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Phenomenological Study Into the Role of Self-Efficacy in Minority Student-Athletes' Sport Performance

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**PHENOMENOLOGICAL STUDY INTO THE ROLE OF SELF-EFFICACY IN
MINORITY STUDENT-ATHLETES' SPORT PERFORMANCE**

A Master's Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Kinesiology

By

Tomas Singhgolden

August 2023

PHENOMENOLOGICAL STUDY INTO THE ROLE OF SELF-EFFICACY IN MINORITY STUDENT-ATHLETES' SPORT PERFORMANCE

Kinesiology

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Master of Science

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ABSTRACT

Self-efficacy is a person's belief in their ability to successfully complete a task, which can be derived from four sources of information (i.e., past performance, vicarious experience, verbal persuasion, and physiological states). The role of self-efficacy in sporting performance is well documented as being positively associated with enhanced performance across multiple levels of sport (e.g., Olympic, collegiate athletes). Specifically, with collegiate athletes, high levels of reported self-efficacy have resulted in higher performance accomplishments. Although self-efficacy has been researched within sports, there is a dearth of knowledge examining ethnic minority athletes' perceptions of self-efficacy related to their athletic performance. The aim of this study was to explore the role of self-efficacy in ethnic minority (e.g., non-Caucasian) student-athletes' athletic performance. Using a phenomenological research design, semi-structured interviews were conducted with six ethnic minority endurance sport student-athletes. Interviews were recorded, transcribed verbatim and analyzed using qualitative data analysis software. The four main sources of self-efficacy were identified as four significant themes, along with coaching and mental toughness. Subsequent subthemes of concentration, mental skills, anxiety, flow/the zone, individual athlete vs team sport athlete, achieving success, role model, positive emotions, injury, self-negativity, mindfulness, sense of belonging, feedback and positive influence, were established. Results suggested that ethnic minority student-athletes rely on the four main sources of self-efficacy, along with their relationship with their coach and their levels of mental toughness to produce increased sporting performance. Understanding the role these factors can have in aiding sporting performance should be considered for ethnic minority student-athletes.

KEYWORDS: qualitative, past performance, vicarious experience, verbal persuasion, physiological states, coaching, mental toughness

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August 2023

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In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

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TABLE OF CONTENTS

Introduction	Page 1
Significance of the Problem	Page 1
Use of Qualitative Methodology	Page 2
Literature Review	Page 3
Self-Efficacy	Page 3
Self-Efficacy in Sports	Page 3
Self-Efficacy in Collegiate Athletes	Page 5
Minority Athletes' Self-Efficacy and Lack of Research	Page 7
Methods	Page 13
Procedures	Page 13
Bracket Interview	Page 16
Pilot Study	Page 17
Results	Page 18
Past Performance	Page 19
Vicarious Experience	Page 20
Physiological States	Page 21
Verbal Persuasion	Page 22
Coaching	Page 23
Mental Toughness	Page 24
Discussion	Page 25
Past Performance	Page 26
Vicarious Experience	Page 27
Physiological States	Page 29
Verbal Persuasion	Page 30
Coaching	Page 31
Mental Toughness	Page 32
Implications	Page 34
Limitations and Future Directions	Page 34
References	Page 38
Appendix A: IRB Approval	Page 48

LIST OF TABLES

Table 1. Overview of Theme and Sub-Themes of Past Performance	Page 42
Table 2. Overview of Theme and Sub-Themes of Vicarious Experience	Page 43
Table 3. Overview of Theme and Sub-Themes of Physiological States	Page 44
Table 4. Overview of Theme and Sub-Themes of Verbal Persuasion	Page 45
Table 5. Overview of Theme and Sub-Themes of Coaching	Page 46
Table 6. Overview of Theme and Sub-Themes of Mental Toughness	Page 47

INTRODUCTION

The purpose of this study is to understand how self-efficacy affects minority student-athletes' sporting performance through conducting semi structured interviews. The sample consisted of ethnic minority student-athletes at a mid-sized Midwestern university.

Significance of the Problem

Despite much research into self-efficacy, there is a gap in sport psychology research focusing on ethnic minorities (Ayiku, 2005; Duda & Allison, 1990; Ram, Starek & Johnson, 2004). Research investigating self-efficacy predominantly uses Caucasian samples and doesn't differentiate between different races within research findings. Devos and Banaji (2005) established that this led to a "White = American" relationship, which suggested that being American was synonymous with being white. Western psychology views research ethnocentrically, and assumes theories based on majority groups are applicable to all groups. These inappropriate generalizations can result in misdiagnosis or mistreatment of ethnic minorities (Iijima Hall, 1997).

Race is a deciding factor behind participation in sport. While sport is looked at as a vehicle through which integration can occur, it is also used to differentiate between social and racial groups (Elling & Knoppers, 2005). It is important to understand how disparities experienced by minority athletes are manifested in their relationships with self-efficacy; a potentially performance-enhancing psychological variable. Given this, this study looks to investigate a gap in self-efficacy research: Understanding the role of self-efficacy in minority athletes' sporting performance.

