The Consequences of Choking in Sport: A Constructive or Destructive Experience?

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Abstract

Through an empirical phenomenological methodology, the study examined the short- and long-term consequences of choking in sport. Eleven intermediate golfers (10 males, 1 female, aged 23-50 years; *M* = 34.6; *SD* = 8.9) with handicaps between 6 and 18 (*M* = 10.91; *SD* = 3.98), completed phenomenological interviews which explored the perceived psychological impact of their choking episode(s). While the reported short-term consequences were negative (i.e., collapse in performance standards, limited attention/emotional control and negative affect), most participants considered the long-term impact of choking was constructive, for it encouraged adversity-related growth. However, a small number of golfers identified the long-term consequences were highly destructive, including a loss of self-confidence, withdrawal from the sport, and in one case, lowered self-worth. The findings of the study extend the choking literature by informing strategies that can be used to encourage constructive, rather than destructive consequences from any choking episode that athletes may experience.

Keywords. performance collapse, reflection, adversity-related growth, learned helplessness.

Introduction

While discussions regarding the definition and conceptualization of choking in sport continue (see Mesagno & Hill, 2013; Mesagno, Geukes, & Larkin, 2015), athletes normally identify the choking event as a dramatic, catastrophic and acute decline in performance standards when exposed to high levels of pressure (Hill, Carvell, Matthews, Thelwell, & Weston, 2017; Hill, Hanton, Matthews, & Fleming, 2010a). The most recent definition provided by Mesagno and Hill (2013), suggests that choking is, "an acute and considerable decrease in skill execution and performance, when self-expected standards are normally achievable, and which is the result of increased anxiety under perceived pressure" (p.273).

The extant literature provides an increasing detailed account of the causes and moderators of the choking experience (see Hill, Hanton, Matthews, & Fleming, 2010b; Mesagno et al., 2015), though limited research attention has been directed towards understanding the consequences of a choking episode. What is known, has emerged from studies that have examined choking in sport broadly, with the consequences considered briefly alongside the antecedents, mechanisms, and moderators of choking (e.g., Hill et al., 2010a; Gucciardi, Longbottom, Dimmock, & Jackson, 2010). Moreover, such research has focused almost exclusively on the short-term impact that choking may have on the sporting performance, with little consideration given to either the psychological effect the experience may have on the performer, or the long-term consequences for the athlete's future pressurized performances.

Of the research available, Hill, Hanton, Fleming and Matthews (2009) were the first to propose that the choke, and its associated collapse in performance standards, could have a psychological effect on the athlete in the short- and long-term by lowering their self-confidence and encouraging negative thinking. In turn, this psychological state was suggested to impact detrimentally the remainder of the athlete's current performance (unless the choke occurred at the end of the game) and any future pressurized performances for 'a period of time'. However, the participants within this study were either applied sport psychologist who had worked with athletes vulnerable to

choking, and/or held research expertise within the 'stress-related' subject area. Thus, they were only able to infer the perceived consequences.

Nevertheless, in their follow-up exploration of the choking process with elite golfers who had choked under pressure regularly, Hill et al. (2010a) found the experience did appear to elicit a number of short- and long-term consequences. In the short-term (i.e., immediately post-choke), participants reported their performance standards declined significantly. Then, as a result of lowered self-confidence, increased perceived pressure and an increased vulnerability to distraction, many of the golfers noted their future pressurized performances were affected negatively over the longer-term. Of interest, two (out of the six) participants suggested their choking episodes had also lowered their enjoyment of golf to such an extent, they were considering withdrawing from the sport. It was unclear why choking had such negative long-term consequences for those particular golfers, though it was inferred by Hill and colleagues (2010a) that it was due to their highly self-critical response to the choking event. The authors went on to suggest that choking may also diminish athletes' self-esteem, self-worth, and well-being, as one of their participants recalled, "[After choking] I hate golf. . . I hate myself (p.230)", and another identified that after a choking event, "…I was thinking that…I have given up so much time for golf, and it's for nothing…I was very very miserable (p.230)." This proposal has since received support from Hill, Hanton, Matthews and Fleming's (2011) longitudinal (season-long) intervention study with choking-susceptible professional golfers, where one participant offered the following pertinent insight into the impact that frequent choking events had on his well-being:

> All I have ever wanted to do is play sport. If I was no good at sport, then I was nothing…To be no good at the one thing I thought I was best at, is heart-breaking. All I did every night was beat myself up. It wasn't worth being here if I wasn't good at golf. Life wasn't worth living… (p.482).

Conversely, Gucciardi et al. (2010) found that while their sample of 22 golfers experienced negative psychological affect (i.e., loss of self-confidence, emotional distress, and lowered

enjoyment), and a performance decrement immediately following choking, they all used the event as a positive learning experience in the longer-term. That is, through reflecting on the choking episode, they recognized how to manage themselves more effectively during subsequent pressurized performances (e.g., maintain a pre-shot routine, perspective and a process focus). Similarly, through their examination of choking in a team sport setting, Hill and Shaw (2013) found that most of their participants (seven of eight) acknowledged the short-term negative consequences of choking (i.e., acute performance decrement and high levels of negative affect) were transient. Again, in this case, the athletes utilized the choking event to inform effective management of future pressurized situations, and for some participants, it also prompted increased effort during training sessions and competitions. It should be acknowledged however, that for one athlete within the Hill and Shaw study, choking had led to the withdrawal from elite level sport (for a period of two years), as the episode caused a loss of enjoyment and self-confidence. The authors proposed that the availability (or lack of) social support from team-mates and the coach determined whether choking encouraged or discouraged positive long-term consequences. However, they were unable to provide any details to explain this process further.

Accordingly, initial research findings indicate that choking in sport can have a negative effect on the athlete's psychological state and performance in the short-term. Though in the longer-term, the consequences may be positive or negative, with the reasons for such differential outcomes remaining unclear. Hence, the primary aim of the study was to explore in detail the consequences of choking in sport, and elucidate how any negative impact can be minimized, while ensuring positive long-term consequences for the athlete and their future pressurized performance. This information could then be used by practitioners to support those who have choked or are choking-susceptible.

