Original Article

Study on the relationship between quality of life and shoulder trauma in professional handball players

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Published online: November 30, 2019

(Accepted for publication: November 15, 2019)

DOI:10.7752/jpes.2019.s6335

Abstract

Handball is a synthesis of basic motor skills, team play, means of physical education, a complementary sports. Collective sports, dynamic character, running speed is defining for this sports game, a very accessible one, few and simple rules, easily understood and applied, this game allows direct contact between opponents, the risk of injury being reduced only if the rules of the game are strictly followed.

The positive tendencies of the handball game consist of the much improved technique, the increased play speed, new technical procedures, the spectacular counterattack, the more and more athletic defense, with total physical commitment, collective tactics masterfully applied and the specialization on positions being a trend with good results on the spectacularity of the game.

Negative trends are based on the intentional practice of irregular play in defense, the application of brutality with intent on the opponent player with the ball for his intimidation and injury and not least the use of the foul as a method of stopping the attack.

Summarizing the above, shoulder trauma to the professional handball players is more and more common, so this article aims to highlight the influence of these traumas on the quality of life in performance athletes.

Key words: handball, quality of life, trauma, pain.

Introduction

There is current evidence that has shown a substantial increase in the incidence of shoulder surgery. The purpose of a study conducted in Wisconsin from 2002 to 2010 was to determine the incidence of shoulder surgery in order to see if, in correlation with the population, it increases or decreases. The results showed that the number of surgeries in this area of the shoulder and during this time period increased by 91.4%. The ratio between men and women remained constant at 3: 2 throughout the study. The conclusion is that the number of shoulder surgeries has risen unexpectedly once with population growth. Thus, it is proven the need to continue research in the field of shoulder injuries.

We believe that scapular-humeral joint plays an essential role in the development and evolution of handball performers and that a good condition of the joint components ensures the necessary mobility for improving the athletes' playing techniques. Compromising this joint is a clear obstacle to proper training, and therefore an obstacle to achieving performance.

According to the authors Rinderu Elena Taina and Ilinca Ilona, over time, the pathological aspects and the characteristics of sports traumatology have experienced a significant development. The complexity of the musculoskeletal system during the sports activity and the varied modalities of its pathological manifestation, lead to a wide range of studies on sports traumatology.

Material and method

Lesions at the upper limb may impose limits both in the practice of the performance handball and in the athlete's daily life, by the impossibility of participating in recreational activities and social activities.

Depriving the athlete of practicing the sports game entails manifestations such as depression and irritability.

The identification of these aspects represents criteria that support the need to study this subject as the need to prevent shoulder trauma and the cause of their occurrence.

We assume that during a competition year, there is recorded a high frequency of trauma suffered at the level of the scapular-humeral joint, with significant repercussions on the athlete's quality of life and may impose limits both on practicing the game of handball and in daily life.

Data collection methods consisted of interviewing handball players about shoulder injuries and pain experienced after handball training and matches.

A number of 126 sportsmen were included in this study, to whom was also applied, besides the interview, a questionnaire regarding the assessment of quality of life developed by Burckhardt C. and Anderson

Kathryn, which deals with conceptual categories like material comfort, networking with other people, social activities, personal development and leisure activities-recreation.

It presents a set of questions with required answers, each answer having a score, the scores can be from 1 to 7, thus, by gathering points, we obtain a score by which we can state about the person questioned if the perception about one's own life is dysfunctional (score 1-40), serious perception on one's own life with an emphasis on the sense of duty to the detriment of the general well-being (score 40-70), satisfactory perception on life (score 70-98) and very good perception on life (score 98-112).

Results and data interpretation

In order to assess the discomfort, the limitations imposed by the trauma of the shoulder, the perception of the performance handball players on the pain of the shoulder and the functionality of the joint and on the quality as a player, an interview with 20 "closed" questions was developed.

To the statement: *in the last 3 months I suffered injuries or felt pain in the shoulder*, 126 professional handball players said yes, so we can see a large number of players who feel shoulder pain at the end of one season. One question in the interview concerns the immobilization of the athlete at home due to shoulder pain, this one registering only two affirmative answers, and the question that refers to the discomfort created by the shoulder pain and the frequent search for an analgesic position recorded 41 affirmative answers.

