A Qualitative Investigation into the Role of the Caddie in Elite-level Golf

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ABSTRACT

The aim of this study was to determine the nature of the caddie's role in the decision-making, psychological conditioning and tournament preparation of elite-level golfers. Semi-structured interviews were conducted with 17 elite-level golfers (17-24 years; 15 male and 2 female) and 6 caddies (29-42 years; 6 male). Data were transcribed and subjected to thematic analysis techniques. Analysis produced four main findings: (1) the caddie's role in decision-making was to provide information, assist in shot selection and provide feedback of the golfer's club selection; (2) the caddie's role in psychological conditioning was to maintain the golfer's high performance state using a variety of cognitive and attentional strategies; (3) caddies assist in tournament preparation by 'mapping' to plan strategy and record the important characteristics of the course prior to a competitive event; and, (4) although the benefits of the caddie were recognized, golfers were dissatisfied with the quality of caddies available. The findings of this study provide guidelines for the best practice of caddies. Additionally, the development of a prerequisite document or caddie contract was proposed as an appropriate solution to the issue of golfer discontent in caddie quality. The application of this knowledge has implications for national sport agencies, performance enhancement in the sport and the development of more effective working relationships between elite golfers and their caddies.

Key words: *Decision-making; tournament preparation; sport psychology; interviews; optimal psychological state; attentional control*

INTRODUCTION

Golf is unique when compared with other individual skill based sports as golfers at the highest level usually compete with an assistant, known as the caddie, who plays a support role alongside the golfer [1]. Thus, at the highest levels of golf, the golfer and caddie operate as one complete 'unit'. Traditional duties, commonly performed by the caddie to reduce the golfer's workload, such as carrying the golfer's bag, cleaning clubs, and maintaining the course for play are well documented [1-4]. Furthermore, recent research has investigated the qualities that underpin an effective golfer-caddie relationship [5-6], the caddie's impact on the golfer's scoring outcomes [7], and basic structure of the caddie role [3-6]. However, there remains a dearth of empirical evidence concerning the broader roles that caddies may play in adjusting psychological states, assisting in decision-making, and in preparation for a competitive event.

In competitive sport, the ability of athletes to achieve and maintain a psychological state appropriate for the execution of a well-learned skill is an important determinant of success. The specific psychological qualities associated with optimal performance in golf have been well identified [8-12]. Unlike open-skilled sports, in which split second decisions are common, golf is relatively closed-skilled in nature and is played over a long duration, interspersed with regular periods of downtime between movements [13, 14]. Therefore, to achieve the desired scoring outcomes golfers must be able to 'adjust' their psychological activation throughout the course of play [6, 13, 15]. Caddies may assist in facilitating this optimal state by: (a) optimizing golfer's self-confidence prior to shot execution; and, (b) maintaining the golfer's psychological state in the period between shots [3, 6]. However, the specific techniques used to perform these duties are yet to be empirically shown.

Elite golfers have been shown to employ several different coping techniques or strategies, often in combination, to minimize poor execution, manage competitive stressors and maintain their optimal performance state [11-13, 16]. These include: cognitive (e.g., imagery, self-talk), behavioural (e.g., following a specific routine) and emotional (e.g., physical relaxation, seeking on-course social support) strategies [16]. Several of these strategies are used internally by the golfer and offer limited capacity for direct caddie intervention. However, the position the caddie occupies, being: (a) proximal to the golfer; (b) trusted by the golfer; and, (c) aware of the golfer's psychological state, provides a

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signficant opportunity for the caddie to promote or encourage specific techniques. For example, there is potential for the caddie to assist in the delivery of 'triggers', which may include statements or phrases, delivered once or several times in succession. These triggers are designed to promote a direct response from the golfer; or alternatively encourage the golfer to employ other psychological strategies (e.g., imagery) thus having an indirect effect on the golfer's psychological state [6,17,18].

