SCANDINAVIAN SPORT STUDIES FORUM ISSN 2000-088X
VOLUME FIFTEEN, 2024, 111–129

WWW.SPORTSTUDIES.ORG

Does responsibility fall on the players or the sporting context?

A study of the use of injury-prevention programmes in Swedish elite floorball clubs

Taru Tervo[1,2] **Andreas Simensen**[3] **& Staffan Karp**[2,4]

[1] Floorball Research and Development Centre, Umeå University; [2] Umeå School of Sport Sciences, Umeå University; [3] Sports Clinic Rehab, Solna, Stockholm; [4] Department of Education, Umeå University

Author contact <taru.tervo@umu.se>

Abstract

Purpose: Floorball is a team sport associated with many potential injuries, but several studies have shown that injury-prevention programmes (IPEPs) can reduce the risk of injuries occurring. Despite the existence and efficacy of injury-prevention exercise programmes, the incidence of injuries is still high. An important factor in conducting injury-prevention programmes regularly is player motivation. Therefore, the aim of the present study was to explore the perceptions of and motivations behind floorball players participating in injury-prevention programmes in relation to their athletic context in elite Swedish clubs.

Method: Thirteen players from three different teams—five men and eight women—were interviewed. The interviews were analysed using qualitative content analysis.

Results: One main overall theme was identified: Insufficient conditions for motivation. The theme consists of four categories: "high demand on player responsibility", "the influence of injuries", "lack of time", and "support from experts".

Conclusions: The results of the study show that the conditions necessary for floorball player's motivation in their sporting environment to perform injury-prevention exercise programme are insufficient, despite knowledge of their significance in avoiding injuries. The two main detriments to the motivation of the players to conduct injury-prevention exercise programmes were a lack of time, and injury-prevention programmes not being prioritised in everyday training. Based on the results, it is suggested that floorball players need improved conditions in order to be able to perform injury-prevention programmes on a regular basis, and moreover, that injury-prevention exercises must become a natural part of everyday training.

Keywords: floorball, team sports, motivation, injury prevention, qualitative methods, holistic approach, self-determination theory

Introduction

Floorball is a popular indoor team sport played on a 20 x 40 m low-boarded rink. It is a fast-paced indoor sport involving elements of both field hockey and ice hockey. Floorball consists of movements such as accelerations and decelerations, quick stops and turns, and rapid variations in movement direction. While participation in sports-related activities has a positive impact on health outcomes, floorball players are at a high risk of injury (Pasanen et al., 2008; Snellman et al., 2001; Tranaeus et al., 2016), especially injuries affecting the lower limbs, such as the knee and ankle, whether male or female (Pasanen et al., 2018; Tervo et al., 2019). Reported injury rates for floorball players at the junior level are 27 per 1000 game hours, and 21 per 1000 game hours at international tournaments (Pasanen et al., 2016). Additionally, it is well known that female players in team sports such as floorball have a higher incidence of serious traumatic knee injuries than male players (Åman et al., 2016; Prodromos et al., 2007), and a high risk of injuries leading to permanent medical impairment (Åman et al., 2016). Sadly, these injuries lead to time out from sport and increase the probability of re-injury (Wiggins et al., 2016).

Several studies have shown that injury-prevention exercise programmes (IPEPs) can reduce the risk of injury in team sports such as floorball, football, and handball (Åkerlund et al., 2020; Olsen et al., 2005; Pasanen et al., 2008; Waldén et al., 2012). Pasanen et al. (2008) were the first to perform a study on top-level Finnish female floorball players, employing a neuromuscular warm-up programme as an intervention. This reduced the risk of receiving a non-contact leg injury by 66% in the intervention group, who conducted the neuromuscular training programme during the floorball season (Pasanen et al., 2008). In Sweden, an injury-prevention exercise programme called 'Knee Control' was developed for team sports such as football, floorball, and basketball (Waldén et al., 2012). The effectiveness of this programme has been shown in a randomised controlled trial of football players, with the aim of reducing the rate of anterior cruciate ligament injury in adolescent female football players (Waldén et al., 2012). Åkerlund et al. (2020) recently conducted a similar study, based on the Swedish Knee Control programme, for 12–17-year-old floorball players. The results were similarly positive as regards injury prevention to those of Pasanen et al. (2008), with the players who participated in the injury-prevention programme having a 45% lower risk of acute injuries (Åkerlund et al., 2020).