Use of Qualitative Methodology

The study takes on a phenomenological approach, which is the study of lived experience; this approach aims to gain a deeper understanding of the meaning of everyday experiences (van Manen, 1997). Due to the nature of phenomenology, qualitative methodology was used to capture these experiences in detail. According to Devetak, Saša & Vogrinc (2010), qualitative research is an exploratory approach which views the world in the eyes of those being examined; an approach that is suited to understanding the experience of ethnic minority athletes.

Using a qualitative approach to investigate self-efficacy also allows for the exploration of potential differences among athletes, including those affected by race related issues. Athletes are given a platform in which they can express how they experience the phenomenon being investigated. As such, many qualitative methodologies provide the opportunity for sociocultural perspectives to materialize from data (Ram, Starek & Johnson, 2004). Furthermore, the issue of race can be a sensitive one and it is important to provide ethnic minority athletes validation and a voice when conducting research into factors that affect their feelings related to performance. Not only does this give insight into their experience, but also highlights where research should be conducted next.

LITERATURE REVIEW

Self-Efficacy

Self-efficacy is a person's belief in their ability to successfully complete a particular task (Bandura, 1977). It can be derived from four sources of information. The first is 'past performance', which indicates that previous success increases mastery expectations, which are strengthened through repeated success. Once established, this self-efficacy can be generalized to other scenarios that are substantially different from those in which the success was initially experienced. 'Vicarious experience' is the second source of information. This occurs from observing models (e.g., role models) perform specific behaviors and strategies that lead to success in a given situation. Witnessing this, supports one's belief in their own ability to perform the task successfully (Mureritta, 2005). 'Verbal persuasion' is the third factor affecting self-efficacy. People are encouraged into believing that they can cope successfully with challenging situations. The final source of information for self-efficacy is 'physiological states'. During stressful situations, an individual's perceived competency levels can be expressed through their emotional arousal. If an individual is experiencing high arousal that is associated with debilitating performance, they are likely to have lower expectations of success compared to when they aren't aroused aversively (Bandura, 1977).

Self-Efficacy in Sports

As well as being a powerful predictor behind success, self-efficacy can be harnessed in a way to maximize its performance enhancing benefits (Heslin & Klehe, 2006). In terms of sports, some athletes may have higher levels of self-efficacy carrying out one task, but lower levels for

another task, making it a situationally specific variable. According to Maddux (2012), self-efficacy isn't a personality trait, but it is a set of beliefs about the ability to attain desired goals in specific circumstances. (Maddux, 2012).

The role of self-efficacy in sporting performance is well documented. According to Gould, Greenleaf, Lauer & Chung (1999), self-efficacy was one of the most influential factors that the US Winter Olympic team of 1998 reported as positively affecting their performance, highlighting that an increased level of self-efficacy can lead to an increase in sporting performance. Bandura's self-efficacy theory states that if an individual possesses the required amount of skill and motivation, then self-efficacy becomes the major determinant of performance. That is, performance is heightened when an athlete has both the ability and willingness to succeed (Gould & Weinberg, 2018). Several meta-analyses have assessed the relationship between self-efficacy and sporting performance, with the majority revealing its significance. Moritz, Feltz, Fahrback, & Mack (2000) investigated 45 studies, reporting up to 102 correlations between self-efficacy and sporting performance, with an average correlation of .38, suggesting a moderate relationship. However, Feltz and Lirgg (2001) further investigated the 45 studies that were analyzed by Moritz, Feltz, Fahrback, & Mack (2000), and confirmed that throughout the studies, there was a consistent relationship between self-efficacy and performance. Most of the studies that specifically investigated self-efficacy within athletes showed a relationship that was significant and at least positively moderate between self-efficacy and performance (Feltz & Lirgg, 2001). Further, those studies within the meta-analysis that reported low correlations, either measured self-efficacy against nontraditional scales or had a negative low concordance between their measures. Only six percent of the studies found a variable other than self-efficacy to be a stronger predictor of performance. These collective

findings reiterate that self-efficacy can be a valid predictor of performance, being associated with low pre-competitive anxiety, positive affect, and high trait confidence; key predictors of performance (Feltz & Lirgg, 2001). In terms of endurance athletes, Martin and Gill (1991), investigated the relationship among trait and state psychological variables and performance. Those athletes that had high levels of self-efficacy ran faster than those who had lower levels of self-efficacy. These results support prior research into self-efficacy among distance runners; Okwumabua (1985) and Gayton, Matthews & Burchstead (1986), found significant correlations between self-efficacy and marathon finishing times. Overall, the research on self-efficacy beliefs of athletes shows a positive relationship with sport performance, as well as being useful in combination with other variables that affect performance, such as cognitive and training factors.