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Decision-making in golf involves the gathering of information relevant to the golfer's current position (e.g., wind, lie, yardage) and the consideration of how this information applies to the shot required [19]. It has been shown that the caddie's role in decision-making is to assemble information (e.g., yardage, wind direction), assist in club and shot selection, and to provide positive reinforcement of the golfer's decision in order to increase confidence and commitment prior to execution [2,3,6]. However, previous studies have been exploratory in nature and thus were unable to provide a concise description of optimal caddie function. In order to design performance interventions targeting the efficiency of the decision-making period, more detailed investigations are required. Further, there is relatively little information available concerning how and when caddies obtain the information required to inform shot selection. It has been observed that caddies may assist golfers by 'mapping' the course prior to competitive play [2], however it is presently unknown whether or not this process is considered effective and what factors may influence the quality of this information.

Therefore, the present study aimed to determine the nature of the caddie's role in the decision-making, psychological conditioning and tournament preparation of elite-level golfers from a golfer-caddie perspective.

METHOD

Participants

Purposeful sampling was used to recruit 17 golfers (15 male, 2 female; playing level = 2 rookie professionals, 15 high-level amateurs; age range = 17-24 years; *M* age = 20 years; *M* years of playing = 10 years) and 6 caddies (6 male; age range = 29-42 years; *M* age = 37 years; *M* years of caddying = 15 years; *M* number of golfers worked with = 19). Inclusion criteria for golfers required that participants were either (a) a current member of the Australian Amateur National Squad; or (b) a current member of the Australian Rookie Squad; and, (c) greater than 17 years of age. Both the rookie

professional group and the high level amateur group were considered 'elite' based on definition by previous research [20]. Inclusion criteria for caddies stipulated that they were currently or had previously worked with (a) a current member of the Australian Amateur National Squad; or (b) a current member of the Australian Rookie Squad; and, (c) greater than 18 years of age. The caddies recruited were all full-time employed in golf (tournament coaching consultant, one national coach, three PGA teaching professionals and one PGA professional trainee). These individuals volunteered to caddies for elite-level golfers as part of their capacity within these roles and were not paid for their services. The participants were recruited either by being approached directly (phone, electronic mail) or via liaison with the second authors existing industry contacts. Ethical clearance to conduct the study was provided by the Deakin University Human Ethics Advisory Group.

Materials

Interview Guide. Separate semi-structured guides (adapted from similar work by Lavallee, Bruce and Gorely [3]) were used to elicit information from participant caddies and golfers. Each guide included a brief introductory script, topic questions and follow-up probes. Topic questions were designed to assess the participant's experience in several areas relevant to the caddie role, including: background, playing/caddying experience, function of the caddie, the caddie's role in maintaining a golfer's mental state, communication and decision-making. Sample questions included: "When did you first play with a caddie?", "Most people are aware of the basic duties of the caddie, for example: carrying bags or course maintenance, from your experience could you tell me more about what caddies do during a round?", and, "Who has the final responsibility for decisions that are made on the course?" Each content topic and related questions were introduced in such a way that encouraged the interview to develop in a natural, conversational manner [21,22]. Probes were used to further explore aspects of the participant's experience that arose during the interviews. Thus, whilst each interview followed the topic guide, the interviewer had the flexibility to pursue responses beyond the scope of the specific questions [21]. Each interview guide was reviewed by the research team as well as an independent expert in interview methods. The guides were piloted with two non-elite golfers (n = 2) to assess the appropriateness of each of the topic areas. Feedback from participants was positive and no problems were indicated with the content topics, questions, instructions and interview sequence.

Instruments. Interviews were conducted locally (Melbourne, Australia) and internationally (Texas, USA). A combination of four audio devices were used to record the interviews: (a) Zoom Q3HD video/audio recorder; (b) Olympus Note Corder DP-211; (c) Livescribe 2GB Echo Smartpen; and, (d) Samsung Galaxy S5 internal recorder. The Q3HD and the Echo Smartpen were used as the primary and secondary recorders for all Melbourne-based interviews and the DP-211 and the S5 were employed as the primary and secondary audio recorders for interviews conducted in Texas. The NVivo 10 ® analysis software (Qualitative Research Solutions International QSR; 2012) was used for the management and analysis of textual data. This software enabled the data to be assigned meaning by associating codes or labels with congruent sections of text [23].

