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SPORTS & EXERCISE | RESEARCH ARTICLE

Elite professional soccer players' experience of injury prevention

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Abstract: *Introduction:* Injuries are common in professional soccer and might interfere with the ability of the team and the individual player to perform. Several studies have shown the benefits of exercise as a means to prevent injuries in soccer, but research is needed to substantiate, how injury prevention strategies are best implemented. *Purpose:* The purpose of this study was to describe and interpret soccer players' experience of injury prevention. *Method:* A hermeneutic phenomenological approach was used as described by van Manen. *Respondents:* Eight professional Danish soccer players were interviewed with open-ended interviews. *Results:* The players' lived experience of injury prevention across all the interviews were shown as the interaction between three overarching themes: (1) being a part of a performance environment, (2) the need for an individual approach and (3) strong personal ambitions. Interaction between the three themes empowered the players to engage in injury prevention. *Conclusion:* Professional soccer players' experience of injury prevention can be interpreted within the four components of the empowerment model: (1) impact, (2) competence, (3) meaningfulness and (4) choice. The presence of the four components empowered the players to engage in injury prevention in the soccer club.

Subjects: Sport and Exercise Science; Sport and Leisure Studies; Sports Medicine and Therapy; Behavioral Sciences

Keywords: injury prevention; soccer; compliance; hermeneutic phenomenology; empowerment; behaviour

ABOUT THE AUTHORS

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PUBLIC INTEREST STATEMENT

Injuries are a major problem in professional male soccer. Injuries have massive negative consequences for the performance of the team and the player, as well as the health of the player. Even though many injuries can be prevented through exercises, it is difficult for players and clubs to perform the exercises adequately and frequent enough to get the desired effect. This is the first study to explore the experience of the players involved in the exercises. The study outlines that players needed to experience being empowered to make them more committed to the tasks related to injury prevention. When players feel empowered, they seem to get a deeper understanding of the purpose and execution of the interventions rather than just following instructions.

1. Background

Injuries are common in professional soccer. On average an elite soccer team with 25 players will experience about 50 injuries per season (Ekstrand, Hagglund, & Walden, 2011). When a player is injured, he or she is not eligible for match or training, which affects the team's overall performance and success (Hagglund, Waldén, Magnusson, Kristenson & Bengtsson, 2013). The most common injuries are hamstring strains, adductor pain, ankle distortions and injuries to the ligaments of the knee, respectively (Ekstrand et al., 2011). These injuries account for more than 50% of all injuries in professional soccer. An injury to the ankle or knee joint increases the risk of developing osteoarthritis later in life, which furthermore stresses the need for effective injury prevention (Emery & Meeuwisse, 2010). This makes prevention of injuries one of the most important assignments for the medical staff in a professional soccer club (Owen et al., 2013).

There has been a large increase in studies on injury prevention in relation to both professional and amateur soccer players over the last decade and several studies show a significant decrease in time-loss due to injuries (Barengo et al., 2014; Gagnier, Morgenstern, & Chess, 2013; Lauersen, Bertelsen, & Andersen, 2014). Overall injury rates have decreased in the Belgian soccer community, both professional and recreational over the last decade partly by implementing the official injury prevention program from FIFA, "The 11+" (Bollars et al., 2014). Petersen, Thorborg, Nielsen, Budtz-Jørgensen, and Hölmich (2011) decreased the overall, new and recurrent hamstring injuries in professional and amateur soccer players compared to controls by carrying out a 10-week eccentric strengthening program for the hamstrings. Owen et al. (2013) and Melegati et al. (2013) have also shown a reduction of injuries in elite professional male soccer players through preventive exercises.

Studies report superior preventive results with higher compliance to the exercises (Gagnier et al., 2013; Hagglund, Atroshi, Wagner, & Waldén, 2013). There seems to be an inverse dose-response relationship between compliance with a neuromuscular training and incidence of ACL injury (Sugimoto et al., 2012). Thus, compliance is an important issue in order to optimize the effect of injury prevention, whereas lack of compliance might be the limiting factor for the overall success of injury prevention (Alentorn-Geli et al., 2009). Therefore any intervention done to prevent injuries in professional soccer will not reach its full potential unless it is correctly implemented and maintained during a longer period of time (O'Brien & Finch, 2016). Despite evidence of the effectiveness of injury prevention programs McCall, Dupont, and Ekstrand (2016) showed that the top 33 teams of the UEFA Elite Club Injury Study saw the players' adherence with injury prevention, as well as the quality of execution, as limiting the effect of such interventions.

