionnaire (Odintsova et al., 2022) were used.

Thus, to analyze the respondents' attitudes towards their injuries, they were asked to answer questions aimed at their cognitive, emotional, and behavioral efforts undertaken by them to prevent psychological stress experienced as a result of a sports injury.

Participants

The study sample comprised 95 athletes of various sports with certain types of injuries, aged 16-31 years ($M = 19.40$, $SD = 2.55$; 43 males and 52 females).

It is important to mention that the majority of athletes in our sample (59 respondents) have more than 10 years of sports experience, 30 respondents in our sample have been involved in their sport for 6-8 years, and only 6 respondents in our sample have had less than 6 years of a sports experience.

At the beginning of the study, the participants were divided into two groups according to the type of sport they practiced (contact/non-contact). Thus, 54 respondents constituted a group of contact sports athletes (football, hockey, basketball, freestyle wrestling, handball, taekwondo, volleyball, karate, rugby, jujitsu wrestling, water polo); 41 respondents constituted a group of non-contact sports athletes (figure skating, rhythmic gymnastics, swimming, sports dancing, tennis, skiing, rock climbing, snowboarding, cycling, gymnastics, aerial gymnastics, athletics). The division of the sample according to this principle was chosen in connection with research in sports psychology, noting that athletes in contact sports are more likely to experience physical injuries in their activities than athletes in non-contact sports (Sohrabi et al., 2011; Castro-Sánchez et al., 2019).

Participants in the study were also divided into three groups, depending on the severity of their injuries. The category of athletes with severe injuries included athletes with injuries that caused pronounced health problems, leading to the loss of the ability to engage in sports for more than 30 days. The category of athletes with moderate injuries included respondents who received injuries that provoked pronounced changes in the body, leading to the loss of the ability to engage in sports for 10 to 30 days. The category of athletes with mild injuries included respondents who received injuries that did not cause significant health problems and did not lead to the loss of the ability to participate in sports activities (Trushkov, 2015).

Thus, 35 respondents constituted a group of severely injured athletes (shoulder fracture, fractures of vertebral processes, cruciate ligament rupture, etc.); 23 respondents constituted a group of athletes with moderate injuries (ankle dislocation, shoulder dislocation, knee joint subluxation, etc.); 37 respondents constituted a group of athletes with mild injuries (muscle strain, ankle sprain, elbow injury, etc.).

It is also important to note that the majority of our sample (61 respondents) reported that the current injury they were experiencing was ongoing, meaning they were in the early stages of rehabilitation (several days/weeks after the injury),

while 34 athletes reported that they were in the final stages of their rehabilitation and the injury they were experiencing was almost completely overcome.

When analyzing the responses it was found that the majority of respondents in our sample participating in contact sports suffered severe injuries (24 athletes in contact sports reported severe injuries; 18 – reported moderate injuries; 12 – reported mild injuries), while the majority of respondents in the sample participating in non-contact sports predominantly suffered mild injuries (25 athletes in non-contact sports reported mild injuries; 11 – reported severe injuries, 5 – reported moderate injuries).

It is worth mentioning that when analyzing the distribution of sports injuries by gender, it was found that female athletes were more likely to encounter minor injuries (27 women reported experiencing a minor injury; 15 – a severe injury; 11 – a moderate injury), while male athletes in our sample were more likely to report encountering severe injuries (20 men reported encountering a severe injury; 13 – a moderate injury; 10 – a minor injury).

The questionnaire was completed online in the presence of the experimenters. On average, the questionnaire filling process took 30–35 minutes. Respondents conducted the study voluntarily in accordance with all ethical standards of the Russian Psychological Society.

Results

The results were processed using Microsoft Excel in IBM SPSS Statistics software.

When checking the normality assumption using the Kolmogorov–Smirnov criterion, we found that the distribution was non-normal. Therefore, we used non-parametric analysis criteria in further analysis.

To test the hypothesis that the choice of coping strategies used by injured athletes depends on their gender, injury severity, and the type of sport they participate in, we used the Mann–Whitney U test to assess differences between gender and sport and the Kruskal–Wallis H test to assess differences in injury severity.

