The development of a tournament preparation framework for competitive golf: A Delphi study

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Running head: The tournament preparation framework for golf

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Abstract

Tournament preparation in golf is used by players to increase course knowledge, develop strategy, optimise playing conditions and facilitate self-regulation. It is not known whether specific behaviours in tournament preparation should be given priority in education and practice at different stages of competition. This study aimed to achieve consensus on the importance of specific tournament preparation behaviours or "items" to players of five competitive levels. A two-round Delphi study was used, including an expert panel of 36 coaches, high-performance staff, players and academics. Participants were asked to score the relative importance of 48 items to players using a 5-point Likert-type scale. For an item to achieve consensus, 67% agreement was required in two adjacent score categories. Consensus was reached for 46 items and these were used to develop a ranked framework for each competitive level. The developed framework provides consensus-based guidelines of the behaviours that are perceived as important in tournament preparation. This framework could be used by national sport organisations to guide the development of more comprehensive learning environments for players and coaches. It could also direct future studies examining the critical behaviours for golfers across different competitive levels.

Keywords: Golf, pre-competition, preparation, elite sport, self-regulation

Introduction

There is considerable research on factors important for elite performance in golf. Recent studies have focused on the technical and physical components of the swing (Hellström, 2009a; Hume, Keogh, & Reid, 2005; Smith, 2010), the psychological qualities and processes associated with optimal performance (Bois, Sarrazin, Southon, & Boiché, 2009; Cotterill, Sanders, & Collins, 2010; Hellström, 2009b; Hill, Hanton, Matthews, & Fleming, 2011), as well as the developmental and contextual factors that could be important to achieve elite status (Hayman, Polman, Taylor, Hemmings, & Borkoles, 2011). Other components of performance, such as tournament preparation have received less attention, despite potential importance. Tournament preparation can be defined as the mental and behavioural elements, and strategies that prepare players for competition (Pilgrim, Kremer, & Robertson, 2018). Tournament preparation can be represented by three periods (1) the pre-tournament period (generally one week before until the first round of competition, but can also include preparatory activities and behaviours that may occur several weeks or months prior to competition); (2) the tournament period; (3) the post-tournament period (the last round of competition until the next tournament or return to normal training) (Pilgrim et al., 2018). Among elite amateur and professional players, behaviours that are important for success in tournament preparation include strategies to structure and implement preparation, develop a course strategy, optimise playing conditions and facilitate effective self-regulation (McCaffrey & Orlick, 1989; Pilgrim et al., 2018). Professional golfers also use structured pre-tournament practice to enhance swing consistency, establish confidence and improve ball striking (Douglas & Fox, 2002). Currently, it is not known (a) whether these same processes are also important for players of other competitive levels and (b) whether specific processes are considered more important within and between competitive levels.

There is substantial inter-trial variability of regulatory conditions in golf when compared to many other sports (Haibach, Reid, & Collier, 2011). For example, a regulation court in the National Basketball Association is always 28.7 m in length and the hoop 3 m off the ground. But with golf, courses are appreciably different in design and present novel conditions based on their geographic setting. In the UK, courses in coastal regions or "Links" courses are common, and include wide, undulating fairways with few trees, but gusting winds and thick areas of rough. "Parkland" courses are more often found in North America and continental Europe, and feature narrow, verdant fairways with fast greens and many wooded areas (Crowell, 2014). In some cases, courses are difficult to categorise into a specific group; rather they incorporate style elements from both Parkland and Links. There are also several, less distinct course types such as "Heathland" – interior courses that feature the undulation and sandy soils of Links, but are usually well-manicured, with tree-lined fairways. Consequently, suitable preparation is important to ensure that shot practice and course strategy is relevant to the specific constraints of the performance environment. Amateur and professional golfers use practice rounds before competition to examine the course layout, plan approach paths and develop course strategies (Aitken & Weigand, 2007; Pilgrim, Robertson, & Kremer, 2016). Many amateur and professional tournaments are played on the same courses each year, therefore course mapping and anticipatory planning would appear to be just as relevant for less experienced players that are yet to develop their own course strategy or guide books.