Critically, there is also a lack of clarity regarding whether the consequences of one choking incident (i.e., singular event) differ from those experienced after several choking episodes across a period of time (i.e., multiple events). As an example, Gucciardi et al. (2010) reported on the consequences of a singular choking event that occurred during one game, whereas the body of work

by Hill and colleagues (Hill et al., 2010a, Hill & Hemmings, 2015; Hill & Shaw, 2013; Hill et al., 2011), examined the impact of frequent and multiple choking episodes, that had occurred over a minimum two-year period. Hence, the secondary purpose of the current study was to explore the perceived short- and long-term consequences of singular and multiple choking events.

Method

Methodology

A descriptive, empirical phenomenological approach was adopted to address the aims of the study (Martínková & Parry, 2011) for it seeks to enable a rigorous and detailed exploration of a phenomenon (Finlay, 2011). The methodology is concerned with providing more than a descriptive account, for it aims to capture the 'essence' (i.e., nature and structure) of the phenomenon, as perceived by the individual within their consciousness. This is achieved through a process of epoché, whereby the researcher challenges their taken-for-granted ways of thinking and attempts to suspend their preconceptions of the phenomenon in question (see Allen-Collinson, 2017). Accordingly, this interpretivist methodology can provide a rich account of the perceived consequences of choking, and offer further conceptual clarity to the subject area (Nesti, 2004).

Participants

Eleven golfers (10 males and 1 female, aged 23-50 years; M=34.6; SD=8.9) were recruited from the South West of England, UK. Their handicaps ranged between 6 and 18 (M=10.91; SD=3.98), and they had played competitively (i.e., under pressure) for at least four years. Thus, according to the classification system proposed by Swann, Moran and Piggott (2015), the participants were either intermediate or the lower-end of semi-elite, and all had performed/experienced success up to club level. The participants were purposefully selected if they had experienced either a singular choking event (n = 3) or multiple choking episodes (n = 8) during the last two years (see procedure for further details). Consequently, they were well-placed to discuss the short- and long-term consequences of choking in sport.

Procedure

Once ethical approval for the study had been obtained, selected golf clubs from the South West region of the UK were approached (i.e. those with a large membership base). The purpose of the study was explained to the clubs' leadership team (e.g., professional, club secretary, and/or captains), and if permitted, details of the project were distributed to their members. Those players who believed they matched the inclusion criteria for the study (i.e., >4 years competitive playing experience; handicap <18; perceived they had "choked" during the previous 2 years; and were willing to discuss their experiences) were instructed to contact the research team to arrange a face-to-face interview. The process enabled a confidential recruitment process and allowed the participants to self-identify as having choked. Hence, taking into consideration the lack of consensus regarding the definition of choking in sport (see Mesagno & Hill, 2013), and the phenomenological methodology underpinning the study, it was deemed appropriate for the recruited participants to have experienced an event which *they* labelled as choking. To offer a broad comparison of findings across the sample, participants were asked prior to their interview, whether their perception of choking reflected the most recent definition (i.e., an acute decline in performance under perceived pressure; Mesagno & Hill, 2013). In all cases, there was an alignment. Recruitment ended once theme/code saturation was gained (see below), thereby establishing an adequate sample size for a phenomenological study of this exploratory nature (see Sandelowski, 1995).

Data Collection

Following the descriptive empirical phenomenological methodology, data were collected via individual phenomenological interviews, for they can provide a comprehensive, contextual and critical understanding of the participant's experience (Nesti, 2004). After relevant introductions, and questioning to build rapport, each interview began with an open-ended question relating to the phenomenon in question (i.e., "Please tell me about any consequences you have experienced from choking in sport"), with all follow-up questions remaining open, non-leading and based on the previous data provided (Dale, 1996). Hence, the first question was the only pre-determined question

of the interview (see O'Halloran, Littlewood, Richardson, Tod, & Nesti, 2016). Probes were also used throughout the interview (i.e., "can you explain what you mean by that?" and "can you offer an example?") to ensure detailed accounts of the post-choke experience were gained. Accordingly, while there were broad topic areas (i.e., short and long-term consequences) that each interview covered, every effort was made by the interviewer to ensure the conversation remained substantively unstructured and driven by the interviewee.

The interviews were completed by the lead and second author, with each taking approximately 60 minutes (*M*=53 minutes; *SD*=12.18). They were recorded digitally, and then transcribed *verbatim*. Data analysis and collection was an iterative process, meaning the data were analyzed (by the second author), the findings discussed by the research team, and then used to inform future interviews (see Sparkes & Smith, 2014). This process also facilitated the recognition of theoretical saturation (i.e., theme/code saturation; see Hennink, Kaiser, & Marconi, 2017) whereby the interviews ceased once new themes no longer emerged from the analysis.

Data Analysis

Following the process first identified by Giorgi and Giorgi (2008), and extended by Schmicking (2010), data were analyzed via four broad steps. The first, was to bracket assumptions and pre-conceptions (as much as possible) regarding the consequences of choking. The second step, involved reading/re-reading the interview transcripts to gain an overall sense of the data, and note any initial reflections regarding the participants' post-choke experience. Importantly, those notes were returned to throughout the analysis, to (re-)check the themes/meaning units constructed during the latter phases of analysis. Thereafter, the third step involved identifying codes (e.g., points of note) in the data, followed by the grouping of any common codes into themes. These were then transformed into meaning units that provided a coherent description of the short-and long-term consequences of choking for the performer and their performance. Those meaning units were re-visited and constantly compared to confirm they provided an authentic representation of the

participants' experience. For the final step, memos and notes were utilized throughout the analysis process to maintain reflexivity and challenge the analytical decisions.