Procedure

Each player and caddie was interviewed once. Seventeen face-to-face semi-structured interviews were conducted with golfers on-site at the Woodlands Country Club in Houston, Texas, during the Golf Australia National Squad camp (July, 2014) by the second author. Three face-to-face interviews and three phone interviews were conducted with caddies by the first author (August, 2014). For the face-to-face interviews, locations included a quiet office space at the University campus and a similar facility at participants' places of employment. Both the face-to-face and phone interviews lasted between 10 and 30 minutes. With permission, the interviews were audio taped and field notes taken as a means of recording the interviewer’s observations and preliminary coding ideas.

Interview recordings were transcribed verbatim by the first author and a trained research assistant. The first two golfer interviews were cross transcribed (research assistant and first author) to ensure accuracy and transferability between transcribers [24]. During transcription all identifying information was removed and participants were assigned a pseudonym to preserve anonymity [25]. Golfers and caddies were indicated by the code 'G' and 'C', respectively, followed by their gender and identification number [25]. Following transcription golfer and caddie transcripts were checked for accuracy (e.g., analyzed alongside interview audio) by the author and the research assistant [24].

Data analysis

A six-step thematic analysis was used to analyze the content of the interview transcripts: (1) perform 'repeated reading' of the data; (2) organize meaningful elements of data into groups or 'codes';

(3) collate similar coded extracts into candidate themes; (4) review the validity of each theme in relation to the coded extracts and the entire data set; (5) use the themes identified to construct a 'thematic map' of the data; (6) generate an accompanying narrative describing the specifics of each theme in relation to the research question [26]. A sample of interview transcripts (n = 5) were submitted to multiple coding by the research assistant and assessed against those of the primary coder. Crosschecking of coding strategies concluded that codings were consistent in 87% of cases, which is acceptable according to methods defined by LeCompte and Goetz [27]. The use of multiple investigators (coders) was positioned to facilitate triangulation of the data, in order to reduce the impact of individual bias. To ensure trustworthiness, data analysis and interpretation was conducted in reference to the consolidated criteria for the reporting of qualitative research [28].

RESULTS

Thematic analysis of the data highlighted four central themes and additional subthemes to describe the role of the caddie. These central themes included: decision-making, psychological conditioning, tournament preparation and perceptions of caddie quality, and are presented in Table 1.

Insert Table 1 about here

Each of the themes and subthemes are analyzed in further detail.

Decision-making

This theme represents the behaviors undertaken by golfers and caddies from when they first approach the ball to when the golfer executes the shot. Two subthemes emerged, 'stages of decision-making', and 'moderating factors'.

Stages of decision-making. Stages of decision-making referred to the predefined sequence of events that golfers and caddies progress through prior to shot execution, these stages included: (a) zone of focus, (b) shot selection, (c) club selection, (d) pre-shot routine, (e) shot execution and (f) post shot reflection period. The specific order and content of these stages varied between participants, however this subtheme represented what participants considered to be optimal. The sequence of these stages is depicted in Figure 1.

Insert Figure 1 about here

Zone of focus. This first stage was defined as the golfer and caddie narrowing their focus or psychological activation; in essence 'switching on' in preparation for analysis and shot execution. The exact threshold or distance at which the golfer initiated this process varied between participants, but typically this was 5-10 m from the ball.

Shot selection. Golfers and caddies agreed that the caddie's role during shot selection was to provide the golfer with relevant information pertaining to a shot. The exact content of this information varied considerably, but those reported to be most fundamental to the caddie's role included: hazard placement, pin position, wind (angle, intensity) and yardage (to the front, side and back of the green; yardage to hazards; yardage to the pin). This information was collected upon reaching the ball or pre-recorded in the caddies 'yardage book'. Following the provision of information, each variable was considered in relation to the desired shot outcome and used to discuss the intended landing zone, line of approach, shot shape (draw, fade, high, low) and to calculate the exact yardage or 'true distance', as one golfer described:

> *"You just work out, if it's 150m, I hit my 8 iron 150m, but it's uphill and into the wind. It's probably playing 5m (more) for uphill, 10m (more) for the wind, so you just do a bit of adding and subtracting for the yardages." (GM014).*

Club selection. After all information has been collated and calculations completed it was the golfer's responsibility to select the club based on the distance required to execute the desired shot. This decision should be mathematical and not based on visual estimates:

> *"Never tell them what club to hit. Run the numbers, go through your list, check off your list as these things that I want from this shot, the club will choose itself, you'll come up with a number..." (CM002).*

Based on the golfer's decision the caddie had two options, they could choose to either agree with the initial club selection or they may be unsure and could choose to disagree. If the caddie chose to agree their duty was to provide positive reinforcement to the golfer's decision, this task was essential to the caddie's role and helped to ensure the golfer is confident and committed to their shot execution. The content of this reinforcement was described as a short phrase to convey agreement. Conversely, if the caddie disagreed with the golfer's club selection this was done in a diplomatic way. To avoid potential conflict, the caddie's role was not to inform the golfer their decision was wrong, but rather to suggest they re-do the initial calculations to confirm the distance.

