

# Shared decision-making with athletes: a survey study of healthcare professionals' perspectives

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## ABSTRACT

**Objectives** Shared decision-making (SDM) is a trending topic in athlete health care; however, little is known about its use in a sports context. This study aimed to measure knowledge and self-perceived practice of SDM among healthcare professionals working with athletes. This study evaluates SDM attitudes and preferences and explores how healthcare professionals perceive the factors influencing SDM.

**Methods** A web-based cross-sectional survey with open-ended and closed-ended questions.

**Results** Our survey was completed by 131 healthcare professionals. The majority (63.6%) reported to prefer SDM and to be confident in their SDM skills (81.1%). Despite this inclination and confidence, only one in four clinicians reported consistent practice of SDM when feasible.

Additionally, most clinicians lacked SDM knowledge. The barriers perceived by healthcare professionals included time constraints (17.6%), limited patient knowledge (17.6%), limited patient motivation (13.5%) and language barriers (16.2%). Importantly, two-thirds of the participants believed that SDM in athlete health care differs from SDM in non-athletes due to the high-pressure environment, the tension between performance and health, and the involvement of multiple stakeholders with potentially conflicting interests.

**Conclusions** Although healthcare professionals preferred SDM, they did not fully understand nor routinely practice it. Most healthcare professionals perceive SDM in athlete health care to differ from SDM in the general population. Therefore, to inform the implementation of SDM in athlete health care, future research is crucial to understand better what makes practising SDM unique in this setting.

## BACKGROUND

Shared decision-making (SDM) among healthcare professionals and patients was coined in the 1980s in a report on ethics in medicine.<sup>1</sup> It marked the shift from a paternalistic informed consent approach to a patient-centred decision-making process when, from a medical perspective, multiple reasonable options exist.<sup>2</sup>

Since then, SDM has come a long way; its principles have been firmly anchored

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Although shared decision-making is a trending topic in athlete health care, original research on it and its implementation in this setting is limited.

## WHAT THIS STUDY ADDS

⇒ To inform implementation, this study explores knowledge and self-perceived practice of shared decision-making of healthcare professionals working with athletes and factors influencing shared decision-making as perceived by healthcare professionals.

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This study highlights that although there are similarities with other healthcare settings, the unique features of athlete health care likely pose unique challenges to implementing shared decision-making, which necessitates further exploration.

as non-negotiable patient rights. But apart from the ethical imperative, SDM has other benefits; it could (1) reduce unwarranted practice variation (differences in health care or outcomes that clinical factors or patient preferences cannot explain, and as such is considered 'unwarranted'), (2) prevent patients from choosing a treatment they would not have chosen if adequately informed and (3) bolster higher patient satisfaction, lead to less decisional conflict and better health outcomes.<sup>3,4</sup>

Although SDM has many definitions, three elements are key: (1) collaboration between the patient and the healthcare provider, (2) knowing and understanding the scientific evidence and (3) incorporating the patient's values and preferences into the decision.<sup>5</sup>

Despite increased attention to SDM in athlete health care, the literature could be more extensive, and more empirical evidence should be needed in this realm. The evidence and arguments available are circumstantial and merely underline the importance of SDM without addressing its key characteristics or



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implementation.<sup>6–16</sup> Even so, the application of SDM in athlete health care is perfectly suitable. Not only because there are many decisions with clinical equipoise (a decision for which two or more options might be equally suitable, eg, surgical or conservative treatment for anterior cruciate ligament injury or return to play decisions) but also because many treatment decisions have a high degree of uncertainty, making it important for the patient to understand the limitations of the evidence and for the clinician to incorporate the preferences of the patient in the decision.<sup>8</sup>

It is important to distinguish between healthcare and health care. Healthcare is ‘the activity or business of providing medical services’.<sup>17</sup> In contrast, health care refers to ‘efforts made to maintain, restore or promote someone’s physical, mental or emotional well-being especially when performed by trained and licensed professionals’.<sup>18</sup> In short, healthcare is the industry as a whole, and health care is aimed at the individual.