Elite amateur and professional players frequently travel from one country to another to participate in competition. During travel, players can experience difficulties in their acute adaptations to new environments. For example, developing countries may provide reduced food and water quality that can expose players to gastrointestinal upset and possible illness (Reilly, Waterhouse, Burke, & Alonso, 2007). The food provided by commercial airlines and sporting venues is also often unsuitable for an athlete's nutritional requirements (Heaney,

O'Connor, Naughton, & Gifford, 2008). Dehydration can affect performance by reducing shot distance, accuracy and distance judgement in hot and humid climates (Smith, Newell, & Baker, 2012). To deal with such challenges, players should approach nutrition proactively by planning and preparing their own food and fluid intake for the tournament (Pilgrim et al., 2018). Specific strategies for nutrition may be particularly relevant for younger players that are less experienced with new food cultures and customs.

International or domestic travel across multiple time zones can result in jet lag (Reilly et al., 2007). Symptoms, such as sleep disruption, decreased mental and physical performance, as well as gastrointestinal disturbances are caused by a mismatch between "body clock time" and new local time (Manfredini, Manfredini, Fersini, & Conconi, 1998; Reilly et al., 2007). Behavioural approaches to reduce the symptoms of jet lag can include the appropriate timing and composition of meals (Manfredini et al., 1998), exposure or avoidance of bright light and the use of caffeine to maintain daytime alertness (Reilly et al., 2007). Most important is to allow sufficient time for an athlete's body clock to adapt to local time in the new environment before competitive play begins (Reilly et al., 2007). However, sufficient time for adaptation may be difficult to organise for some players, such as amateurs, due to their limited finances and dependence on organisational funding.

Despite the clear need for effective tournament preparation in golf, there are no theoretical or applied frameworks available to guide practice and education in this area for Golf Australia (GA) and its member associations. Content relating to tournament preparation is included in education programmes by some state and national coaches (Robertson, 2014). However, in the absence of peer-reviewed literature, the origin of the content used by GA is unclear and may not represent agreement between experts. Further, the content to date has not been operationalised into a user-friendly format. Thus, it is difficult for coaches to oversee and

guide the education of players because of the potential lack of consistency and gradual delivery of content throughout a player's development.

To achieve widespread acceptance of any developed framework, broad agreement on critical content is required from key stakeholder groups (Mokkink et al., 2010). Previous research in disciplines such as medicine (Meijer, Ihnenfeldt, Vermeulen, De Haan, & Van Limbeek, 2003), exercise and sport science (Robertson, Kremer, Aisbett, Tran, & Cerin, 2017) and quality of life research (Mokkink et al., 2010) has used the Delphi technique to seek consensus and develop standardised guidelines or protocols for professional practice. The Delphi approach uses a panel of experts, responding to a series of questionnaires with aggregate feedback provided to help facilitate consensus from the panel (Hasson, Keeney, & McKenna, 2000). This approach is useful in areas where there is a lack of empirical evidence and established knowledge (Mokkink et al., 2010). Recent work has successfully used this technique to develop a hierarchy of attributes important for talent identification in youth soccer (Larkin & O'Connor, 2017) and officiating in rugby (Morris & O'Connor, 2017). The primary aim of this study was to achieve expert consensus on the relative importance of golf-specific tournament preparation items for players of different competitive levels. A secondary aim was to develop a framework to score and subsequently rank the importance of these behaviours to players of five competitive levels that can be used to inform and guide coaching practice.

Method

Participants

Participants from Australia, England, New Zealand, Canada, Sweden, Scotland and the United States were invited to contribute to an expert panel (countries ordered by number of experts invited). To ensure all relevant stakeholder groups were included, three participant

groups were formed: (1) Australian golf coaches and high-performance staff from the Professional Golf Association (PGA) and GA; (2) Australian elite amateur and professional players; (3) international academics. Inclusion criteria for the coaches was >10 years of coaching experience as well as a current or previous working relationship with elite amateur or professional players. For the high-performance staff, individuals in senior roles were targeted, for example, the GA high-performance director and manager. Players were required to be either: (1) a member of the GA Amateur National Squad, (2) a member of the GA rookie squad (professional golfers) or (3) an Olympic representative. Academics required a back-ground of scientific publications relating to the field of golf or coaching science (≥3 publications) (Robertson et al., 2017). Golf coaches, high-performance staff and players were recruited via liaison with the first author's personal industry contacts. Recruitment for the international academics involved "cold contacting" using publicly available email addresses and contact details provided by the third author. All participants were provided with a document explaining the aims, procedures and requirements of the study. Informed consent was obtained from all participants prior to undertaking the first questionnaire. Ethical approval for the study was provided by the relevant Institutional Human Research Ethics Committee.