Sport Types

The empirical findings showed that depending on the type of sport that respondents participated in (contact/non-contact), they used different coping strategies for recovery from sport injury. Table 1 shows that athletes from different sports have significant differences in the manifestation of such coping strategies (skills) as “Coping with adversity” ($p = .004$), “Goal setting and mental readiness” ($p = .019$), “Freedom from negative experiences” ($p = .037$), “Overall potential for successful coping with stress” ($p = 0.015$), “Active coping” ($p = .027$), “Restraint coping” ($p = .04$), “Seeking of emotional social support” ($p = .025$), and “Planning” ($p = .01$).

At the same time, non-contact sports athletes are more likely to use active and problem-focused coping strategies (Active coping, Planning, Coping with adversity, etc.).

Contact sports athletes are more likely to use passive coping strategies (Restraint coping).

Table 1

Reliability of Difference Scores for Coping Strategies (Skills) among Contact and Non-Contact Sports Athletes

Scale	Contact sports (mean, SD)	Non-contact sports (mean, SD)	Reliability of difference scores (Mann–Whitney U test, significance level)
Coping with adversity	M = 6.8 SD = 2.105	M = 8.17 SD = 2.459	U = 725.5 <i>p</i> = .004
Goal setting and mental readiness	M = 7.76 SD = 2.51	M = 9.05 SD = 2.109	U = 798.5 <i>p</i> = .019
Freedom from negative experiences	M = 8.61 SD = 2.58	M = 9.39 SD = 2.932	U = 832 <i>p</i> = .037
Overall potential for successful coping with stress	M = 54.19 SD = 11.967	M = 59.98 SD = 13.277	U = 785 <i>p</i> = .015
Active coping	M = 6.26 SD = 1.63	M = 7.00 SD = 1.43	U = 830 <i>p</i> = .027
Restraint coping	M = 5.41 SD = 1.78	M = 4.63 SD = 1.67	U = 838.5 <i>p</i> = .04
Seeking of emotional social support	M = 5.96 SD = 1.33	M = 6.54 SD = 1.17	U = 817.5 <i>p</i> = .025
Planning	M = 6.34 SD = 1.65	M = 7.12 SD = 1.45	U = 782.5 <i>p</i> = .01

Gender

Table 2 shows significant differences in the use of coping strategies depending on the athletes' gender. In particular, such coping strategies as "Mental disengagement"

Table 2

Reliability of Difference Scores for Coping Strategies (Skills) by Gender

Scale	Males (mean, SD)	Females (mean, SD)	Reliability of difference scores (Mann–Whitney U test, significance level)
Mental disengagement	M = 5.37 SD = 2.00	M = 4.25 SD = 1.76	U = 748.5 <i>p</i> = .005
Denial	M = 4.67 SD = 1.89	M = 3.90 SD = 1.86	U = 847.5 <i>p</i> = .04
Turning to religion	M = 5.12 SD = 2.23	M = 4.09 SD = 2.11	U = 831 <i>p</i> = .028
Restraint coping	M = 5.86 SD = 1.71	M = 4.42 SD = 1.54	U = 624.5 <i>p</i> = .000
Seeking of emotional social support	M = 5.81 SD = 1.37	M = 6.54 SD = 1.12	U = 766 <i>p</i> = .007
Planning	M = 6.18 SD = 1.75	M = 7.07 SD = 1.37	U = 809 <i>p</i> = .014

($p = 0.005$), “Denial” ($p = 0.04$), “Turning to religion” ($p = 0.028$), and “Restraint coping” ($p = 0.000$) are more typical for men. Such coping strategies as “Seeking of emotional social support” ($p = 0.007$) and “Planning” ($p = 0.014$) are more typical for women.

Injury Severity

Table 3 shows that injury severity affects specific coping strategies used by athletes.