Despite existing injury-prevention exercise programmes targeting floorball players that have been shown to be effective, injuries occur frequently. The effectiveness of an injury-prevention exercise programme depends largely on player compliance and adherence (Åkerlund et al., 2022; Arundale et al., 2022; Hagglund et al., 2013; Silvers-Granelli et al., 2018; Soligard et al., 2010). Players who exhibit higher compliance rates with neuromuscular warm-up programmes have been found to have significantly lower rates of both injury and severe injury compared to players with low compliance rates (Åkerlund et al., 2022; Hagglund et al., 2013; Silvers-Granelli et al., 2018; Soligard et al., 2010), and have less time loss due to injury (Silvers-Granelli et al., 2018).

Obiously, player motivation is crucial to regular injury-prevention exercise programmes usage. In sport psychology research, Self-Determination Theory (SDT) is commonly used to study and explain the various socio-environmental factors that affect an individual's autonomy and self-determined behaviour (Ryan & Deci, 2000b, 2000a). In SDT, different types of motivation are distinguished based on the different reasons or goals that give rise to an action. According to STD, the kinds of motivation that can influence behavioural commitment and persistence include both intrinsic and extrinsic motivation (Ryan & Deci, 2000a). Intrinsic motivation comes from inside oneself; one performs an activity for the pleasure and natural satisfaction of the activity itself—for fun, interest, or excitement. In contrast, extrinsic motivation refers to engaging in the performance of an activity to attain some separable outcome. External motivation is considered to be regulated by controlled forms of motivation, whereas behaviours driven by intrinsic motivation are considered to be regulated by autonomous forms of motivation. The vital difference is that autonomous motivation emerges from an individual's instrinsic values, self-satisfaction, or sense of volition; controlled motivation emanates from external demands, the experience of pressure, or defense of one's sense of self-esteem (Chan & Hagger, 2012). Furtheremore motivation can be viewed on a self-determination continuum, where on the far left lies amotivation, and on the far right instrinsic motivation; the latter is characterised by activities that are pursued for their inherent satisfactions, and actions are highly autonomous. Between these extremes on the continuum are extrinsically motivated behaviours, which vary in terms of relative autonomy and can be categorised into four different types; external regulation, introjected regulation, identified regulation, and integrated regulation. Externally regulated behaviour represents the least autonomous behaviour on this

continuum, where actions are performed to satisfy external rewards or demands. Introjected regulation involves actions done to avoid guilt or punishment, where regulations are acknowledged but not fully accepted and internalised. A more internal form of extrinsic motivation is identified regulation, wherein individuals consciously value a goal or regulation as personally important. The most autonomous kind of extrinsic motivation is integrated regulation, which involves regulations fully assimilated into the self and integrated into a person's self-evaluations and beliefs regarding their personal needs. Action driven by integrated regulation shares many qualities with intrinsic motivation, although the former is still pursued to attain a separable outcome rather than for inherent enjoyment (Ryan & Deci, 2000a).

Motivation in athletes does not occur in a vacuum, and is strongly linked to a wider social context. The existing literature on athletic development shows that it is not enough to understand the sporting development of players simply by looking at an individual's development and actions, and therefore advocates taking a wider, more holistic approach that considers the whole athlete, their sporting career, and the sporting context and broader surroundings (Alfermann & Stambulova, 2007; Henriksen et al., 2010). Hence, some researchers have created models that describe the factors crucial for the development of players from a holistic perspective (Henriksen et al., 2010; Li et al., 2014). Henriksen et al. (2009) created a holistic athletic talent development environment (ATDE) model, which describes environmental components and structures, and clarifies the roles and functions of these different components. The ATDE model is a dynamic system that positions the athlete at the centre, and uses components that are structured into two levels: the micro level and the macro level (Henriksen et al., 2010). Immediate surroundings at the micro level are the sporting environment, including people such as coaches, experts (e.g., physiotherapists), teammates, managers/leaders, and structures such as family, clubs, and school. Since athletes spend a great deal of their time in this sporting environment, this level is characterised by many interactions and much communication. The macro-level domain—the larger context—is the social settings that indirectly affect the athletes but do not include the athletes, per se. This includes structures such as sports federations, with their educational systems and media campaigns, and the various contexts, existing values, and customs of the cultures to which the athlete belongs (Henriksen et al., 2010; Li et al., 2014).

Despite knowledge of the importance of injury-prevention programmes, the incidence of injuries is still high. Therefore, there is a need to study the motivation of athletes to participate in injury-prevention programmes and explore how the sporting environment and broader context affect the implementation of these programmes. To date, limited research has been conducted regarding the perceived barriers to and motivational factors regarding the use of injury-prevention programmes in elite floorball players, and therefore the purpose of the present study was to explore the perceptions of and motivations for floorball players participating in injury-prevention programmes in relation to their athletic context in elite Swedish clubs.

Material and methods

This study has a qualitative research design, involving semi-structured interviews with floorball players at three elite clubs in Sweden.