Procedure

A list of tournament preparation items was developed by the first author, with revisions made based on feedback provided by a steering committee, comprising all authors. Items were based on the results of previous work, involving interviews with elite-level players and expert coaches (Pilgrim et al., 2018). Once finalised, the initial questionnaire included 48 items that were assigned to one of three categories: (1) the pre-tournament period, (2) the tournament period and (3) the post-tournament period. A web-based commercial survey provider was used to administer the questionnaire (Survey Monkey Inc., USA). Panel members were asked to

score the relative importance of each item to players of different competitive levels, with 1 indicating “not at all important” and 5 “extremely important”.

Two sets of definitions were provided to ensure that the five competitive levels used were familiar to all participant groups (see Figure 1). The first included terminology from the GA talent pathway, based on the Foundation, Talent, Elite and Mastery (FTEM) framework (Gulbin, Croser, Morley, & Weissensteiner, 2013). The FTEM framework is represented by 4 macro and 10 micro phases: Foundation (F1-F3), Talent (T1-T4), Elite (E1-E2) and Mastery (M1) (Gulbin et al., 2013). Given the complexity of some of the items included, the steering committee elected to include competitive levels T3 to M1. The second set of definitions were intended to be more recognisable to the PGA coaches and academics. When completing the questionnaire, participants could provide justification for their responses and comment as to whether they agreed with the description used for each item.

Golf Australia athlete pathway represented by Foundation, Talent, Elite and Mastery (FTEM) framework	General terminology used to describe different competitive levels in golf
T3 State or National junior squad representative	Elite junior amateur
T4 State Open or National squad (Tier 2) representative	Elite senior amateur
E1 National squad representative (Tier 1) or Rookie scholarship holder	Australian Touring Professional
E2 A top 100 International Touring Professional	A top 100 International Touring Professional
M A major champion or Olympic player	A major champion or Olympic player

Figure 1. The two groups of definitions for the player competitive levels provided to participants as part of the first Delphi round.

Round one. The first round of the Delphi remained open for seven weeks (September to November 2016). Following this period, participants' responses were exported to Microsoft Excel for statistical analysis. Within the Delphi literature, cut-off values between 55% and 100% have been used to represent consensus (Powell, 2003). Studies of similar designs have used the consensus criteria of 67% agreement in the top two scores on a five-point scale (Hasson et al., 2000; Robertson et al., 2017). Given that the purpose of this study was to determine a score and ranking for each item, for an item to achieve consensus 67% agreement was required in two adjacent scale categories (e.g. 4 and 5, 1 and 2, etc.). If less than 67% agreement was reached on an item or if consensus was reached across some, but not at all

levels, it was included in the next round (Mokkink et al., 2010). Items that were adjusted or changed based on participant feedback were also included in the next round.

Round two. Prior to round two, participants were provided with a report explaining the results of round one. This included: (1) a series of graphs showing the participant's score for each item versus the median score of the panel and (2) a document indicating the specific revisions to each item. Participants were asked to consider the response from the panel, and the results of the preceding round when scoring items in round two.

Results

Participants

Table I describes the details of the participants in both rounds of the Delphi. A total of 158 experts were invited to participate in the first and second rounds (30 academics, 12 players, 111 coaches and 5 high-performance staff). Of these, 122/158 (77%) did not respond; 36/158 (23%) participated in the first round; and 21/36 (58%) participated in the second round. The panel members predominately came from Australia (n = 30), while four were from England, one from New Zealand and one from Canada.