Table 3

Reliability of Difference Scores for Coping Strategies (Skills) of Athletes with Physical Injuries of Varying Severity

Scale	Severe injuries (mean, SD)	Moderate injuries (mean, SD)	Mild injuries (mean, SD)	Reliability of difference scores (Kruskal–Wallis H test, significance level)
Coping with adversity	M = 7.03 SD = 2.28	M = 6.61 SD = 1.95	M = 8.22 SD = 2.45	H = 8.67 $p = .013$
Self-confidence and achievement motivation	M = 9.34 SD = 2.06	M = 8.78 SD = 2.79	M = 10.22 SD = 2.43	H = 7.75 $p = .021$
Higher achievement under stress	M = 5.67 SD = 2.63	M = 5.65 SD = 2.71	M = 7.05 SD = 2.49	H = 7.14 $p = .028$
Freedom from negative experiences	M = 8.63 SD = 2.56	M = 8.22 SD = 2.89	M = 9.7 SD = 2.73	H = 8.79 $p = .012$
Overall potential for successful coping with stress	M = 54.89 SD = 10.83	M = 52.65 SD = 14.01	M = 60.89 SD = 12.83	H = 7.82 $p = .02$
Positive reinterpretation	M = 5.83 SD = 1.54	M = 6.35 SD = 1.11	M = 6.65 SD = 1.51	H = 6.81 $p = .033$
Mental disengagement	M = 5.54 SD = 2.08	M = 4.91 SD = 1.97	M = 3.92 SD = 1.44	H = 11.36 $p = .003$
Seeking of instrumental social support	M = 5.97 SD = 1.40	M = 6.61 SD = 0.99	M = 6.86 SD = 1.25	H = 8.57 $p = .014$
Active coping	M = 5.97 SD = 1.56	M = 6.48 SD = 1.47	M = 7.22 SD = 1.45	H = 12.54 $p = .002$
Turning to religion	M = 4.8 SD = 2.29	M = 5.39 SD = 2.35	M = 3.81 SD = 1.85	H = 7.39 $p = .025$
Restraint coping	M = 5.71 SD = 1.87	M = 5.04 SD = 1.72	M = 4.49 SD = 1.50	H = 8.32 $p = .016$
Seeking of emotional social support	M = 5.68 SD = 1.23	M = 6.30 SD = 1.36	M = 6.65 SD = 1.13	H = 10.45 $p = .005$
Planning	M = 6.2 SD = 1.49	M = 6.65 SD = 1.33	M = 7.13 SD = 1.77	H = 12.85 $p = .002$

In particular, athletes with mild injuries tend to use problem-focused coping strategies, including “Coping with adversity” ($p = .013$), “Self-confidence and achievement motivation” ($p = .021$), “Higher achievement under stress” ($p = .028$), “Freedom from negative experiences” ($p = .012$), “Overall potential for successful coping with stress” ($p = .02$), “Positive reinterpretation” ($p = .033$), “Seeking of instrumental social support” ($p = .014$), “Active coping” ($p = .002$), “Seeking of emotional social support” ($p = .005$), and “Planning” ($p = .002$).

Severely injured athletes were more likely to use avoidance-focused coping strategies, including “Restraint coping” ($p = .016$) and “Mental disengagement” ($p = .003$).

Discussion

This study aimed to examine the characteristics of the choice of coping strategies of injured athletes, depending on the type of sport they participate in, their gender, and injury severity.

Sport Types

Statistical analysis showed that non-contact sports athletes are more likely to use problem-focused strategies. It is more typical for them to set specific objectives to overcome the current situation and remain calm in the face of injury. In contrast, contact sports athletes tend to use passive coping strategies. When injured, contact sports athletes are less likely to make immediate decisions about how to act to achieve a more successful recovery. They also have less resources to overcome a stressful situation effectively compared to non-contact sports athletes.

Our results are partially contrary to the conclusions of other authors, who argue that contact sports athletes are more likely to use problem-focused coping strategies due to their higher pain tolerance and, generally, higher determination compared to non-contact sports athletes (Meyers et al., 2015; Thornton et al., 2021).

However, we should remember that athletes who participate in contact sports, due to the specific characteristics of their activities, have special requirements, in particular to demonstrate higher levels of activity and sensory excitability, to always maintain their concentration on a large number of stimuli and to always predict the reaction of the opponent (Castro-Sánchez et al., 2019).

Therefore, the difference between the results of our study and the results of other authors may be due to the increased exposure of contact sports athletes to physical injuries due to the specific characteristics of their activities.

Indeed, when analyzing the distribution of injury types by the sport in which the athlete participates, it was found that the majority of respondents in our sample from contact sports predominantly faced severe injuries. Accordingly, against the background of strong negative emotions associated with a severe injury, contact sports athletes in our sample may have difficulty making decisions about active coping, which explains their desire to distance themselves from the problem and use an avoidance strategy in order to minimize the impact of stress.

