

PHENOMENOLOGICAL UNDERSTANDING OF ELITE ATHLETES' EXPERIENCES
WITH MENTAL BLOCKS IN CLOSED-SKILLED SPORTS

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ABSTRACT

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With the sports world placing high demands on elite athletes to accomplish functional movements, athletes are under a great amount of pressure (Gray, 2004). This imposes stress onto athletes to obtain, maintain, and successfully perform skills and abilities within practice and performance, potentially causing the athlete to overthink (Christensen, Sutton, & McIlwain, 2015). Overthinking can cause cognitive impairment when attempting the skill, potentially leading to psychological impairments, such as mental blocks (DeCaro, Thomas, Albert, & Beilock, 2011). Due to literature proposing conflicting arguments as to why mental blocks occur, this study aimed to further understand the underpinnings of mental blocks using a hermeneutic phenomenological approach. Additionally, this study observed mental block development through the lens of self-efficacy theory due to previous research proposing the vital role it plays with mental blocks (Day et al., 2006; Lawrence 2016; Maarenen et al., 2020). Six elite adult athletes who participated in close-skilled sports and were either currently experiencing a mental block for at least one month or had experienced one within the past two years participated in this study. Semi-structured interviews were conducted, with questions like, "Could you describe when you first realized that there was a problem with the skill?" and "What do you think

changed before your mental block?” Themes involved pressures to perform and performance anxiety, with subthemes of participants indicating that social support, fear of injury, negative self-talk, and pre-performance routines having an impact on their mental block. Participants reported having lower self-efficacy levels mainly due to the pressures to perform and performance anxiety. Future directions should dive deeper into self-efficacy sources to better understand effective interventions.

Keywords: performance blocks, self-paced tasks, pressures to perform, anxiety, self-efficacy

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CHAPTER I

INTRODUCTION

Mental blocks, defined as the inability to perform a physical skill that was once automatic (Bennett et al., 2015), have been an ongoing occurrence in sports, specifically to closed-skilled sports, yet coaches and athletes claim that literature has not contributed to the reasoning behind the development of mental blocks and possible interventions (Lawrence, 2016). Related terminology, like yips, choking, and slumping has been utilized in sports that have similar yet distinct characteristics to mental blocks. Two differences include the fact that mental blocks do not happen to every athlete and athletes that are experiencing the mental block alters their cognitions, causing them to not be able to perform the skill for a duration of time (Feigley, 2009).

There are discrepancies in literature over mental blocks regarding why they occur. Day et al. (2006) found that national level trampolinists were experiencing pressures to perform, causing them to lose the ability to attempt and execute skills. Durate et al. (2015) reported similar findings with artistic gymnasts, along with reporting a recurring theme of fear among the gymnasts. These fears included the fear of injury, fear of error, and fear of their coach. Fear of injury was consistent in Collins et al. (1999) who conducted a case study on a javelin thrower. However, it was inconsistent with the findings of Day et al. when interviews reported that were not afraid of getting hurt, instead, they were just afraid of the movement itself (p. 161). Fear of error was consistent with the findings of Collins et al. (1999) since the javelin thrower was fine tuning his skills and Day et al. with reporting performance anxiety.

Most mental block researchers have suggested that mental blocks can result from performance pressures (Day et al., 2006), fear (Collins et al., 1999; Duarte et al., 2015); or

refinement of movements (Day et al., 2006). All of these components can contribute to one's negative self-belief (Lawrence, 2016). Therefore, Bandura's self-efficacy theory was used as a theoretical framework to explain the negative self-belief that has been reported within literature (Day et al., 2006; Duarte et al., 2015; Feigley, 2009; Lawrence, 2016).

Researchers have suggested that further research is needed to better understand the underpinnings of mental blocks. While some suggest that fear attributes to mental blocks (Chase et al., 2005; Collins et al., 1999; Duarte et al., 2015), others suggest that fear does not play a role in mental blocks (Day et al., 2006). Some researchers have suggested that performance pressures attribute to mental blocks (Day et al., 2006; Pattinson & Cotterill, 2017). Some suggest that it is negative self-efficacy causing athletes to experience mental blocks (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000). Fewer indicate that refining movements contribute to the onset of a mental block (Collins et al., 1999). Consequently, this study will continue exploring the development of mental blocks to enhance the knowledge and understanding of them, moving towards finding interventions to assist athletes, coaches, and sport psychologists.

Purpose of Study

Considering that there are many discrepancies in the literature involving mental block development, the purpose of this study was to replicate the path taken by other researchers, which utilized hermeneutic phenomenology to explore athletes' perceptions of their mental block. Minimal research has been conducted on athletes who are in the collegiate setting or elite level setting, with Maaranen et al. (2017) and Pattinson and Cotterill (2017) being the only studies to examine athletes who were older than 18. Therefore, this study focused on adult participants, improving the knowledge of the underpinnings of mental blocks for this particular age level. Additionally, since previous research proposes that Bandura's (1977) self-efficacy

theory and mental blocks are connected (Day et al., 2006; Lawrence, 2016), it was further observed in the current study. Finally, mental block research prior to this study focused on gymnastics and cheerleading. This study hopes to better understand the role of mental blocks involving closed-skill sports, seeking participants in diving, pole vault, gymnastics, and cheerleading. Due to these considerations, the specific research questions are: What are the lived experiences of one encountering a mental block? How can self-efficacy theory explain mental block development?

Definitions

The following terms are important to define:

Closed Skilled Sport: sports that are held in a static, stationary environment, involving self-paced skills (Wang et al., 2013). Examples include, but are not limited to, pole vault, cheerleading, gymnastics, and diving.

Elite (athletes): individuals who have or are competing at a varsity, collegiate, professional, national, or international player (Swann et al., 2015)

Fear: perception of the importance of performance, feelings of doubt, or what they believe others will think about their performance (DePero et al., 2013).

Mental block: an inability to perform a particular skill that was once automatic for the athlete to perform (Maaranen et al., 2017; Lawrence, 2016; Duarte et al, 2015).

Performance anxiety: an unpleasant psychological state which occurs under stress concerning the performance of a task under pressure (Ford et al., 2017).

Refinement of movement: alteration of technical body movements to improve the execution of a skill (Moore, 1991).

Self-Efficacy Theory: the belief an individual has about their capacity to execute necessary behaviors involved to generate particular performance goals (Bandura & Adams, 1997).

Self-paced task: a task or skill that is initiated by the performer (Wang et al., 2013).

Delimitations

1. Participants must be at least 18 years old.
2. Participants must be involved in a close-skilled sport, meaning that the skill is performed in a stable environment (Day et al., 2006). Examples include gymnastics, cheerleading, diving, pole vault, and javelin.
3. During the time of the interview, one of the following must be valid: the participant is currently experiencing a mental block that has been present for at least one month or the participant has previously experienced a mental block within the past two years.

Assumptions

1. It is assumed that participants are physically capable of performing a skill but fail to perform to complete a certain skill or movement that was once automatic, due to their mental block (Bennett et al., 2015; Thompson, 2013).
2. It is assumed that participants are being honest and authentic when sharing their experiences and interpretations involving their mental block.
3. It is assumed that participants can recall memories and feelings about their mental block.

Limitations

1. Even though participants who have been removed from their sport for two years may be able to vividly remember their experiences with their mental block, memories may become distorted over time.

2. Interview questions may alter responses resulting in response bias instead of being true and authentic of their experience.
3. Interviews will be held over Zoom, causing the researcher to not be able to pick up on all nonverbal cues. This could affect appropriate probing questions being asked to dive deeper into the underpinnings of the mental blocks.

Significance of Study

Furthering research may lead us closer to understanding why mental blocks occur, specifically for cheerleading and gymnastics, improving athletes' safety and risk of injury (Maaranen et al., 2017). This may increase their risk of concussions, which has recently been shown to potentially produce long-term damages in the mind, such as chronic traumatic encephalopathy (CTE; Martini & Broglio, 2018; Solomon & Kuhn, 2014). Injuries, along with humiliation and fear, has shown to contribute to dropout (Feltz & Albrecht, 1986), and the hope is to assist with decreasing the rate of dropout due to negative elements that occur in sport. The coach-athlete relationship is one that effects an athlete remaining in their sport. Considering that coaches normally become frustrated with the athlete for not performing their skill, developing stress and worry in the athlete (Day et al., 2006; Duarte et al., 2015; Feigley, 2009; Lawrence, 2017; Maaranen et al., 2017) this research hoped to know more about the occurrence of mental blocks in cheerleading and gymnastics to enrich relationships and increase one's self-efficacy.

CHAPTER II

LITERATURE REVIEW

Mental blocks, defined as a loss of athletes' ability to perform skills that they once perceived as automatic (Day et al., 2006; Maaranen, et al., 2017; Pattison & Cotterill, 2017), are especially common for athletes who participate in closed-skilled sports (Bennett et al., 2015; Lawrence, 2016). Mental blocks may also include occurrences where individuals begin to perform a skill but stop mid skill (Maaranen et al., 2017; Thompson, 2013). Closed-skill sports involve activities that are held in a consistent, stationary, environment that have self-paced skills (Wang et al., 2013). Characteristics of closed skill sports may have a greater impact on the development of mental blocks than open-skill sports since close-skilled sports include fixed apparatus' in a stable environment, individual performances and high inter-trial consistency, and single tasks (Wang et al., 2013). Without much influence from the environment affecting an individual's performance, there are limited factors as to why an individual does not perform well. This may add pressure to closed skill sport athletes, which may trigger stress and emotional responses that may cause the mental block to develop (Laborde, 2016). However, mental block researchers have proposed conflicting findings as to why mental blocks may occur. Current literature suggests that mental blocks occur from pressures to perform (Day et al., 2006), performance anxiety (Thompson, 2013), fear (Durante et al., 2015; Gullon & King, 1993), refinement of movement (Bennett et al., 2015; Collins et al., 1999) and overall, negative self-efficacy (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000). Considering the conflicting findings from previous literature, researchers have suggested that more research should be conducted to enhance the knowledge about the underpinnings of mental blocks (Lawrence, 2016; Maaranen et al., 2017; Thompson, 2013), which is the purpose of this study.

This literature review dives deeper into the current understandings of mental blocks, discusses the influential factors, and provides an overview of the intervention strategies that practitioners have performed in attempts to diminish the mental block.

Understanding Mental Blocks

Current literature interchanges the term mental block with names such as lost movement syndrome (LMS; Day et al., 2006), performance blocks (Bennett & Maynard, 2017), and psychological blocking (Feigley, 2006), therefore, all four terms have the same definition. However, other related conditions have been discussed within sports, showcasing similar yet distinctive characteristics when comparing them to mental blocks, resulting in the definitions to be different. These terms include slumping, choking, and the yips.

According to Taylor (1988), slumping is defined as an unexplained decline in performance from a previously determined baseline (p. 40). The decline in performance would be longer than a normal recurring variation in performance (Taylor, 1988). The characteristics of slumping suggest that it is inevitable, however, it will pass (Taylor, 1988). Slumping may come in four different categories: physical, technical, technological, and psychological (Taylor, 1988). This literature suggests that slumping is different than mental blocks in three different ways. First, slumping is seen as inevitable, suggesting that every athlete will experience it, yet not every athlete experiences a mental block (Day et al., 2006). Second, slumping could occur in four different categories, however, mental blocks are seen solely as a psychological cause (Bennett et al., 2015; Day et al., 2006; Feigley, 2009). Third, research slumping states the athletes are able to perform affected skills at lower levels (Taylor, 1988). However, when an athlete is experiencing a mental block, literature has indicated that athletes are incapable in performing the skill altogether (Day et al., 2006).

Choking is another term that is frequently used when talking about factors inhibiting performance. A common definition utilized for choking involves athletes experiencing decline in performance due to feeling pressure or stress in certain situations (Baumeister, 1984; Beilock & Gray, 2007; Hill et al., 2009; Mesagno & Hill, 2013). A form of choking, that is seen as a more extreme form, is known as the yips (Masters, 1992). This is commonly used in golf, cricket, and baseball. The yips have been defined as involuntary movements that occur when attempting to execute finely controlled, skilled motor behaviors (McDaniel et al., 1989). Two processes have been discussed when examining the underpinnings of why choking and the yips occur. The first involves individuals overthinking the skills, constantly attending to the process of performance, causing them to move from automatic processing to controlled processing (Baumeister, 1984). Another process involves when anxiety and self-focus interfere with execution of the motor skill (Baumeister, 1984). Research has indicated that mental blocks can also occur from athletes experiencing pressures to perform (Day et al., 2006; Duarte et al., 2015), anxiety (Collins et al., 1999; Day et al., 2006; Durate et al., 2015; Rotherham et al., 2012), and moving skills from automatic processing to control processing (Collins et al., 1999; Pattinson & Cotterill, 2017). Although these are similarities between mental blocks, choking, and the yips, athletes who are experiencing choking or the yips do not lose the ability to perform the skill altogether.