Table I. Delphi participants' characteristics and responses by group

				Round One		Round Two	
Participant group	Participants invited (n)	Golf experience (mean, standard deviation)	Participant age (mean, standard deviation)	Number (n)	Response rate (%)	Number (n)	Response rate (%)
Coaches	111	31.95 (±12.09)	49.21 (±9.50)	19	17	11	58
High-performance staff	5	20.8 (±5.97)	41.2 (±3.35)	5	100	3	60
Players	12	11.83 (±4.17)	19.83 (±2.93)	6	50	2	33
Academics	30	16 (±5.06)	41.50 (±8.17)	6	20	5	83
Total	158	24.39 (±12.55)	41.92 (±13.08)	36	28	21	58

Analysis

Round one. A summary of the results of round one and two is shown in Figure 2 and Table II. Of the 48 items included in the first round, 28/48 (58%) items achieved consensus with respect to importance to players of different competitive levels. Nineteen changes were proposed by the first author and confirmed by the steering committee based on the feedback provided by the panel. Most of these related to changes in the terminology used. For example, the item "structuring pre-round technical practice to match the requirements of the course and hitting a variety of distances (partial and full), clubs, and shot types" was changed to include the term "shot practice". In some cases, more detailed changes were required, and several lines of text were added. For example, seven participants suggested the item "performing an evaluation or debrief with the coach after each round" needed more information to clarify the focus of the player-coach evaluation. Consequently, this item was altered to include "the debrief should focus on the positive aspects of the player's game, and on-course decision-making, while avoiding technical evaluation and over-analysis".

Round two. Of the 23 items included in the second round, 20 items (87%) achieved consensus. Across both rounds, 46 of the 48 items achieved consensus from the expert panel. The two items not included in the final framework were "setting outcome or scoring goals for the tournament" and "performing a debrief/evaluation with the caddie post-round".

Table II. Percentage of agreement for each Delphi round

	Round One					Round Two				
Item	EJA(%)	ESA(%)	ATP(%)	ITP(%)	MC(%)	EJA(%)	ESA(%)	ATP(%)	ITP(%)	MC(%)
1	94	91	89	89	89					
2	91	89	83	76	77	90	85	86	71	71
3	83	79	82	82	82					
4	91	94	91	94	89					
5	85	88	88	91	91					
6	82	88	88	88	83					
7	71	77	80	86	86					
8	94	94	94	94	94					
9	71	74	80	77	75	67	71	71	71	76
10	71	74	88	94	92					
11	94	91	74	63	64				67	70
12	74	74	77	80	81					
13	85	85	88	88	91					
14	77	80	80	83	83					
15	74	71	83	86	86	76	81	81	90	95
16	83	86	86	89	89					
17	69	63	71	71	69	76	71	67	67	67
18	77	80	77	77	75					
19	74	74	77	71	67					
20	69	68	74	77	78					
21	66	66	63	69	64	67	67	67	71	71
22	74	76	71	71	66	90	90	90	90	90
23	66	71	66	69	69	71	71	67	67	67
24	94	97	91	89	89					

25	77	80	74	71	72					
26	76	85	82	82	83					
27	68	68	68	74	71					
28	65	68	65	65	65	76	81	90	90	90
29	71	59	68	62	60	67	71	76	71	71
30	68	74	76	76	77					
31	71	74	76	76	77					
32	94	91	94	94	94					
33	79	74	76	82	82					
34	56	56	53	53	54	81	76	71	67	67
35	71	76	79	74	69					
36	68	71	65	67	63	86	81	71	81	67
37	63	63	57	66	64	67	76	76	86	90
38	69	69	77	49	44				67	70
39	60	55	53	49	44	76	76	67	67	67
40	46	46	54	53	50	71	71	76	67	71
41	53	59	59	59	60	57	48	58	62	57
42	57	60	66	66	61	71	76	71	71	71
43	67	70	64	67	67	76	71	76	71	71
44	76	74	79	71	71					
45	59	56	56	56	57	71	67	67	67	67
46	57	63	49	46	44	57	57	48	48	52
47	68	65	59	53	51		81	71	67	67
48	63	60	54	57	58	81	76	76	67	67

EJA (Elite junior amateur), ESA (Elite senior amateur), ATP (Australian touring professional), ITP (International touring professional), MC (Major champion)