Ensuring Quality of Data

A relativist approach was adopted for the study (see Smith & McGannon, 2017), in which an interpretive account of the participants' post-choke experience was gained through adhering to criteria relevant for the context/aim of this study (Levitt, Morrow, Wertz, Motulsky, & Ponterotto, 2016). Thus, bracketing was used to avoid making tacit assumptions about the consequences of choking and ascertain the participants' account of the experience (Allen-Collinson, 2017). Participants were also encouraged to articulate at length, their perceived consequences of choking through phenomenological interviews. Furthermore, the transcript and associated themes/meaning units from their interview were sent to the participants for "checking". It is acknowledged this process is contentious, for those themes and meaning units were the result of an interpretative process (see Smith & McGannon, 2017). However, the process afforded the opportunity for participants to identify any gaps in their account and provide additional information (NB. no participant offered supplementary data). In addition, through providing a detailed, contextual and evocative account of the participant's post-choke experiences, the findings of the study encouraged naturalistic generalizability in which the narrative resonates with the reader (see Smith, 2017). Finally, it is important to note that the research team have expertise in the completion of qualitative research and phenomenological interviewing (e.g., Hill, et al., 2017; Hill & Hemmings, 2015; Hill, Matthews & Senior, 2016) which enabled a thorough account of the participant's experiences to be gained. Such experience across the research team also facilitated reflexivity, whereby key decisions and actions taken through the data collection/analysis process were challenged through both self-reflection and critical team discussions (Sparkes & Smith, 2014).

Results

The results of the study will be presented in two sections. The first reviews the short-term impact of choking in sport, and the second identifies the longer-term consequences. Within each

section, the secondary aim of the study will also be addressed by providing a comparative overview of the consequences for singular and multiple choking events.

Short-Term Consequences of Choking in Sport

In the short-term, the choking experience was perceived to have a negative impact on all of the participants' performance and psychological state.

Performance collapse and the inability to retrieve performance standards. In all cases, an immediate consequence of a choking event was a, "catastrophic failure" and "collapse" in performance standards. The choking episodes occurred at a critical point during the game, where perceived pressure was very high and optimal performance was desired (i.e., the first tee, a difficult hole/shot, and at the end of the game). If the choke occurred during the game (rather than the end), all participants indicated they were unable to retrieve standards back to normal/optimal levels for the remainder of the game. As discussed by one of the participants, "it [the choke] affected me for the rest of the round…I was better…but didn't have any pars and missed a few putts afterwards." Another described that, I couldn't hit a thing properly after [the choke], and just carried on messing up the rest of the round." Such inability to recover normal performance standards appeared to be due to limited attentional and emotional control, and lowered self-confidence.

Limited attentional-control. All participants indicated that post-choke, they remained distracted by the outcome or cause of the choking episode and thereby failed to focus appropriately on the next shot(s). When asked to describe what she was was focusing on post-choke, one of the participants reported: "All I was thinking was the fact that I just lost my opportunity to win because of it [the choke]." Another golfer explained, "I continued to think about it [the choke]…I wasn't thinking about my next shot or the pre-shot routine…I played rubbish all the way in." Similarly, it was noted that, "…rather than say 'never mind' and move on, I tried to work out what I had done wrong. This meant the rest of the round was no good, as I was thinking about how to put things right." For a small number of participants (four), an additional source of distraction was self-presentation concerns, as they were focusing on the negative image they had just presented during

the choking event: "My focus was on him (playing partner). What he was thinking about me, rather than the next shot…I was so embarrassed that I just couldn't get my game back."

Limited emotional-control. All participants experienced very high levels of negative affect (i.e., anger) post-choke, for the episode had prevented them attaining their achievement and self-presentational goals. Critically, such anger was perceived as a key reason for failing to retrieve normal/optimal performance standards for the remainder of the game. When asked to expand on why he felt such anger after the choking event, one participant explained:

> What I had just done was shocking. I got really angry because I felt like an idiot, and my best chance of winning the championship trophy had just gone. That meant, I struggled to pull myself together and I messed up the rest of the round.

Such anger appeared to prevent performance recovery by encouraging, or at least sustaining, the participants' distraction and reducing their attentional control:

> For me, it's like a mist, an absolute rage mist…and I'm just thinking 'why did I just do that, why, why, why?' I'm trying to block the negatives, trying to think about my processes, but because I'm so angry, I'm always coming back to think about the what if's and the why's, instead of just thinking about and playing the next shot.

Lowered self-confidence. Several participants were asked to reflect on their attempts to regain performance standards post-choke, and it was indicated that a loss of self-confidence was considered to inhibit their ability to (re-)focus appropriately and in turn, recover performance. As an example, one of the golfers suggested:

> It's about parking it [the choke] and then hitting the best shot you can with the next one. It's about compressing the negative thoughts and trying to be positive. But because the choke strips you of your confidence, the negative thoughts come in. In that instance, I can't say, 'oh well, never mind', and move on…The choke gets me. Destroys my whole game.

Dissipation of negative affect. Four of the eleven participants acknowledged that any negative affect post-choke, normally lasted for a number of days. One of those participants explained that

she would, "get very down and frustrated for a couple of days…a little bit moody…I don't sleep well after [the choke] because of how awful it was." Concerningly, another concluded that after the choking episode, he often felt "slightly depressed during the following week." When asked to reflect on this response, it appeared that in each of the four cases, the negative affect was sustained through rumination and self-criticism: "I kept thinking, 'you prat why did you do that?'… All the things I've practiced…all the things I've been taught, and I couldn't do it when it mattered'. I was furious with myself for at least a couple of days." Similarly:

> During the night I don't sleep. It [the choke] plays on my mind. I go back over every shot...I never go over the good shots. Those bad shots just go round and round in my head…I go through the what if's and the if only's …I just think how stupid I was. And I will get angry all over again.

In contrast, the remaining (seven) participants identified their negative affect dissipated soon after the game for they re-directed their focus towards commitments outside golf, maintained perspective on the importance of golf, and/or used humour when discussing their choking experience. As one of the participants summarized: "It's just a game. I go home to my wife and family…have a laugh with the guys over my abysmal game. It's not like I'm on the [professional] tour. So, I'm angry, but it soon goes."