Due to mental blocks, slumping, choking, and the yips having similar characteristics, Bennett et al. (2015) introduced a generic term, known as performance blocks, thought to address locked, stuck, or frozen movement, causing temporary loss of fine and/or gross motor control (p. 61). Even though there is umbrella term to categorize these terms, mental blocks are thought to have slightly different developmental stages than slumping, choking, and the yips. Feigley (2009) conducted a qualitative study which included five artistic gymnasts who had

mental blocks for at least one month. When coding and creating themes, three stages of development with mental blocks were found in the phenomenological study. The first stage of a mental block explained that athletes were simply unable to perform the skill due to vague, unspecified fears. In this particular study, there was not anything specific that caused this fear to arise. The second stage involved negative feelings, such as shame, anger, or guilt, to appear due to being frustrated with their sport performance becoming hindered. Finally, negative statements began to occur regarding their self-worth and abilities as time progressed without performing the skill. Mental blocks have received attention in literature in sports such as trampolining, gymnastics, and diving. However, current literature has conflicted reasonings for why mental blocks occur.

Influential Factors of Mental Blocks

Research has discussed multiple factors that could be the possibility of mental blocks occurring (e.g., Day et al., 2006; Duarte et al., 2015, Lawrence, 2017). Categories commonly discussed include pressures to perform, performance anxiety, fear, refinement of movement, and overall, negative self-efficacy.

Pressures to Perform. Performance expectations from external factors, such as coaches, spectators, sponsors, and teammates place high demands on athletes, increasing the pressure for them to perform at an elite level (Gould et al., 1999; Mellalieu et al., 2009). A study conducted by Day and colleagues (2006) categorized pressures in three different components, involving upcoming competition, spectators of their movements, and vicarious experiences. Of the 15-national level trampolinists who suffered from loss move syndrome (LMS) who participated in this Day et al. (2006), fourteen reported that the external pressures while performing caused stress to perform the skill or a routine which involved the skill (p. 151). When the participants

were approaching competition days, fear and anxiety increased because they did not believe that they were going to get their skills back in time (Day et al., 2006). This caused them to worry even more about the skill, potentially leading them to overthink the movements. In regard to spectators, 12 and of 15 participants reported about their concerns of letting a coach down. Athletes within this study were thinking about how their coach's reputation was also in jeopardy, causing excess pressure to occur (Day et al., 2006).

Parental pressures were also a concern, along with other personnel, such as teammates and spectators. Even though they did not share their lost move with others, they felt as if they were being judged and thought spectators were stating that they lacked courage for not even attempting the skill or were seeking attention (Day et al., 2006). As their lost most syndrome got worse, the social support of coaches, parents, and teammates, began to deteriorate (Day et al., 2006). This was mostly due to the lack of knowledge about lost move syndrome, resulting in the athletes not understanding how they felt during that time so they could not describe it to anyone (Day et al., 2006). Even though the need for social support increases since the athlete is experiencing a tough time, it is not received due to the frustrations that arise from coaches, teammates, and parents, causing them to isolate the athlete (Day et al., 2006). The final subcategory involved watching other teammates complete skills similar to the one that they current cannot perform. Instead of learning from others and replicating the movements, it makes the athlete frustrated because they have successfully completed the skill, however, there is just something wrong with it that is unidentifiable (Day et al., 2006). This continues to frustrate the athlete and personnel that interact with the athlete in the sport environment, resulting in a cycle that the athlete would like answers to know how to break. Within current mental block literature, Day et al. (2006) is the only study to find that performance pressures may cause a mental block

to develop, thus, mental block research should continue to evaluate the influence that performance pressures may have on the onset of a mental block.

Performance Anxiety. Performance anxiety can be defined as having nerves in front of other people before completing an activity or skill (Haraldsen et al., 2020). Two types of anxiety, known as somatic and cognitive anxiety, are mentioned when discussing performance anxiety. Somatic anxiety is known as the physical symptoms that one may experience when having a mental block while cognitive anxiety is the emotional aspect that individuals who have a mental block may express (e.g., Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017; Thompson, 2013). Findings using the Sport Anxiety Scale-2 (Smith et al., 2006) with female cheerleaders, ranging from 10 to 16 years old who experienced a mental tumbling block, reported having heightened somatic anxiety symptoms when asked to perform the skill they are struggling with, such as sweaty palms and racing heart beats before completing the skill, compared to individuals who are not experiencing a mental block (Thompson, 2013). This aligns with previous research, that supported that somatic anxiety could hinder athletic performance (Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017).

Research involving somatic anxiety has also examined the differences in individuals' pitch and intensity of voice (Mendoza & Carballo, 1998; Scharfstein et al., 2011; Scherr, 1986). In addition to Thompson (2013) utilizing the Sport Anxiety Scale-2, an objective element of voice analysis, PRAAT, was performed. PRAAT examined pitch and intensity differences between athletes who were experiencing a mental block (higher pitched voices compared to those who were not) (p. 17). Opposing findings were suggested in a study conducted by Scharfstein et al. (2011), who found that children with social phobia spoke in softer and lower tones than typically developing children. In regard to anxious adults, studies have found that

jitters and shimmers in the voice increased while the loudness of the voice (intensity) decreased (Mendoza & Carballo, 1998; Scherer, 1986). Participants who experienced mental blocks in the study conducted by Thompson (2013) were likely to experience somatic symptoms before completing the skill that they were currently having a mental block on, increasing their likelihood to report cognitive anxiety, suggesting that the two may co-occur when having a mental block. Cognitive anxiety involves an athlete having negative expectations and thoughts about their performance, such as worry and fear (Vickers & Williams, 2007). Studies have found contradicting results regarding the impact of cognitive anxiety on performance. Some conclude that there is a negative linear relationship (Barnes et al., 1986; Burton, 1988; Gould et al., 1984) while other studies have disclosed no significant relationship between cognitive anxiety and sport performance (Hammermeister & Burton, 1995; Maynard & Cotton, 1993; Vadocz et al., 1997). Thompson (2013) specifically examined the impact of cognitive anxiety on mental blocks, suggesting that competitive cheerleaders reported higher rates of self-confidence when they experienced lower feelings of somatic and cognitive anxiety. Within this study, statements of cognitive anxiety included expressions of fear or negative self-talk, reducing their self-belief to complete the skill.

The study conducted by Thompson (2013) suggests that cognitive and somatic anxiety are strong indicators of athletic performance, which is congruent to the findings of Tsopani et al. (2011). Literature has also examined the relationship between self-confidence and somatic anxiety. Some findings suggest that there is a statistical correlation between self-confidence and somatic anxiety (Jones et al., 1993; Kais & Raudsepp, 2004; Tsopani et al., 2011); opposing findings suggest that there is not a statistical correlation between self-confidence and somatic anxiety (Dallas et al., 2019; Pineda-Espejel et al., 2013). More research should be conducted to

examine the influential factors of anxiety on sport performance and the specific impacts that they have on mental blocks (Thompson, 2013).

Fear. Fear and anxiety may be an explanation as to why mental blocks develop in certain athletes (Duarte et al., 2015). Research involving emotions and sport performance have been observed, indicating that individuals experience different emotions and affects their performance in different manners (e.g., Robazza et al., 2004; Tamminen & Crocker, 2013; Woodman et al., 2009). For example, researchers use the Individual Zone of Optimal Functioning (IZOF) theory to make a practical connection between emotional states and optimal performance (Kamata & Tenenbaum, 2002). According to Hanin (2000), optimal performance is defined as being in the state of flow, which involves an individual being fully immersed into the feeling of being focused, while losing track of time (p. 105). Each individual requires specific emotions in order to achieve their individual optimal zone of functioning. If the individual is experiencing different emotions in pre-performance other than what they typically feel during successful performances, they decrease the chances of having an optimal performance (Kamata & Tenenbaum, 2002). If athletes are aware of their normal optimal zone emotional states and realize that they are not experiencing their normal states, they increase their changes of negative physiological and psychological sensations occurring, potentially hindering performance. This includes feelings of fear and anxiety.

Fear and anxiety were examined with athletes who are experiencing mental blocks. Duarte and colleagues (2015) found common themes of fear of injury, fear of error, and fear of the coach among the 16 female youth artistic gymnasts who were experiencing mental blocks. Possible explanations for these findings may be due to gymnasts having rigorous schedules with minimal rest days, increased time in training and completing repetitive drills, and movements

that involve high risk of injury (Kolt & Kirkby, 1996). This led to the most repetitive response that was provided involving fear, indicating that fear of injury was the most pertinent for this study (Duarte et al., 2015). Certain causes of fear discussed involved personal and vicarious experiences involving injuries, increasing nerves to perform particular skills. This began to condition the gymnasts to become fearful of error or failure due to the incidents of unsuccessful performances. This is apparent in any sport at any level due to social consequences. According to Gullon and King (1993), adolescent years are even more daunting when thinking about the fear of failure since gymnasts begin to think about potential professional careers and aspirations of continuing gymnastics. This may also apply to other athletes who are depending on their physical abilities to carry them to a professional position in the sport industry. However, in the study conducted by Day et al. (2006), 15 high-level trampolinists reported that fear of injury was not usually in their minds. One trampolinist commented, “I never thought I would hurt myself. I was scared of the move, not what might happen afterwards” (Day et al., 2006, p 161). Thirteen other trampolinists had similar statements, suggesting that fear of injury was not the primary cause of their mental block (Day et al., 2006).

The final theme discussed in the Duarte et al. (2015) that is similar to Day et al. (2006) is the result that athletes state influential people place additional pressure on them to perform. The coach-athlete relationship immensely impacts an athletes’ performance, considering that athletes are normally nervous to let down or upset their coach since they dictate whether or not they play, start, compete, etc. Gymnasts in the study reported the aggressive attitudes, negative and verbal punishments that have been inflicted from coaches when they do not perform well cause them to become even more fearful of mistakes being made (Duarte et al., 2015). This creates a stressful

environment, which potentially allows fear to occur, which may decrease optimal performances in practices and in competition.

Refinement of Movement. Refinement of movement refers to individuals altering elements of a motor skill that was already learned (Collins et al., 1999; Komar et al., 2021). Automatic processing requires minimal to no cognitive effort by an individual; contrarily, controlled processing requires attentional effort by individuals (Schneider & Chein, 2003). Athletes who experienced mental blocks experienced issues with skills that were in automatic processing (Bennett et al., 2015; Collins et al., 1999; Day et al., 2006). However, adjustments are constantly being made to fine tune the skills being performed, causing them to shift back into controlled processing. This indicates that when athletes are refining movements and skills, they are operating under controlled processing (Collins et al., 1999). The impact of skills shifting from automatic processing back to controlled processing was examined with individuals who were experiencing a mental block. A case study on the world's top three javelin thrower at the time regarding interventions that would recover "lost" skills and shared ideas as to why this athlete believed they were unable to perform particular skills (Collins et al., 1999). Three hypotheses were proposed as to why one may momentarily lose their ability to perform a skill when trying to refine the movement. First, athletes consciously hindering movement due to negative cognitions involving previous injury (Collin et al., 1999). Secondly, athletes may attempt to control the movement too much, causing his conscious control to inhibit the execution of the optimum motor program (Collin et al., 2009). Finally, it is proposed that the brain cannot access the appropriate motor program to perform the desired movement (Collins et al., 1999). These hypotheses propose that elite athletes rely on perfected skills to remain in automatic processing to increase higher levels of performance. Aligning with findings from Day and

colleagues (2006), if a skill shifts to controlled processing and remains in control processing for a long duration, that the individual may be at risk for overthinking the skill and could lead to an onset of a mental block (Collins et al., 1999).