It is worth noting that other authors also noted the tendency to use avoidance-focused coping strategies in situations of increasing negative emotions (Crocker & Graham, 1995; Dovzhik & Nartova-Bochaver, 2015). Thus, the use of passive coping strategies by contact sports athletes can be considered as a natural result of facing a severe injury.

Gender

We found that the use of avoidance-focused coping strategies is more typical for men. They are more likely to distract themselves from negative thoughts about the injury, refuse to believe what happened and deny the need to take immediate action for recovery after injuries. The use of problem-focused coping strategies is more typical for women. Women are more likely to plan further actions for recovery after injuries, and they are also more likely to seek advice and support from their loved ones in a stressful situation.

Our results to some extent contradict data from similar studies in which the authors conclude that problem-focused strategies are more commonly used by male athletes, while women are more likely to use emotion-focused strategies (Anshel et al., 1998; Anshel et al., 2009; Dollen et al., 2015; Yavorovskaya et al., 2022). However, our results can be explained by the fact that male participants in our study are predominantly contact sports athletes (34 men are participants of contact sports, 9 – participants of non-contact sports), while women are predominantly non-contact sports athletes (33 women are participants of non-contact sports, 19 – participants of contact sports) and, as noted earlier, athletes of contact sports are significantly more likely to experience severe injuries and, due to the predominance of negative emotions accompanying severe injuries, are more often forced to use passive and avoidance-oriented coping strategies compared to athletes of non-contact sports.

Injury Severity

We found that athletes' choice of coping strategies was primarily dependent on the type of injury they had to deal with.

In particular, the use of problem-focused coping strategies is more characteristic of athletes with mild injuries. It is also worth emphasizing that female athletes, and athletes of non-contact sports in our sample also reported encountering milder types of injuries. In this case, athletes are more likely to use strategies to actively overcome the situation by taking concrete steps towards a successful rehabilitation.

Severely injured athletes are more likely to use avoidance-focused coping strategies. It is worth clarifying that in our sample, male athletes, and athletes of contact sports predominantly encountered severe types of injuries. Athletes recovering from severe injuries are more likely to avoid, reject, and distract themselves from the problem, hoping that the current situation will be resolved in some way.

We believe that this result is due to the fact that severe physical injuries are also inevitable with increased stress and resource loss in the context of long-term reha-

bilitation. Therefore, severely injured athletes tend to avoid the situation and use passive coping strategies. In general, other authors also note the tendency to avoidant and denial reactions in the context of increasing negative emotions immediately during the post-traumatic period, when athletes face serious injuries requiring longer rehabilitation (Santi & Pietrantonio, 2013; Brewer, 2009b).

In turn, athletes with mild injuries are less likely to experience negative emotions due to the consequences of their injury and experience a lower level of emotional stress, as the rehabilitation process takes a relatively short time in this case (Brewer, 2009b; Yavorovskaya et al., 2022). As a result, athletes with mild injuries have more strength and resources to face the situation actively and are therefore more likely to use problem-focused coping strategies.

Conclusion

Injuries are an important obstacle to building a successful athletic career. Injuries can have a considerable impact on athletes' physical sensations and serious psychological consequences, including a reduction in self-esteem, an increase in anxiety and the feeling of inadequacy. Therefore, studying an athlete's ability to cope with injuries and effectively deal with their consequences is fundamental to full realization of his/her athletic potential. Coping strategies help reduce the negative experience caused by injuries, build the basis for a successful return to sports, and improve an athlete's general psychological state.

In this study, we examined the specific characteristics of the use of coping strategies by injured athletes, depending on their gender, type of sport, and injury severity. As a result, we found that the choice of coping strategies by an athlete depends predominantly on the type of injury he/she has experienced. In particular, athletes who have experienced a severe injury (predominantly male athletes, and athletes of contact sports in our sample) significantly more often use avoidance-oriented strategies, while athletes who have experienced a mild injury (predominantly female athletes, and athletes of non-contact sports in our sample) more often use problem-oriented strategies.