Little is known about professional soccer players' experience with injury preventive exercises. Finch et al. (2014) made a survey on injury prevention among community Australian football players. At the end of the season the players filled out the survey and stated that they found the neuromuscular training program enjoyable and that shortening and introducing more variety in the exercises could improve the exercise program. The study is a rare example of studying the recipients, the athletes, to whom the exercises are targeted. The Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework has been proposed as a means for researchers to conduct injury prevention studies in order to improve adoption by practitioners and policy makers (Hanson, Allegrante, Sleet & Finch, 2014). The current literature regarding injury prevention mostly deals with the first two parts of the RE-AIM framework and rarely use any social or behavioural theories or models in order to enhance the uptake and maintenance of the intervention (McGlashan & Finch, 2010).

Verhagen, van Stralen, and van Mechelen (2010) consider the behavioural aspects, as being the key factor in injury prevention and yet very few studies relating to injury prevention in sport use social and behavioural science theories even though they could be used to enhance the preventive effect of the intervention (McGlashan & Finch, 2010). Two often-used theories are the Theory of Planned Behaviour (TPB) and Self-Determination Theory (SDT) (Keats, Emery, & Finch, 2012). TPB highlights three social and cognitive aspects of an individual's intention to engage in certain behaviour: (1) attitude, (2) social norm and (3) perceived behavioural control. The theory states that an

individual will be motivated to engage in and an activity, if he views it positively (attitude), believes that significant others think that he should perform it (social norm) and he believes that he has the confidence and ability to perform it successfully (perceived behavioural control). SDT states that intrinsic motivation is present if the task is freely chosen (autonomy), if the person is able to master the task (competence) and if it is considered meaningful to the individual (relatedness) (Keats et al., 2012). An integrated framework between the two theories has been used to examine athletes' intentions towards sports injury prevention and rehabilitation (Chan & Hagger, 2012a). The integrated framework found that the autonomy of SDT and the three variables of the TPB positively predicted intentions of injury prevention. In contrast to their hypothesis a more controlled motivation from the SDT was also positively linked to the intentions, however not as effectively as autonomous motivation (Chan & Hagger, 2012a). Even if coaches and athletes have positive attitudes and beliefs towards a preventive intervention, it does not seem to make them comply any better, which points out that behavioural factors should be considered (McKay, Steffen, Romiti, Finch, & Emery, 2014).

Little is known about how professional soccer players experience injury prevention. Gaining knowledge on the subject would give valuable information enabling scientists and clinicians to prevent injuries in professional soccer and thereby optimizing players and team performances and health. The purpose of this study was to describe and interpret the professional soccer players' experience of injury prevention.

2. Methods

A hermeneutic phenomenological approach described by Van Manen (1997) was used. The method is rooted in phenomenology, which is the systematic description of human experience as it is experienced in the natural situations (Laverty, 2003). It is referred to as "phenomenology of praxis" (Thome, Esbensen, Dykes, & Hallberg, 2004). Phenomenology deals with the uniqueness of the individual experience and the phenomenological approach seeks to grasp the essence of the conscious human being lived experience as each individual experiences it. Van Manen (1997) uses the interpretive hermeneutics to make sense of the descriptive phenomenological text in the context of human experience. Where phenomenology seeks interpretations of texts, hermeneutic phenomenology rather focuses on the meaning that arises from the interpretive interactions within the text (Laverty, 2003). Hence, the hermeneutic phenomenology method is a way of gaining in-depth knowledge about the uniqueness of how elite soccer players experience the phenomenon of injury prevention. Working with phenomenology involves "bracketing" personal opinions and assumptions in order to capture the phenomenon, as it is experienced by the individual player (Van Manen, 1997). However, turning ones interest towards a phenomenon of particular interest is essential when working with phenomenology (Van Manen, 1997). The first author tried to disregard his pre-understanding of working as a physiotherapist with an elite soccer team. The second author had no previous experience in working with professional soccer players.

Prior to initiating this study, The Ethical Board of the Capitol Region in Copenhagen was contacted to obtain an ethical approval. The Board replied that no ethical approval was needed due to the use of interview as data collection.

2.1. Respondents

Eight male Danish soccer players were interviewed. No female players were included, due to the relatively low number of professional female soccer players in Denmark, thus compromise the confidentiality of the interviews. Purposive sampling was used in order to obtain as large variety of different age groups and soccer experience as possible (Patton, 2005). Players were recruited through personal contacts with individual players and medical staffs at different professional soccer clubs. The players all played in Danish professional soccer clubs or abroad. All the players had played in at least two different professional soccer clubs. The respondents were professional players between 18 and 33 years of age. They participated in 6–8 training sessions and 1–2 matches every week during a season in clubs with a professional medical staff and were injury free at the time of the interview. All the interviewed players had represented the Danish National youth teams and some of the players also played for the National team at a senior level. All the participants returned the written consent prior the day of the interview.