Low Self-Efficacy. Self-efficacy can be defined as the belief one has about their ability to successfully completing a skill or task (Bandura & Adams, 1977; Beattie et al., 2016). Over time, the mental block begins to chip away from individuals' self-efficacy to complete the skill since they have not physically completed the skill in a such a long time (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000). In a study with eight youth all-star cheerleaders, results indicated that the inability to perform the skill was associated with negative beliefs (Lawrence, 2016). Participants commented that they feel inadequate at cheerleading since they cannot perform the skill, leading them to believe that they are letting teammates, and whoever is paying for the sport, and coaches down. This continues to add pressure from certain personnel for the athlete, as also discussed in Day et al. (2006). According to De Pero et al. (2013), fears of injury and increased anxiety negatively correlated with self-efficacy in their study examining relationships between pre-competition anxiety, self-efficacy, and fear of injury in elite European athletes (p. 64). These findings align with the theory of self-efficacy provided from Bandura (1997).

Bandura's (1997) self-efficacy theory suggests that four factors influence perceived self-efficacy: performance accomplishments, vicarious learning, social persuasion, and physiological feedback, such as physical and emotional arousal. The perceived self-efficacy that an individual has will then lead to potential outcomes, like persistence, performance, and approach instead of avoidance (Bandura, 1997). Considering that mental blocks are disrupting performance accomplishments, affecting how athletes are perceiving vicarious learning, causing social

interactions to be negatively altered, and heightening negative emotional feelings, Bandura's model may explain why athletes are at a higher risk to perceive themselves as having low self-efficacy. This may also cause an athlete to remain in the cycle that the mental blocks create with hindering performance and the negative emotional experiences that arise.

Intervention Strategies

Multiple interventions have been incorporated to attempt to minimize, and even diminish mental blocks (Chase et al., 2005; Howells, 2017; Martin et al., 2008). Self-regulatory strategies have been implemented across numerous mental block studies to assist athletes (Barlow, 2002; Bennett & Maynard, 2017; Chase et al., 2005; Magyar & Chase, 1996; Vealey, 2007).

Mental block coping strategies have been utilized with competitive gymnastics who experienced fear involve breathing control, counting to three, imagery, performance routines, prayer, self-talk, and support from others (e.g., Howells, 2017; Martin et al., 2008). The intent of implementing interventions was to regularly challenge the erroneous beliefs involving worry and assist them with deciphering through which worries are responsive to problem solving and which ones are not (Martin et al., 2008). Martin et al. (2008) indicated that the higher level gymnasts (USAG levels 9 and 10; n = 40) implement these coping strategies more often than the lower-level gymnasts. However, the study did not indicate how utilizing these coping strategies effected their mental block or performance.

Similar techniques were utilized with a nine-year old gymnast who was fearful of flicking off of the beam (Howells, 2017). Howells (2017) suggested having seven sessions to build rapport, role play, as well as practice imagery, relaxation techniques, and goal setting. Age-appropriate activities were adopted from adult versions to accommodate for the young athlete and align with the researchers' sport psychology philosophy, which suggests that childhood

should be an exciting time. These activities included the use of kinesthetic learning and visual processing. For example, Howells developed a vision of a magic carpet to the athlete to assist with understanding the purpose of imagery. The consultant also taught the athlete about emotion regulation through art to assist them with coping with their anxiety (i.e., painting with different colors to express different emotions that were being experienced). By the final session, the gymnast was able to flick on low beam and it was periodically carried out on high beam and the gymnast reported sessions with the sport psychologist attributed to her progress (Howells, 2017). Overall, the gymnasts reported that learning several psychological techniques can assist her in different situations (Howells, 2017).

Another technique performed involved the use of eye movement desensitization and reprocessing (EMDR) with graded exposure for the treatment of two athletes experiencing mental blocks. Reprocessing memories using eye movement desensitization and reprocessing (EMDR) and graded exposure has showed positive results to treating anxiety disorders, concluding the reduction of anxiety levels, negative cognitions, and altered feelings and behaviors of the mental block symptoms, improving both of the athletes' ability to execute their affected skills (Bennett & Maynard, 2017). These findings suggest that EMDR techniques paired with graded exposure may assist with eliminating inhibitory factors of mental blocks.

Additionally, a personal contact practices mental block strategy with gymnasts of all ages and at all levels using techniques from neurolinguistic programming (NLP). NLP involves linking cognitions, language, and patterns of learned behavior through experiences to achieve a desired outcome (Kotera et al., 2019). One aspect of NLP involves bringing awareness to the unconscious mind (Passmore & Rowson, 2019). From an NLP perspective, mental blocks occur when there is a disconnect between the conscious and the unconscious mind. Because of this, a

strategy has been utilized to bring attention to the unconscious mind, with guiding the athlete to think about what they can and cannot control. Then, the practitioner will attempt to shift the focus off of the external components that they cannot control and focus on what they can control. Athletes have found this technique beneficial and have found that they can overcome their mental blocks using techniques that connect the conscious and unconscious mind.

Other effective interventions taught individuals a variety of things. This included how to identify current interpersonal needs, beliefs, worries and fears, patterns of behaviors, and emotional responses; perform consequential analysis to examine the consequences of certain feelings; develop alternative causal explanations for negative events; evaluate pros and cons of maintaining certain beliefs and behavior patterns; and develop psychological skills and techniques (Barlow, 2002; Vealey, 2007). While some individuals state that these interventions have assisted with diminishing their mental blocks (Howells, 2017), some individuals indicate mental block strategies were unsuccessful (Martin et al., 2018).

Hermeneutic Phenomenology

Qualitative methods enhance our understanding of new phenomena, helps us identify new research questions, and allows us to understand the living experiences of individuals (Hammarberg et al., 2016). Mental block researchers are seeking to better understand the lived experiences of individuals who are encountering mental blocks, causing phenomenological approaches to be a primary qualitative methodology (Day et al., 2006; Lawrence, 2016; Maaranen et al., 2017). Phenomenology aims to describe and interpret the meanings of experiences of human life (Finlay, 2012). One of three types of Western phenomenology approaches involve hermeneutic phenomenology, which focuses on the lived experiences of human life (Kafle, 2011; Sloan & Bowe, 2014).

Participants

Participants were chosen based on the certainty that the participant has actual experiences and knowledge about the phenomenon being studied (Ramsook, 2018). The number of participants “depended on the methodology, the detailed nature of the information required, and the number of people who have the necessary experiences” (Dezin & Lincoln, 2013) The hermeneutic phenomenological approach required collaboration between the researcher and participant to explore and develop a better understanding of the phenomenon being studied (Lauterbach, 2018). Genuine conversation where the interviewer remains open-minded and seeks the truth through the art of questioning is imperative (Ramsook, 2018). Heidegger (1962) added an element to hermeneutic phenomenology known as “exegesis,” which is interpretation that may be derived from various forms of communication, such as verbal, non-verbal, and written.

Sampling Methods & Procedure

Purposive sampling was utilized for the data gathering process (Ramsook, 2018). This technique involved researchers “intentionally select individuals and sites to learn or understand a central phenomenon” (Creswell, 2012, p. 206). Since there is a certain population suitable for data collection, participants were about to give advice about potential participants who meet the requirements for this study, known as snowball sampling (Creswell, 2012).

The process of hermeneutic phenomenology is iterative. In-depth semi-structured interviews are imperative to represent participants’ experiences. Several mediums, such as memos, journal entries, logs, field notes, and anecdotal records are kept enhancing the understanding of the participants’ experiences (Ramsook, 2018). While there is not a set structure of methodology followed using this approach (Crowther et al., 2016), Symthe and colleagues (2008) describe the process as “reading, writing, talking, mulling, re-reading, re-

writing, and keeping new insights in play” (p. 1393). This involves the researcher reporting back to the participant to validate the data, ensuring that their story is accurately interpreted within the study, increasing the trustworthiness of hermeneutic phenomenological studies (Stephenson, Giles, & Bissaker, 2018). Interpretations are not amenable to numerical analysis (Miles et al., 2014; Bogdan & Biklen, 2007).

Interview Guides. Interview guides should be constructed with open-ended questions that are aligned with the research question since the objective is to gather information that adds to previous data (Ramsook, 2018). Open ended questions invite the participant to use their voice freely without constraints from the researcher or findings from previous research (Ramsook, 2018).

Trustworthiness. Trustworthiness of a study suggests that the data collected is precise and consistent (Ramsook, 2018). Trustworthiness can be met through the researcher utilizing snowball sampling which is a type of purposive sampling. It can also be accomplished by having participants reread to affirm the accuracy and validity of what is written (Lichtman, 2006).

Credibility. Credibility is achieved when the researcher utilizes triangulation and peer debriefing (Ramsook, 2018). Credibility can also be maintained by transcribing the interviews verbatim. Participants should be allowed to review the transcripts to validate accuracy. This will increase the reliability of the findings (Denzin & Lincoln, 2013).

Transferability. Transferability corresponds with the external validity or generalizability of a study (Morrow, 2005). However, qualitative research seeks out different knowledge than quantitative research. According to Creswell (2012), most qualitative researchers suggest that findings are not generalizable due to their unique context, yet some advocate for the transferability of findings (Patton, 2002; Cohen et al., 2011).

Reflexivity. Reflexivity refers to the reflection that a researcher has regarding their personal biases, values, and assumptions involving the studied phenomenon and constantly records and writes them into their research (Creswell, 2012). It is important to consider one's own ideas and preconceived notions about the topic and how it may influence their interpretation of the data. Although every facet of the study can be skewed, data analysis may be impacted most (Denzin & Lincoln, 2013).

Hermeneutic phenomenology was utilized in various mental block studies, uncovering the lived experiences that athletes were encountering (Maaranen et al., 2017; Lawrence, 2016; Thompson, 2013). This may be due to the fact that participants are able to freely create and express their own experiences without skewedness occurring from the researchers regarding the phenomenon (Ramsook, 2013). Therefore, to extend mental block research and the lived experiences of the athletes who are facing mental blocks, this study will also implement hermeneutic phenomenology.

Conclusion

This study aimed to better understand the development of mental blocks by exploring experiences of individuals who have either previously endured a mental block no longer than two years from interviewing from the study or was experiencing their mental block throughout the duration of the study. There are discrepancies in literature concerning mental block development. Some researchers found the individuals will not perform the skill due to external performance pressures (Day et al., 2006; Durante et al., 2015); some studies suggest that individuals are experiencing performance anxiety (Day et al., 2006; Durante et al., 2015); some studies indicate that fear played a primary role in the underpinnings of the mental block (Duranter et al., 2015; Gullon & King, 1993), while Day et al. (2006) found that fear was not an inhibiting factor for

declines in performance; and some suggest the refining the movements of the skill inhibited performance (Collins et al., 1999).

Considering these discrepancies in the literature about why mental blocks occur, researchers have suggested that further research is needed (Day et al., 2006; Lawrence, 2017; Maaranen et al., 2017; Thompson, 2013). Therefore, the purpose of this study was to continue exploring the experiences that athletes have while experiencing a mental block in hopes to enhance knowledge about mental blocks using hermeneutic phenomenology. This study hopes to benefit athletes, coaches, parents, and teammates with better understanding why they are experiencing a mental block. Additionally, this may assist sport psychologists and coaches with potential interventions that may be effectively eliminate mental blocks over time.

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CHAPTER III

METHOD

Participants

Six adult elite closed-skill sport athletes who are or have experienced a mental block participated in this study. For this study, elite was defined as one who is currently competing or has previously competed as a varsity player, national, and/or international player. Participants were required to experience a mental block during the duration of the study that has been ongoing for at least one month or previously experience a mental block that occurred longer than a month yet was within two years of the interview to ensure that participants still have vivid memories about their mental block and can truthfully and accurately explain their experiences. *Table 1* indicates the participant demographics. Cheerleading was the main sport represented, yielding five participants cheering at the collegiate level (83%) and one participant was involved in gymnastics, competing on a level 10 club team (17%). Participants ranged from 19-23 years ($M:21.16$ years, $SD: 1.213$), and ranged from 9-14 years of participating in their sport ($M:10.6$ years, $SD: 1.599$). Five of six participants experienced a mental block on a standing tuck, which is a skill that can be competed in all-star cheerleading, out of the six levels possible (USASF, 2021). The participant who was a former gymnast experienced a mental block on a Yurchenko vault, a level 6 skill according to USA Gymnastics (p. 1).

Table 1

Participant Demographics and Inclusive Criteria.