Despite consensus among healthcare professionals and policy-makers on the importance and benefits of SDM, its implementation is challenging in all clinical settings.<sup>19–21</sup> In the athlete setting, these challenges are likely more profound. Athlete health care has unique features that do not exist, or exist to a lesser extent, in other healthcare settings. SDM in athlete health care is complicated and contextual. Depending on the sport, the type of injury and the clinical environment, for example, SDM might not be the appropriate approach; care (and its related decisions) does not only happen in a cosy clinic but also the oft-messy field-side environment with its added pressures on the decision-making process. It is also often intersectoral; athletes are part of a multidisciplinary team, consisting not only of medically trained professionals such as physicians and physiotherapists but, importantly, non-medical professionals such as coaches and trainers.<sup>22</sup> Furthermore, the setting is often international and intercultural, which might lead to differences in preferred communication and decision-making styles and necessitates the key players to find a common language and practice cultural sensitivity and awareness.<sup>23 24</sup> Finally, competing priorities could complicate matters. Not health, but performance might come first, and what is good for the athlete’s health might not benefit the team.<sup>6 22 25</sup> These unique features necessitate a deeper dive into the factors influencing SDM in athlete health care.

As healthcare professionals play a key role in SDM in athlete health care, this study aimed to explore their knowledge, practice and perspectives on SDM to support its implementation in athlete health care.

The objectives of this mixed-methods study were to:

- ▶ Measure SDM knowledge and self-perceived practice of healthcare professionals in athlete health care.
- ▶ Evaluate SDM attitudes and preferences of healthcare professionals in athlete health care.
- ▶ Explore factors influencing SDM as perceived by healthcare professionals in athlete health care.

## METHODS

### Research paradigm

This study explored SDM knowledge, practice and preferences of healthcare providers working with athletes, especially elite athletes. We used a descriptive survey design underpinned by a pragmatic paradigm. Pragmatism aims to answer research questions and examine real-world problems using the best methods, including several sources.<sup>26</sup> As SDM in athlete health care is a real-world problem for which the solution is context-specific, we blended quantitative and qualitative data to gain deeper insight into this topic.

### Design and setting

We adapted a web-based cross-sectional survey with open-ended and closed-ended questions, used in similar research among trauma surgeons, to reflect the athlete healthcare setting. This survey was chosen because the trauma surgery setting has similarities with the athlete healthcare setting.<sup>27</sup> We adapted the 11 items of the original survey, translated them into English and added nine more items: four demographic questions because of the multicultural background of our target population, one question about SDM confidence, one about the preferred decision-making role, one on SDM practice, one on SDM knowledge and one about the difference between SDM in athletes and other settings (see online supplemental attachment 1-Shared Decision-Making Survey). Internal validation was ensured by independent reviews by two SDM experts and one athlete healthcare expert. We reviewed technical functionality and understanding using two rounds of individual cognitive interviewing (with two participants in each round). We combined the ‘think-aloud procedure’ and ‘verbal probing’.<sup>28</sup> The interviews were recorded, and notes were taken. We adapted the survey based on the results of the first round of cognitive interviewing and evaluated the effect of the changes in the second round of interviewing.

### Participants and recruitment

The target population was healthcare professionals working with athletes. The exclusion criteria were not being a healthcare professional and not working with athletes. We defined an athlete as someone trained or skilled in a sport, especially one who regularly competes with others in organised events.<sup>29</sup>

In November 2021, we sent email invitations with a survey link (SurveyMonkey) to 426 licensed healthcare professionals employed by Aspetar, Orthopaedic and Sports Medicine Hospital in Qatar. Aspetar specialises in multidisciplinary medical treatment for sports-related injuries in youth, elite and recreational athletes and employs more than 400 healthcare professionals (from more than 70 different nationalities and often extensive experience in sports medicine by the time they join Aspetar), including the National Sports Medicine Programme—healthcare professionals of all Qatar’s national clubs and federations. In addition, we invited

participants through Aspetar's social media channels. The Aspetar social media channels are followed by thousands, including healthcare professionals working with athletes worldwide. We, therefore, had access to a large international, multidisciplinary population of healthcare professionals working with athletes.

The survey was closed after 2 months following one reminder email and another social media post.

### Survey procedures

The survey provided participants with information on the purpose of the study, who the investigators were, which data would be stored (and for how long), and asked participants to provide online informed consent. We also provided them with the following definitions of SDM and athletes:

'SDM is an approach in which clinicians and patients share the best available evidence when making decisions and where patients are supported to consider options to achieve informed preferences. The questions below concern SDM situations in which the patients are athletes. An athlete is trained or skilled in a sport, especially one who regularly competes with others in organised events.'