2.2. Interview

The durations of the interviews were around 45 min and 3 of the interviews were conducted on Skype video calls to be able to include players playing all over Europe. Each interview was recorded with a digital recorder and transcribed verbatim. The interviews were all conducted from August 2014 to March 2015. In accordance with Van Manen (1997) the interviews were conducted as open-ended, with the least amount of pre-manufactured questions. “One needs to be oriented to one’s question or notion in such a strong matter that one does not get easily carried away with interviews that go everywhere and nowhere” (Van Manen, 1997, p. 67).

In order to grasp their individual experience, the respondent was encouraged to think of specific situations or events in an attempt to describe how he experienced injury prevention at different clubs. These concrete examples were used in order to fully explore the entire lived experience. The purpose of the interviews was to grasp the individual experiences rather than what the respondents considered important for the rest of his teammates. The interviewer tried to promote the respondents to reflect on their personal and individual experiences with injury prevention, by asking questions such as: “what was that experience like for you?” and “how do you feel about that?”

2.3. Analysis

Van Manen (1997) describes the process of analysing the interviews as being divided into two levels. At the first level each interview was analysed separately prior to comparing and analysing all the interviews as a whole. The researcher’s thoughts and beliefs were bracketed to enable a short description of the phenomenon, as each player experienced it. Descriptive phenomenology was mainly used at the initial level and the interpretive hermeneutic was set aside (Giorgi, 2006; Van Manen, 1997). The interview was read or listened to numerous times and a holistic reading approach was applied to ensure that a short description of an aspect of the experience was written. The description represented the emerging condensation. A selective reading approach was applied and each statement or phrase that described the qualities or the variations of the experience was highlighted. The statements were then decontextualized into the condensation that captured the experience (Tables 1 and 2).

At the second level the phenomenon was analysed across all the interviews (Table 3). The themes representing the phenomenon were formulated on the basis of the condensations and codes of all

Table 1. Example of revealing a single condensation from one interview

Holistic reading approach
The player experiences that the culture in the club and within the players has to facilitate an environment where it is allowed to make an extra effort to improve
Selective reading approach
“Sometimes the other will be like ... wow you’re serious about this, huh? Me, L and M got that a lot, right? I don’t know why there is this prejudice. I think it’s just an old fashion approach, where you get in at practice, tie you boots and if you win a game you can have a beer afterwards. That old-fashion approach ... it still lives within some players. I don’t think that everyone has gotten beyond the fact that the ones that work a bit harder ... it certainly isn’t a disadvantage. Sometimes it’s just like ... are you going to the gym again, trainer’s pet?”
“I am 100% certain that if we had to do it ourselves ... if we had the choice between doing that an fooling around with the ball, then half of us would be doing the exercises and the other half would be playing, right?”
“The place where I came from a lot of us just went to the gym and did the exercises, right? No one asked any questions if you did that”
“Not necessarily everyone went to the gym afterwards, but no one had any smart remarks if they did. I mean ... some players just came in and went afterward because they had a family or other commitments. And that’s ok ... but it’s also ok to work harder, you know?”
“The level of playing makes a big difference in the clubs ... you know ... what you can do that isn’t frowned upon. The higher the level the more serious it gets”
Condensation
An environment where you can make an effort to improve

Table 2. All the condensations from one interview

Agreement within the staff on injury prevention
Confidence in the medical staff
The need for proper facilities
Well-structured exercises
An environment where you are allowed to make an effort
Idols as an inspirational source
Previous experiences with injuries
The bodily experience with the exercises

Table 3. Example of revealing the theme “being a part of a performance environment”