Singular versus multiple choking episodes. There were similarities in the short-term consequences of choking for all participants, regardless of whether they had experienced singular or multiple choking events (i.e., performance collapse and inability to recover normal/optimal performance due to limited attention/emotional control). It was noted however, that several (though not all) of those who suffered multiple choking events reported the sustained negative affect (through self-criticism and rumination) over a number of days. Critically, however, a striking theme was found in the data of four participants who had experienced choking far more frequently, and over a longer period of time (>4years) than the other participants (i.e., multiple *and* chronic choking). In these cases, they reported that through their choking experiences, and over time, they

had developed a lack of perceived control and sense of helplessness immediately following the choke. Those participants were encouraged to describe this psychological state in further detail, which led to the following account from one of the golfers:

> I got to the point where I would think really negatively [after the choke], I'd be embarrassed. Then I would think 'here we go again....' When the choke happens, I just know there is nothing I can do…It's out of my hands. I just have to put up with it, and whatever happens next.

Choking versus minor performance errors. When asked to consider how the short-term consequences of a choke compared to other performance failures, errors, or mistakes, it was interesting to note that each participant perceived their affect, cognitions and behavioral responses were far more negative post-choke. One participant summarized this finding:

> I get frustrated any time I've hit a bad shot or had a bad game. But it doesn't compare to how I feel after a choke. As the choke is a total capitulation under pressure, it's an embarrassing and brutal experience, where you feel inept…worthless... So, after a choke, I fall apart. But just a crap shot?..or a game when you're not playing that well? I'll feel annoyed and a bit flat. But you can come back from it. It pails into significance when you compare that to the aftermath of choking - which is carnage.

The Long-Term Consequences of Choking in Sport

Seven participants considered the long-term impact of their choking episode(s) had been constructive, while the remaining four golfers reported destructive consequences in the longer-term. Of importance, the group of seven participants (i.e., constructive consequences) contained golfers who had choked on singular and multiple occasions, while those who identified destructive consequences had all experienced multiple choking episodes. The participant's ability (i.e., handicap) did not appear to influence whether the consequences of choking were positive or negative.

Constructive Experience. The seven participants who perceived their choking experience(s) had become beneficial, identified the event(s) had enabled them to improve their ability to perform

under pressure. One participant concluded, “I feel I am now far better under pressure. It [choking] has made me stronger mentally. I now don’t see it happening again to be honest.” When asked to summarize the consequences of his choking experience, another participant suggested, “Overall, it [choking] has been a good experience, as by going through it, I now know how to stop it occurring.” The seven participants considered the choking experience had in the long-term, indirectly increased their self-confidence and performance expectations when exposed to pressure. That is, by learning from the choking episode, their self-confidence improved: “I feel far more able to cope with pressure as I now know what to do, and what not to do.” It should be noted however, that the process of reaching the point at which the choke was perceived as a positive experience, was challenging and lengthy for a small number of participants who had choked on multiple occasions: “…I did get to the point of thinking what’s the point, but then I thought, ‘no, I’m not going to give in to it [choking]’. I was going to find a way to fight through. And I did.” While another proposed:

> It has taken me a couple of years and many chokes to work out how to manage myself better under pressure. It was tough going for a time, and I did think about jacking it in [quitting]. But I got there in the end. And I am now a much much better golfer for it.

Constructive reflection. The seven participants in question reflected on the choking experience in a constructive manner. In addition, their reflection was often delayed until a later time (a day or two after the choke), when they had the opportunity to seek additional guidance (e.g., receive instruction from a golf professional). As stated by one of the participants: “I think about what I did straight after [the game] but would wait until I got to the range the next day…work through it properly then…chat with the pro[fessional]…see what he has to say…No point worrying about it until then.” This approach led to the adoption of behaviours that improved their future pressurized performance. For one participant, this process resulted in the recognition that he needed to increase off-course effort and preparation: “It [the choke] told me that I needed to work harder. Practice, practice, and practice more regularly.” While, for the other six participants, their constructive

reflection encouraged them to access advice and learn appropriate coping strategies. In terms of gaining advice, most turned to a golf professional:

> After it [the choke] happened, I knew I needed professional help. So, I went to see this pro who had a bit of sport psychology training…With a bit of help from him, I understood what had gone wrong when it happened, and what I can do to prevent it happening again.

The adopted coping strategies were explored in detail with the relevant participants, revealing they consisted of process goals, pre-shot routines, simulated training and relaxation. All six of the participants learnt the importance of process goals when attempting to prevent their choking episodes:

> I used to think, right I want a 75 today, or I want to hit this a few feet to the right of the flag. But that didn't help me. I learnt to concentrate on the process…That is how I combat the nerves. Rather than think of the target, I think about what I should be doing to send the ball away from the club…I can now play well under pressure doing that.

Additionally, a pre-shot routine was adopted by five of the six participants to enhance their focus when playing under pressure. For example, one stated that:

> I was told that a pre-shot routine would help me [avoid choking]. So, my pre-shot routine is now line up, pick a spot…take a swing. I think 'turn'. That's the last thought I have before I hit the ball…I don't think of anything else. It works a treat, as it keeps the negatives out.

Similarly, simulated practice was identified as an important coping strategy by a smaller number of the participants (three), as their reflection had led to the realization that to manage the psychological demands of competition, it was necessary to practice under pressure, "Now when I practice, I pretend I am on the first [tee]…and replicate what I'm doing on the course rather than just practice a club…I then feel more confident when I am place under pressure for real." Finally, one of the golfers identified the need for him to learn relaxation (deep breathing) techniques to lower the anxiety which had led to his choking event(s), "I'd heard it keeps you calm, so gave it a go. I found

I could focus on that [breathing] and it stopped my negative thoughts. It also helped me relax my muscles, so I could complete my turn [swing] better."

Improved management of choking events. Interestingly, of the seven participants who identified choking as having constructive consequences, those who were multiple chokers suggested the experience had taught them over time to respond more "effectively" and "appropriately" to their future choking episodes. Thus, while all participants were unable to retrieve their performance standards to normal/optimal levels in the short-term after choking, the golfers in question learnt to recover their performance standards partially (relative to the choke), so that the choking episode was short-lived and discrete (one shot, or one/two holes). When this suggestion was explored in more detail, it was explained by one of the participants that:

> I now rarely choke, but when I did recently, the old me would have given up. I don't do that anymore. I have learnt that you just keep going to keep the score as low as possible. That means I choke on the one shot, or hole. But I'll get myself together for the rest of the round, so it's still bad, but not a total embarrassment.