Pre-shot routine. Once the golfer and caddie were content with the club selection, the golfer approached the ball and began the pre-shot routine. During this time, both golfers and caddies stated that the caddie's role was to simultaneously provide the golfer with positive prompts or trigger words. The use of trigger words was highlighted as a means to positively influence the golfer's focus:

> *"And then while I'm doing my routine he would just say 'commit, commit to your golf shot' and then I'd walk in and hit it. That's about it really." (GM008).*

Shot execution. Following the pre-shot routine the caddie adopted a passive role as the golfer executed the shot.

Post-shot reflection period. Post execution the golfer and caddie allowed a short period of time to reflect on the shot outcome and the execution of the decision-making process. Several caddies reported that this period was important in reducing a golfer's build-up of negative energy. Generally, if the golfer wanted to release some anger or frustration the caddie would encourage the golfer to do so during this stage.

Variability. The input and feedback requested by golfers from their caddies during decision-making varied considerably depending on individual preference and several moderating factors. This variability ranged from complete involvement in almost every aspect, to relatively no involvement at all.

Moderating factors. Responses indicated that the caddie's level of involvement during the decision-making period was moderated by two factors: (a) the caddie's knowledge of the golfer's specific requirements, and (b) the golfer's trust in the caddie.

Knowledge of golfer requirements. The responses of caddies identified the 'knowledge of golfer requirements' to be a key factor in their ability to deliver effective input and advice during decision-making. Currently, it appears that the golfers were not using a systematic approach to effectively communicate their exact preferences during this period. Several caddies believed that the responsibility should fall on the golfer to inform the caddie of their needs and requirements prior to competition; allowing the caddie to deliver specific input that is most beneficial to the golfer's decision-making process.

Trust. Participants discussed trust more than any other factor when describing the determinants that may influence the nature of the caddie's role in decision-making**.** The consensus was that a distrusting golfer-caddie partnership results in ineffective decision-making, particularly by reducing the level of input that golfers feel comfortable requesting from caddies during shot selection**.** The caddie's level of experience and the degree of familiarity between the golfer and caddie were both found to increase the trust that golfers had in their caddie's abilities, with many golfers stating that they would not trust the input of an unfamiliar caddie.

Psychological conditioning

This theme contained any reference made by participants concerning a golfer's psychological state or condition. In particular, the variables used to define a golfer's peak psychological state were highlighted and any techniques or strategies used by caddies to maintain or regain this state were explored. The theme contained two subthemes; these were 'high performance state,' and 'caddie input'.

High performance state. Participants described a golfer's 'high performance state' as their psychological state or 'headspace' when they are performing at their peak. Seven main characteristics were identified to define this state: effortless performance, able to isolate each shot, high self-confidence, focused, relaxed, staying in the present, feeling unstoppable, and able to switch off between shots. It was revealed that the caddie's role was to keep the golfer performing within their high performance state, for as long as possible.

Caddie input. To maintain the golfer's high performance state players indicated that caddies employed two primary methods: 'cognitive strategies' and 'attentional control'.

Cognitive strategies. Participants indicated that several cognitive strategies were used by caddies to influence the psychological state of the golfers. As noted previously, caddies used three cognitive strategies during the decision-making period: (a) positive reinforcement; (b) trigger words; and (c) the post-shot reflection period. Proving reinforcement of the golfer's club selection allowed caddies to embed confidence prior to execution, reducing self-doubt and improving the likelihood of a successful outcome. The caddie's provision of trigger words was noted to have two purposes; first, to narrow the golfer's focus of attention, and second to improve their ability to concentrate. The third cognitive strategy, post-shot reflection, enabled the caddie to facilitate release of negative energy by the golfer through discussion of the golfer's feelings concerning the previous decision-making period. This period of reflection represented a form of coping, helping the golfer to release stress and frustration before moving onto the next shot.