Quote	Condensation	Code	Theme
“To me the collaboration between the staff and management is essential in injury prevention.” #6	The collaboration on different levels within the organisation	Organisation	Being a part of a performance environment
“... we lived in sort of a bubble, where we had a dialog with the coaches and the entire club. They showed interest in what we were doing, right?” #1			
“When the coach wasn’t there, the level of engagement was extremely low.” #4			
“We had a much better dialogue with the rest of the club. They were interested in what we were doing.” #8	An organisation that prioritizes IP		
“The club just showed that injury prevention was important for them and thereby for me.” #6			
“It doesn’t matter if it’s just two exercises, you have to do it 100% or it doesn’t do anything.” #7	Discipline within every training session	Training environment	
“The level of playing makes a big difference in the clubs... you know ... what you can do that isn’t frowned upon. The higher the level the more serious it gets” #3	An environment where you can make an effort to improve		
“I have to stay fit, otherwise somebody else will take my place.” #2	A competitive environment		
“I feel like I’m getting better than the others and I want that!” #7			
“The better the facilities, the more I want to do the exercises ... simple as that.” #6	The positive effect of the club facilities	Facilities	
“It was very structured. We did the exercises together to make sure that everybody did them.” #4	Structured exercises		
“The less injuries I have the better I can perform on the pitch” #6	Focus on performance enhancement	Performance	
“... being able to perform regularly without the interruption of injuries.” #4			
“I see him outshining us all and he’s the one that works the hardest and most focused of us all” #3	Successful role models		
“Our physios definitely believe in the exercises and that we will benefit from them.” #5	Confidence in the medical staff	Medical staff	
“The overall purpose was that we would get stronger.” #1	Purpose of the exercises		
“No matter how self-discipline you are it’s just not possible to do an exercise 100% if somebody isn’t doing the group isn’t doing their best.” #7	A squad that works hard every day	Squad mentality	
“It was such a great training environment. It was such a pleasure to be a part of.” #4			
“I have responsibilities for my teammates. If I’m ready and you are ready, we can develop as a team.” #7	Being a part of a team		

the interviews. The themes had to contain the experience of all the players. Interpretive hermeneutic was used at this level to interpret the descriptive phenomenological condensations.

The experience was highlighted to make external of what was once internal. The writing process was closely fused into the research activity and reflection itself. It was possible that new discoveries occurred at this step. During the analysis process the results were constantly debated by the two authors in order to reach an agreement on the descriptions and interpretations of the players' experience.

3. Results

The players' lived experience of injury prevention across all the interviews were illuminated as three overarching themes: (1) being a part of a performance environment, (2) the need for an individual approach and (3) strong personal ambitions. The interaction between the three themes can be interpreted within the empowerment model.

3.1. Theme: *Being a part of a performance environment*

The players experienced injury prevention as meaningful, when the medical staff, the coaches and the entire organisation supported it. The players reacted positively to this feeling of performing as a team in almost every aspect of training. The experience of effect and relevance of the preventive strategies decreased, if the players experienced that only the medical staff supported it. The collaboration between the different levels of the organisation showed the players that this was something of value and that their efforts would not pass unnoticed:

The collaboration between the medical staff and the management is essential to me when dealing with injury prevention. I'm simply more motivated. If it's important for me and the entire club, then I'm all in. Player #6

The players experienced that a competitive environment, where their teammates were eager to improve their performance forced them to be disciplined in every training session. The feeling of being stronger or fitter than their peers motivated the players into doing the hard work. Even though they were all competitors, they respected each other for making an effort in optimizing their performance.

I have to stay fit, otherwise somebody else will take my place. Player #2

The players needed their teammates to be motivated, when they performed injury prevention. In theory, they could do prevention exercises by themselves, but training with the rest of the squad gave a certain motivational boost. They experienced that a disciplined squad that was eager to perform in every training session was a motivational factor. When some players were not doing their best, it affected the rest of the squad and some players may have felt reluctant to perform as well. The squad had to be ready to perform exercises or drills with quality and concentration:

I felt like it was a session on the pitch. Instead of something that we just had to get over with ... we really had to be ready, man. 2-3 guys on each team with weights in their hands and then you just had to perform, right? We had to be ready. It was a pleasure to be a part of. Player #4

Even though experiences with facilities differed among players, they generally experienced better facilities as an important part of an environment in order to maximize their performance. Adequate facilities were also an expression of how ambitious the club was in its quest for preventing injuries. The facilities reflected better working conditions for the squad and their motivation to work hard and disciplined was increased. They experienced that the medical staff had a better chance of getting their ideas through to the players when facilities were of a certain standard:

Yeah, definitely. I can say that with confidence. If I have to choose between fighting some old equipment and a state of the art fitness centre that's just beside the stadium, then that's an easy choice to me. It draws me over there. Player # 3

The collaboration within the organisation made the medical staff and the preventive strategies more credible for the players. Even well structured and reliable medical staffs that were not a part of the daily routines were experienced as less meaningful to the players. The players had to be confident that the medical staff prescribed effective exercises with a clear purpose:

When I played in ... there was a clear purpose with the exercises, I would become a better player. I guess it was because I knew something about it and it was routinely done. It wasn't just for laughs ... we did it for 5 years. Player #1

The players saw injury prevention as performance enhancement, which was a key motivational factor. This enhancement was always the overall goal with any exercise that the players did. Anything that might compromise the performance during the matches was not experienced as relevant to the players. Every player had been injured at some point and experienced, how it interfered with their performance:

The less injuries I have the better I can perform on the pitch. Player #6

3.1.1. Being a part of a performance environment

Being a part of an environment that strove to improve players' physical performance through injury prevention was experienced as more relevant and meaningful to the players. They experienced that every part of the organisation from the medical staff to the manager, had to have similar goals of performance enhancement. If one aspect of the organisation did not prioritise injury preventive interventions, the players' motivation was lowered. As a consequence, the squad found it difficult to continue working hard in doing the exercises, which made it even more difficult for the individual player. However, a squad that was highly motivated could compensate for the fact, that the club was not able to supply the team with the latest fitness equipment or adequate people in the medical staff. The squad still needed an organisation to keep them focused and working hard as a team towards the goal of improving performance. Therefore, they were mutually dependent on each other in creating this performance environment.

3.2. Theme: Strong personal ambitions

All the players experienced that the opportunity to play in a larger club as a way of motivating themselves into doing exercises to prevent injuries and improve performance, as well as the drive to improve and do better than their peers. Although the sense of being a part of the team was important to the players, it could never match the sense of maximizing individual performance and getting the opportunity to play in a more prestigious club and achieving more success as a soccer player.

If you want to be sold to a major club, then it starts in here. It's as simple as that. Even though it sucks. But if you get injured after 60 min against some looser team, you'll bust yourself up for two weeks because you can't play, score the goals and get on the national team. But your teammate can, right. It's all linked. Player #8

In order to maximize their match performance the players tried to increase the quality and duration of the preventive interventions that they experienced as being effective. The players tried to do this by incorporating their ambitious attitude into their training sessions. Even though they tried to work hard during all types of training sessions, the aim was always an increase of the performance during the matches. Players experienced the continuous improvements of for example strength or balance as motivational, in the sense that they physically felt them. These small day-to-day improvements, motivated the players into continuing the exercises, even though it did not directly relate to soccer.

You can always become a little bit faster ... I mean move forward. That's my approach. Always a little bit stronger, but also with injury prevention, right? You can always go a little bit harder than last time. Player #4

3.2.1. *Strong personal ambitions*

The interviewed players were extremely ambitious and tried to do whatever it took to perform optimum during the weekends. Even though they knew that training was important, they saw themselves as being measured by their performance in the matches. The players needed the desire to play at the highest level possible, in order to keep the motivation to improve their physical abilities. They knew that the absence of injuries would help them achieve the goal of getting to a larger club. Their ambitious nature helped them to find meaning in trying to make the small, but significant improvements every day.

3.3. *Theme: The need for an individual approach*

The players experienced that once preventive interventions were done with respect for their physical capabilities and previous experiences, the interventions were valuable and effective for them. They felt confident, when they were presented with interventions that were developed for their very body and made them perform better. They felt very reluctant to do anything that might compromise that performance. The thought of doing the same interventions for every player seemed irrelevant to them, as they saw it as obvious that everyone should be treated differently.

I find it odd that I have to do leg press with 140 kilos, when I'm telling you that it doesn't do my legs any good. Not everyone is playing right wing. We don't all have the same assignments on the pitch. Player #8

The players had tremendous respect for qualified medical staff. They experienced a feeling of success, when preventive interventions were effectively implemented in a collaboration of the between the staff and the player. The players only saw purpose in any intervention, when there was a mutual understanding between the medical staff and the player of the fact that the very aim was to enable them able to perform better on the pitch. This also included managing the training load to be adequate and targeted towards the individual player's needs. With this positive dialogue it made sense to the players to do exercises that they might fear because of previous injury. They felt the bodily deficits and felt the need for improvements even though they were reluctant to use a particular muscle or joint. The players needed to physically feel the exercises fatiguing their body, in order for them to experience them as effective.

I think that's a cool way to work with exercises. You often feel a bit of soreness somewhere. It's actually good to feel the muscles 7 min before the training session. Player #3

Once they experienced the positive effect of an intervention, as the absence of injury, they were very motivated to continuing the intervention and embrace it as a part of their routines.

I've done a lot of stuff on my own during the break. We've done a lot of exercises with rubber bands. I haven't been injured since and I have more energy and I'm able to play soccer all the time. Plus I sleep well at night too. Player #7

3.3.1. *The need for an individualised approach*

All the players experienced the need for an individual approach to make injury prevention meaningful and effective for them. A feeling of lack of respect from particularly the medical staff arose, when the players did not experience a dialogue between the medical staff and themselves. The players felt that they best knew their own body and therefore, no one should tell them anything that contradicted or questioned that knowledge. They were happy to help the medical staff with information about their body, in order to develop the best injury prevention program for them. With a respectful dialogue between the player and the staff, the players could also be given some heavier exercises

that they earlier were reluctant to adhere to. This enabled the medical staff to show them the need for additional injury preventive exercises.