Likewise, another noted that:

> While choking is frustrating, I think 'calm', 'slow down', and 'hit the best shot you can with the next club'. I might still make a triple [3 over par], but this time last year, that would be a 10… What I have learnt from this devastating thing, is that I should never give up and I should strive to be better…That means, instead of shooting a 110, it will be a 90. So that is still shit, but nowhere near as embarrassing as it would have been.

Positive affect. Finally, the seven participants who considered that choking was a constructive experience in the long-term, reported increasing levels of positive affect (i.e., enjoyment) when performing under pressure. As summarized by one participant, "Going into the game, I now feel that it's going to be a good result, which is a huge change for me in the last few months…So I am actually enjoying my golf more." Another indicated, "I have a completely different mind-set where

I don't focus on the negatives and just focus on the next shot...That has made me so much happier on the course than before".

Destructive Experience. In contrast, the remaining four participants in the study perceived that choking under pressure had long-term destructive consequences for them and their future performances under pressure. Of importance, the same four participants had reacted (in the short-term) to their choking events with rumination, self-criticism, and sustained negative affect, and were the chronic-multiple chokers within the sample (choked frequently over >4 years). In two of these cases, they revealed that they had (temporarily) withdrawn from their sport, while the other two participants had chosen to play at a lower (less pressurized) level. During discussions relating to the destructive impact of choking, one of the golfers recalled:

> It got to the point when all I could see in my mind was the ball going out of bounds. I would end up taking a pitching wedge instead of a driver!! That's not golf, it's not fun…I only played golf socially for a while, and even now, I can't play with people who are being serious.

Another of those participants added, "For this one game, I ended up playing the entire 18th with my putter. There and then, I stopped playing for about 2 years…I was sad, but strangely relieved it was over." Concerningly, another of the participants admitted that the chronic and multiple choking events had led to self-destructive behavior off the golf course:

> It came to a head this one team championship…Loads of people were watching and as usual the moment got the better of me. I was so nervous that I couldn't control my body…I was no longer capable of hitting a proper shot…Next thing I know, we are shaking hands and my choke has just got me and the team knocked out of an event we should have won…It's hard to describe how that type of collapse makes you feel. Especially when you keep doing it over and over. I felt empty, angry...a failure…I walked in without saying a word to anyone. I sat in the club house and drank [alcohol]. Then I got in the car and I drove home. I was massively over the [legal alcohol] limit. When I woke up the next day, I knew I had to quit competitive golf…That behavior is inexcusable…I doubt anyone would understand why I did it, which is

why this is first time I've ever admitted it. It's just an indication of how choking made me feel, and I needed to blank it out. Choking really damaged my self-esteem. Does that make sense? No, probably not. I had this image of myself being a successful golfer, but the truth was, I was a pathetic when it mattered. Anyway, choking got me to the point where I no longer had any regard for myself.

Self-critical reflection. In the long-term, the four participants reflected negatively and self-critically on their choking episode(s). Thus, their self-confidence lowered after each choking event, and their susceptibility to its re-occurrence increased: "It's a self-perpetuating cycle isn't is? I choke, I beat myself up about it. Then I get so worried I would do it again, that I do!" Such a self-critical reflective process also appeared to diminish their perceived control over future pressurized performance:

I think 'why would I ever handle that level of anxiety and play well? The anxiety is totally overwhelming. I hope to come through it. But I can't, and I never do. So why would that change? I'm going to choke when it matters. That's that. End of.

Another of the participants stated, "I just got to the point where I thought that every time I felt pressure I would choke. And there was nothing I could do about it."

Interestingly, through their process of reflection, three of the four participants did recognize their need to learn coping strategies to prevent their choking events. However, those strategies were quickly dismissed as ineffective. The participants in question were asked to consider why they felt the coping strategies were unhelpful, with one of the golfers reporting:

I used this pre-shot routine. I'd walk behind the ball, line the shot up, then picture the shot. But, as soon as my club was behind the ball I felt nervous. The previous choke would flash across my mind…I would try and cancel it out with thoughts of a positive shot. But I would tighten up and the backswing would be forced. On my follow through, the club face would come through massively open and it would be a huge slice!! It [pre-shot routine] doesn't work.

Another recalled:

I realize that I had to try and do things differently, and I even listened to music before the first tee. But I just became more and more afraid…Would I shove it into the car park off the first? I know it wasn't helpful. And I would try and talk myself through it, but there was nothing I could do to prevent those thoughts coming in.

***Sustained catastrophic performance*.** The same four participants in question acknowledged their response to choking events had become increasingly negative. As a result, once the choke had begun, they felt unable to prevent the performance remaining catastrophically low until the game ended. One of the participants explained, "Every time I was under pressure, or hit a bad shot, I thought, 'it's [choking] happening again'. I found it harder and harder to compose myself, so didn't bother. That meant I played shit through to the clubhouse" Likewise, another stated, "I'd miss a putt, hit a shot out of bounds, and rather than dig deep, I'd think that I'd rather be somewhere else, as there is nothing I could do. Couldn't hit a thing after that, as I was just thinking about getting back to the clubhouse."

Negative affect. Finally, when discussing the long-term impact of choking, the four participants who experienced destructive consequences, also reported low levels of enjoyment. This appeared to encourage them to withdraw from their sport (albeit temporarily) and avoid pressurized situations: "I began to seriously dislike golf, and I hated playing in anything important…No enjoyment in it at all. I got to the point, when I didn't see how this would change, so there was no point carrying on playing competitively."

Singular versus multiple choking episodes. Those golfers who experienced a singular choking episode all reported the consequences had been constructive in the long-term. Moreover, a small number of participants were able to consider their multiple choking events had, over time, led to positive outcomes. However, as previously indicated, the four participants who identified destructive consequences, had experienced multiple and chronic choking episodes (i.e., frequently, over <4years), and noted that such experiences had lowered their self-confidence and perceived control, and seemingly encouraged learned helplessness:

> When you keep doing it [choking] you end up thinking that you just can't handle the pressure. You also get told that by people around you too. So, it becomes the truth. I fail under pressure, and I can't do a thing about it. Before the big games I would hope to come through, but when the moment comes, it's the same old story. I'd get anxious, I wouldn't be able to swing, and I would hit a shit shot. Then, because I'm so embarrassed and fucked off, there would be no way back, and my game would be shit until the end.