Participant	Gender	Age	Sport	Years in Sport	Competition Level	MB Skill	Years with the MB
Participant 1	F	21	Cheerleading	9	Collegiate	Standing Tuck	2

Participant 2	F	19	Cheerleading	11	Collegiate	Standing Tuck	2
Participant 3	F	21	Cheerleading	10	Collegiate	Standing Tuck	5
Participant 4	F	21	Cheerleading	10	Collegiate	Standing Tuck	1
Participant 5	F	22	Cheerleading	10	Collegiate	Standing Tuck	2
Participant 6	F	23	Gymnastics	14	Club Level 10	Yurchenko	1

Instruments

Various instruments were incorporated in this study, including an initial survey and a modified interview guide (see Appendix A) adopted from Lawrence (2016) and Maaranen et al. (2017).

Demographic Survey. Initial information gathered included age, race, ethnicity, and gender. Additionally, the initial survey was used to explore participants' sport background to have knowledge of their sport(s), level of sport(s), experience, skill level, and the skill they are currently experiencing their mental block. This information allowed the researcher to determine whether or not the individuals are representative of the target population for generalization purposes.

Interview Guide. The interview guide was designed to help the researcher understand the interviewee's experience with mental blocks, specifically mental block discrepancies (e.g., fear, anxiety, performance pressure, refinement of movement). Consequently, the researcher asked about the onset of the mental block, which gave participants the opportunity to reflect on the initial onset and progressions of the mental block. The researcher then asked about different areas suggested within current mental block literature as a reason for mental block development.

Finally, the researcher asked about participants' perspective of their mental block and why they believe they are having trouble and explain their experience in any way possible.

Recording Devices. An Apple MacBook Air and the researcher's iPhone 11 were utilized for recording purposes. Interviews were placed into a private folder, under Box, a confidential file shared by the research team and removed from all other devices.

Interviewer. The interviewer, who is also the primary author and researcher, was in a dual master's program of Sport and Exercise Psychology and Rehabilitation Counseling at the time of conducting the study. The interviewer was a part of cheerleading for ten years and competed at the collegiate level for a Big Ten university, winning three National Championships. After retiring, the interviewer completed five years of combined experience coaching at the high school and all-star level, solely coaching females. The interviewer worked for Universal Cheerleading Association for four years, allowing them to teach cheer camps to all levels and ages, ranging from elementary to college, across the United States. Along with cheerleading, the interviewer has experience working with two other closed-skilled sports, diving and gymnastics.

Throughout the interviewer's experiences, they have seen teammates and female athletes who they have coached face challenges from mental blocks. Athletes are unaware of how and why this is happening to them, causing their well-being and love for the sport to decline. The interviewer has observed that athletes' mental block also negatively impacted various areas of their lives (e.g., school). Other observations include witnessing coaches become frustrated and feel helpless with athletes who are experiencing mental blocks, which could potentially increase the risk of burnout.

Additionally, the interviewer has consulting experience with closed-skill sports, which involves spending several hours observing practice and competition, along with providing

individual and team sessions for mental skills and counseling. Working with these athletes has impacted the interviewer's thoughts about the underpinnings of mental blocks. Therefore, for the sake of the athletes, it is the interviewer's desire to explore the underpinnings of mental blocks to assist athletes who are experiencing them.

Finally, the researcher has completed a qualitative research course, allowing her to become familiar with qualitative methodology and terminology. After learning about different types of qualitative methodology, along with being supervised by a qualitative researcher, the researcher chose hermeneutic phenomenology. Guidance from this course and the professor who is a professional qualitative researcher has enhanced the quality of the study.

Research Team. Three researchers familiar with qualitative research assisted with data analysis. All of the researchers completed an ethnographic research course and have contributed to multiple qualitative research studies.

Pilot Study

A pilot study was conducted to trial the interview guide and increase the comfortability of the researcher to conduct interviews. Four female participants were included in the pilot study, with two being familiar with qualitative research and have strong sport backgrounds and two being former gymnasts who experienced mental blocks during their careers. The feedback provided from the four participants on the interview guide was to add an initial survey involving a demographic component, tweak the wording of a few questions, and to continue to ask the participant about all areas of the discrepancies even if the participant focuses on one area that literature has covered. With the feedback provided, the interview guide was expanded to ask about all areas that have previously been found as an underpinning of a mental block. Additionally, an initial survey was added to gather information about the participants'

demographics, sport background, and sport type. Finally, wording that was confusing or too specific was edited to reduce the biases of certain topics and allow the participant to tell their side of the story without guidance.

Procedure

Upon approval from the University's Institutional Review Board, the participant recruitment process began by using purposive sampling (Creswell, 2012), which entailed reaching out to organizations/programs via phone, email, or face-to-face that include closed-skill sport (e.g., diving, gymnastics, cheerleading, pole vault). Personal connections with coaches and athletes were also utilized via phone, email, or face-to-face interactions to help identify potential participants who meet the inclusion/exclusion criteria. Approximately 500 coaches were contacted from various closed-skill sports across of the United States to recruit participants for this study. The researcher may have to interact with certain gatekeepers of programs, such as program owners before directly connecting with the coaches. When networking through coaches for this study, a recruitment email (see Appendix B) was sent to coaches of closed-skills sports in the collegiate setting or in organizations (e.g., all-star cheerleading programs, select or travel closed skill sport teams), which asked them to forward along the participant recruitment email to all athletes (see Appendix C). Coaches were not asked to determine who or who not to forward information to involving this study, rather they were asked to pass along the recruiting email to all of their athletes. Coaches were not notified regarding their athletes' responses to email efforts, and they will not be involved in this study. When utilizing personal connections, personnel will be recruited via phone or email.

Interested athletes had the opportunity to send an email expressing their interest. Once athletes accepted the invitation to participate in the study, an informed consent form (see

Appendix D) was sent. After reviewing, if they were still interested and willing to participate, they returned the signed consent form via email.

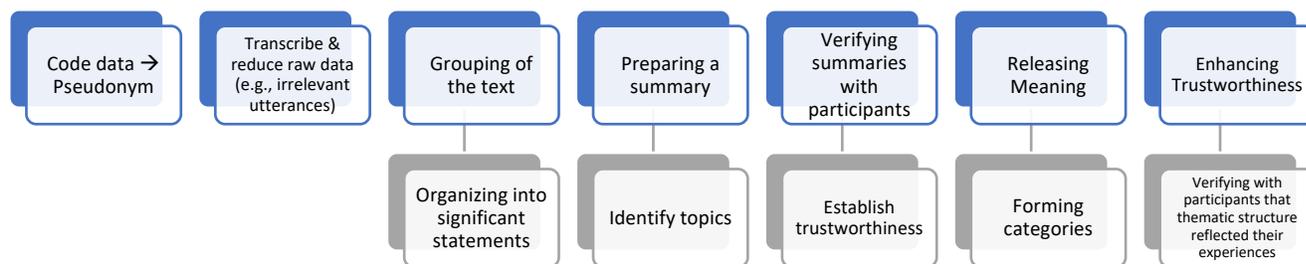
An initial survey via Qualtrics to determine if the participants meet the inclusion criteria for the study was conducted. Recruitment for this survey was performed by the researcher sending recruitment emails to coaches to forward to their athletes, as shown in Appendix B. Of the fifteen respondents, six participants met the inclusion criteria and were eligible for the study. Six semi-structured phone interviews were conducted using an interview guide modified from studies conducted by Maaranen et al. (2017) and Lawrence (2016). Appendix A displays the open-ended questions pertaining to sport background, onset of the mental block, attempted interventions, and specific questions targeting the researched discrepancies current discussed in mental block literature. All interviews were recorded using “Voice Memo” from either the researchers iPhone 11 Pro or Apple MacBook Air. The interviews were then transferred into a secure and confidential location, Box.

Research Design and Data Analysis

All interviews followed a coding tactic utilized in Czech et al. (2004). *Figure 1* describes the coding and data analysis protocol in depth. The researcher labeled each interview with a participant number and the interviews were transcribed verbatim. The researcher then reduced the raw data by removing irrelevant components. Grouping the text into significant statements and topics followed.

Figure 1.

Data Analysis Protocol.



The researcher then sent the initial findings to the participants to verify accuracy. Once approved, categories were created and sent back to the participants to ensure trustworthiness of the findings. The current study embodies the qualitative nature of hermeneutic phenomenology. Hermeneutic phenomenology involves individuals who share similar experiences within a specific group (Creswell, 2014). For this study, the specific group involved elite athletes who participated in closed skills sports and who experienced a mental block within the last two years. The analysis of this qualitative descriptive data involved focusing on reducing raw interview data, resulting in explanation of the true experience of the participants. Data analysis protocol followed Czech and colleagues (2004). Transcripts were reviewed independently by the researcher to ensure accuracy by reading while listening to the audio recording. The researcher and research team who is familiar with qualitative research collaborated and cleared any irrelevant utterances, false starts, and side conversations that occurred. Grouping the text followed, organizing material into significant statements using the following suggestions from Czech et al. (2004). These suggestions included: eliminate repetitive statements, punctuate when able to without distortion of the meaning behind the text, de-emphasize the interviewer, and continue to decrease clutter while enhancing readability. After grouping, preparing

summaries of the interviews using vital words and information to explain that participants' thoughts were completed.

Czech et al. (2004) suggest identifying topics, gathering related statements, editing statements, and removing any additions that are not necessary. This was completed by the researcher who reviewed the transcribed interviews and examining key words that match across participants. If there were statements within the interview that irrelevant for the study's purpose, it was omitted. Once summaries were prepared, participants were contacted by the researcher to review their summaries to ensure they are truthful and represent what the participants intended to express, which improves the trustworthiness of the data (Lichtman, 2006). After review, categories will be formed through the collaboration of the researcher and the research team to determine trends across all interviews.

Global terms were created to signify the common set of experiences' participants have expressed (Henderson, 1992). After themes were developed, participants were contacted to verify that the themes reflect their experiences to further enhance the trustworthiness of the data (Lichtman, 2006). Additionally, the data was analyzed by the research group who is trained in qualitative research, which provided consensus that the thematic structure matched the phenomenon of interest (Post & Wrisberg, 2002), improving the credibility of the study (Ramsook, 2018).

CHAPTER IV

MANUSCRIPT

Title: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks in
Closed-Skilled Sports

To be submitted to the *Journal for Advancing Sport Psychology in Research*

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ABSTRACT

Mental blocks (MBs) are the inability to perform a skill that was once deemed as automatic (Bennett et al., 2015; Lawrence, 2016). Previous literature proposed discrepancies for the development of mental blocks (Bennett et al., 2015); therefore, this study sought to further examine the development of MBs and better understand the experiences of athletes who encounter MBs within a closed skilled sport. Six collegiate cheerleaders and one level-10 gymnast participated in this study. Furthermore, two of the six collegiate cheerleaders had experience in gymnastics. Participants were at least 18-years old and were either experiencing a mental block during the study for at least one month, or who has previous experienced a MB within the past two years. Semi-structured interviews were conducted using hermeneutic phenomenology. Subthemes included social support, fear of injury, negative self-talk, and the use of pre-performance routines. Significant themes included pressures to perform and performance anxiety. Self-efficacy theory was a main theory proposing the vital role self-efficacy plays in mental block development. Limitations and future directions are discussed.

Keywords: performance blocks, self-paced tasks, pressures to perform, anxiety, self-efficacy

INTRODUCTION

Mental blocks (MBs) are defined as the loss of an individual's ability to perform skills that were once perceived as automatic (Day et al., 2006; Maaranen et al., 2017; Pattison & Cotterill, 2017). MBs are typically seen in closed-skill sports or stationery self-paced tasks due to the high inter-trial consistency of the single tasks (Wang et al., 2013). Since athletes are performing under a stable environment, there are limited factors as to why an individual does not perform well. Thus, this may increase the pressure to perform well, which can increase the risk of one developing a mental block (Laborde, 2016). Studies have particularly been seen with gymnastics and cheerleading due to the number of backward skills being performed and the fear of stopping in the middle of the skill (Lawrence, 2016; Maaranen et al., 2020). Previous literature suggests that performance pressures play a role in mental block development (Day et al., 2006; Durante et al., 2015), however, there are contradicting findings that propose otherwise. Aside from performance pressures, mental block research has suggested that MBs occur because of one's fear of injury (Durante et al., 2015; Gullon & King, 1993), or refinement of movement (Bennett et al., 2015; Collins et al., 1999). Throughout these ideas, one finding that has remained fairly consistent is the concept that athletes have lower self-efficacy levels when experiencing a mental block (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000).