3.4. Interaction between the themes

The proposed interaction between the themes is shown in Figure 1.

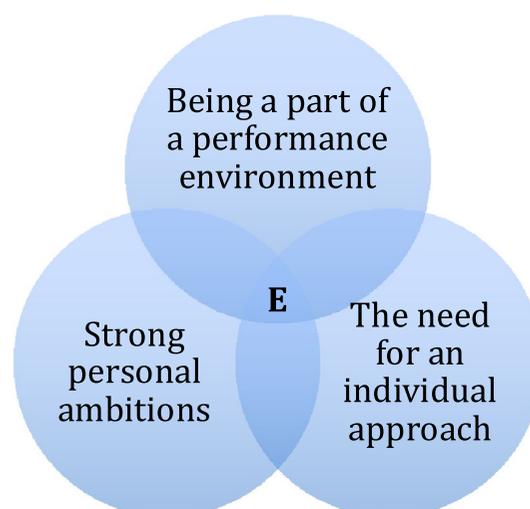
The players' lived experience of injury prevention was an interaction between being a part of a performance environment, while maintaining the need for an individual approach of each individual player with strong personal ambitions. The three overlapping themes that constitute the experience of the players can be interpreted within the empowerment model (capital "E" in Figure 1), as proposed by Thomas and Velthouse (1990). The authors define empowerment as increased intrinsic task motivation in workers and identify 4 cognitive components as the basis of worker empowerment. In other words, when a person is given a task or an assignment he or she will make a series of judgements before engaging in this specific task. The four components of the empowerment model includes: (1) Impact, (2) competence, (3) meaningfulness and (4) choice.

Impact refers to the ability of the task to make a difference in the pursuit of the goal. The players need to believe that doing preventive exercises will prevent injuries occurring to them and thereby enhance their performance on the pitch. This was accomplished by clear communication from the medical staff and the entire club. The player felt that injury prevention was important and effective if the entire club and the rest of his teammates emphasised it.

Competence refers to a person's ability to perform the task adequately and with skill, when her or she tries. When injury prevention exercises were performed it had to be done in a performance environment, where the players could compare how skilfully the exercises were performed to the other players. If the entire team did not adhere to the exercises, it was very hard for a player to experience that they performed any exercises skilfully. The players also needed to experience that the exercises were tailored to their individual needs and they were instructed properly to engage in the exercises.

Meaningfulness refers to the value (or lack of) of the goal in relation to the person's own ideals. Every player knew the value of preventing injuries in order to perform at their top level, but every player needed to experience that the exercises were constructed to their individual needs, in order to maximize their performance. The experience of not being included in the process of tailoring the prevention strategies left the players experiencing a lack of meaning with the exercises.

Figure 1. Interaction between the three emerging themes of the text.



Choice involves an individual's responsibility for his or her actions and whether or not a person is determined to behave in a certain way. The players experienced their ambitions of performing on their highest possible level as the key motivational factor in engaging in injury prevention exercises. They generally experienced the responsibility for actively trying to prevent injuries, but this responsibility was shared with the club environment.

4. Discussion

The study highlights three overarching themes that constitute the players' experience with injury prevention, (1) being a part of a performance environment, (2) the need for an individual approach and (3) strong personal ambitions. These themes can be interpreted within the four components of the empowerment model (impact, competence, meaningfulness and choice). The presence of the four components empowered the players to engage in injury prevention in the soccer club.

A large body of evidence seems to support the positive impact of injury prevention exercises in soccer. Empowerment as described as psychological empowerment as experienced by the players, rather than structural empowerment that focuses on transitioning authority from upper management (Maynard, Gilson, & Mathieu, 2012). The players in this study would try any intervention they experienced as having any positive impact on their performance. By being professional players they did not view time as an issue, as speculated by Finch et al. (2014) and Soligard et al. (2010). Van Manen (1997) refers to this as *Lived time*. Lived time refers to the players' subjective experience of time rather than to the objective duration of time, which may differ significantly between professional and community soccer players.

In a qualitative study on the performance environment in English elite youth soccer Fransen, Vanbeselaere, De Cuyper, Broek, and Boen (2015) found that by continuous messages and goal setting within the staff members, they were able to make the team respond well to the ideas and expectation of the club or federation. Pain and Harwood (2007) also showed that planning and organization were important in order for the players to engage in creating a performance environment. This is in line with the players in this study, where the players experienced that the medical staff, as well as the entire club, needed to be facilitators in creating the performance environment, where injury prevention was emphasised. As shown by Chan and Hagger (2012a) some athletes also seem to respond to a more controlled motivation rather than the more autonomous motivation. This is similar to the experience of the players in this study, who needed an amount of more controlled motivation from the medical staff, coaches and other club members.