Participants

The authors were located in different parts of Sweden, with knowledge about the elite teams in their respective areas. This facilitated the recruitment of a varied sample, as is recommended in qualitative studies (Moser & Korstjens, 2018). At first, written information was sent to three elite floorball clubs, and the team leaders were then contacted and asked about players who might be suitable for participation. The inclusion criteria were an age of at least 18, playing in Sweden's highest floorball league (SSL), speaking Swedish fluently, and having played at least one full season in the SSL. Players were contacted directly by email. In total, 13 players from three different clubs were asked to participate—five men and eight women—all of whom accepted. The participants ranged in age between 18 and 33. This gave the sample variation in terms of gender, age, and location in Sweden. The Regional Ethical Board in Umeå approved the study (DN: 2016/493-31). All participants provided prior written informed consent, in accordance with the Declaration of Helsinki.

Data collection

Data were collected through face-to-face interviews held between February 2017 and April 2017. The interviews were conducted in the players' own training areas, in calm rooms with only the player and the interviewer present. Before the interviews, written and verbal information about the study were provided, and all participants signed informed consent.

All interviews were performed in Swedish, and each interview lasted between 25 and 35 minutes. Both the interviews and transcribed text were handled anonymously.

The data were collected as semi-structured interviews, as described by Grandheim and Lundman (Graneheim & Lundman, 2004). An interview guide based on SDT (Ryan & Deci, 2000b) and the impact of a sporting athletic environment (Henriksen et al., 2010; Li et al., 2014) was developed. The interview guide consisted of three overarching concerns: 1) their history in sports, which was intended to summarise each interviewee's background and experience as a floorball player on an individual level, and locate their experiences in a social context (e.g. being part of a sports association); 2) their experience of injury-prevention measures, which was intended to summarise how the players perceived these programmes and participated in them on an individual level; and 3) the factors that influence players to undertake and continue to undertake injury-prevention measures, which was intended to capture factors related to the self-determination continuum on an individual level, describe how players relate to participate in injury-prevention programmes, and explore motivational factors outside of the players themselves that may affect their participation in injury-prevention programmes (e.g. teammates, coaches, support teams, sports associations, and the wider sporting culture). The interviews began with background questions about how many years the participant had played floorball, whether they worked or studied in addition to playing floorball, and previous injuries. The players were asked orienting questions for each of the three themes. The responses initiated the conversation and were guided by preselected questions. When elaborations were needed, the main questions were followed by sub-questions. However, most of the preselected questions were individual-level questions, and the interviewees were encouraged to speak freely. The interviews were audio-recorded with the permission of the players. The interviews were conducted by the second author, who is a physiotherapist with clinical experience of sports injuries and injury-prevention work. Since the data was collected in 2017, in 2024 we contacted both The Swedish Floorball

Federation and contact people for the teams at the elite level to ascertain whether any substantial changes had occurred concerning the players' and physiotherapists' working situations compared to when the interviews were conducted.

Data analysis

The interviews were analysed using qualitative content analysis as described by Graneheim and Lundman (2004). To develop a deeper overall impression of the data, the analysis began by reading all of the interviews multiple times. The next step was identifying meaning units and sentences, which were related back to the research topic. After this, meaning units and sentences were sorted into condensed meaning units, and thereafter labelled with codes. This was followed by sorting the codes into different subcategories and categories. In the final step of the analysis process, the latent content from the categories was formulated into one overall theme, relevant to the aim of this study. No data were excluded for lack of a suitable category or coded into two categories (Graneheim et al., 2017; Graneheim & Lundman, 2004).

Analysis was mainly performed by the second author; however, to ensure that no relevant aspects of the material had been overlooked, the other two authors independently reviewed the codes and coded data, acting as 'critical friends' (Smith & McGannon, 2018). A meeting was then held to compare annotations and discuss different perspectives and views, which allowed collective agreement regarding the coding scheme to be reached.

Results

One main overall theme was identified in the analysis: *insufficient conditions for motivation*. The theme consists of four categories: "high demand on player responsibility", "the influence of injuries", "lack of time", and "support from experts". Table 1 presents an overview of the main theme, categories, and subcategories. The results are discussed below.

Table 1. *Overview of the results of the analysis: main theme, subcategories, and categories.*

Theme	**Insufficient conditions for motivation**			
Categories	High demand on player responsibility	The influence of injuries	Support from experts	Lack of time
Sub-categories	Knowledge of Knee Control Individual approach Routines before games vs. practice Better communication	Fear of missing games due to injury Fear of losing place on the team Previous injuries Fear of career-ending injuries	Well-liked by players Deeper understanding of IPEPs Communication between coach and physiotherapist Desired presence of physiotherapist Boring exercises	High workload Mentally exhausted Full-time job Tired and worn out

High demand on player responsibility

The floorball players had knowledge of Knee Control, and most believed that these exercises, when performed as part of a warm-up before practice and games, reduce the risk of serious injuries. One player said that "one season we did not have any prehab work and I believe we had more injuries that season". Some of the interviewees believed that teams that focus on injury-prevention programmes frequently have fewer injuries. One player who had participated in an injury-prevention programme said: "I stayed injury-free all last season, so I guess it [the injury-prevention programme] has something to do with it". The participants felt that knowing that Knee Control is effective in terms of injury prevention gave them stronger motivation to participate in the programme.