Due to discrepancies in literature, previous mental block research proposes future research dive further why mental blocks occur. Therefore, the current study seeks to observe mental block development through the lens of self-efficacy theory.

Influential Factors of Mental Blocks

Research has discussed multiple factors that could be the possibility of mental blocks occurring, such as: pressures to perform (e.g., Day et al., 2006; Duarte et al., 2015, Lawrence, 2017), performance anxiety (e.g., Lawrence, 2016; Maaranen et al., 2017), fear (e.g., Durate et al., 2015; Maaranen et al., 2020), and refinement of movement (e.g., Collins et al., 1999). A consistent factor across mental block literature discusses the affect mental blocks have on one's self-efficacy because the athlete is unable to perform the skill even while attempting to complete the skill over a long period of time (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000).

Pressures to Perform

Coaches, spectators, sponsors, and teammates can impact the perceived performance pressures, especially at an elite level (Gould et al., 1999; Mellalieu et al., 2009). Day and colleagues (2006) conducted a study using 15-national level trampolinists. Fourteen indicated that the external pressures caused distress and the pressure increased when for twelve of the fifteen because they expressed feeling as if they were letting their coach down. Parental and teammate pressure were also indicated. Participants mentioned being judged and believed that spectators were commenting on their lack of courage for not attempting the skill (Day et al., 2006). Overall, social support decreased, and frustration increased among coaches, parents, and teammates when participants expressed being unsure why they could not complete the skill (Day et al., 2006).

Durante et al. (2015) had similar findings to Day et al. (2006), who conducted a study examining common fears with 15 female adolescent artistic gymnasts. Nine of fifteen expressed feeling fear of failure. According to Treasure (2001), the pressure to perform at maximum

capacity is very important with this population, which may heighten one's fear of performing an error in front of their peers and coaches (Durante et al., 2015). This is consistent with findings from Evans (2014) who found that gymnasts' frustrations typically come from not having perfect performances. Feelings of shame and guilt resulted, which has seen to contribute to sport dropout rates (Durante et al., 2015).

Performance Anxiety

Performance anxiety can be defined as having nerves in front of other people before completing an activity or skill (Haraldsen et al., 2020) and can involve both somatic and cognitive anxiety. Somatic anxiety refers to physical symptoms that may occur while cognitive anxiety involves emotional aspects that may occur (e.g., Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017; Thompson, 2013). Somatic anxiety has been suggested to play a role in mental block symptoms. Findings using the Sport Anxiety Scale-2 (Smith et al., 2006) with female cheerleaders, ranging from 10 to 16 years old who experienced a mental tumbling block, reported having heightened somatic anxiety symptoms when asked to perform the skill they are struggling with, such as sweaty palms and racing heart beats before completing the skill, compared to individuals who are not experiencing a mental block (Thompson, 2013). Additionally, Smith et al. (2006) interviewed 15 female cheerleaders who reported having heightened somatic anxiety symptoms when asked to perform the skill they are struggling with, such as sweaty palms and racing heart beats before completing the skill. This aligns with previous research, that supported that somatic anxiety could hinder athletic performance (Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017).

Cognitive anxiety is another component that could affect performance. Cognitive anxiety involves an athlete having negative expectations and thoughts about their performance, such as

worry and fear (Vickers & Williams, 2007). Studies have found contradicting results regarding the impact of cognitive anxiety on performance, with some concluding that there is a negative linear relationship (e.g., Barnes et al., 1986; Burton, 1988; Gould et al., 1984) while other studies have disclosed no significant relationship between cognitive anxiety and sport performance (e.g., Hammermeister & Burton, 1995; Maynard & Cotton, 1993; Vadocz et al., 1997). Thompson (2013) specifically examined the impact of cognitive anxiety on mental blocks, finding that competitive cheerleaders reported higher rates of self-confidence when they experienced lower feelings of somatic and cognitive anxiety.

The study conducted by Thompson (2013) suggested that cognitive and somatic anxiety are strong indicators of athletic performance, which is congruent to the findings of Tsopani et al. (2011). Literature has also examined the relationship between self-confidence and somatic anxiety. Some findings suggest that there is a statistical correlation between self-confidence and somatic anxiety (Jones et al., 1993; Kais & Raudsepp, 2004; Tsopani et al., 2011); opposing findings suggest that there is not a statistical correlation between self-confidence and somatic anxiety (Dallas et al., 2019; Pineda-Espejel et al., 2013). More research should be conducted to examine the influential factors of anxiety on sport performance and the specific impacts that they have on mental blocks (Thompson, 2013).

Fear

Research involving emotions and sport performance have been observed, indicating that individuals experience different emotions and affects their performance in different manners (e.g., Robazza et al., 2004; Tamminen & Crocker, 2013; Woodman et al., 2009). The Individual Zone of Optimal Functioning (IZOF) theory helps to make a practical connection between emotional states and optimal performance where one is fully immersed in their performance

(Kamata & Tenenbaum, 2002). Each individual requires specific emotions in order to achieve their individual optimal zone of functioning. Emotions that could negatively impact one's performance include fear and anxiety (Durante et al., 2015). Durate et al (2015) examined common fears that may occur with 15 female adolescent artistic gymnastics who were experiencing mental blocks. Common themes included fear of injury, fear of error, and fear of the coach; however, the most pertinent fear from this study was fear of injury. Contrarily, athletes who participated in Day's (2006) study reported that they were not fearful of injury but did not understand why they could not perform the skill. This was consistent to Maaranen et al. (2020) who conducted a longitudinal study examining six gymnasts and four cheerleaders on their flikikammo, a Finnish word synonymous for mental block. Participants in this study reported being fearful of the backward movement of the skill execution. Furthermore, Maarenen et al. found that athletes were not fearful of being injured but they were afraid of stopping in the middle of the skill, which could result in serious injuries. Overall, fear may play a role in mental block development and researchers suggest that further research should be performed to better understand the impact fear has on mental block development (Day et al., 2006, Lawrence, 2016; Maaranen et al., 2017).

Refinement of Movement

Automatic processing requires minimal to no cognitive effort by an individual; contrarily, controlled processing requires attentional effort by individuals (Schneider & Chein, 2003). Athletes who experienced mental blocks experienced issues with skills that were in automatic processing (Bennett et al., 2015; Collins et al., 1999; Day et al., 2006). However, adjustments are constantly being made to fine tune the skills being performed, causing them to shift back into controlled processing. This indicates that when athletes are refining movements and skills, they

are operating under controlled processing (Collins et al., 1999). The impact of skills shifting from automatic processing back to controlled processing was examined with mental blocks.

Three hypotheses were proposed as to why one may momentarily lose their ability to perform a skill when trying to refine the movement (Collins et al., 1999). First, athletes consciously hindering movement due to negative cognitions involving previous injury. Secondly, athletes may attempt to control the movement too much, causing his conscious control to inhibit the execution of the optimum motor program. Finally, it is proposed that the brain cannot access the appropriate motor program to perform the desired movement. These hypotheses propose that elite athletes rely on perfected skills to remain in automatic processing to increase higher levels of performance. These hypotheses align with findings from Day et al. (2006), if a skill shifts to controlled processing and remains in control processing for a long duration, that the individual may be at risk for overthinking the skill and could lead to an onset of a mental block (Collins et al., 1999).

Role of Self-Efficacy in MB

Self-efficacy can be defined as the belief one has about their ability to successfully completing a skill or task (Bandura & Adams, 1977; Beattie et al., 2016). Over time, the mental block begins to chip away from individuals' self-efficacy to complete the skill since they have not physically completed the skill in a such a long time (Day et al., 2006; Feigley, 2009; Lawrence, 2016; Mortiz et al., 2000). Bandura's (1997) self-efficacy theory suggests that four factors influence perceived self-efficacy: Mastery experiences, vicarious experiences, verbal persuasion, and physiological feedback.

Mastery Experiences. Mastery experiences refer to one's personal successes when completing a task or skill and is considered one of the most important psychological constructs

that impact performance outcomes (Feltz & Lrigg, 2001; Habeeb et al., 2017). Mastery experiences can occur during practice and competition. Successes empower individuals' personal self-efficacy beliefs, while failures undermine it, especially if there were not successful performances before the failure (Bandura, 2010). With mental blocks, individuals are no longer able to perform the skill, thus reducing performance rates. Since the athlete is attempting yet not completing the skill during their mental block, this may robustly hinder self-efficacy (Lawrence, 2016).

Vicarious Experiences. Vicarious experiences increase one's confidence to perform the skill through observing other's performances (Habeeb et al., 2017). Vicarious information can be gathered from others through comparison, observation of others, and observation of self (Dumcke et al., 2021). Seeing others who have similar abilities model the skill increases the observer's belief that they also possess the same abilities to master the task (Bandura, 2010). Watching others being able to successfully complete skills while individuals with mental blocks are struggling may hurt their confidence and increase negative emotions (Lawrence, 2016).

Verbal Persuasion. Verbal persuasion involves encouraging or discouraging words either from others or oneself that effect one's perceived ability (Redmond, 2010). When external personnel, such as coaches, teammates, or spectators, are criticizing one's ability, this may decrease one's self-efficacy, while having words of encouragement may increase self-efficacy (MacAfee, 2021). Communication derived from oneself, known as self-talk, can also influence one's belief in performing a task (MacAfee, 2021). Individuals with mental blocks may have increased negative self-talk as their mental block progresses (Lawrence, 2016).

Physiological Feedback. Physiological feedback refers to the physical and emotional indicators that impact self-efficacy (MacAfee, 2021). Physical and emotional characteristics can

either be facilitative or inhibiting to performance, depending on how it is perceived (MacAfee, 2021). The relationship between emotional experiences and performance is known as one's Individual Zone of Optimal Functioning (IZOF); subsequently, emotional experiences affect physical experiences (Kamata & Tenenbaum, 2002). Certain emotional characteristics may inhibit performance. For example, anxiety provoking symptoms have been thought to contribute to mental block development (Day et al., 2006; Feigley, 2009; Lawrence, 2016). When an individual consistently experiences negative emotional and physical symptoms that are connected to a certain task or skill, it decreases one's self-efficacy (Lawrence, 2016), and decreases one's motivation levels (Bennett et al., 2015).

The perceived self-efficacy that an individual has will then lead to potential outcomes, like persistence, performance, and approach instead of avoidance (Bandura, 1997). Considering that mental blocks are disrupting performance accomplishments, affecting how athletes are perceiving vicarious learning, causing social interactions to be negatively altered, and heightening negative emotional feelings, Bandura's (1997) model may explain why athletes are at a higher risk to perceive themselves as having low self-efficacy. This may also cause an athlete to remain in the cycle that the mental blocks create with hindering performance and the negative emotional experiences that arise.

Purpose

Previous research has reported controversial findings for how mental blocks develop, linking it to performance pressures (Day et al., 2006; Durante et al., 2015), performance anxiety (Day et al., 2006; Durante et al., 2015), fear (Duran et al., 2015; Gullon & King, 1993), and refinement of movement (Collins et al., 1999). One consistent component proposed in mental

block research suggests that self-efficacy plays a vital role in mental block development (Day et al., 2006; Feigley, 2009; Lawrence, 2016). Due to discrepancies in the literature, this study aimed to better understand the development of mental blocks through the lived experiences of athletes who currently have a mental block or have experienced a mental block within the last 2 years.

Method

Participants

Six elite female athletes who participate in closed-skilled sports were involved in this study. Participants ranged from 19-23 years old ($M: 21.16$ years, $SD: 1.213$), and had a range of 9-14 years of participating in their sport ($M: 10.6$ years, $SD: 1.599$). Participants were either currently experiencing a mental block or had experienced a mental block within the past two years from the date of the study (see Table 1). Five of six participants experienced a mental block on a standing tuck, which is a skill that can be competed in all-star cheerleading, out of the six levels possible (USASF, 2021). The participant who was a former gymnast experienced a mental block on a Yurchenko vault, a level 6 skill according to USA Gymnastics (p. 1).

Table 1

Participant Demographics and Inclusive Criteria.