Data were collected and stored anonymously on a password-protected computer.

### Survey

#### Demographics

We collected demographic data: gender, age, profession, years of clinical experience, the type of institution participants worked at (primary or secondary healthcare; private or governmental), years of experience at this specific institution, country of origin and country of primary professional degree.

#### SDM knowledge

To assess SDM knowledge, we asked participants to determine which behaviours, out of a list of 13, are, to their knowledge, part of SDM (see [table 1](#)). These 13 items were taken from the original survey in the trauma surgery setting and were translated from Dutch to English. Seven of these behaviours can be regarded as essential for SDM.<sup>5</sup> The other six behaviours are considered more general clinical conversation techniques and not specifically essential for SDM. We gave 2 points for every correct answer and 1 point for the answer 'sometimes'. Then, an additional knowledge question (which we added to the original survey) with five statements that participants had to rate as true or false (eg, 'SDM leads to higher patient satisfaction'). We gave 1 point for every correct answer and added up the points of all knowledge items to achieve a total knowledge score per participant, with a possible total score of 31 points.

**Table 1** Demographic data

	N	Percent
<b>Gender</b>		
Male	99	75.6
I would rather not say	1	0.8
Female	31	23.7
<b>Age</b>		
26–35	19	14.5
36–45	58	44.3
46–55	35	26.7
56–65	16	12.2
>65 years	3	2.3
<b>Profession</b>		
Dental assistant	1	0.8
Dental hygienist	1	0.8
Dentist	1	0.8
Laboratory technician	6	4.6
Nurse	6	4.6
Podiatrist	3	2.3
Physician	50	38.2
Physiotherapist	61	46.6
Psychologist	1	0.8
Radiography technician	1	0.8
<b>Years in practice</b>		
0–5 years	5	3.8
6–10 years	13	9.9
11–15 years	32	24.4
16–20 years	37	28.2
>20 years	44	33.6
<b>Primary or secondary healthcare</b>		
Primary healthcare	67	51.1
Secondary healthcare	64	48.9
<b>Governmental or private healthcare</b>		
Governmental	85	64.9
Private	46	35.1
<b>Years in the current institution</b>		
0–5 years	34	26.0
6–10 years	54	41.2
11–15 years	32	23.7
16–20 years	7	5.3
>20 years	4	3.1

#### SDM practice

To assess SDM practice, we adapted the knowledge question of the original survey; we used the same 13 behaviours as before but asked participants how often they practised them. We also added a question to

quantify how often participants practice SDM when possible (9-point Likert scale: never-always).

### SDM preference

We asked participants if they had heard about SDM and how confident they were in their SDM skills, followed by a question on their preferred decision-making role.

### Factors influencing SDM

We asked participants the three open-ended questions: 'In your opinion, why do you use SDM?' 'What makes SDM difficult?' and 'What makes SDM easier?' We asked participants to describe a maximum of three situations or decisions they regard as suitable for SDM and three situations or decisions they do not regard as suitable.

Lastly, we asked five SDM opinion questions and whether they thought SDM differed in athletes compared with the general patient population. Participants who answered 'yes' were asked to explain their answers in free text.

We used the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) as a guideline to report the survey results (online supplemental file 2).<sup>30</sup>

### Analysis

#### Quantitative assessment

Results were anonymously downloaded into an Excel file and analysed using SPSS (V.21.0). We used descriptive and inferential statistics to analyse the quantitative data. The number of participants with a profession other than physician or physiotherapist (nurses, dentists, dental hygienists, dental assistants, laboratory technicians, radiography technicians, psychologists and others) was low; therefore, we grouped these professions for statistical analysis as 'others'.

The correlation between the SDM knowledge score and SDM practice, age, work experience and current work experience was determined using Pearson's correlation coefficient. To compare knowledge and practice scores between types of occupation (defined as three groups: physicians, physiotherapists and others), one-way analysis of variance was used. Post hoc pairwise comparisons were performed following significant effects after adjusting for Bonferroni correction. A  $p < 0.05$  was considered statistical significance.