Choking versus minor performance errors. As with the short-term consequences, the participants were encouraged to reflect on how the long-term consequences of choking in sport compared to other performance errors/mistakes they had made under pressure. As indicated by one of the participants who experienced positive consequences from choking, "the choke is the most powerful learning experience I have ever had in golf. It focused the mind and catapulted by golf forward leaps and bounds." Equally, a participant who experienced the destructive consequences of choking, provided the following detailed summary:

> You are continually learning through your golfing experiences, whether they are good or bad. But I don't feel I have had any significant long-term impact from a bad shot or bad round. I suppose there may have been an accumulative impact that I am not aware of. But at the end of the day, it is the choke that has defined me and my golfing achievements. Choking is the reason I didn't achieve my goals; the reason I became so anxious on the course that I could barely hold the club; the reason I gave up playing the game; the reason I've let my parents and others down; the reason I don't have any confidence…

Discussion

The study is the first to examine directly the short- and long-term consequences of singular and multiple choking episodes for the performer and their pressurized performances. As with previous qualitative research in this area (see Hill et al., 2009; Hill et al., 2010a; Hill & Shaw, 2013), the current study indicates that athletes perceive choking in sport to be a dramatic and catastrophic collapse in performance standards, that occurs at a critical moment, when pressure is very high.

Therefore, several of the choking episodes recalled by the participants occurred at the final stages of a game. However, when the choking was experienced during the round (e.g., first tee, and difficult hole/shot), a key short-term consequence reported by all participants was the inability to retrieve performance standards to normal or optimal levels for the remainder of that game. The failure to recover performance standards after choking was first proposed by Hill et al. (2009), who suggested it was due to the athlete lacking mental toughness. The current study extends this work by identifying that in the short-term, the golfers may have failed to retrieve their 'normal' performance levels due to the inability to regain optimal attentional and emotional control. Furthermore, the reported extremely high levels of negative affect (i.e., anger) alongside the low levels of self-confidence, appeared to play a key role in this inability to recover self-regulatory control and performance.

As explained though the cognitive motivational relational theory (CMR; Lazarus, 1991, 2000), a choking event is likely to elicit intense anger for it prevents the athlete from achieving their goal, threatens their ego identity, and may be perceived as a 'demeaning offence' in which self-blame is attached. While anger holds the potential to have a facilitative or debilitative impact on sporting performance, this is determined by how the athlete appraises the emotion. Specifically, high levels of self-confidence can encourage a positive appraisal of anger, which often energizes and motivates the individual to act (Ruiz & Hanin, 2011; Vast, Young, & Thomas, 2010). However, as the participants reported lowered levels of self-confidence immediately after choking, this is likely to have promoted a negative appraisal of their anger, which elicits distraction and reduced levels of attentional control (see Ruiz & Hanin, 2011; McCarthy, Allen, & Jones, 2012; Robazza & Bortoli, 2007). Hence, with such intense levels of anger and low levels of self-confidence identified post-choke, it is understandable that the golfer's attentional and emotional control were compromised in the short-term, thereby limiting their ability to retrieve performance to normal/optimal standards.

Nevertheless, it is important to note, that while performance levels were not retrieved fully after choking (in the short-term), most participants indicated they had learnt how to recover and

improve standards partially, relative to the choke. Accordingly, many choking events recalled by the golfers within the current study were discrete and short-lived (i.e., one shot/a few holes). Conversely, four participants suggested that once they had choked, their performance standards remained catastrophically low until the game finished. Such performance outcomes may be explained through a value-based process of self-control (see Berkman, Hutcherson, Livingston, Kahn, & Inzlicht, 2017; Inzlicht & Schmeichel, 2012) which specifies that individuals will only exert effort to regain self-regulatory control if they believe it will make a difference in the pursuit of their goal. Once regulatory efforts are considered futile, the individual will shift their motivation and attention away from that task, and towards another that is less demanding, or where reward/gratification is likely to be received. In the case of the four participants who experienced sustained poor performance standards post-choke, they did identify a lack of perceived control/learned helplessness while choking, and therefore demonstrated a belief that self-regulatory efforts would be ineffectual in the pursuit of any performance goal. Indeed, it became evident within their narratives that they withdrew effort while choking, and directed their motivation/attention elsewhere (i.e., off the course). Hence, their performance standards continued to be extremely low.

In contrast, the remaining participants reported that once their choke had begun, and they had lost the opportunity to achieve their primary goal (winning and lowering their handicap etc.,), they still considered a secondary aim (i.e., keep the score as low as possible and minimize embarrassment) achievable and of value. Therefore, unlike their counterparts, they continued to exert self-regulatory effort, and directed their motivation/attention towards attaining this new goal. In the post-choke context (i.e., high levels of negative affect, lowered self-confidence, and losing the opportunity to achieve their primary goal), it can be inferred that such effort was insufficient to recover their attentional/emotional control and performance to normal/optimal levels, though sufficient to retrieve standards relative to the choke.

Critically, as choking is currently defined as a performance failure when the athlete is "striving" for success (see Baumeister & Showers, 1986), it is only the participants' initial catastrophic performance collapse under pressure that can be labeled as the choke. When the golfers re-directed their motivation/attention away from the task while choking, the equally poor performance that followed can only be conceptualized as the *consequence* of choking, for they are no longer "striving". However, there is mounting evidence to suggest that avoidance coping responses may be associated with the choking process itself (e.g., Hill et al., 2010a; Hill & Hemmings, 2015; Jordet & Hartman, 2008), and thus it is of benefit for researchers to consider examining the choking phenomenon through a value-based framework, and ascertain whether the avoidance behaviors, and associated re-direction of attentional/motivation away from the task, does form part of the choking mechanism. If so, it may be necessary to re-visit current definitions of choking.