Participants	Age	Sport	Years in Sport	Competition Level	MB Skill	Years with MB
Participant 1	21	Cheerleading	9	Collegiate	Standing Tuck	2
Participant 2	19	Cheerleading	11	Collegiate	Standing Tuck	2
Participant 3	21	Cheerleading	10	Collegiate	Standing Tuck	5
Participant 4	21	Cheerleading	10	Collegiate	Standing Tuck	1
Participant 5	22	Cheerleading	10	Collegiate	Standing Tuck	2

Data Collection

After approval was received from the University's Institutional Review Board, the participant recruitment process began by using purposive sampling (Creswell, 2018). This entailed reaching out to organizations/programs via phone, email, or face-to-face that include closed-skill sport (e.g., diving, gymnastics, cheerleading, pole vault). Approximately 500 closed-skill sport coaches across the United States were contacted via email to recruit participants for this study. A recruitment email was sent to coaches, requesting coaches to forward the participant email to all of their athletes, eliminating there biases as to whether or not their athlete was experiencing a mental block. Coaches were not notified if their athlete participated in the study.

A demographic survey was developed via Qualtrics to determine if the participants met the inclusion criteria for the study. Inclusion criteria included: participants are elite athletes, which was defined as athletes who are or were a varsity player, a professional player, or national/international player; participants are 18-years or older; participants were involved in closed-skilled sports, meaning stationary or static environments; and finally, participants had to experience a mental block within the last two years for at least a month. Eligible participants were sent additional information for the study via the informed consent. Of the fifteen participants that completed the survey, six participants were eligible.

Semi-structure interviews were conducted, adopting questions from interview guides demonstrated by Maaranen et al. (2017) and Lawrence (2016). Interview questions asked about sport background, the onset of the mental block, coping strategies and interventions, along with their perceived interpretation of why the mental block occurred. All interviews were recorded

using “Voice Memo” from either the researchers iPhone 11 Pro or Apple MacBook Air. The interviews were then transferred into a secure and confidential online location.

Table 1

Interview Guide Questions

Question Type	Sample Questions
Sport Background	Tell me about your sport participation and level. How long have you been with each program? Have you had any injuries throughout your career? Could you describe when you first realized there was a problem with the skill? How have you progressed with the skill?
Onset of Mental Block	How are you/did you cope with the mental block? What makes it better? What makes it worse? What strategies have you tried? (interventions)
After Onset	

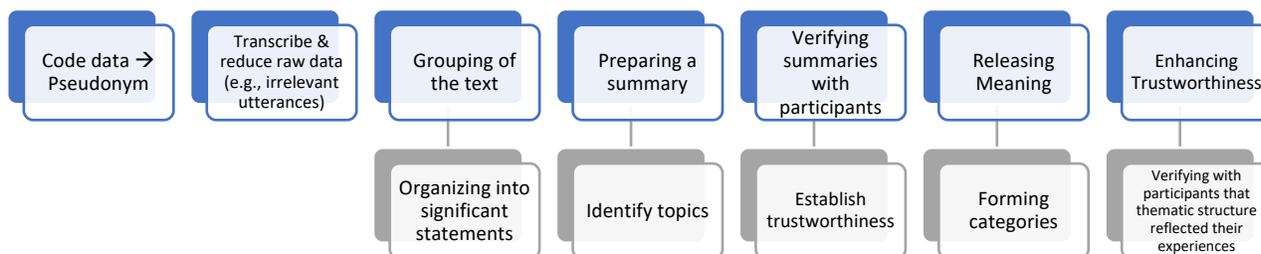
Research Design & Analysis

This study utilized hermeneutic phenomenology, a qualitative research method that studies how experiences, traditions, and culture shape individuals (Suddick et al., 2020). In the current study, the specific group involved elite athletes who participated in closed-skill sports and who experienced a mental block within the last two years. Participants were asked about their experiences with their mental blocks, expanding knowledge about this certain group who encounter mental blocks.

Coding methods for this study mimic from Czech et al. (2004; see Figure 1). The researcher coded the participants with a number, transcribed and reduced raw data, and grouped the text into significant statements. Three individuals involved in the research team who specialized in qualitative research, analyzed the data without the primary researcher to eliminate bias. Themes were created separately before being evaluated collectively. Consensus of thematic structure was developed among the research team, improving the credibility of the study (Ramsock, 2018). Significant themes were shared with the participants to ensure accuracy, enhancing the trustworthiness of the data (Lichtman, 2006).

Figure 1.

Data Analysis Protocol.



RESULTS AND DISCUSSION

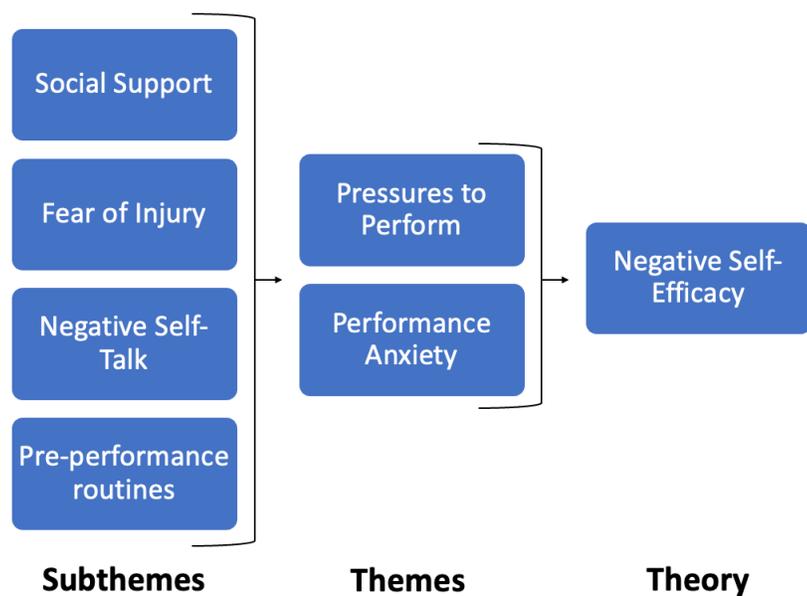
Overview

Overall, Bandura's (1977) self-efficacy theory was utilized to create themes to answer the main research question of what the experiences of athletes are who encounter mental blocks within a closed-skill sport. Self-efficacy refers to the belief one has about their perceived ability to complete a task or skill (Bandura & Adam, 1977; Beattie et al., 2016). Four sources of self-efficacy include mastery performances, vicarious performances, verbal persuasion, and

physiological feedback. Since previous research was persistent regarding the involvement of self-efficacy with mental block development (Day et al., 2006; Feigley et al., 2009; Lawrence, 2016), the current study used self-efficacy theory to create themes and subthemes (see Figure 2). Themes involved pressures to perform and performance anxiety. These relate to self-efficacy theory through two main self-efficacy sources: verbal persuasion and physiological feedback. Subthemes included social support, fear of injury, negative self-talk, and pre-performance routines. These relate to self-efficacy theory through mastery performances, verbal persuasion, and physiological feedback.

Figure 2.

Results via Data Collection



Themes

Main themes include pressures to perform and performance anxiety. These themes relate to these main sources of self-efficacy: vicarious experiences, verbal persuasion, and

physiological feedback. Vicarious experiences impact pressures to perform due to the athlete who is experiencing a mental block observing people who have similar abilities, which may increase expectations and pressure of the individual experiencing a mental block. This may also cause or heighten performance anxiety. Verbal persuasion from coaches, teammates, or oneself may increase pressures to perform and performance anxiety. Additionally, physical and emotional physiological feedback affects the pressures to perform and may cause performance anxiety.

Pressures to Perform

Performance pressures can be experienced from upcoming competitions and performances or spectators of movements (Day et al., 2006). There is extensive research on subjective emotional experiences and how it influences performance (e.g., Hanin, 2007; McCarthy, 2011). Kamata et al. (2002) proposes the Individual Zone of Optimal Functioning (IZOF) model which aims to predict the quality of nearing performances depending on the emotional state that the individual is in during their pre-performance routine (p.189). The IZOF model considers emotional intensities, recognizing optimal and nonoptimal emotions for each individual. Participants indicated experiencing that performance pressures inhibited their ability to complete their skill. Participant 1 stated:

I always failed under pressure after my senior year. It gave me anxiety and stress and I began overthinking the skill. I had all the motion of the tuck memorized but I stopped thinking about the skills and began doubting the skill. Additionally, the pressure to connect skills with the standing tuck also messed with me and I could not throw it.

Participant 1's quote relates to the IZOF model because they are self-aware of their optimal emotional states and recognized how the emotional intensity of the anxiety caused distress and overthinking negatively impacted their performance.

In addition to emotions, sport level might also influence the intensity of pressure felt from athletes (Hussain et al., 2021). Studies suggest that elite athletes experience more pressure to have more "clutch" performances, meaning successful performances while under pressure (Schweickle et al., 2021). However, when individuals fall short of these expectations, it may lead to negative thoughts and emotions regarding their performance (Gould et al., 1999; Mellalieu et al., 2009). One participant mentioned that experiencing emotions because of the expectations of performing at an elite level when trying out for a collegiate cheerleading program. Participant 2 stated:

My first realization when I knew that there was a problem with a skill was my first collegiate tryouts and I never cried over the skill until I felt pressures to perform well at the tryouts. The pressure eases whenever I was alone and did not have other people around to watch me.

Pressure can heighten if there are expectations placed by their coaches, teammates, and spectators (Moore, 2015). A study conducted by Day et al. (2006) examined lost movement syndrome with 15-national trampolinists. Athletes in this study reported feeling judged and believed that their spectators assumed that they lacked courage for not attempting the skill (Day et al., 2006). This was also seen in the current study when multiple participants expressed lacking confidence when performing in front of others. One participant mentioned being singled-out within their sport environment, which increased the pressure to perform the skill. Participant 3 expressed:

My coach would make me stand there by myself with the rest of the team watching me. This put a lot of pressure on me to perform the skill in that moment and I did not want to let anyone down. Additionally, teammates would place pressure on me by becoming frustrated whenever I did not throw the skill. The environment that I was in negatively impacted my mentality and ability to complete the skill.

Another participant shared negative statements expressed by their coaching staff out of frustration regarding the athlete's mental block. Participant 6 stated:

They would negatively compare me with other elite gymnasts at the club. Comparison and friendly competition can be good at times, but they did not see how it was affecting me. Additionally, they would remind me how the younger ones were looking up to me and this placed a lot of pressure on me.

Even if external pressures are removed from one's sport environment, internal pressures may occur from the athletes (Olsson et al., 2021). Harb-Wu and Krumer (2019) examined choking under pressure in front of a supportive audience using professional biathlon events over a 16-year period. This study found that more shots were significantly missed when participants were competing in their home country compared to competing abroad (Harb-Wu & Krumer, 2019). Similar findings occurred in this study when one participant reported setting high expectations for themselves even though their coaches and teammates did not in regard to tumbling.

Participant 4 stated:

My teammates and coaches were very supportive. They would encourage me to tumble but never placed pressure on me. The pressure would come from my own head because of the expectations that I had for myself.

Based on findings from the current study, both external and internal pressures influence mental block development, which supports findings from Day et al. (2006) and Durante et al. (2015). External pressures like the influence of vicarious experiences, verbal persuasion, and physiological feedback have an immense impact on mental block development and symptoms. In addition, internal pressures can increase one's self-talk or expectation of mastery experiences that are not occurring, leading to negative physical and emotional aspects, which influences one's self-efficacy. Therefore, performance pressure should be considered when managing mental block symptoms.

Performance Anxiety

Performance anxiety involves experiencing nerves in front of other people before completing an activity or skill (Haradsen et al., 2020). This includes two types of anxiety, known as somatic and cognitive anxiety. Somatic anxiety refers to the physical symptoms that one may experience, while cognitive anxiety refers to the emotional aspects (Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017; Thompson, 2013). Smith and colleagues performed a study with 15 female cheerleaders. Results indicated that participants experienced sweaty palms and elevated heart rate when asked to perform the skill. Findings from the current study are consistent with these results. All six participants reported having performance anxiety before attempting to perform the skill, resulting in physical and emotional aspects. Participant 1 reported:

Some of my teammates also caught on to my pattern of using the restroom before practice started. It increased my confidence in my tumbling abilities. However, my palms would still sweat whenever we would get to standing tucks and sometimes my stomach would feel sick.