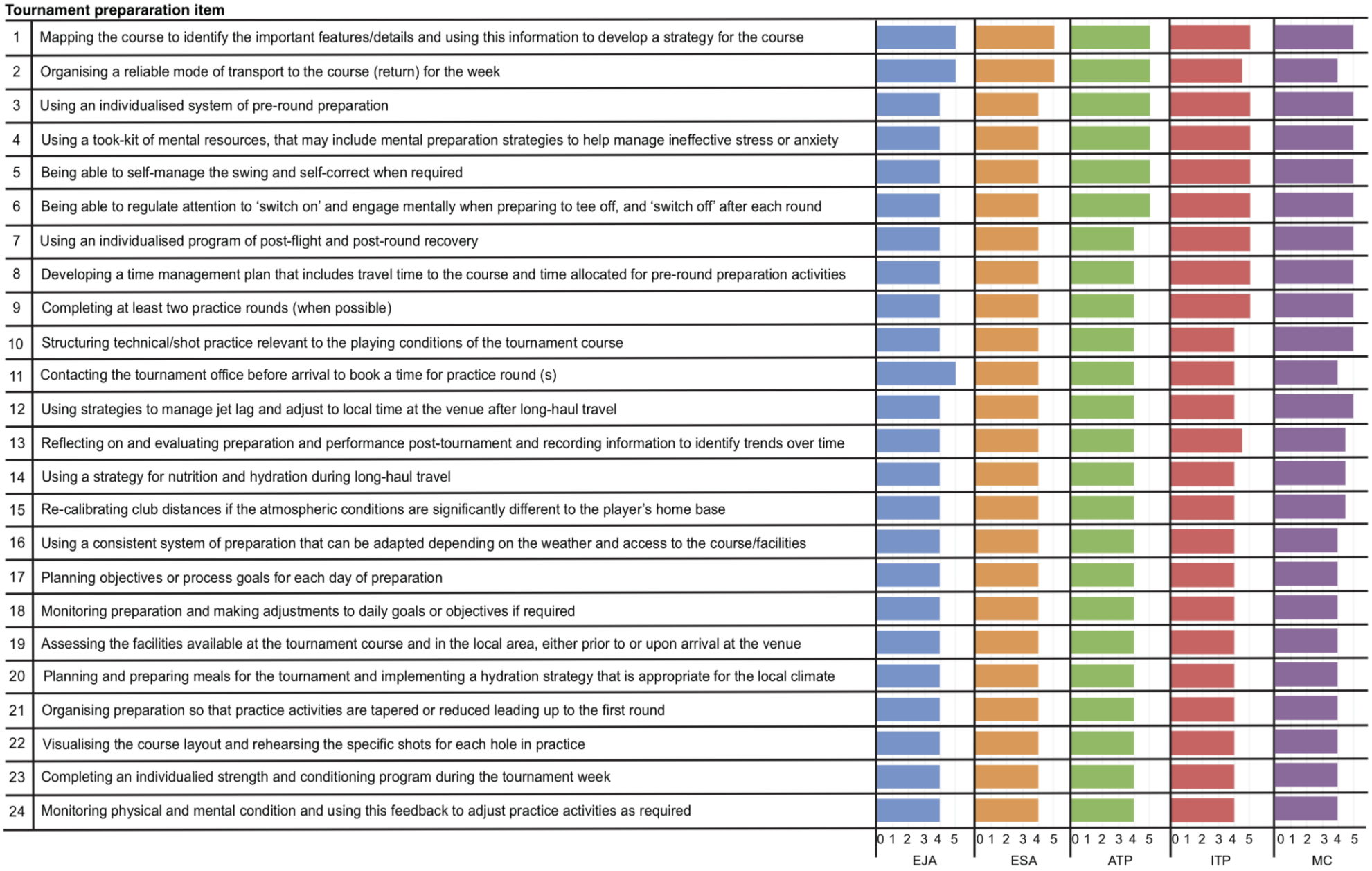

Figure 2. Median scores for each of the tournament preparation items. Item descriptions provided are abbreviated. Items organised by highest mean score across all competitive levels. Score provided is the score for the last round the item was included. ***indicates items that did not reach consensus