Furthermore, when the all the staff members were the facilitators, the players felt that the coaches also would notice their hard work and as a result have a positive impact on their chances of being a starting members in important games.

In order to experience the injury preventive exercises to be meaningful for the players, they needed to feel that the exercises were tailored to their individual needs. This individualized approach is a contrast to many intervention studies that have been performed with elite soccer players. Most of the studies have standardized exercises programmes that are executed in a predefined time period (Bollars et al., 2014; Owen et al., 2013; Petersen et al., 2011). Although effective in preventing injuries they offer a *one fits all* approach, which makes sense in a scientific setting. However, it does not support the individual player's needs and experience. A standardized protocol also diminishes the dialogue between the players and the medical staff, a dialogue that the players experienced as extremely important. These elements may partly explain why compliance with the exercises diminishes, when an intervention period has ended (Engebretsen, Myklebust, Holme, Engebretsen, & Bahr, 2008; Owen et al., 2013). High degrees of meaningfulness are believed to result in increased commitment and concentration (Thomas & Velthouse, 1990). This could be very important as medical officers of 33 elite European soccer teams state that low compliance and quality of movement may limit the effect of the preventive exercises (McCall et al., 2016). Given that quality of movement is seen as important in injury prevention, an increase in the competences to which the players can

perform the exercises skilfully, might increase effort and persistence (Thomas & Velthouse, 1990). The players also experienced an increase in competence when the exercises were individually tailored and instructed to each player. Melegati et al. (2013) reduced the number of injuries in an Italian professional soccer team with an injury prevention program that incorporated a group- and an individually based exercise programs. No compliance measures were used, but based on the results, they were able to take the individual and the team into account, when performing successful injury prevention. The players experienced a strong degree of competence when managing the physical load on their body during training and matches in order to prevent injuries and improve performance. Without appropriate training stimulus, players would not increase their performance, however an excessive overload would increase the risk of injury (Bengtsson, Ekstrand, & Hägglund, 2013; Owen et al., 2014). Malone et al. (2017) found that elite soccer players had a decreased risk of injury when possessing higher physical capacity as well as not being exposed to large increases in weekly loads. Van Manen (1997) refers to this experience as *Lived body*, where the physical experience of finding the appropriate load enables the players to use their knowledge of their own body to guide the decision-making process.

The high level of ambitions within these players reflects the last component of the empowerment model, choice. All the players experience their ambitions of achieving their full potential in the field of soccer as the main driver when deciding to engage in injury prevention. The players needed to experience having a choice in the intervention strategies and not just following orders. Keats et al. (2012) see the intention or self-determination to engage in an activity as the main intrinsic motivational sources. One of the reasons for an individual to choose to participate in an activity is that it can satisfy personal relevant goal. The primary goal of the players in the study was to maximize their potential, so they definitely possessed the intention and the ambition to engage in injury preventive exercises. However, even though intention might still be the best predictor, evidence still shows that intention is not sufficient to create of behavioural enactment (Rhodes & de Bruijn, 2013). Maynard et al. (2012) see empowerment as a four-dimensional framework and whilst choice is of great importance it cannot stand alone without the other three elements. Keats et al. (2012) utilize a combination of SDT and TPB as a framework for injury prevention in youth athletes. While the SDT focuses on giving the athletes a sense of choice and appeals to more personally held values, the TPB targets the advantages of performing the behaviour and how it can be done effectively, which has been shown to be effective in a physical activity context (Chan & Hagger, 2012b). This is in line with the findings of this study, where the players experience, that interventions which integrate belief-related information together with opportunities for choices corresponding with their individual and personal values. However, the players also needed to experience a sense of a collective goal and being a part of a performance team. The empowerment model can also be understood at a team level, where impact refers to when the work performed by the team as being significant and advancing organisational objectives (Maynard et al., 2012). In the case of the players in this study, it meant reaching their maximal potential as soccer players and performing at their top level on the pitch.

4.1. Practical implications

The concept of empowerment can be traced decades back and those who advocate the use of empowerment do so for its potential to enhance performance, well being and positive attitudes in workers (Maynard et al., 2012). If all four components of the model are considered, when trying to prevent injuries it could potentially increase the motivation to perform and engage in the exercises and thereby enhancing performance on the pitch. The task is both complicated and multifactorial, thus a standardised prevention protocol done only by the medical staff, without any engagement from the rest of the staff, is not likely to be effective in the long term. The delivery and content of the prevention programme will be different depending on the players, the team and other contextual elements, but the staff needs to take all the components of the empowerment model into account, when trying to effectively prevent injuries in professional soccer. Effectively empowering the players may not only make them comply better with the interventions, but also make them more committed to them. Rather than simply following instructions, they may get a deeper understanding of the purpose and execution of the interventions.