Participant 2 and Participant 3 both mentioned experiencing similar experiences to participant 1. Both reported feeling nauseas and having sweaty palms when preparing to their standing tucks. One participant was so anxious, she self-inflicted physical pain. Participant 4 stated:

I would get very anxious coming to practice because I knew that we would tumble first, but it would typically be a good practice after that was completed. Leading up to practice and tumbling, I would puncture my skin with my nails, especially before throwing my tuck.

One participant reported that her stress levels took their symptoms to another level. Participant 6 stated that would stress themselves out to the point where they would throw up numerous times and have seizures before competing. This is consistent with previous research that suggests the hindrance somatic anxiety has on performance (Balyan et al., 2016; Nieuwenhuys & Oudejans, 2017).

Cognitive anxiety involves one having negative expectations or thoughts about their upcoming performance (Vickers & Williams, 2007). There are differing views regarding the impact of cognitive anxiety has on performance. Thompson (2013) performed a study with 49 female children and adolescent cheerleaders examining the effects of cognitive anxiety on mental block development. Findings indicated that athletes experiencing mental blocks had higher anxiety levels and fear than those without a mental block. These findings were consistent with the current study. One participant mentioned about the stress of cheerleading and performing their standing tuck. Participant 5 stated:

I would scare myself when thinking about the skill. I would stress myself out by overthinking and this caused me to become anxious before performing the skill.

This study suggests that both somatic and cognitive anxiety can play a role in mental block development, which is connected to the self-efficacy component, physiological feedback.

Physiological feedback involves physical and emotional aspects that can affect performance outcomes (MacAfee, 2021). Positive emotions such as excitement or being calm typically increase self-efficacy, facilitating performance, while negative emotions such as fear, anxiety, or frustration tend to decrease self-efficacy, inhibiting performance (Brooks, 2014). Previous mental block research has suggested that the physiological components, fear and anxiety, negatively impact mental blocks (Chase et al., 2005; Day et al., 2006; Durante et al., 2015; Feigley, 2009). This is consistent with findings from the current study, yielding the importance that both somatic and cognitive anxiety have on mental block development.

Subthemes

Subthemes include social support, which relates to vicarious experiences and verbal persuasions of self-efficacy. Another subtheme includes pre-performance routines, which relates to mastery experiences and physiological feedback within self-efficacy theory. Other subthemes that are connected to self-efficacy theory involves negative self-talk and refinement of movement. Both are influenced by all four components of self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological feedback.

Social Support

Social relationships influence athletes' performance and well-being (Freeman, 2021). Day et al. (2006) discussed the decrease in social support from coaches, parents, and teammates as their mental block progressed. Mixed findings occurred in this study, as some participants gained positive support from their coaches and teammates while others did not.

The coaching staff develops the team culture when sharing similar values and beliefs that each member adopts (Raithel, van Knippenberg, & Stam, 2021). Furthermore, coaches set the tone for the team because they decide on the members of the team and their respective roles (Jowett & Chaundy, 2004). Due to this, the coach-athlete relationship can vastly impact performance. Moore (2015) explored the coach-athlete dyadic relationship when cheerleaders were experiencing mental blocks and found that athletes expressed feeling shame for letting their coaches down because they could not complete the skill, which caused added stress. This finding is similar to Participant 6 and her relationship with her coach, who stated:

The more that I would stop myself from vaulting, the more I got punished by my coaches. They were frustrated about the situation. Whenever I would finish doing my punishment push-ups, they would yell, “You better go this time.” They would compare me to another gymnast and make us compete. They would state, “Oh, she just got this still, what are you going to do now?”

Effective communication between the coach and the athlete is the key component to building strong relationships (Jowett, 2017). Coaches who were interviewed for the study conducted by Moore (2015) emphasized the importance of having open dialogue with their athletes beyond the topic of sport, so athletes know that they genuinely care about them as people. Two athletes within this study had similar experiences where their coaches would spend time understanding where their athletes were coming from and what they needed, specifically with their mental block. One shared that she was referred to a sport psychologist and had a different punishment than other teammates when she was not able to throw her tuck. Participant 2 stated:

My head coach would sit me down and we would have long talks about what was going on. He eventually referred me to the team sport psychologist. My punishment for not

throwing my tuck was to sit out the first football game. My assistant coach typically makes individuals who have to sit out sit in the stands with the band. However, my assistant coach allowed me to stand on the field next to her. She stated that she wanted me to watch my teammates and realize that I should be out there with them.

Another participant stated that her coaches placed her on the team for other reasons than tumbling. Participant 4 stated:

The coaching staff has always been understanding of my tuck. Whenever I would become frustrated, they stated, “You didn’t make this team to tumble.” This alleviated a lot of stress and pressure.

Having an interpersonal and authentic coach-athlete relationship opened up a strong line of communication, decreasing the chances of burnout and increases retention rates (McGlone, 2021; Moore, 2015). In Moore’s (2015) study, there were times where miscommunications occurred, and athletes reported feeling as if their coach was frustrated with them for their mental block and believed that the coaches thought they were using it as an excuse to be lazy. One athlete in the current study shared a similar experience. Participant 3 stated:

I was told that it’s all a mental game and that I need to get over myself. They never understood why I could not throw it. Sometimes in practice, my coach would make me do my tuck by myself and have everyone on the team watch because they were finished throwing theirs. It made me lose respect for him and I have also seen him do that with another teammate who was my best friend. It tore both of us apart.

All participants stated that the perception of their coach impacted the amount of pressure placed on them to perform the skill. This either inhibited their performance by adding

pressure or alleviated stress and altered their perception of pressure due to communicating effectively and coaches having an understanding of the athlete's experience.

Everyone involved in the program or organization contributes to the team culture. Therefore, positive relationships among teammates are equally as important as the coach-athlete relationship (Eime et al., 2013). Trust seems to play an imperative role between teammates that their role and job will be performed (Imam & Zaheer, 2021; Malloy et al., 2021). Mach and colleagues (2010) conducted a study examining the effect of trust among team members on performance with 690 professional elite athletes and found that team player trust improves team cohesion and support. This was consistent with the findings from the current study. Participant 4 and Participant 6 indicated that they had supportive teammates through encouragement and "picking them up" at practice. Due to this, this improved team cohesion and the sport environment. Contrarily, lower trust decreases team cohesion and support (Imam & Zaheer, 2021). Participants who had unsupportive teammates felt their sport environment become tense. Participant 1 stated:

I had one teammate who got angry for not throwing things during practice. During competitions within my sophomore year, there were times where I did not throw my intended pass during, there was tension between my teammates and me. I brushed it off because there were other things that happened within those routines.

Another participant suggested that their teammates were not considerate of the other things that were occurring in their life through stating:

Whenever I would not throw my tuck, I got "grilled into." I wasn't in the right mindset in my personal life and it affected my cheer life. My teammates were a big factor. They tore

me down rather than built me up. They would just “lay into me” and not make me feel like I was a part of the team.

One participant reported having mixed reactions from teammates over their high school and collegiate years. Participant 3 stated:

Most of my teammates were very helpful and they wanted me to get better and feel better. When I got to college, it was mostly the seniors who had a problem with me not throwing my tuck. The seniors indicated that they could not relate and didn't understand why I couldn't “just get over it.” This only made me feel worse.

Overall, social support is connected to vicarious experiences and verbal persuasions, which are two main sources of self-efficacy. Having positive relationships in the sport environment increases team cohesion and comfortability, which is important for individuals who are experiencing a mental block (Lawrence, 2016). If the individual with a mental block is having negative experiences regarding their social support systems, it may inhibit progress with their mental block (Lawrence, 2016).

Pre-performance Routines

Pre-performance routines are series of motor, emotional, and cognitive behaviors directly before performing a skill (Cohn, 1990; Perry et al., 2018). There are cognitive components within pre-performance routines, such as self-talk, imagery, and emotion regulation (Cotterill, 2011; Velentzas et al., 2011). There is also a physiological component that the athlete attempts to control, such as heart rate (Ortega & Wang, 2018). Lastly, there is a behavioral component that occurs with pre-performance routines, such as breath control, visual focus, and particular body mechanics (Velentzas et al., 2011). Overall, research has suggested that pre-performance routines enhance confidence in motor skills and have higher rates of peak performances

(Csikszentmihalyi, 1990). Additionally, pre-performance routines ease one's mind about the skill and increase the confidence (Di Corrado, 2021). Findings from Di Corrado and colleagues (2021) study are consistent with the findings from the current study. Two of the six participants indicated that they had a pre-performance routine before they attempted to perform the skill, which alleviated their anxiety about performing the skill. Participant 1 stated:

I wore the same shoes every practice and tied them the same way. I would sing the same song to take my mind off of the skill for a brief moment. Doing the same routine beforehand would create consistency and calm me down a little. But, when I would try to imagine myself successfully completing the skill, I could never visualize me actually finishing the skill. It is like I did not remember how to do it.

Routines enhance one's self-efficacy, specifically enhancing mastery experiences (Ma et al., 2021); however, when individuals are experiencing a mental block, they are not getting past the pre-performance routine. In the current study, participants experienced their mental block for longer than three months. Due to the duration of their mental block, self-efficacy is severely hindered over time, which vastly affects performance (Bandura, 2010; Lawrence, 2016). Coaches, sport psychologists, and other personnel have reported in previous studies interventions to improve one's mastery performance rate, such as giving the athletes drills or having them do a different skill that they have mastered (Chase et al., 2005; Lawrence, 2016; Maaranen et al., 2017). A study performed by Chase et al. (2005) examined self-efficacy with gymnasts who were afraid of getting injured. Psychological strategies were discussed within this study, involving physical preparation and watching film or their previous successful performances. Gymnasts reported trying different drills and apparatuses before moving back to the skill that they were fearful of to increase their confidence. These findings were similar to the participants

in the current study. Participants in the current study mentioned not knowing if or when they would be able to complete the skill again but reported watching old videos of themselves to remind them of their capability. Though individuals are doing alternative skills and drills in place of the skill, it still decreases confidence when individuals have to return back to the skill that they are experiencing a mental block (Lawrence, 2016).

Others stated that they did not want to think about the skill. Participant 3 and 4 reported thinking of fruit to take their mind off of the skill and alleviate their feelings of being overwhelmed. Though the anxiety was alleviated, they were also unable to perform the skill. Overall, those who used pre-performance routines reported having less anxiety compared to other participants in the study who did not perform a consistent pre-performance routine. While this would be performed before attempting the skill, all of the participants were still unable to complete the skill.

Fear of Injury

Having a fear of injury involves individuals not wanting to complete the skill because they are afraid that they will be hurt (Bennett et al., 2015). Durante and colleagues (2015) examined common fears with 16 female artistic gymnasts experiencing mental blocks. Fear of injury was the most prevalent among all of the participants. Contrarily, athletes who participated in Day et al.'s (2006) study reported that they were not fearful of injury but did not understand why they could not perform the skill. Only one of the six participants indicated that they were nervous about injuring themselves from the mental block skill. Participant 5 stated:

I put it into my head that I unable to perform the skill. Every time that I did the skill, I was scared that I would mess up and injure myself. I would visualize myself doing it before practice and would psych myself out before even getting into the space.

This study corresponds with findings from Day et al. (2006) and suggests that fear of injury is subjective to mental blocks. In order to perform successfully, individuals must learn to control their responses to fear (Chase et al., 2005). Fear is a physiological feedback source, which is related to the four main components of self-efficacy (Lawrence, 2016). Findings from this study indicate that physiological feedback influences mental block development.

Refinement of Movement

Refinement of movement refers to the alteration of technical body movements to enhance motor skills (Moore & Stevenson, 1991). Collins and colleagues (1999) conducted a case study with an elite javelin thrower who was instructed to change their technique. Collin et al. (1999) suggested that athletes may try to control the new movement too much, consciously inhibiting execution of the skill, which may overload the brain, limiting access to previous motor networks. This study aligns with findings from Day et al. (2006) which indicated that if a skill remains in controlled processing too long, it may cause one to overthink the skill. Findings from the current study align with these studies. Two of six participants indicated that they were attempting to make changes to their standing tuck and contributed to the inhibition of the skill. Participant 1 stated:

I took private lessons to improve on my tumbling outside of my high school cheerleading team. The corrections from my tumbling coach would contradict what my high school coach was saying. This confused me and resulted in me overthinking the skill.