	Tournament prepararation item
25	Evaluating preparation day-to-day and using this feedback to guide planning for further days of preparation
26	Structuring pre-round shot practice to match the course conditions and hitting a variety of distances, clubs and shot types
27	Reflecting on the game plan and strategy for the course before each round
28	Using a relatively consistent routine for AM and PM tee times that can be adapted depending on the time available
29	Using self-report computer software programs or paper-based notes to record statistical information after each round
30	Evaluating performance after each round at a technical, psychological, physical and tactical level and adjusting strategy as required
31	Monitoring weather conditions and the state of the player's game day-to-day and adjusting course strategy as required
32	Adjusting preparation for future tournaments based on feedback from self-reflection and evaluation
33	Completing a post-tournament debrief with the coach
34	Performing a physical check to determine if an area of the body requires more focus in the warm-up
35	Recording self-reflection/evaluation after each round
36	Practicing skills or shot-types post-round or prior to the next round that weren't performed well on the course
37	Adjusting equipment set-up and bag configuration to match the playing conditions of the course
38	Developing a financial plan or budget for the tournament
39	Arriving at the venue at least 3-4 days prior to the first round of competition for long-haul travel
40	Using internet-based tools to analyse the course and develop a guide before arrival at the venue
41	Performing a debrief/evalution with the caddie post-round***
42	Minimising practice drills during the tournament week that significantly change or alter the player's swing
43	Performing an evaluation/debrief with the coach post-round to discuss decision-making and the positive aspects of their performance
44	Contacting the coach for advice following a poor performance
45	Practicing skills or shot-types post-round or prior to the next round that were performed well on the course
46	Setting outcome or scoring goals for the tournament***
47	Contacting a sports psychologist or practitioner for a post-round debrief
48	Dedicating less time to course mapping and more to shot practice if the player has experience playing the course