#### Qualitative assessment

We based our approach for the answers to the open-ended questions and free text answers on a combination of content analysis and the theoretical thematic analysis approach as outlined by Braun and Clarke, as this is driven by the theoretical interest of the researchers and, therefore, appropriate for answering specific research questions like ours.<sup>31</sup>

The primary researcher (SN) created codes for each open-ended question and free-text answer separately and categorised the codes into themes. If there was any doubt about the code or theme, a discussion with the research

team followed until a consensus was reached. Frequencies of themes were reported.

### Patient and public involvement

We deemed coproduction with patients or the public inappropriate for our research question.

## RESULTS

### Participants

The email invitation was sent to 426 healthcare providers at Aspetar and shared on social media. We cannot ascertain how many viewed and responded to social media. Of 131 clinicians who responded to the survey, 73 completed it (53.3% completion rate).

Most participants were physiotherapists (46.6%), followed by physicians (38.2%) (see table 1). Most (75.6%) identified as male. The mean age was 46.3 years (SD 9.4), with an average of 18.9 years in clinical practice (SD 8.2).

The percentage of participants working in primary healthcare (51.1%) and secondary healthcare (48.9%) was almost equal, with a higher percentage working in a governmental setting (64.9%) than in a private setting (35.1%).

Participants from 39 countries and 5 continents completed the survey. The majority were from Tunisia (16.8%) and the UK (7.3%), followed by Australia, Greece and South Africa (5.1% each) (see figure 1).

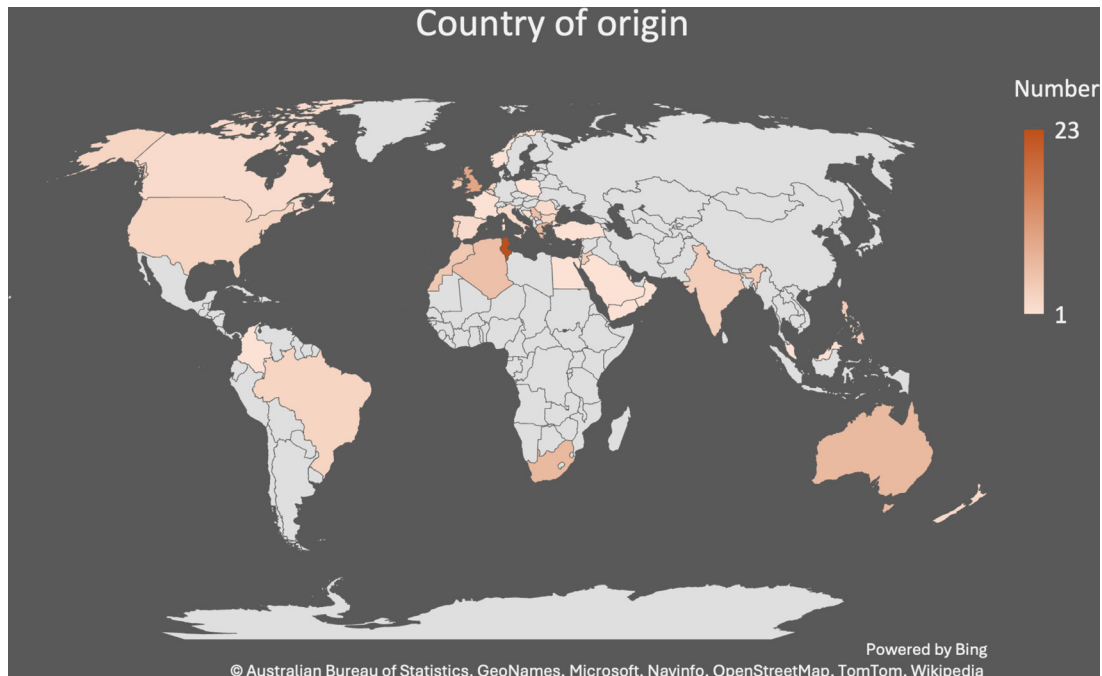
### Knowledge of SDM (objective 1)

The mean SDM knowledge score was 60.2/100 (SD 8.3) and had a normal distribution, with a statistically significant difference between physicians, physiotherapists and others (see figure 2). Physicians scored higher than physiotherapists, and physiotherapists scored higher than others ( $p = 0.004$ ,  $F = 5.70$ ).