Understanding how the choice of a particular coping strategy in an injury situation may differ depending on the type of sport an athlete participates in, their gender, and the type of injury they have experienced may help coaches and sport psychologists develop more effective support methods for athletes' individual needs, depending on their traumatic experiences. Therefore, further research in this area can significantly improve the quality of athletes' rehabilitation and recovery processes.

References

- Amirkhan, J. H. (1990). A factor analytically derived measure of coping: The coping strategy indicator. *Journal of Personality and Social Psychology*, 59(5), 1066–1074. <https://doi.org/10.1037/0022-3514.59.5.1066>

- Anshel, M. H., Porter, A., & Quek, J. J. (1998). Coping with acute stress in sport as a function of gender: An exploratory study. *Journal of Sport Behavior*, 21(4), 363–376.
- Anshel, M. H., Sutarso, T., & Jubenville, C. (2009). Racial and gender differences on sources of acute stress and coping style among competitive athletes. *The Journal of Social Psychology*, 149(2), 159–178.
- Aslanova, M. S., Molotok, E. V., Kaurova, A. M., & Iaskova, E. E. (2023). Relationship between stylistic characteristics of humor and types of coping behavior in students. *Natsional'nyi Psikhologicheskii Zhurnal [National Psychological Journal]*, 18(4), 137–147. <https://doi.org/10.11621/npj.2023.0412> (in Russian)
- Brewer, B. W. (1998). Introduction to the special issue: Theoretical, empirical, and applied issues in the psychology of sport injury. *Journal of Applied Sport Psychology*, 10(1), 1–4.
- Brewer, B. W. (Ed.). (2009a). *Handbook of sports medicine and science: Sport psychology*. John Wiley & Sons.
- Brewer, B. W. (2009b). Injury prevention and rehabilitation. In B. W. Brewer (Ed.), *Sport psychology* (pp. 75–86). Chichester, UK: Wiley-Blackwell.
- Castro-Sánchez, M., Lara-Sánchez, A. J., Zurita-Ortega, F., & Chacón-Cuberos, R. (2019). Motivation, anxiety, and emotional intelligence are associated with the practice of contact and non-contact sports: An explanatory model. *Sustainability*, 11(16), Article 4256. <https://doi.org/10.3390/su11164256>
- Chárthaigh, N. N., Kouthouris, C., Goudas, M., Theodorakis, Y. (2017, November 14). Extreme sports injury: an applied approach to psychological effects and coping. *PANR Journal*. <https://www.panr.com.cy/?p=1656>
- Crocker, P. R., & Graham, T. R. (1995). Coping by competitive athletes with performance stress: Gender differences and relationships with affect. *The Sport Psychologist*, 9(3), 325–338.
- Dollen, M., Grove, J. R., & Pepping, G. J. (2015). A comparison of coping-styles of individual and team athletes of Australia and the Netherlands. *International Sports Studies*, 37(2), 36–48.
- Dovzhik, L. M., & Bochaver, K. A. (2020). *Psikhologiya sportivnoi travmy* [Psychology of sports injury]. Moscow: Sport.
- Dovzhik, L. M., & Nartova-Bochaver, S. K. (2015). Coping with the trauma of professional athletes. *Klinicheskaya i Spetsial'naya Psikhologiya [Clinical Psychology and Special Education]*, 4(2), 25–38. (in Russian)
- Endler, N. S., & Parker, J. D. (1994). Assessment of multidimensional coping: Task, emotion, and avoidance strategies. *Psychological Assessment*, 6(1), 50–60. <https://doi.org/10.1037/1040-3590.6.1.50>
- Flores-Mendoza, J. B., García Méndez, M., Bravo Doddoli, A., & Díaz-Loving, R. (2024). Development and psychometric properties of coping scales towards adherence to pharmacological treatment, heart-healthy eating and cardiovascular physical exercise. *Psychology in Russia: State of the Art*, 17(3), 97–113. <https://doi.org/10.11621/pir.2024.0307>
- Ford, U. W., & Gordon, S. (1999). Coping with sport injury: Resource loss and the role of social support. *Journal of Personal & Interpersonal Loss*, 4(3), 243–256.
- Green, L. B. (1992). The use of imagery in the rehabilitation of injured athletes. *The Sport Psychologist*, 6(4), 416–428.
- Heil, J. (1993). *Psychology of sport injury*. Human Kinetics Publishers.
- Ievleva, L., & Orlick, T. (1991). Mental links to enhanced healing: An exploratory study. *The Sport Psychologist*, 5(1), 25–40.
- Klenk, C. A. (2006). *Psychological response to injury, recovery, and social support: A survey of athletes at an NCAA Division I University* [Senior Honors Projects. Paper 9]. <https://digitalcommons.uri.edu/srhonorsprog/9>

- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company.
- Meyers, M. C., Higgs, R., LeUnes, A. D., Bourgeois, A. E., & Laurent, C. M. (2015). Pain-coping traits of nontraditional women athletes: relevance to optimal treatment and rehabilitation. *Journal of Athletic Training, 50*(10), 1034–1041.
- Nicholls, A. R., & Polman, R. C. (2007). Coping in sport: A systematic review. *Journal of Sports Sciences, 25*(1), 11–31.
- Odintsova, M. A., Radchikova, N. P., & Aleksandrova, L. A. (2022). COPE-30: psychometric properties of the short version of the Russian-language inventory for coping strategies evaluation. *Moscow University Psychology Bulletin, 4*, 247–275. <https://doi.org/10.11621/vsp.2022.04.11> (in Russian)
- Philippe, R. A., Seiler, R., & Mengisen, W. (2004). Relationships of coping styles with type of sport. *Perceptual and Motor Skills, 98*(2), 479–486.
- Russell, W. D. (2000). Coping with injuries in scholastic athletics. *Journal of Physical Education, Recreation & Dance, 71*(7), 41–46.
- Sagova, Z. A., & Shaiafetdinova, R. R. (2024). Relationship between personal potential and the goal orientation in athletes of team and individual sports. *Natsional'nyi Psikhologicheskii Zhurnal [National Psychological Journal], 19*(2), 175–188. <https://doi.org/10.11621/npj.2024.0215> (in Russian)
- Sahler, O. J. Z., & Carr, J. E. (2009). *Coping strategies*. In W. B. Carey, W. L. Coleman, H. M. Feldman, A. C. Crocker, & E. R. Elias (Eds.), *Developmental-behavioral pediatrics* (pp. 491–496). Philadelphia, PA: Elsevier Saunders.
- Santi, G., & Pietrantonio, L. (2013). Psychology of sport injury rehabilitation: a review of models and interventions. *Journal of Human Sport and Exercise, 8*(4), 1029–1044.
- Sohrabi, F., Atashak, S., & Aliloo, M. M. (2011). Psychological profile of athletes in contact and non-contact sports. *Middle-East Journal of Scientific Research, 9*(5), 638–644.
- Thornton, C., Sheffield, D., & Baird, A. (2021). Exposure to contact sports results in maintained performance during experimental pain. *The Journal of Pain, 22*(1), 68–75.
- Trushkov, K. O. (2015). Sportivnyi travmatizm, ego osobennosti, vidy, profilaktika [Sports injuries, its features, types, prevention]. In *Vestnik nauchnogo obshchestva studentov, aspirantov i molodykh uchenykh* [Bulletin of the scientific society of students, postgraduates and young scientists] (Iss. 3, pp. 213–215). Komsomolsk-on-Amur: AmGPGU.
- Vets, I. V. (2023). Conscious self-regulation and coping strategies as resources for overcoming difficult life situations. *Teoreticheskaya i Eksperimental'naya Psikhologiya [Theoretical and Experimental Psychology], 3*(16), 50–71. <https://doi.org/10.11621/TEP-23-19> (in Russian)
- Wiese-Bjornstal, D. M., Smith, A. M., Shaffer, S. M., & Morrey, M. A. (1998). An integrated model of response to sport injury: Psychological and sociological dynamics. *Journal of Applied Sport Psychology, 10*(1), 46–69.
- Yavorovskaya, A. D., Leonov, S. V., Yakushina, A. A., & Rasskazova E. I. (2022). Features of coping behavior in injured athletes. *Vestnik Sankt-Peterburgskogo Universiteta. Psychology, 12*(3), 360–375. <https://doi.org/10.21638/spbu16.2022.308> (in Russian)