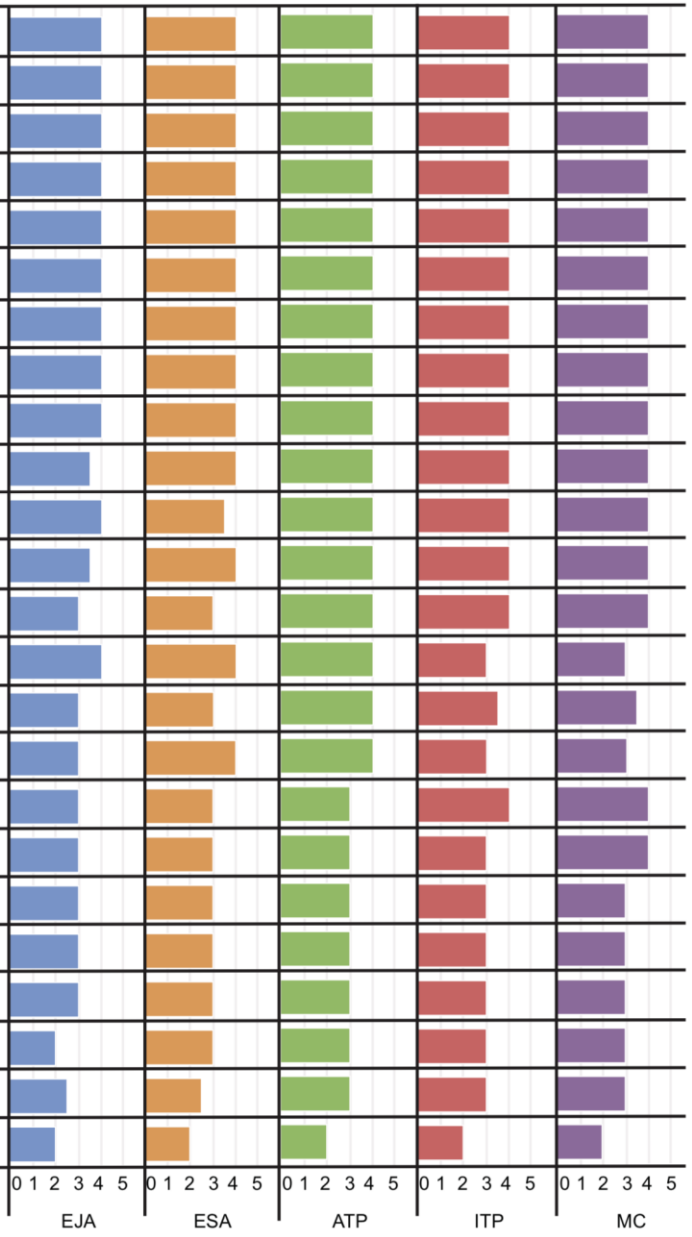

Figure 2. Continued

Framework development

A framework developed from the findings of the Delphi has been included as Appendix 1. This framework is composed of a ranked list of items that display perceived importance relative to different competitive levels.

Discussion

In the present study, a two-round Delphi was used to achieve consensus on the importance of specific tournament preparation items to players of different competitive levels in golf. Consensus was achieved for 46 of the 48 items included in the questionnaire. These findings were used to develop a ranked framework of items for tournament preparation. Results from the Delphi showed that overall a greater number of items were considered "extremely important" for more elite players, when compared with those of a lower competitive level, providing evidence of a trend whereby level of item importance increased monotonically with competitive level. This indicates that more comprehensive systems of preparation are required as players progress along the talent pathway. This was expected given that minor changes in strategy or technique can have a profound influence on performance at the elite level. The present findings are consistent with the previous work that has described the use of more detailed preparation routines for professional tour players when compared with teaching professionals (McCaffrey & Orlick, 1989). It was also notable that 23 of the 48 items received the same score across all competitive levels, suggesting that many of the items in the framework were deemed important regardless of competitive level. However, as recognised by several participants, lower level or poorer performing players are unlikely to have access to the financial resources to complete some of these items; therefore, these are likely aspirational in nature.

The item considered most important in preparation was “mapping the course to identify the important features and details including the speed and slope of the greens, location of hazards, types of grasses, key yardages, approach paths to the green, prevailing wind, essential shot types and skills, and using this information to develop a strategy or game plan for shot making.” Previous research has recognised the critical role of information-gathering activities performed prior to competition. For example, Eccles, Ward, and Woodman (2009) observed how expert orienteers study existing maps of terrain to gather information about the constraints of an upcoming competition. Furthermore, orienteers use this information to design practice tasks and activities to represent these constraints (Eccles et al., 2009). In order to have a meaningful contribution on performance, practice must simulate the ecological constraints of a specific performance environment (Araújo, Davids, Bennett, Button, & Chapman, 2004; Davids, Araújo, Seifert, & Orth, 2015). Therefore, while course mapping can assist players to identify the constraints present at a tournament course, it could also function as a prerequisite for the implementation of other tournament preparation items. That is, knowledge of competition constraints allows players to complete items relating to practice design, such as “structuring technical or shot practice to the playing conditions of the tournament course”. It should be noted that the importance of information-gathering activities and other pre-tournament items is also related to the amount of time between tournaments. Smaller periods of time – common for professional and elite players – provide less time for players to engage in information-gathering activities and less opportunity to benefit from structured representative practice. However, as more time becomes available, so does the opportunity to engage in pre-tournament behaviours (Eccles et al., 2009).

The second highest scoring item in the framework was “organising a mode of transport from the airport to accommodation, and from accommodation (return) for the week”. Several other items associated with planning and time management also received high scores from the

panel. While these items appear to have a less direct influence on performance, it is likely that they were viewed as foundational and necessary for the implementation of other items. For example, the failure to organise a dependable method of transport and allow sufficient travel time to the course could disrupt preparation by providing reduced time for pre-round activities (e.g. physical or mental preparation). Previous studies have identified aspects of planning and time management as critical factors for success in golf (McCaffrey & Orlick, 1989) and Olympic sports (Orlick & Partington, 1988).