The interviews described different routines for preparing for floorball practice with their teams. Some did not have a common routine for before or after practice. Here, the warm-up before practice was felt to be each player's own responsibility, like pre-season training, and some players described not taking time to warm up. The participants stated that some coaches want to make full use of the time spent on the field during practice, and therefore warm-up programmes are not prioritised during practice. Sometimes, players are not able to warm up before practice but training begins immediately, regardless: "we just get to the practice and start with the team training; we hardly have a proper warm-up. Some

players cannot get here in time, because usually our practice starts in the afternoon/evening and many players come straight from work". Most of the participants stated that the actions of coaches highly affect their motivation to warm up (or not).

With regard to games, routines were generally more structured, and the players described participating in warm-up programmes together with the team. Consequently, the players felt that they were more prepared physically for games compared to practice. Warm-up routines, held together with the rest of the team, increased players' motivation to perform exercises. "In games it is more structured, you know exactly what to do and then you have everything ready for you before you are going out to play the game".

In conclusion, the participants seemed to be aware of the positive effects of injury-prevention programmes, but much of the responsibility for doing these is left to the individual, decreasing motivation. When warm-up programmes are part of team routines before matches and are done as a group, this social aspect seems to affect player compliance and willingness to participate.

The influence of injuries

For the players, a strong motivation for performing injury-prevention exercises came from the fear of missing games due to injury. They also worried that an injury could lead to absence from training and games, and that they might end up losing 'their' position on the team to another player. In a worst-case scenario, an injury can mean the end of a player's sporting career.

The players who had already experienced a long-term absence due to injury were very aware of what it feels like to not be able to play the sport that they love, and described an awareness of how difficult it is to get back to fitness after an injury: "first, floorball is so much fun that you want to play all the time. Then I probably needed to hurt myself to realise how important everything is, because I did not do anything before; I hurt myself". Injuries and subsequent absence from floorball increases the motivation of players to take care of their physical form as best as they can, in order to prevent future injuries.

Many of the participants described a general fear of a serious knee injury, which often leads to a long absence—a worry that was especially common among those who had already had a knee injury: "you become

afraid because it can really put a stop to your career". However, the players had differing views regarding how they wanted to approach injury prevention, and motivation to do injury-prevention work varies greatly between teammates. As one participant stated: "motivation can differ between people but everyone wants to be injury-free. We all think that that's important, but we don't all spend our time working on avoiding injury in the same ways".

Thus, fear of injury and of not being able to play seems to motivate all participants—at least on some level—to participate in injury-prevention programmes. While all of the participants acknowledged that injury prevention is important, the motivation to participate in injury-prevention programmes varied greatly between players.

Support from experts

All teams in this study have access to a physiotherapist. The physiotherapist's role in the team is to assist the players regarding how they should train, to motivate them, and to reduce their risk of injury. The participants felt that it was important that the physiotherapist explained why they should do certain exercises. Such explanations led to a deeper understanding of why exercises that sometimes feel 'boring' should be done, and support from the physiotherapist strengthened players' motivation: "When I hear the word 'prehab', I think about boring exercises".

Many of the players praised the work of their physiotherapist, and wished that their physiotherapist could be at team practice more often. They also felt that support from the physiotherapist was particularly important for players nursing an injury. At the time the study was conducted, no physiotherapist was employed full-time by any of the participating teams. One player felt that their physiotherapist had a strong role in injury-prevention work: "I think the presence of our fitness coach and physio is not enough, considering how many injuries we have had during the season."

Some of the participants felt that communication regarding injuries between the physiotherapist, coaches, and players could be better. One obstacle for this communication is that physiotherapists are rarely present at team practice, with players often meeting physiotherapists at their clinics instead. The player must then communicate the physiotherapist's evaluation and recommended treatment/exercises to their coach, which could lead to misunderstandings, or even incorrect information being

given to a coach when a player does not want to tell the truth about their injury for fear of not being permitted to play.

To conclude, the players highlighted the important role that team physiotherapists have in injury prevention, as experts who explain why it is necessary to perform sometimes tedious exercises and argued that this increases player motivation. The lack of communication between coaches and physiotherapists was seen as a problem since this can lead to misunderstandings about the players' exact nature of injuries.