Another participant mentioned that they were told to adjust the way that they initially learned their tumbling skill. Participant 3 stated:

My coaches wanted me to remove the step that I took before throwing my tuck. Since I was so focused on removing the step to please them, I forgot what to how I was supposed to do the tuck, causing me to overthink the technique of the skill.

The findings from this study indicate that refinement of movement may be subjective to one's mental block development. Shifting the skill from automatic processing to controlled processing means that the individual is learning a different motor skill that they are not used to (Collins et al, 1999). Consequently, this may decrease mastery experiences, which is one of the four main sources in Bandura's self-efficacy theory (Akhtar et al., 2013).

Limitations and Future Directions

While the current study design provided the opportunity for an in-depth exploration of mental block development, the sample size limits the transferability of the findings to the overall population. The study sought to explore closed-skill sports with participants from pole vault, diving, gymnastics, and cheerleading. During the recruiting process, approximately 300 collegiate and club coaches were contacted across the United States. However, there were several barriers when finding participants. Coaches declined due to being in the middle of their season. Ten athletes take the demographic survey were not eligible to participate in the study because their experiences did not match the definition of a mental block. Two athletes that met the inclusion criteria did not respond to the researcher's communication efforts. Due to these occurrences in the current study, future researchers should approach coaches in person, request to observe practices if coaches believe that there are individuals on the team with mental blocks, and utilize personal contacts from closed-skilled sports. Since the current study involves cheer and gymnastics, minimal generalizations can be made about mental block development and conclusions that can be drawn should stay focused on cheerleading. Another limitation involves

the interview process. Due to implications of COVID-19, a national pandemic that vastly changed social interactions, specifically face-to-face interactions, along with a few participants being out of state, interviews were held via Zoom or phone. Because of the limits that Zoom or phone calls place on communication, pieces of communication may be missed, such as participants' use of nonverbal communication. Nonverbal communication, such as gestures, body language, tone of voice, and facial expressions assist one to understand one's perspective (Preston, 2005). Seeing nonverbals could have benefitted the interview process, assisting the researcher with probing questions based upon responses and reactions.

Future research should continue to examine pressures to perform, furthering examining the influence coaches have compared to one's teammates and examine the impact it has on self-efficacy. Since self-efficacy theory was utilized to explain mental block development in the current study, future research should further investigate interventions to improve the sources of self-efficacy that one has with mental blocks. Finally, researchers should explore preventative strategies for mental blocks better understand the onset, along with how to overcome mental blocks when athletes endure one.

Implications

Findings from this study can be utilized by coaches, parents, and sport psychology consultants to better understand the experiences of athletes who face mental blocks. When working with individuals who have experienced a mental block, the four main sources of self-efficacy should be assessed.

Since these athletes are not having mastery experiences, sport psychology consultants could utilize previous film or imagery techniques to enhance mastery experiences. Additionally, coaches can have athletes complete lower-level skills or drills that they feel comfortable

performing to increase confidence. In regard to vicarious experiences, sport psychology consultants can limit the athlete's ability to observe others if it is inhibiting performance. Furthermore, coaches can place the athlete in a lower-level group, making them the master of the class, increasing their confidence and abilities to perform skills. Verbal persuasion from coaches, teammates, and sport psychology consultants should be positive and supportive. Finally, sport psychology consultants should assess the physical and emotional feedback they individual is experiencing. If the physiological feedback is inhibiting performance such as fear or performance anxiety, consultants should attempt to alleviate those elements with various techniques such as relaxation or imagery.

Mental block interventions have been examined, but researchers have yet to find an effective mental block strategy to diminish mental block symptoms. Future research should focus on preventative measures for mental blocks, along with interventions to overcome mental blocks. This would enhance sport performance, team environments, retention rates, burnout rates, and reduce the risk of injury.

Conclusion

In conclusion, the current study aimed to expand the current knowledge of mental block development. Findings from this study indicate that self-efficacy plays a vital role in mental block development, specifically when levels of performance pressures and performance anxiety are high. Therefore, sport psychology consultants should assess the four main sources of self-efficacy to assist athletes with alleviating mental block symptoms. These findings are consistent to previous mental block research; however, future research should increase their sample size and number of closed-skill sports. Additionally, studies should examine effective preventative strategies and intervention strategies.

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APPENDICES

Appendix A Interview Guide

Study Title: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks in Closed-Skilled Sports
Miata Walker
Ball State University

Introduction: The purpose of this study is to examine the experiences that elite athletes have with mental blocks, which is what this interview will attempt to address. Just a reminder that this is a safe space, and your answers will be confidential and will be only seen by the researchers in this study. Your name will not be mentioned in the study, yet it will have a code. You do not have to disclose any information that you do not wish to. You also have the right to drop out of the study at any time.

Sport Background:

- 1) What sport(s) do you participate in?
 - a. If multiple sports: Which sport, are you having a mental block in?
 - b. Is your mental block affecting other sports that you participate in?
- 2) How long have you been in this sport?
- 3) How long have you been with the current program that you are with?
- 4) What is the skill that you are having a mental block on?
- 5) Have you ever been injured?
 - a. Did it take you a long time to get back into your sport?
 - b. How did you feel during your time off?
- 6) What level are you at?
- 7) What level are you in your sport?

Onset of Mental Block:

- 8) Could you describe when you first realized there was a problem with the skill?
- 9) How have you progressed with the skill?
- 10) Tell me about the environment within practice and competition.
 - a. How is the pressure
 - b. Laid back
- 11) How do you feel the mental block has affected your mental block?
 - a. Parents
 - b. Coaches
 - c. Teammates

After Onset:

- 12) How are you coping with the difficulty now?
 - a. What makes it better?
 - b. What makes it worse?
- 13) How has your social support changed over time?

Participants Interpretation of Mental Block:

- 14) Why do you think you have trouble with the skill(s)?
 - a. Possible topics to veer off (discrepancies)
 - i. Fear of injury or reinjury
 - ii. Performance anxiety
 - iii. Self-Efficacy Theory
 - iv. Pressures to perform

- 15) What are some interventions that you have tried to alleviate your mental block?
 - a. What have you found to make it better?
 - b. Worse?

- 16) How did you feel about the skill before it was an issue?
 - a. Emotions
 - b. Physical
 - c. Psychological

- 17) What do you think changed before your mental block?
 - a. Refinement of movement?
 - b. Injury?
 - c. Change in coaching staff?

- 18) Is there anything else that you would like to tell me about your experiences regarding your mental block?

Ending Script: I really appreciate you taking the time to meet with me today. I may also contact you to do a second interview in hopes to continue to enhance the data that is already collected. So that you are aware of the timeline, I intend on wrapping up interviews closer to the end of the semester and provide a preliminary report. When it is published, and with your permission, I will send you a copy. Please keep in mind that it may take months for this to happen. In the meantime, if you have anything else that you would like to add, please feel free to email me. If you have questions regarding the study or anything, don't hesitate to ask.

Appendix B
Coach Recruitment Email
Study: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks
in Closed-Skilled Sports - 1491979

To Whom It May Concern:

My name is Miata Walker, and I am a second-year master's student in the dual program of Sport and Exercise Psychology and Rehabilitation Counseling at Ball State University. I am writing to you to extend my research study invitation to your athletes to see if they qualify and are interested in participating.

My research study involves learning more about the experiences of elite athletes who have experienced a mental block within the last two years. To participate, the participants must be 18 years or older and have experienced a mental block in the last two years. **Participating in this study is confidential.**

Could you forward this email to all of your athletes? More information about the study for the athletes is attached.

I appreciate your assistance with this research project. If you have any questions or concerns, please contact me at mjwalker4@bsu.edu or my advisor, Dr. Lindsey Blom, lcbloom@bsu.edu.

Miata Walker | Ball State University
Graduate Student & Research Assistant
MS Sport and Exercise Psychology
MA Rehabilitation Counseling
mjwalker4@bsu.edu

Appendix C
Athlete Recruitment Email

Study: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks
in Closed-Skilled Sports- 1491979

To Whom It May Concern,

My name is Miata Walker, and I am a master's student at Ball State University. I am writing to invite you to participate in my research study involving elite athletes experiencing mental blocks to figure out more about why they occur, assisting with research down the line in hopes to find beneficial intervention techniques to improve the state mental blocks and even diminish them. You are eligible to be in this study because you have experienced this mental block for three months on a skill that was once automatic to you and is now causing you problems. I've obtained your contact information from [*describe source*]. **Please note that these personnel will not have any information as to who participated in the study and it will not affect your standings on the team.**

If you decide to participate in this study, you will be participating in an interview with me that should only last about 45 to 60 minutes. Questions will involve your sport participation and background, and onset of the mental block, for example. I would like to audio record the interview to use the information to describe the characteristics of your mental block if you are willing.

Remember, this is completely voluntary. If you'd like to participate or have any questions about the study, please email or contact me at mjwalker4@bsu.edu and I will send you an informed consent form, further describing the study.

Thank you for your time and I look forward to hearing from you.

Sincerely,

Miata Walker

Appendix D
Consent Form

Study Title: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks in Closed-Skilled Sports- 1491979

Study Purpose and Rationale

The purpose of this study is to understand the experiences of elite athletes who are experiencing mental blocks. Mental blocks can be defined as a loss of the athlete's ability to perform skills that were once automatic (Maaranen et al, 2017; Day et al., 2006; Pattison & Cotterill, 2017). Mental blocks only affect some athletes, and athletes do not regress to performing the affected skills. However, research has found conflicting arguments as to why they occur and have called for future research to dive deeper into understanding mental blocks. This study will help with understand more about the development of mental blocks and lead us in a direction to understand different interventions to use to assist athletes who will experience a mental block.

Inclusion/Exclusion Criteria

Inclusion criteria for participating in this study includes individuals who are at least 18 years old or older. Participants need to be elite athletes, which for this study will be defined as athletes who are currently compete as a varsity player, a professional player, or a national or international player. In order to participate in this study, the athlete must have the experience of their mental block for at least one month (~30 days).

Exclusion criteria includes athletes who are in their sport within the first year, who have not mastered the skills that are causing them troubles, who have not been experiencing issues with a particular skill for three months, and who is under the age of 18-years old.

Participation Procedures and Duration

Interviews will be conducted for approximately 45-minutes to an hour via Zoom. Questions will be targeted towards potential aspects of the mental block to figure out why you are experiencing issues with specific skills. Follow-up interviews may occur to have participants confirm transcripts, themes, and ask any other questions that may assist with answering the research question.

Audio or Video Tapes

Audio recordings will be utilized to assist with data collection and interpretation. These recordings will be confidential and only the research team will have access to these files, which will be kept on a secured, password protected computer. Files will also be saved under a code instead of the participant's name.

Data Confidentiality or Anonymity

The data will be confidential. Only the researcher will be able to connect interview information with each participant in the study. Different names will be applied when any formal writings or presentations report study findings.

Storage of Data and Data Retention Period

Data will be kept until Spring of 2022 unless the duration of the study is completed beforehand.

Risks or Discomforts

The research study is examining a topic that may be sensitive to discuss since mental blocks are seen as an inhibitory component affecting one's sport performance. This may result in the participant potentially experiencing psychological risks, such as mental stresses.

Who to Contact Should You Experience Any Negative Effects from Participating in this Study?

You also have mental health services if need be. While the researcher cannot fund these services, the following contacts are our recommendations. The Ball State Counseling center is open to students and the public if needed contact them at (765) 285-1736 from 8am-5pm. Still Waters Counseling, Muncie, IN, contact at (765) 284-0043 and or the International Helpline, 1-866-482-5433.

Benefits

This may improve one's own condition, wellbeing, or quality of life when expressing the experiences of one's mental block due to the discussion of an occurrence that has been inhibiting one's sport performance.

Voluntary Participation

Your participation in this study is completely voluntary and you are free to withdraw your permission at any time for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study.

IRB Contact Information

For questions about your rights as a research subject, please contact the Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5052 or at orihelp@bsu.edu.

Study Title: Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks in Closed-Skilled Sports 1491979-1

Consent

I, _____, agree to participate in this research project entitled, *Phenomenological Understanding of Elite Athletes' Experiences with Mental Blocks in Closed-Skilled Sports*. I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described on the previous page) in this study.

Participant's Signature

Date

Researcher Contact Information

Principal Investigator:

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