The third and fourth items perceived as most important by participants were related to physical and mental preparation. Physical preparation was concerned with players "implementing an individualised system of pre-round preparation that can be adapted depending on the availability of practice facilities, arrival time to the course, the weather or climatic conditions, and may include (1) pre-round physical warm-up (e.g. dynamic stretching, self- massage, mobility work) and (2) pre-round technical routine (e.g. putting, chipping, range work)." Warm-up activities are typically used by competitive athletes to enhance physical performance and prevent sports-related injuries (Shellock & Prentice, 1985). Studies in golf have provided support for this notion by reporting significant increases in club head speed (Fradkin, Sherman, & Finch, 2004) and decreases in injury occurrence (Fradkin, Cameron, & Gabbe, 2007) when players participated in a pre-round warm-up. Significant decreases in club head speed, ball displacement and accuracy have been observed when players followed a passive stretching routine, indicating this type of exercise should be avoided in preference to the dynamic and golf-specific movements described in the present study (Gergley, 2009).

Mental preparation was associated with players "developing a 'Tool kit' of mental resources and strategies (helpful cognitions and appropriate cues) to help manage ineffective stress and anxiety before a round". Psychological factors have consistently been shown to be

important for the outcome of golf competition (Hellström, 2009b). For example, research examining the influence of mental strategy use before a round indicates positive associations between pre-competition imagery and golf performance (Beauchamp, Bray, & Albinson, 2002). Mental preparation strategies have also been found to be positively associated with performance in triathlon (Houston, Dolan, & Martin, 2011) and Olympic wrestling (Gould, Eklund, & Jackson, 1992).

The development of a framework of tournament preparation items represents the main practical application of this work. The framework consists of 46 items from the Delphi questionnaire and provides consensus-based guidelines for effective practice in tournament preparation. The developed framework could be used by national sport organisations to guide the development of more comprehensive learning environments for players and trainee coaches. Further, it presents easily applicable content for players to help structure their own preparation routines. Based on the participation of many experts and industry professionals, the framework is well-placed for uptake by relevant stakeholders in the sport. While the framework does appear to provide guidelines for priority-based coaching, it is not intended to be used as a prescriptive or rigid coaching tool. The authors acknowledge that players have different individual preferences and requirements for preparation. Therefore, the framework could be used as a reference for coaches and players to select items and develop routines based on the individual needs of the athlete.

Several limitations may have influenced the findings of this study. First, while international experts were invited to participate, the final panel included mostly participants from Australia; therefore, their opinions, as well as the current findings are specific to this geographic region. As a result, studies performed in other countries may support or challenge the observed results. Another limitation is that, while this study provides guidelines on the

perceived importance of preparation items, it does not establish at a behavioural level how these activities relate to performance. For example, it is not known as to whether completing a greater number of items or specific items from the framework translates to concomitant performance benefits.

Future studies may wish to consider a cross-cultural or region-specific analysis when undertaking research in this area. In addition, because this was the first study to categorise and score preparatory behaviours in the literature, it could provide procedural guidelines for building curriculums in other sports. It could also be beneficial to compare the applied use of items in the framework with performance data to validate and assess the relationship between specific items and scoring success. Given that this framework and the way it has been derived is novel to the sport, qualitative research may also be valuable to assess the uptake and user acceptability of the framework for coaches and players. For example, the framework could be distributed to a representative group of players/coaches and following a period of familiarisation, qualitative interviews could then be performed to examine the participants' perceptions of the framework.

Conclusion

This study aimed to achieve expert consensus on the importance of specific tournament preparation items to players of different competitive levels. Within a two-round Delphi process, consensus was reached for 46 of the 48 items included in the questionnaire. These items were used to develop a ranked framework of items for each competitive level. The findings provide initial evidence of the items or behaviours that content experts consider important for players when preparing for tournaments in golf. These findings have the potential to assist in the development of education programmes and curriculum by national sport organisations for players and trainee coaches. Such programmes could give increased focus to items with the

highest score; conversely, less emphasis could be applied to items that scored poorly and were considered of limited significance. For coaches and practitioners, the findings could be used to inform a screening process to identify the strengths and deficiencies of player's preparation routines and structure their individualised training programmes. In addition, the framework could be made available to individual players via a mobile application or web-based learning module, thereby encouraging players to become proactive participants in their own preparation and development (Mallet, 2005). Comparing the applied use and practice of items in the framework with performance data to determine the relationship between specific items and tournament success represents an obvious direction for future studies in this area.

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