Lack of time

The participants in this study described problems with their schedules, in terms of not having enough time for the things that they had to do and wanted to do. The number of games has increased in the highest-level floorball league in recent years, which also increases the load on players and reduces recovery time between games. Since all of the participants in the study worked or studied in addition to playing floorball, they need to work or study before or after practice. Therefore, most of the participants, especially those who work full time, felt that they simply do not have the energy or motivation to perform additional exercises to take care of their bodies. As one participant put it: "You work 8 am to 5 pm and then it is practice, and after that you go home, and if you have any rehab to do it takes a lot of time and energy, and in the end, you might not be able to do that".

All the participants described being aware of the importance of warming up properly before practice, and of regularly performing injury-prevention exercises. Moreover, they know that these exercises require a certain focus, and that they should be done with an eye on quality and control. However, some of the players indicated that this was not easy to do when mentally exhausted: "You've had so much with studies all day and there is a lot in your head. I then find it hard to focus, because I feel tired, and everything just gets bad".

In conclusion, the main reason the participants do not warm up properly before practice and conduct injury prevention is simply lack of time. However, they know that not doing injury prevention and insufficient recovery likely increase their risk of getting hurt: "It was when I started working full time that I also hurt myself". Working full-time in addition to playing floorball has a negative impact on recovery, and many players felt that they are often tired and 'worn out'. Irrespective of whether they work

full or half time or study, the interviewees often described lacking the time to conduct injury-prevention and warm-up exercises. Hence, a perceived lack of time had a negative effective on motivation for undertaking injury-prevention exercises.

Discussion

The aim of this study was to explore the perceptions of and motivations behind floorball players participating in injury-prevention programmes in relation to their athletic context in elite Swedish clubs. The results are discussed in relation to self-determination theory (STD; Ryan & Deci, 2000b) and a holistic athlete talent development environment (ATDE) model (Henriksen et al., 2010; Li et al., 2014). First, the individual-level factors that influence players' motivation to engage in injury-prevention measures across the entire motivation continuum are discussed, as are their experiences of injury-prevention measures in a social context. The results of the study are then discussed from a holistic perspective in relation to circumstances beyond the players themselves, which affect players' motivation to conduct injury-prevention measures on both the micro and macro levels.

The players were familiar with the existing Knee Control programme, one of the most frequently used injury-prevention programmes in Sweden, and aware of the possible negative effects of not conducting injury-prevention exercises. Despite this, only a minority of players described a high level of motivation to conduct programmes by themselves beyond an ordinary training session, and these players were mostly those who had already experienced an injury. A perceived lack of time seemed to have a significant effect on players' motivation to conduct injury-prevention exercise programmes before or after practice. Although the interviewees played for some of the best-performing teams in Sweden, none of them were full-time floorball players, and all worked or studied in addition to playing floorball. The follow-up questions in 2024 about players' working situations showed that there are no substantial differences between the players' working situations at that time compared to when the interviews were conducted. The fact that warm-ups and injury-prevention exercises are not prioritised during team practice, and players are expected to undertake these programmes by themselves, decreases players' motivation, despite their awareness of injury risks.

In STD, both internal and external motivations impact self-regulation (Ryan & Deci, 2000a). For the players who had been seriously injured previously, the injury itself serves as an external motivator to engage in injury-prevention work, even if they undertake this alone. These players described a fear of missing games or losing their place on the team to other players, or in the worst-case scenario ending their sporting career due to injury. Consequently, they set a goal for themselves—to remain injury-free—due to a new-found appreciation for the importance of floorball following an injury. Goal setting has been observed to be a motivational factor in sustaining the injury-rehabilitation process (Hildingsson et al, 2018). Similarly, in this study, players were driven by the goal of staying injury-free and continuing to participate in the sport, rather than being motivated solely by fear and anxiety. This can also shift motivation to engage in injury-prevention exercise programmes along the motivation continuum, from external regulation towards a more autonomous form (identified regulation) that is characterised by identification, on the basis of floorball's personal importance to the study participants (Ryan & Deci, 2000a).

Injury-prevention activities prior to games were described as relatively structured, and warm-up programmes on these occasions were self-evident actions conducted by the entire team. According to SDT, relatedness, competence, and autonomy are individual basic needs; in the context of social environments that support one's feeling of these needs, external motivation can transform into internal motivation (Ryan & Deci, 2000b). It can be assumed that the social context prior to matches—all players having the same goal: to win the match—acts as a motivator to do warm-up and injury-prevention exercises. These findings are consistent with a study of elite football players, wherein the implementation of injury-prevention exercise programmes within a team setting provided a motivational boost (Kristiansen & Larsson 2017). However, the results indicate that when players receive external rewards in exchange for conducting injury-prevention exercises, particularly when these activities are conducted in a social context, they perceive the exercises as important. This helps them to engage in activities that they may otherwise find dull. Nevertheless, the results suggest that the motivation of the players is not entirely autonomous; they are not solely driven by intrinsic motivation, as they do not inherently find injury-prevention exercises to be interesting or enjoyable.