All seven behaviours considered essential in SDM (see table 2), according to current consensus, were recognised correctly by most participants, with 'informing the athlete about benefits and harms of all options' scoring highest (88.9%) and 'informing the athlete that a decision has to be made' scoring lowest (60.2%). Most participants considered general conversation techniques (like 'encourage the patient to repeat given information') as part of SDM. Alarming, more than 85% of participants said that, 'The healthcare professional chooses an option and explains to the athlete why this has been chosen' is part of SDM; current consensus suggests this is incompatible with SDM.

### Self-reported practice of SDM (objective 1)

26 out of 108 participants (24.1%) reported always practising SDM when possible. The most practised behaviour was 'informing the athlete about benefits and harms of all options' (85.2%). 'Informing the athlete that a decision needs to be made' was practised least (58.3%) (see table 3).



**Figure 1** Distribution of country of origin of participants.

### SDM attitudes and preferences (objective 2)

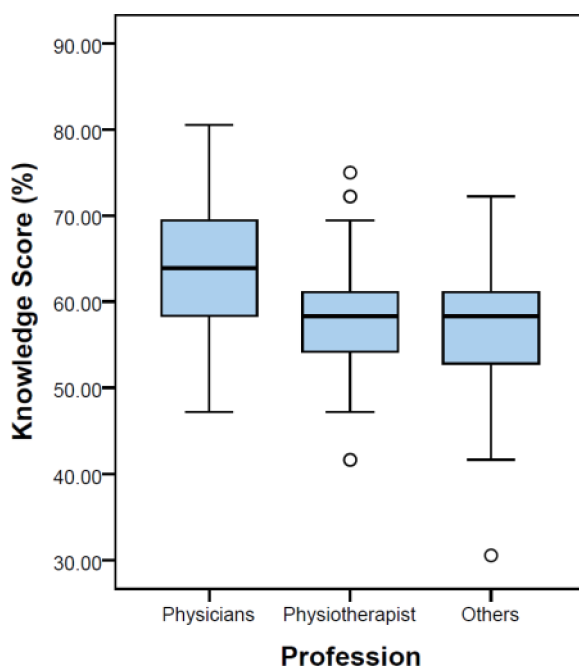
We asked participants to pick their preferred role in decision-making; 63.6% preferred a truly shared approach where ‘you discuss options with your patients and then come to a decision together’—followed by 22.7% who chose to ‘tell your patients the options, and the pros and cons of each, and then they decide what to do’. 12.1% preferred a paternalistic approach where ‘you keep your patients informed, but in general, make health care decisions for them based on what you think is

best’. Only 1.5% chose ‘The patient comes with options, and I provide them with pros and cons of each, and they decide what to do’.

Most participants stated they feel confident in their SDM skills, with 20.5% feeling very confident. The mean knowledge score of physicians (63.2, SD 8.1) was higher than the score of physiotherapists (58.7, SD 7.2) and others (56.2, SD 10.1) ( $p < 0.005$ ). Correlation analysis showed a moderate positive correlation between the knowledge score and self-reported/perceived practice score ( $R = 0.536$  and  $p < 0.001$ ) and a small positive correlation between confidence and self-reported/perceived practice ( $R = 0.340$  and  $p < 0.001$ ).

Almost all participants (94.6%) thought that SDM is important (6–9 on a 9-point Likert scale) and that the patient appreciates it (83.8%; 6–9 on a 9-point Likert scale). Participants also felt that SDM is stimulated by their institution (71.6%; 6–9 points on a 9-point Likert scale) and facilitated by their institution (68.9%; 6–9 points on a 9-point Likert scale). Fewer participants thought SDM is easy (56.8%; 6–9 points on a 9-point Likert scale).

Most thought that SDM differs in athlete health care compared with the general patient population (62.2%).