Attentional control. Participant's responses indicated that the ability to modify attention to meet situational requirements was an important determinant of a golfer's psychological state. It was identified that the caddie's main influence in regulating golfer attention occurs in the period of downtime in-between shots. Following the post-shot reflection period, caddies used frequent periods of conversation with the golfer, focusing on non-golf related topics to re-direct the golfer's attention, in effect keeping their mind off golf. Re-directing the golfer's attentional focus helped the golfer avoid external distractions, stay focused in the present and maintain a low level of psychological activation; thereby facilitating maintenance of the golfer's high performance state and allowing them to concentrate more effectively when they reach the ball:

> *"If you can get their mind off (golf) the player is able to concentrate a lot more when they get to (the ball), usually if they are thinking about golf the whole time they burn out after 9 or 10 holes." (CM005).*

Tournament preparation

Participants defined tournament preparation as a series of tasks undertaken by golfers and caddies prior to a competitive event in order to optimize performance. This theme describes the caddie's role in this process. Two subthemes emerged: the 'practice round' and 'course mapping'.

Practice round. It was reported that during the practice round the caddie completes a series of duties similar to that of a normal round, to support the golfer's performance. However, several respondents indicated that there was also a trust element to the caddie's involvement, and that golfers may use the practice round as a means to gauge caddie competency. This was particularly the case when the golfer did not have a pre-existing relationship with the caddie. Furthermore, depending on how the golfer perceived the caddie's abilities, this was found to either increase or decrease the golfer's trust in the caddie and had significant implications for the dynamic of the relationship:

> *"In the practice round I might ask the caddie for a lot more input because then I can use that for evidence as to whether he's getting it right or not." (GM013).*

Course mapping. Participants considered course mapping to involve measuring out the course, identifying hazards, approach paths, planning strategy and recording this information in the yardage book. Although not specifically mentioned, it was explicit that the caddie's involvement in course mapping may influence their ability to provide input during the decision-making process. Caddies who are technically skilled in mapping and routinely involved in this process had more detailed, high quality information to contribute during the decision-making period than those whose yardage books were poorly designed and sourced.

Perceptions of caddie quality

While a critical analysis of caddie quality was not the purpose of this investigation, this theme emerged throughout the analysis and was considered an important element when reflecting on the golfer-caddie dynamic in elite golf. Golfers spoke quite candidly concerning the quality and usefulness of caddies with whom they had previously worked, with the majority of golfers reporting a feeling of dissatisfaction:

> *"I've never had a good caddie …" (GM011).*

These feelings of inadequacy were directed particularly toward parent or family member caddies. It was reported that younger golfers working alongside a family member tended to place added pressure on themselves either to perform or meet expectations, resulting in an ineffective golfer-caddie relationship. Of the golfers interviewed, many still regularly employed the services of family members or friends as caddies. Despite golfers reporting general dissatisfaction with their caddie experiences, most recognized the importance of the caddie's role and reported a desire to work with high-quality caddies in the future.

DISCUSSION

The present study aimed to determine the nature of the caddie's role in the decision-making, psychological conditioning and tournament preparation of elite-level golfers. The caddie's most fundamental role in decision-making was to provide the golfer with information concerning the situation of play or the physical characteristics of a shot. Caddies also assisted the golfer in shot selection and provided feedback concerning the golfer's club selection. It is important to understand that the findings presented herein are representative of what golfers and caddies considered being optimal. The actual input provided by caddies was found to vary considerably depending on the golfer's individual preferences, the caddie's knowledge of the golfer's requirements and the golfer's level of trust in the caddie. In particular, low levels of trust were associated with the caddie being less involved in the decision-making process.