In the longer-term, most of the golfers within the current study perceived the consequences of choking were constructive, demonstrating adversity-related growth. An increasing number of studies have identified the critical role that adversity can play in enabling talent development and facilitating sporting success (e.g., Howells & Fletcher, 2015; Sarkar, Fletcher, & Brown, 2015), with much of this work based on the affective-cognitive processing model of post-traumatic growth (ACPM; Joseph, Murphy, & Regel, 2012). The model proposes that individuals manage their experiences of adversity through a cycle of appraisal, emotions, and coping. Accordingly, and as found within the current study, adversarial-growth occurs when the adverse event is appraised positively, encouraging the athlete to learn from, and find meaning in that experience. In turn, the athlete will modify their pre-adversity assumptions, develop a new philosophy to their sporting life, enhance their sense of mastery/perceived control over future challenges, and improve their ability to manage emotions effectively (Galli & Reed, 2012; Sarkar, et al., 2015).

In contrast, the four golfers who experienced destructive consequences of choking in the longer-term, failed to demonstrate any adversarial growth, for they engaged with brooding

rumination shortly after choking (i.e., repeatedly revisiting the event and associated negative thoughts/emotions in their minds; Schoofs, Herman, & Raes, 2010) and appraised the adverse event negatively/self-critically. This response lowered the golfers' self-confidence and perceived control to the extent that they considered the choke was an "inevitable" outcome under pressure. Hence, they demonstrated less desire to learn why they choked, or how to manage future pressurized performance effectively, and did not persist with appropriate coping strategies that held the potential to impact their performance positively. As found elsewhere in the extant literature (Howells & Fletcher, 2015), and explained through the ACPM (Joseph et al., 2012), such negative appraisal of adversarial events was likely to have maintained those golfers' pre-adversity assumptions, leading to a failure to resolve the issues that caused choking, and encourage an increased susceptibility to further adversity under pressure.

It remains unclear however, why most participants reflected constructively on their choking event(s), while the four golfers reflected destructively. Those who demonstrated adversarial growth did identify they accessed support (i.e., golf professional) to understand their choking episode(s), which informed their delayed-constructive reflection process to some extent. However, it also appears that the golfers 'naturally' reflected either positively or negatively on their choking experience. It is possible therefore, that the four golfers may have held 'cognitive distortions' (Beck, Rush, Shaw, & Emery, 1979) whereby their automatic negative response to, and destructive reflection of the choking events, were consistent with their unhelpful core beliefs about themselves, others, and the world. Indeed, those four golfers did demonstrate a number of common negative thinking patterns associated with cognitive distortion including: catastrophizing (i.e., making negative predictions about the future, based on little or no evidence); labelling (i.e., classifying oneself negatively after the occurrence of an adverse event); mental filtering (i.e., focusing on negative information and devaluing positive information); and minimizing or disqualifying the positive (i.e., ignoring or dismissing positive things that have happened). Thus, while it is important to encourage athletes to reflect constructively on their challenging experiences in order to benefit

from adversarial growth, it is necessary to firstly examine and address any underlying cognitive distortions the athlete may hold, which may prompt destructive reflection.

The study also sought to examine whether the consequences of singular and multiple choking events differed. The short-term consequences were similar (performance collapse, inability to retrieve performance fully, poor attentional/emotional control, lowered self-confidence, and intense negative affect), although the golfers who experienced multiple choking events tended to experience sustained negative affect by engaging with brooding rumination. Then, in the longer term, the three participants who experienced a singular choking episode, reported the episode had been constructive. This was also the case for a small number of participants who despite choking on multiple occasions, had eventually been able to use those events to improve their future pressurized performances. However, for four of the golfers, the consequences of multiple choking episodes were highly destructive, including withdrawing from the sport, and self-destructive/unlawful behavior. Moreover, when they choked, the catastrophically poor level of performance was sustained (i.e., maintained until the end of the game) rather than short-lived and discrete (i.e., partial performance recovery relative to the choke). Hence, the current study indicates that both singular and multiple choking events can have beneficial consequences in the long-term. However, it is necessary for researchers to examine why certain golfers were able to persist in their efforts to reflect constructively on their multiple choking events despite the numerous failures and set-backs. Such resilience was not conveyed by the four golfers who became multiple-chronic chokers (over a >4 year period), and endured the associated destructive consequences.

Of importance, this study had offered support for the suggestion by Hill et al. (2011) that choking holds the potential to lower the well-being of athletes. As with the findings of Hill et al. there is an indication within the current study that athletic identity may play a role in this outcome. It has been established that elite athletes with a strong, unidimensional athletic identity can experience a range of negative consequences, including self-destructive behaviors, if they can no longer maintain that identity (e.g., Park, Lavallee, & Tod, 2013; Warriner & Lavallee, 2008).

Hence, multiple and chronic choking episodes may have threatened the golfers' identity as a (successful) athlete and encouraged negative affect, lowered self-confidence, and the reported self-destructive behaviors.

Finally, the findings of the study provide an initial indication that the consequences of choking *may* differ from those experienced as a result of other performance mistakes. There is an ongoing debate within contemporary literature regarding the identification of a choke, and whether it can be distinguished objectively from other errors (e.g., minor under-performances and mistakes; see Mesagno & Hill, 2013; Jackson, 2013). While there is not the scope within the current piece to revisit this debate, it must be emphasized that the study has presented the athletes' perceptions, in which they recognize the consequences of choking differ to those they have experienced after other/minor performance errors. Indeed, such detailed narrative could be used to inform further discussions/research regarding the generation of objective criteria that may be used to classify the choke. Consequently, choking was considered to provide substantial positive consequences, that differed other performance failures, by providing a powerful learning experience and encouraging adversity-related growth. Whereas, the choke also held the potential to impact the golfers far more destructively than minor errors, under-performances and mistakes, as it could lead to withdrawal from the sport, a failure to reach sporting potential, and even self-destructive behavior.