**Figure 2** Mean knowledge score per profession.

### Factors influencing SDM (open questions; objective 3)

We asked healthcare professionals why they practise SDM. The most common themes were better patient engagement (24/73, 32.9%), better patient outcomes (20/73, 27.4%), better patient compliance (17/73, 23.3%), patient empowerment (16/73, 21.9%), improved patient knowledge (15/73, 20.5%), ethical reasons (12/73, 16.4%), achieving realistic patient expectations (6/73, 8.2%) and improved clinician–patient

**Table 2** Healthcare professionals' answers to the question: 'Are the following behaviours, to your knowledge, part of shared decision-making?' (N=108)

Behaviours	Percentage of participants considering the behaviour never part of SDM	Percentage of participants considering the behaviour sometimes part of SDM	Percentage of participants considering the behaviour always part of SDM
The healthcare professional chooses an option and explains to the athlete why this has been chosen	13.9✓	53.7	31.5
Informing the athlete that a decision needs to be made*	3.7	36.1	60.2✓
Explaining to the athlete that there is more than one reasonable treatment option*	0.0	20.4	79.6✓
Explaining to the athlete that their opinion is important in making a decision*	0.9	11.1	88.0✓
Informing the athlete about the benefits and harms of all options*	0.9	10.2	88.9✓
Informing the athlete on the probabilities associated with the benefits and harms of options*	0.9	14.8	84.3✓
Giving the athlete time to think and delay the taking of a decision to the second consultation	0.9✓	46.3	51.9
Exploring the athlete's preferences and values*	0.0	20.4	79.6✓
After discussing the options with the athlete, having the athlete make the decision	2.8✓	48.1	48.1
Asking the athlete to bring someone with them to the consultation	5.6✓	78.7	13.9
Together with the athlete, decide on the best treatment option*	0.9	17.6	81.5✓
Encourage the athlete to repeat the given information	6.5✓	42.6	49.1
Not only by giving information verbally but also in other ways (eg, by giving athletes a leaflet)	3.7✓	60.2	32.4

✓Indicates a correct answer according to current SDM consensus.  
\*Behaviours considered essential in SDM according to current consensus.  
SDM, shared decision-making.

relationship (6/73, 8.2%). For example, one participant emphasised:

I am aware that buy-in and compliance are significantly improved with well-educated patients who can take some control. I dislike creating athlete-dependency. (Physiotherapist, 22 years in practice, trained in the United Kingdom)

Healthcare professionals named several factors that positively and negatively impact SDM.

The factors said to impact SDM positively were patient motivation (18/74, 24.3%), patient knowledge (12/74, 16.2%), enough time (9/74, 12.2%), a good clinician–athlete relation (9/74, 12.2%), clinician knowledge and experience (8/74, 10.8%), good clinician–athlete communication (6/74, 8.1%) and multidisciplinary collaboration (5/74, 6.8%). The following quote

illustrates the importance of those factors on the side of the organisation and professionals, as well as specific patient factors:

Everyone in the healthcare team is on board with shared decision-making. The patient has higher levels of health literacy and self-efficacy. Having a good therapeutic alliance with the patient. (Physiotherapist, 13 years in practice, trained in Australia)

The factors said to impact SDM negatively were lack of time (13/74, 17.6%) and patients that are not equipped for SDM because of a lack of knowledge (13/74, 17.6%), or lack of motivation (10/74, 13.5%), language barriers (12/74, 16.2%), cultural differences (8/74, 10.8%) and involvement of other (clinical and non-clinical) professionals (7/74, 9.5%). The following quote illustrates

**Table 3** Healthcare professional behaviours reported to be practised by healthcare professionals working with athletes (N=108)

Behaviours	Percentage of participants never practising the behaviour	Percentage of participants sometimes practising the behaviour	Percentage of participants always practising the behaviour
The healthcare professional chooses an option and explains to the athlete why this has been chosen	14.8✓	51.9	33.3
Informing the athlete that a decision needs to be made*	1.9	39.8	58.3✓
Explaining to the athlete that there is more than one reasonable treatment option*	1.9	25.9	72.2✓
Explaining to the athlete that their opinion is important in making a decision*	2.8	12.0	84.3✓
Informing the athlete about the benefits and harms of all options*	0.9	13.0	85.2✓
Informing the athlete on the probabilities associated with the benefits and harms of options*	0.9	15.7	82.4✓
Giving the athlete time to think and delay the taking of a decision to the second consultation	2.8✓	59.3	37.0
Exploring the athlete's preferences and values*	0.9	18.5	79.6✓
After discussing the options with the athlete, having the athlete make the decision	2.8✓	46.3	50.0
Asking the athlete to bring someone with them to the consultation	81.5✓	7.4	9.3
Together with the athlete, decide on the best treatment option*	0.9	14.8	84.3✓
Encourage the athlete to repeat the given information	6.5✓	50.9	41.7
Not only by giving information verbally but also in other ways (eg, by giving athletes a leaflet)	7.4*	62.0	28.7