A number of 12 athletes affirm they meet difficulties in moving the shoulder, 2 sustain that they feel the need to use the other arm for different daily activities and 5 of them say that shoulder pain forces them to dress slower than usual and 3 others need help for getting dressed. A number of 12 athletes state that shoulder pain makes them unable to perform regular household activities such as brushing teeth, preparing meals, body hygiene, combing and cleaning activities (sweeping, vacuuming, cleaning the house).

Some of the professional handball players interviewed, more precisely 103, strongly answered that in the last 3 months felt pain almost all the time, one of them affirming that he couldn't sleep and 5 others couldn't turn over the other side in bed. Of the interviewed handball players, 6 of them became nervous due to shoulder pain.

Of the 126 players, 47 declare that the pain occurred during a handball match, the remaining 79 say that the pain occurred during a training session, finding out after the interview that 61 of the 126 cannot participate in the training, 49 carry out their training different from the rest of the team, and 28 state that they cannot participate actively in handball matches.

A large number of athletes, more precisely 80, say that during training they need to rest their upper limb frequently affected. Based on the interview I found that 68 athletes avoid activities that require a great physical effort from the scapular-humeral joint and that 98 of the 126 perceive shoulder pain as a factor that diminished their quality as a player.

Based on this interview, on the answers given by the professional athletes practicing handball, we observe a high frequency of shoulder trauma to the professional handball players but also a fatigue felt at the scapular-humeral joint level, which allows us to state that handball is an extremely demanding sport for the shoulder and we must pay a special attention to both shoulder trauma and the fatigue of this joint. By these aspects we emphasize the need for a program to prevent shoulder trauma to the performance handball players.

In the graph below (Chart 1) we highlighted that no group of handball players recorded average values above the 98 score, which means a very good perception of life quality, the maximum score being 94.13, this being attributed to the players at the National Center of Excellence for Handball in Braşov, which declared values between 83 and 108, and the lowest score, of 72.54, is presented by the Bacău team whose players declared values between 42 and 90.

The teams from Suceava, Botoşani, Vaslui and Focşani, registered average values on lots of 73.08, 84.8, 86.71 and 75. (Table 1).

Chart 1. Quality of life index. Presentation of average values.

Appreciating this more critical item, taking into account the categories of perception on quality of life, we note that the score 40-70 which means a serious perception on one's own life with an emphasis on the sense of duty at the expense of the general well-being, is a number of 28 of the 126 athletes, on score 70-98 which means a satisfactory perception on life, a number of 92 athletes and on score 98-112 which means a very good perception on life, only 6 athletes fit. (Chart 2.).

Chart 2. The number of handball players by categories of perception of quality of life.

We can see that the number of the professional handball players with a high quality of life index is very low, these being 6, compared to the number of players who perceive the quality of their own life as an average, these being 92. It is worrying that a number of 28 professional handball players declare that the personal perception of quality of life is a serious one with an emphasis on the sense of duty at the expense of the general well-being, considering that the quality of life index is low.

Table 1. Quality of life index. Presentation of average values.

Teams	Average value of quality of life
Suceava	73.08
Botoșani	84.8
Bacău	72.54
Vaslui	86.71
Focșani	75
Brașov	94.13

Conclusions

We conclude that shoulder trauma does not only affect the player's profile and quality but also his quality of life, thus the professional handball players' quality of life decreases significantly when faced with health problems that can keep them away from the playing field or which limits them in daily activities.

By identifying a large number of professional handball players who suffered injuries at the level of the shoulder joint during a competitive year and by identifying the mechanisms of manifestation of these trauma, we conclude that the dynamics of the handball game, the harshness of this sport, the overload required to reach the competitive goals, the lack of recovery time due to the loaded competitive calendar, the athletes' lack of discipline and their disordered schedule, are aspects that we consider to be the cause of shoulder injuries.

Shoulder trauma have adverse effects on the quality of athlete's life, creating a dysfunctional perception of his or her life and injuries to the entire upper limb may impose limits on both playing professional handball and the athlete's daily life, through the impossibility of participating in leisure and social activities.

Accentuated affections at the scapular-humeral joint have repercussions on active and passive rest, while also restricting the person's driving ability, the ability to perform daily activities such as personal toilet, nutrition and conducting daily physical activities such as lifting and carrying an object. Shoulder disorders determine the deprivation of the professional athlete from practicing the sports game and this attracts manifestations such as depression and irritability.

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