Interestingly, when discussing the input provided by caddies, a greater quantity of information was not necessarily considered beneficial to golfers. For example, several golfers recalled situations in which previous caddies had identified a hazard and explicitly stated to 'avoid the area', which disrupted the golfer's thought processes and resulted in a negative shot outcome. This finding is consistent with Wegner's [29] theory of 'ironic mental processes', which proposed that attempts to suppress thoughts from one's conscious awareness increase the probability that the suppressed thought will influence subsequent thoughts and actions [30, 31]. The communication delivered by a caddie may also influence the content of a golfer's self-talk. The human environment surrounding a sporting experience plays an important role in shaping an athletes' self-talk [32]. Interestingly, a negative style of communication or behavior from a coach has been shown to increase an athletes' negative self-talk

[33]. In golf, the qualities of the golfer-caddie relationship are similar to that of the relationship between coach and athlete. Therefore, any negative communication from a caddie (e.g., avoid the bunker, beware the water hazard) could influence the content of a golfer's self-talk. Interviews performed by Aitken and Weigand [6] lend support to this theory, as the caddies they interviewed stated that it is crucial to avoid negative communication with golfers during a competitive round.

Overall, the findings reported were consistent with previous models of golfer-caddie decision-making (e.g., Bruce [2]; Lavallee et al. [3]). Specifically, similarities were noted concerning the caddie's role in providing information, in evaluating the golfer's club selection and the variables that moderate the level of input requested by golfers. However, the findings of the present study described the caddie choosing to disagree with the golfer's selection as a diplomatic re-negotiation of the initial calculation. This is in contrast to previous models that have suggested it to be 'precarious' and suggest that if a caddie is to attempt to change a golfer's decision they need to provide supporting information and an alternate option to consider [2, 3]. Another important distinguishing factor between this study and previous investigations was the sample utilized. The present sample included mostly elite amateur golfers with a small number of rookie professionals, while previous studies (Bruce [2]; Lavallee et al. [3]) used professional golfers, playing on the Australasian PGA Tour. It is possible that this may account for these differences, as more experienced golfers may be less open to discussing alternatives to their decision.

As with decision-making, caddies were reported to fulfill a variety of roles in order to influence the psychological condition of the golfer. The most central role was to maintain the golfer's 'high performance state'. It was indicated that any deviation from this state increased the likelihood the golfer would experience a decrement in their performance. This statement was consistent with previous theories of optimal mental climate [34]. To preserve the golfer's high performance state, caddies used a variety of cognitive strategies (positive reinforcement, trigger words and post shot reflection) and attentional control. The first cognitive strategy, positive reinforcement, involved the caddie providing reassurance of the golfer's club selection by using a short statement to convey agreement. Golfers reported that reinforcement from the caddie was an effective strategy to increase self-confidence and reduce doubt prior to shot execution. Previous research has also highlighted

positive reinforcement as an essential component of the caddie's role [2,3]. Additionally, the importance of self-confidence in creating an assurance of certainty, encouraging effortless performance and allowing the golfer to play with maximum commitment has been well documented [18,35].

Caddies delivered the second strategy, trigger words, while the golfer completed their pre-shot routine. The use of trigger words was described as an attentional tool, used by the caddies to narrow the golfers focus and ensure they are able to adopt an optimal internal state prior to skill execution. The use of trigger words has been reported amongst elite-level golfers as a form of structured self-talk, designed to manipulate the golfer's focus and concentration [13,18]. While previous research has not considered the role of the caddie in the delivery of such techniques, the underlying mechanisms may function on the same basis. That is, the caddie provides a positive, instructional statement to the golfer, similar to what the golfer would focus on internally while practicing self-talk, to improve the golfer's attentional skills and remind them of the relevant focus points in a given situation [18]. The third strategy, post-shot reflection, was employed by the caddie to facilitate the release of negative frustration by the golfer. Golfers seeking social support and venting have been recognized as forms of emotional-focused coping [36]. It is conceivable that the post-shot reflection period used by caddies represents a combination of these methods.

Attentional control was a further strategy used by caddies as a means to preserve the golfer's high performance state. Caddies used frequent conversation with the golfer, focusing on non-golf related topics, to redirect the golfer's attention away from the external environment and toward the novel stimulus (conversation). Thereby mitigating the effect of external distractions, keeping the golfer focused on the present and maintaining a low level of psychological activation. In effect, this enabled the caddie to facilitate maintenance of the golfer's high performance state and preserve attentional resources by introducing a stimulus positioned to redirect the golfer's attention from potential stressors (e.g. future performance associated anxiety) that may induce a negative psychophysiological response. While the caddie's role in such methods has been recognized [6, 37] and the relationship between 'concentration disruption' and tournament performance documented [38], the mechanism underlying attentional control is yet to be determined empirically.