✓Indicates an SDM behaviour according to current consensus.  
\*Behaviours that are considered essential in SDM according to the current consensus.

the difficulties this participant experiences with time constraints, patient motivation and the involvement of other professionals:

Time pressure—explaining the pros and cons during an initial consultation takes longer. In sports, the pressure of making the most of time means starting immediately and not waiting until the athlete has decided [on] a plan. The expectation from some athletes is that they don't care—they trust you, so do whatever. Working in emergency response situations also removes the ability to do this, which is common in pitch-side work with athletes. Also, including other professionals, such as Doctors, makes this more tricky, as only some people practice the same approach. (Physiotherapist, 22 years in practice, trained in the United Kingdom)

Participants could list up to three decisions they found suitable for SDM. They found treatment decisions (37/73,

50.7%) and specifically decisions about surgery (29/73, 39.7%) suitable for SDM. They also found return-to-play decisions (16/73, 21.9%) and rehabilitation decisions (10/73, 13.7%) (goal setting and exercise selection) suitable for SDM.

Participants found SDM unsuitable in emergencies (20/71, 28.2%), if the patient's decision-making skills are diminished (eg, due to concussion) (17/71, 23.9%), if the patient preference is harmful (eg, high risk of reinjury or decisions that will lead to doping violations) (11/71, 15.5%), if there is a lack of patient motivation (8/71, 11.3%), there is only one option (7/71, 9.9%) or the player is influenced by others (7/71, 9.9%).

Participants felt that SDM in athlete health care is different from SDM in the general population because decisions influence an athlete's income and career (12/74, 16.2%), because there is a tension between performance and health (12/74, 16.2%), because of the upcoming competitions influencing decisions (6/74,

8.1%) and because of pressure to return to sport (4/74, 5.4%). This participant highlighted the tension between health and performance:

Athletes have performance-based contracts. Sometimes, they must push the boundaries of careful treatment to return to their sport. (Physiotherapist, 30 years in practice, trained in Canada)

They also felt that SDM in athletes is different from SDM in the general population because there are more stakeholders involved (8/74, 10.8%) and because athletes are more experienced and motivated (4/74, 5.4%), as illustrated by the following quote:

For elite athletes who are at the very top of their game and earn [a] huge amount of money, the decisions tend to have more stakeholders (agent, club, international federation) than other athletes. It is always a challenge to reach a consensus with many stakeholders involved who may have different motivations (returning in time for an international match, making more money, and maintaining the player's long-term health). (Other healthcare professional, 23 years in practice, trained in Australia)

## DISCUSSION

Most healthcare professionals in athlete health care preferred to engage in SDM and were confident in their SDM skills. However, despite this inclination and confidence, only one in four healthcare professionals said to consistently practice SDM when feasible. Additionally, almost all healthcare professionals lacked SDM knowledge, responding discordantly to knowledge-based questions.

A generally positive attitude towards SDM but limited knowledge is consistent with findings from previous research studies. A study among Dutch trauma surgeons and a US-based study among nurse practitioners, physician assistants and physicians also found clinicians have positive attitudes toward SDM despite limited knowledge.<sup>27 32</sup> Unlike our findings, the US-based study did not have significant differences in knowledge scores among the different disciplines. This could be because there are fewer culturally diverse participants than in our study. Research has shown that cultural background influences decision-making preferences and concepts. In addition, most training programmes on SDM are developed in Europe and North America, possibly leading to differences in SDM literacy.<sup>23 24 33</sup> SDM training for clinicians working with athletes should consider these variations in standards and care organisations across countries.

Even though clinicians reported confidence in their SDM skills, their lack of SDM knowledge could have contributed to the discrepancy between the preference for SDM and the lagging self-reported practice. However, this discrepancy could also be related to challenges they perceive in practising SDM or characteristics unique to the athlete healthcare setting. Clinicians working in

athlete health care, especially those working with elite athletes (for whom decisions could impact income and career) and youth athletes, might consider general conversation techniques such as 'giving the patient time to think', 'delay deciding a second consultation' and 'asking the athlete to bring someone with them to the consultation' very useful.