4.1.1. Methodological considerations

Williams and Morrow (2009) describe three components when trying to achieve trustworthiness in qualitative research: (1) *ensuring the integrity of the data*, (2) *balancing between participant meaning and researcher interpretation* and (3) *clear communication and application of findings*. The integrity of the data must be secured in order for the results to be dependable. The authors strove to reach a wide range of soccer players to obtain a large variety of experiences. The authors also let the research question guide the open-ended interview in order to capture the unique experience from each player. The process of analysing the interviews and finding the essential themes of the interviews, were discussed between the authors. After agreement upon the condensations that constituted the lived experience of injury prevention, the themes for all the interviews were formulated. This was done to minimize the risk of over interpretation.

To the authors knowledge this is the first study carried through with elite professional soccer players' experience with injury prevention. The trustworthiness of this study also makes it transferable to other soccer players at elite levels.

4.1.2. Limitations and transferability

Given that this is a qualitative study of injury prevention it is not possible to make any generalizations regarding other populations. However, a qualitative research is still transferable and a detailed description should enable the reader to make comparisons to other individuals or groups, as well as to their own experiences and other research findings (Curtin & Fossey, 2007). Although the study constitutes a small number of soccer players, it provides an in-depth view on injury prevention, from the players' perspectives. The respondents are highly professional male soccer players with similar training schedules as many top European players. Soccer provides for their families and as with many other European players, their income reflects the number and amount of league match play. Although some of the respondents have played in larger European clubs, others have only played in Denmark, which may not, in every aspect, reflect the conditions of soccer at the very highest level. However, other studies that only include Danish players have previously been looked upon as being comparable to other European soccer players (Hölmich et al., 1999; Petersen et al., 2011). Given the gender of the respondents is not likely to be transferable to female players and since all the respondents were professional soccer players it is also debateable, whether the results are transferable to amateur soccer players. A limitation of the study is that only soccer players were interviewed, which makes a transfer of the results to other professional athletes. Even though the results may not be applicable to athletes in individual sports, other team sports such as basketball, Gaelic football or rugby may be able to transfer the results to their context, as these sports show similar patterns in injury and injury prevention (Longo et al., 2012; Roe, Murphy, Gissane, & Blake, 2016; Williams, Trewartha, Kemp, & Stokes, 2013). One limitation of the study is that it does not provide a protocol for ensuring empowerment in soccer players, but rather a framework for practitioners to understand the players' experience of injury prevention. Future research is needed to explore the effect of empowering players in preventing injuries in professional male soccer.

4.1.3. Ethical considerations

At the time of the interview none of the respondents were playing at the club where the first author was working. This made it less likely that their participation in the study was due to dependency or loyalty to the author, hence allow the players to talk about the negative aspects of injury prevention without the fear of either pleasing or hurting the author. Any negative statements did not necessarily refer to a specific club, given the fact that they played at different clubs. The respondents were informed that their participation was voluntary and they could withdraw at any time without consequences. This was communicated both written and verbally.

The players might have feared that their statements could be misused against them in the future. Given the fact that injury prevention is an essential part of a soccer player's career, it might be considered valuable information for clubs. If a player does not see injury prevention as an important part of soccer, some people might see it, as if the player is not serious about their sport. As a

consequence, the clubs might hesitate to sign with this player. Therefore, confidentiality was of utmost importance, even though most of the statements were likely to be considered harmless. No specific injury record was taken or discussed during the interviews as this might be of sensitive nature to the player. Since the subject of this study was injury prevention there was very little emphasis rehabilitation of specific individual injuries. This made the data much less sensitive as injury information might be of value to club wanting to sign with the player in the future.

To ensure the security, integrity and confidentiality, the data was secured on an external hard disc and locked in a cabinet with access of only the first author. The external hard drive, which was store in a locked cabinet for which only the first author could access. Alongside the external hard drive, any other material regarding the project was stored (notes, written consent, cut-outs from the analysis).

5. Conclusion

Professional soccer players' experience of injury prevention can be interpreted within the four components of the empowerment model: (1) impact, (2) competence, (3) meaningfulness and (4) choice. The presence of the four components empowered the players to engage in injury prevention in the soccer club. Scientists and practitioners may be able to use this model in developing and implementing injury preventive interventions that can be better adopted and maintained to ensure more effective injury prevention aimed at professional male soccer players.

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