In elite golfers, a more 'task orientated', rather than 'outcome orientated' concentration style has been associated with peak performance [2]. When golfers fixate on future or past performance they tend to become more outcome orientated, creating a self-imposed pressure to perform in an attempt to re-capture missed opportunities. According to Baumeister's [39] self-focus model, increased performance pressure generally results in heightened levels of self-directed attention. An internal focus shifts the golfer’s attention to the step-by-step processes of skill execution and results in the golfer taking conscious control of what is usually an unconscious process, often resulting in a decrease in their performance [40].

The caddie's role in pre-tournament preparation was comprised of the practice round and course mapping. Like in a competition round, the caddie's role during the practice round was to support the performance of the golfer, which has been previously highlighted [2, 8]. Interestingly, participants reported that the practice round was also used as a means to assess the caddie's abilities. If the caddie was perceived as competent, the golfer's trust in the caddie would subsequently be increased. This finding has significant implications for the golfer-caddie dynamic. Specifically, by demonstrating efficacy in the practice round, caddies may be able to circumvent the absence of a pre-existing relationship and increase the golfer’s trust, because as previously noted, trust was dependent on two variables: familiarity and caddie skill. As a result of an increased level of trust the caddie may be invited to provide a greater degree of input into the golfer's decision-making. This was in contrast to Aitken and Weigand [6] who found that professional tour caddies they interviewed reported taking from two to three weeks of tournament golf until their golfer developed enough trust in them so they could contribute significantly to the decision-making process. The caddie’s second role in tournament preparation was to assist golfers in 'mapping' by measuring out the course, identifying hazards, approach paths, planning strategy and recording this information in their yardage book. Understandably, caddies whose yardage books were detailed and of a high quality had more information to contribute during decision-making. These findings are novel, as to our knowledge, the ability of the caddie to build trust using the practice round and increase the quality of the information they can provide to golfers has not been empirically determined, although there has been some indication of this in the broader golf literature [6].

Despite recognizing the benefits of caddies, golfers were generally dissatisfied with the current quality of caddies available. When interpreting this finding, it is important to understand that the sample of caddies recruited for this study were all employed in other areas of golf performance (e.g., golf coach, tournament consultant), and caddied infrequently for golfers as part of their capacity within these roles. There caddies were not necessarily reflective of the quality of caddies typically available to elite-level golfers. Caddies explained that National Squad golfers do not have access to the monetary resources required to employ a regular, high quality (professional) caddie. Therefore, golfers often employed the services of family members, teammates or one-off caddies (individuals provided by the golf course at which a tournament or playing event is held). It is likely that these caddies did not fulfill the specific roles reported in this study, which may account for golfer's current discontent. In the case of caddies with multiple roles (e.g., caddie and family member), this may be attributed to the power ratio of the relationship [6]. To enable effective communication between golfer and caddie, the power in the relationship should belong to the golfer, however, if the caddie and golfer have an existing relationship in which the balance of power is reversed, the caddie may be unwilling to surrender their position of power. This inappropriate allocation of power can reduce the effectiveness of the golfer-caddie communication and overall the success of the partnership [6]. In order to reduce the influence of power balance, it is important for both golfer and caddie to recognize their role and appreciate who is in control to create the best possible working environment and maximize competitive outcomes [6]. Despite the clear need for skilled caddies at the high-level amateur/rookie professional level of golf, due to the lack of employment incentives, it seems likely full time caddying at this level is still not a viable career option.

From an applied perspective these findings have a number of implications worth highlighting. First, an intervention to increase the effectiveness of caddies regularly available to elite-level golfers may be beneficial. As mentioned, the caddies employed by these golfers vary considerably, from a close family member (while playing in their local region), to an individual provided by the golf course (while playing out of state or internationally). Therefore, a skill development program may be an ineffective solution, as the cohort from which caddies are sourced is inconsistent, and it would be difficult to apply such an approach to individuals (e.g. family members) who are not employed in golf

and most likely face significant time constraints. Rather, a more appropriate method to address this situation maybe the development of a prerequisite document or 'caddie contract'. This caddie contract would contain many of the components of an average employment contract; in particular, it would outline the pre-requisites of the caddie's role and describe what the golfer expects of them as an 'employee'. As reported by this study, golfer's specific preferences vary considerably; therefore it is important that the circulation of a generic contract be avoided. Contracts should be individualized to meet golfer's unique requirements and developed based on the coach's recommendations. Future research and evaluation is needed to assist in the development of such methods to ensure the validity and reliability of the instrument, and to determine its effectiveness before it can be applied to the wider golf population.