When the results are viewed from a holistic perspective in relation to the micro-surroundings of the players, the actions of coaches and support of physiotherapists were emphasised as factors that affect players' motivation to conduct injury-prevention work in teams. As has been concluded in previous studies, coaches play a crucial role in the development of athletes through their careers, and their actions influence players' behaviour (Finn & McKenna, 2010; Soligard et al., 2010). The interviewees in this study stated that the actions of their coaches highly affected their motivation—even negatively, as when injury-prevention exercises are not prioritised during team practice. Support from physiotherapists, who are seen as experts, is felt to be a strong motivator for players in conducting injury-prevention programmes, particularly as these are perceived as boring and time-consuming. The players expressed a desire for physiotherapists to be more present during practice, on the basis that their support plays an important role in player motivation. The results show that, in 2017, none of the teams employed full-time physiotherapists, and that none of the physiotherapists employed by teams received full-time salaries from floorball physiotherapy. The situation remains similar in 2024, according to the answers to the follow-up questions asked of the contact people for the teams. Consequently, the availability of physiotherapists during practice sessions is limited.

Based on the results of the study, we can conclude that floorball players have hectic everyday lives, combining work or studies with floorball practice, and in this context lack motivation to conduct injury-prevention exercises—mostly because they do not have sufficient time nor support to perform exercises that require both time and alertness to implement. This in turn affects the outcome of injury-prevention efforts, since one of the most important factors in an injury-prevention exercise programme having a positive effect and reducing the risk of injury is good compliance and adherence to the programme over time (Åkerlund et al., 2022; Arundale et al., 2022; Hagglund et al., 2013; Silvers-Granelli et al., 2018; Soligard et al., 2010).

On an individual level, players should receive education on injury prevention for their own good, even in their younger years, and have a goal of preventing injury for as long as possible and aiming for a healthy life, even after their sporting career has ended. This means that by the time the players come to be at a high level, injury-prevention exercises already are a natural part of their everyday training. Reinforcing players' intrinsic motivation to participate in injury-prevention work from a

young age requires that programmes are also approached as performance-enhancement, rather than solely as injury-prevention (Kristiansen & Larsson, 2017). Injury-prevention exercise programmes should incorporate an individualised approach, where individuals who play in a specific position, are given exercises relevant to their role on the field. Additionally, these exercises should be sports-specific, as demonstrated in a study by Møller et al. (2021).

Our results indicate that associations and leaders expect players to take responsibility for injury-prevention work, but that the conditions for this are frequently not provided. If changes are to take place, leaders—in the context of athletic sports, on both the micro and macro levels—must take responsibility for providing suitable conditions for injury-prevention work to take place. Our findings suggest that floorball players who play at an elite level need better support in order to be able to undertake injury-prevention programmes on a regular basis. These actions should be part of ordinary training, and take place throughout the year. The practical suggestion that can be made based on this study is that individuals, eg physiotherapists, coaches, leaders and so on, who exist in the micro-level contexts of athletes have positive and reflective attitudes and are willing to evolve with and work alongside athletes to undertake injury-prevention actions. Information and education should be provided to players in order to highlight the effectiveness of programmes that are intended to prevent injuries, and to inform them regarding other benefits in terms of performance enhancement (Finch et al., 2014; Kristiansen & Larsson, 2017). The overall responsibility of injury-prevention work should belong to federations and other policymakers on the macro level of athletes, and these bodies should organise educational work around injury prevention in the form of, for example, mandatory courses.

The present study has some limitations. Although there was some variation regarding the gender of the participants and geographical locations of the teams, the studied group can be considered to be limited. However, all players who were invited to take part in the interviews accepted these invitations, which strengthens the results of the study. The results show no significant gender differences, but these aspects should be tested in larger samples.

In summary, the present study shows that floorball players on an elite level lack motivation to conduct injury-prevention programmes regularly, mostly due to insufficient time and a lack of support for injury-prevention exercises in their sporting environments. The results highlight

the importance of cooperation between the multiple components of athletes' micro- and macro-level contexts with regard to decreasing the incidence of injuries. Hence, the responsibility for the implementation of injury-prevention exercise programmes in Swedish elite floorball clubs does not fall on players alone but must be handled by the broader sporting context. Ultimately, this will involve changing the current culture, such that injury-prevention exercise programmes are a natural part of training and competition at all levels of Swedish floorball.