Applied Implications

It is evident that athletes who perform under pressure should be exposed to a range of coping strategies that can prevent the occurrence of choking. Similarly to the empirically-informed choking intervention evaluated by Hill et al. (2011), and the theory-matched strategies advocated by Gropel and Mesagno (2017), the current study has found that process goals, pre-shot routines, simulated training and relaxation may alleviate choking. However, it is also necessary to ensure the athlete commits to rehearsing the coping strategies, thereby embedding them into their performance for optimal impact on performance (Holliday, Burton, Sun, Hammermeister, Naylor, & Frigang, 2008). It has been established that to increase athletes' adherence to mental skills training, the programme

needs to have clear goals, be individualized, and devised with the athlete (Shiang & Mitzel, 2010). Additionally, the golfers within the study who failed to commit to the coping strategies, appeared to lack belief in their efficacy. Thus, it is also necessary to consider mechanisms through which the athlete remains motivated to utilize the coping strategies, even if there are no immediate performance improvements. This may include providing reassurance, the use of vicarious experiences (cf. Bandura, 1982), and developing trust between the athlete and sport psychology practitioner (Andersen, Mahoney, Miles, & Robinson, 2002).

Nevertheless, if the choking experience does occur, it is important that athletes are encouraged to prevent brooding rumination for it holds the potential to sustain negative affect, lower confidence and diminish perceived control. Thought stopping and thought-switching have been advocated as an approach to prevent anger rumination (Maxwell, 2004), with mindfulness therapy also of use for it can decrease the resources available for ruminative processing (Hawley et al., 2014). Thereafter, and critically, it is essential that athletes are supported to reflect on their choking experience in a constructive manner, for this may determine the long-term consequences of the event. As found in the current study, certain athletes may benefit from additional support when making sense of their choking experience, and therefore should be encouraged to engage in delayed-reflection with another individual (e.g., coach/sport psychologist) who can direct learning, and encourage constructive reflection (Knowles, Gilbourne, Tomlinson, & Anderson, 2007). However, athletes who reflect in a highly self-critical and destructive manner, and thereby demonstrate cognitive distortions, should benefit from cognitive restructuring. Specifically, sports psychologists can introduce cognitive behavior therapy that support the athletes to identify and label their cognitive distortions, and then work to actively challenge, address, and replace them (e.g., Hope, Burns, Hayes, Herbert, & Warner, 2010). The athlete would then be better-placed to reflect on the choking experience constructively and reap the long-term adversarial growth.

With a lack of perceived control/learned helplessness appearing to encourage multiple and chronic choking episodes, it would also be advantageous for practitioners to introduce attribution

retraining to those athletes vulnerable to choking. The golfers within the current study who presented learned helplessness and became chronic-multiple chokers, considered their choking episodes were caused by stable attributions. As a result, they felt unable to prevent the choke, or recover their performance once it had occurred. By supporting athletes to challenge and replace such dysfunctional attributions with those that reinforce personal control over their performance, the negative long-term consequences of their choking episodes can be alleviated (e.g., Ball, 2013; Rees, Ingledew, & Hardy, 2005)

Finally, the study has identified the importance of resilience in alleviating the likelihood of choking and being able to overcome and learn from (multiple) choking events. Therefore, athletes who perform under pressure, and have choked on several occasions, may benefit from mental-fortitude training (Fletcher & Sarkar, 2016). This includes the development of *personal qualities* (i.e., belief, self-awareness, functional thoughts and images, attentional control, regulation of arousal levels, effective goal setting, and planning for expected/unexpected events), exposure to a *facilitative environment* (e.g., a supportive climate, constructive feedback, ownership of goals, encouraged to seek challenges, and success recognized/celebrated), and the development of a *challenge mind-set.* The latter is considered pivotal to effective resilience training program, for it enhances the athletes' self-awareness of their negative perceptions towards pressure, and reinforces the fact they have a choice in how to response to pressure and performance set-backs.

Strengths and Limitations of the Study

The study is the first to explore directly the perceived short- and long-term consequences of singular and multiple choking episodes. However, the findings should be reviewed within the context of the sample consisting of varying skill-levels (i.e., 6 vs 18 handicap), and the participants playing at an intermediate/semi-elite level. Further research is required to consider whether elite performers are more likely to suffer negative consequences of choking due to there being more 'at stake', or whether their developed coping responses may increase the likelihood of constructive consequences from choking. Moreover, while the current study examined an experience self-

labelled by the athlete as choking, there is the recognition that participants may be reporting on somewhat different events. The golfers did suggest their choking episodes reflected that of the definition by Mesagno and Hill, (2013), which enabled broad comparison, though the study did not gain (or seek) a comparison of objectively identical events.

The study also provides the novel finding that the reflection process is likely to determine the long-term consequences of choking in sport. Specifically, constructive or destructive reflection appears to influence the athlete's level of self-confidence and perceived control, which in turn, can affect their future pressurized performances. However, as such conclusions have been reached through the golfers' perceptions, and the interpretation of the participants' narratives, it is accepted that the proposed relationship between choking, reflection, the identified psychological constructs, and future performance outcomes, should be evaluated and tested through quantitative means.

The potential value of exploring choking in sport through the lens of a value-based process has emerged from the current study. With contemporary researchers questioning the traditional theories and definitions of choking in sport, and demanding the need for conceptual development (see Christensen, Sutton, & Mcllwain, 2016; Mesagno & Hill, 2013), the value-based process of self-control (see Berkman et al., 2017) provides a theoretically appealing option. Hence, additional research is warranted to confirm, extend or refute this proposal. Finally, the study has identified that a choking episode may be *singular*, *multiple* and/or *chronic*. Moroever, each appear to have been promoted via differing processes, that in turn, lead to varying consequences. As such, it would be beneficial for researchers to consider examining the differing choking episodes as separate/distinct entities.

Summary

The study has identified that in the short-term, the consequences of choking are negative, whereas in the longer term, they can be highly constructive by encouraging adversity-related growth. However, for some, the choking experience can have destructive long-term consequences, leading to a loss of enjoyment, withdrawal from the sport, and lowered well-being. It would appear

that the differential long-term consequences may be determined by the reflection process, which influences the key psychological constructs of self-confidence and perceived control.

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