While 9 in 10 healthcare professionals acknowledged the importance of SDM and reported benefits, such as improved patient engagement, outcomes and compliance, they also highlighted various challenges. These challenges included time constraints, limited patient knowledge, patients who do not actively want to be involved in decision-making and language barriers. These challenges are also commonly found in other studies.<sup>20 34 35</sup> For some of these barriers, effective mitigating strategies have been developed, for example, decision aids have been shown to improve patient knowledge and involvement.<sup>36</sup> Other barriers, such as time constraints, might be based more on healthcare providers' perceptions than reality. Although training on SDM and adaptation of working processes to incorporate SDM into practice might take more time initially, research has shown that thoughtfully implemented and theory-based multilevel approaches can positively impact SDM implementation without increasing consultation duration.<sup>37</sup>

The language barriers this study's participants reported could be due to the multinational setting at Aspetar. Still, they could also be a barrier in other athlete healthcare settings, especially in elite athlete health care where international players and healthcare providers are common. Comprehension of language used in clinical encounters is essential for functional and communicative patient health literacy.<sup>34 35</sup> Dedicating specific attention to health literacy in general and language barriers in SDM interventions could mitigate language barriers.<sup>35 38</sup> Nearly two-thirds of the participants believed SDM in athlete health care differs from SDM in the general patient population. They attributed this difference mainly to increased pressures, such as the impact of medical decisions on an athlete's income or career, the involvement of multiple stakeholders with potentially conflicting interests, and the inherent tension between performance and health. Athletes' health care not only takes place in the clinic but also on the field side. In contrast to decision-making in the clinic, field side decision-making might require a more paternalistic approach when the patient's or coaches' preference (eg, continuing to play with a concussion) might be harmful.<sup>25</sup>

Based on the survey results, we cannot conclude that the highlighted differences influence SDM in athlete health care; however, previous research has demonstrated that the social context in sports influences the medical decision-making of clinicians and athletes.<sup>39 40</sup> Therefore, it is relevant to determine if there is an influence, the nature and extent of this influence and how it might impact interventions to implement SDM.



Although the reported differences between SDM in athlete health care and SDM in the general patient population do not necessarily alter the key SDM principles, they might impact the SDM process. Therefore, implementation interventions should consider these differences and address them appropriately. They also further highlight the applicability of SDM in the athlete setting—where preference-sensitive and high-impact decisions seem to be common.

### Limitations

Our target population for this survey included a small number of nurses, dental assistants, radiographers and laboratory technicians. These professions generally work under supervision, and their involvement in decision-making with athletes is limited. This impacted our results, as their knowledge and practice of SDM might be limited. However, in our context, these professions are part of the multidisciplinary athlete care team (all consultations, eg, are done with sports nurses present and active in the room). Therefore, we value their perspective on SDM. We did not only email but also posted our survey on social media. This impacted who responded to our survey—younger clinicians might be more present on these platforms. We had more male than female respondents, which might have affected our results. But this could also be a true reflection of sports medicine demographics. Although the length of the survey and its open questions led to many participants not completing it and a possible selection bias, the open questions were necessary to add richness and depth to the quantitative data. The definition of athlete used in the survey might have left room for interpretation on whether it pertains to elite athletes only or includes recreational athletes. This impacted our results, as the field side medical decision-making happens more in the elite athlete setting. Due to practical reasons, the answers to the open-ended and free-text questions were analysed by one investigator but discussed with the other investigators when needed. Our approach, counting the frequencies of categories, is controversial in qualitative research. Still, we chose this because it fits our data and study design, where we used qualitative data to understand quantitative data better.

### Clinical implications

Our finding that SDM knowledge and practice are related suggests that some barriers could be mitigated through education. Most healthcare professionals perceive SDM in athlete health care as different from SDM. Therefore, to inform the implementation of SDM in athlete health care, future research is crucial to understand better why practising SDM in this setting is unique.

### CONCLUSION

This is the first study to evaluate SDM from the perspectives of all healthcare professionals in athlete health care. Although they believe SDM is important, they do not fully understand or routinely practice it. The researchers

identified several barriers to practising SDM, some of which might be specific to athlete health care.

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