Conflict of interest

The authors declare that they have no conflicts of interest.

Acknowledgements

This study was supported by grants from the Umeå School of Sport Sciences, Umeå University.

References

Åkerlund, I., Waldén, M., Sonesson, S., & Hägglund, M. (2020). Forty-five per cent lower acute injury incidence but no effect on overuse injury prevalence in youth floorball players (aged 12-17 years) who used an injury prevention exercise programme: Two-armed parallel-group cluster randomised controlled trial. *British Journal of Sports Medicine*, *54*(17), 1028–1035. https://doi.org/10.1136/bjsports-2019-101295

Åkerlund, I., Waldén, M., Sonesson, S., Lindblom, H., & Hägglund, M. (2022). High compliance with the injury prevention exercise programme Knee Control is associated with a greater injury preventive effect in male, but not in female, youth floorball players. *Knee Surgery, Sports Traumatology, Arthroscopy*, *30*(4), 1480–1490. https://doi.org/10.1007/s00167-021-06644-2

Alfermann, D. & Stambulova, N. (2007). *Career transitions and career termination. Handbook of sport psychology* (pp. 712–733). John Wiley & Sons. https://doi.org/10.1002/9781118270011.ch32

Åman, M., Forssblad, M., & Henriksson-Larsén, K. (2016). Incidence and severity of reported acute sports injuries in 35 sports using insurance registry data. *Scandinavian Journal of Medicine & Science in Sports*, *26*(4), 451–462. https://doi.org/10.1111/sms.12462

Arundale, A. J. H., Silvers-Granelli, H. J., & Myklebust, G. (2022). ACL injury prevention: Where have we come from and where are we going? *Journal of Orthopaedic Research*, *40*(1), 43–54. https://doi.org/10.1002/jor.25058

Chan, D., & Hagger, M. (2012). Self-determined forms of motivation predict sport injury prevention and rehabilitation intentions. *Journal of Science and Medicine in Sports, 15(5):398-406*. https://doi.org/10.1016/j.jsams.2012.03.016

Finch, C. F., Doyle, T. L. A., Dempsey, A. R., Elliott, B. C., Twomey, D. M., White, P. E., Diamantopoulou, K., Young, W., & Lloyd, D. G. (2014). What do community football players think about different exercise-training programmes? Implications for the delivery of lower limb injury prevention programmes. *British Journal of Sports Medicine*, *48*(8), 702–707. https://doi.org/10.1136/bjsports-2013-092816

Finn, J., & McKenna, J. (2010). Coping with Academy-to-First-Team Transitions in Elite English Male Team Sports: The Coaches' Perspective. *International Journal of Sports Science & Coaching, 5*, 257–279. https://doi.org/10.1260/1747-9541.5.2.257

Graneheim, U. H., Lindgren, B.-M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: A discussion paper. *Nurse Education Today*, *56*, 29–34. https://doi.org/10.1016/j.nedt.2017.06.002

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, *24*(2), 105–112. https://doi.org/10.1016/j.nedt.2003.10.001

Hagglund, M., Atroshi, I., Wagner, P., & Walden, M. (2013). Superior compliance with a neuromuscular training programme is associated with fewer ACL injuries and fewer acute knee injuries in female adolescent football players: Secondary analysis of an RCT. *British Journal of Sports Medicine*, *47*(15), 974–979. https://doi.org/10.1136/bjsports-2013-092644

Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Holistic approach to athletic talent development environments: A successful sailing milieu. *Psychology of Sport and Exercise*, *11*(3), 212–222. https://doi.org/10.1016/j.psychsport.2009.10.005

Hildingsson, M., Tranaeus Fitzgerald U., Alricsson M. (2018). Perceived motivational factors for female football players during rehabilitation after sports injury - a qualitative interview study. *Journal of Exercise Rehabilitation,* 14(2):199-206. https://doi.org/10.12965/jer.1836030.015

Kristiansen Bredahl J. & Larsson I. Elite professional soccer players ' experience of injury prevention. Cogent Medicine. (2017). 4:1: 1389257. https://doi.org/10.1080/2331205X.2017.1389257

Li, C., Wang, C. K. J., & Pyun, D. Y. (2014). Talent Development Environmental Factors in Sport: A Review and Taxonomic Classification. *Quest*, *66*(4), 433–447. https://doi.org/10.1080/00336297.2014.944715

Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, *24*(1), 9–18. https://doi.org/10.1080/13814788.2017.1375091

Møller, M., Zebis, M., Mycklebust, G., Lind M., Wedderkopp N., Bekker., S. "Is it fun and does it enhance my performance?" Key implementation considerations for injury prevention programs in youth handboll. (2021). *Journal of Science and Medicine in Sport*, 1136-1142. 24https://doi.org/10.1080/13814788.2017.1375091