The findings of this study highlight the specific roles fulfilled by caddies in the decision-making, psychological conditioning and tournament preparation of elite-level golfers. Specifically, caddies provide information and feedback during decision-making, use a variety of strategies to maintain the golfer's high performance state and assist in preparation by 'mapping' the course. Although the benefits of caddies were recognized, elite-level golfers were dissatisfied with current caddie quality. To increase the quality of the service provided by caddies it was recommended that a list of prerequisites or 'contract' be developed and delivered to caddies prior to competition. The results of this study have significant practical relevance for the elite-level golfer, their caddies, golf researchers and National sport agencies. Golfers and caddies may apply this knowledge to optimize performance of the golfer-caddie unit. While researchers and sport agencies may use this information in the development of performance interventions, such as a caddie contract. Future research may also be useful to assess the validity and applicability of the proposed golfer-caddie decision-making model using quantifiable measures. The application of these findings has clear implications for performance enhancement, the development of best practice guidelines and more effective working relationships between elite golfers and their caddies.

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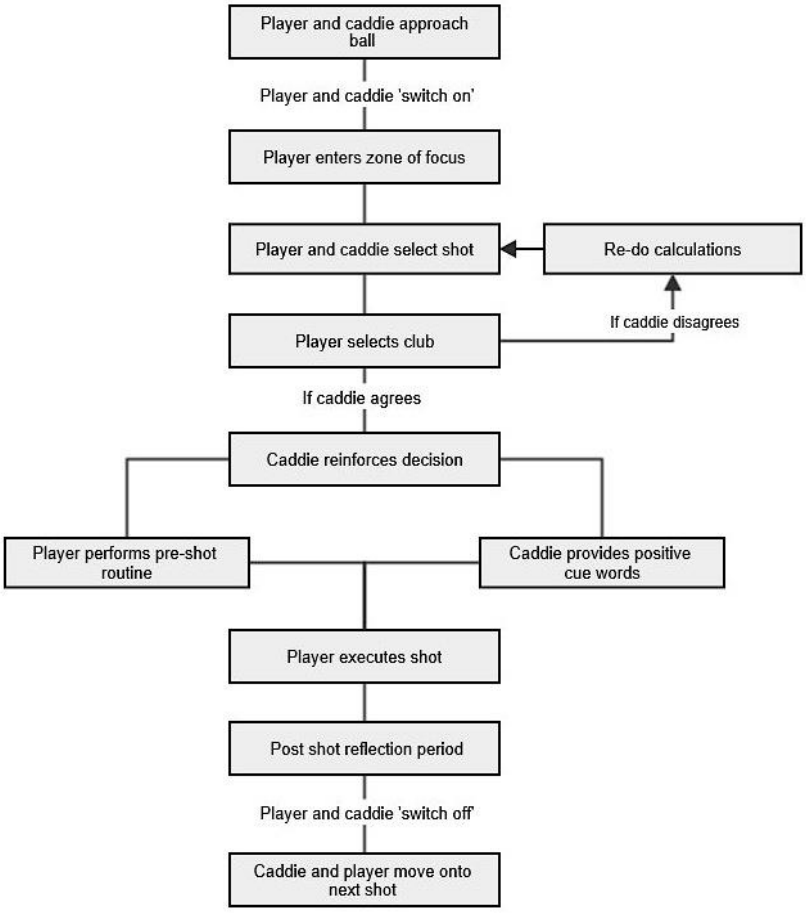
Table 1.

Summary of central themes and subthemes reported by golfers and caddies

Central themes	Subthemes
Decision-making	Stages of decision-making
	Moderating factors
Psychological conditioning	High performance state
	Caddie input
Tournament preparation	Practice round
	Course-mapping
Perceptions of caddie quality	



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574 Figure 1. Model depicting the optimal sequence of events in the decision-making of golfers and

575 caddies.

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