Olsen, O.-E., Myklebust, G., Engebretsen, L., Holme, I., & Bahr, R. (2005). Exercises to prevent lower limb injuries in youth sports: Cluster randomised controlled trial. *BMJ*, *330*(7489), 449. https://doi.org/10.1136/bmj.38330.632801.8F

Pasanen, K., Bruun, M., Vasankari, T., Nurminen, M., & Frey, W. O. (2016). Injuries during the international floorball tournaments from 2012 to 2015. *BMJ Open Sport & Exercise Medicine*, *2*(1), e000217. https://doi.org/10.1136/bmjsem-2016-000217

Pasanen, K., Hietamo, J., Vasankari, T., Kannus, P., Heinonen, A., Kujala, U. M., Mattila, V. M., & Parkkari, J. (2018). Acute injuries in Finnish junior floorball league players. *Journal of Science and Medicine in Sport*, *21*(3), 268–273. https://doi.org/10.1016/j.jsams.2017.06.021

Pasanen, K., Parkkari, J., Kannus, P., Rossi, L., Palvanen, M., Natri, A., & Järvinen, M. (2008). Injury risk in female floorball: A prospective one-season follow-up. *Scandinavian Journal of Medicine & Science in Sports*, *18*(1), 49–54. https://doi.org/10.1111/j.1600-0838.2007.00640.x

Pasanen, K., Parkkari, J., Pasanen, M., Hiilloskorpi, H., Mäkinen, T., Järvinen, M., & Kannus, P. (2008). Neuromuscular training and the risk of leg injuries in female floorball players: Cluster randomised controlled study. *BMJ (Clinical Research Ed.)*, *337*(7661), a295. https://doi.org/10.1136/bmj.a295

Prodromos, C. C., Han, Y., Rogowski, J., Joyce, B., & Shi, K. (2007). A meta-analysis of the incidence of anterior cruciate ligament tears as a function of gender, sport, and a knee injury-reduction regimen. *Arthroscopy: The Journal of Arthroscopic & Related Surgery: Official Publication of the Arthroscopy Association of North America and the International Arthroscopy Association*, *23*(12), 1320-1325. e6. https://doi.org/10.1016/j.arthro.2007.07.003

Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, *25*(1), 54–67. https://doi.org/10.1006/ceps.1999.1020

Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Silvers-Granelli, H. J., Bizzini, M., Arundale, A., Mandelbaum, B. R., & Snyder-Mackler, L. (2018). Higher compliance to a neuromuscular injury prevention program improves overall injury rate in male football players. *Knee Surgery, Sports Traumatology, Arthroscopy: Official Journal of the ESSKA*, *26*(7), 1975–1983. https://doi.org/10.1007/s00167-018-4895-5

Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology*, *11*(1), 101–121. https://doi.org/10.1080/1750984X.2017.1317357

Snellman, K., Parkkari, J., Kannus, P., Leppälä, J., Vuori, I., & Järvinen, M. (2001). Sports injuries in floorball: A prospective one-year follow-up study. *International Journal of Sports Medicine*, *22*(7), 531–536. https://doi.org/10.1055/s-2001-17609

Soligard, T., Nilstad, A., Steffen, K., Myklebust, G., Holme, I., Dvorak, J., Bahr, R., & Andersen, T. E. (2010). Compliance with a comprehensive warm-up programme to prevent injuries in youth football. *British Journal of Sports Medicine*, *44*(11), 787–793. https://doi.org/10.1136/bjsm.2009.070672

Tervo, T., Nyström, H., & Nordström, A. (2019). Injuries in Swedish floorball players: A nationwide matched cohort study. *Cogent Medicine*, *6*(1), 1673087. https://doi.org/10.1080/2331205X.2019.1673087

Tranaeus, U., Götesson, E., & Werner, S. (2016). Injury Profile in Swedish Elite Floorball. *Sports Health*, *8*(3), 224–229. https://doi.org/10.1177/1941738116628472

Waldén, M., Atroshi, I., Magnusson, H., Wagner, P., & Hägglund, M. (2012). Prevention of acute knee injuries in adolescent female football players: Cluster randomised controlled trial. *BMJ (Clinical Research Ed.)*, *344*, e3042. https://doi.org/10.1136/bmj.e3042

Wiggins, A. J., Grandhi, R. K., Schneider, D. K., Stanfield, D., Webster, K. E., & Myer, G. D. (2016). Risk of Secondary Injury in Younger Athletes After Anterior Cruciate Ligament Reconstruction: A Systematic Review and Meta-analysis. *The American Journal of Sports Medicine*, *44*(7), 1861–1876. https://doi.org/10.1177/0363546515621554