Self-Efficacy in Collegiate Athletes

Collegiate athletes also benefit from the role of self-efficacy in performance. Research conducted into high school and collegiate athletes across sports highlighted the predictive positive relationship self-efficacy had on performance (Helper & Chase, 2008; Martin & Gill, 1991). Research also stated that higher levels of both state and trait types of self-efficacy resulted in higher performance levels (Martin and Gill, 1991; Shelangoski, 2013). Further, a study conducted by Sivrikaya (2018) looked at the role of self-efficacy in learning a new skill; specifically, a scissors kick in soccer, among male students attending Ataturk University. The findings of the study indicated that self-efficacy also plays a role in the acquisition of a new skill within sports players (Sivrikaya, 2018), highlighting the multifaceted role self-efficacy plays in indicating sporting performance (Feltz & Lirgg, 2001).

Despite the reported benefits of self-efficacy on collegiate athletes, there often exist barriers to the ease at which self-efficacy is developed. In research summarized by Ayiku (2005), it was stated that many student-athletes faced difficulty with cognitive and psychosocial tasks, with the experiences of living within large team cultures limiting the development of these skills needed for success. This is heightened by the prejudices that faculty members have towards student-athletes compared to non-athletes (Engstrom, Sedlacek & McEwen, 1995). Faculty felt that athletes were less academically inclined than non-athletes and felt strongly about athletes' admissions with a lower SAT score than non-student-athletes (Engstrom, Sedlacek & McEwen, 1995). The National College Athletic Association allow up to 20 hours per week for intercollegiate sport activities (Watson, 2003), however this is on top of the demands that are provided by academic schedule, as well as other personal problems. Therefore, it is difficult for student-athletes to sacrifice either athletic or academic time to seek support (Watson, 2003) that may aid in the development of self-efficacy levels.

The potential barriers that exist to self-efficacy development are especially prevalent among ethnic minority student-athletes. According to Rankin et al. (2011) in their study into the Student-Athlete Climate, student-athletes of color experienced a more negative climate than their white peers, as well as having a lower perception of respect. This mediation effect of perception of climate and respect subsequently had a negative indirect influence on academic success. Further, student-athletes belonging to under-represented minorities – as well as women and LGBTQ student-athletes – experienced a disproportionately higher level of harassment (the coach having favorites, deliberate exclusion and being subjected to derogatory comments) than their counterparts. Rankin et al. (2011) clarified the harassment as “in-house”, occurring most often during practice or competition. As harassment is usually based on sport related reasons, and

usually delivered by coaches and other student-athletes (Rankin et al., 2011), a discriminatory environment could threaten the effectiveness of a facilitative variable to performance such as self-efficacy. As aforementioned, verbal persuasion is a key source of self-efficacy. Bandura (1997) highlights that when social customs frown on voicing devaluation of others, these devaluations are instead expressed through alternative actions such as treating others indifferently, or giving less positive recognition when they succeed; actions that are similar to those of the harassment recorded in Rankin et al. (2011) in their Student-athlete Climate Report. Further, Bandura (1997) explains that harsh criticism can lead to social estrangement and the undermining of one's belief in themselves. To reduce this discriminatory environment in the collegiate setting, steps towards changing the climate within college are needed. Rankin et al. (2016), suggest a number of ways to do so, including the quick response to derogatory language, the development of inclusive policies, acknowledging the contributions of diverse athletes/coaches, and providing clear framework in response to diversity-based incidents or bias. This can be achieved through consistently following clear procedures to create a climate that rebukes intolerance, which is important when ensuring inclusion in the athletic community (Rankin et al., 2016). Hence, it is important for research to investigate the effectiveness of self-efficacy in minority student-athletes to understand the role of self-efficacy in such climates.

Minority Athletes' Self-Efficacy and Lack of Research

There is an underlying belief within society that race can dictate the ability of an individual to be successful in a certain sport (Hylton, 2008). These beliefs consequently affect an individual's decision to participate in a sport, as well as their experience whilst participating. This is heightened for minority athletes. Minority student-athletes must deal with multiple

factors that affect their levels of self-efficacy, such as contending with the stereotype of being an athlete, but also representing a minority race (Ayiku, 2005), factors that aren't experienced by their white counterparts. The stereotype threat is a phenomenon where members of a stigmatized group find themselves in a situation where they risk facing negative judgement in light of the stereotypes held to their group (Spencer, Lofel & Davies, 2016). It creates a disruptive state which undermines performance and can affect athletes' wellbeing (Spencer, Lofel & Davies, 2016). Smallman, Sowa & Young (1991) highlighted that African American athletes attending predominately white institutions experience more negative feelings in response to a stressful event compared to non-ethnic minority athletes, which can result in feelings of isolation. The research further suggests that this could be attributed to a cross section between athletic participation and ethnicity. When an ethnic minority athlete experiences a stressful event, this may be more challenging to deal with due to their effort to adapt to a predominantly white environment. This can consequently lead to the risk of developing depression, anxiety, and other feelings of stress, which is an issue that needs to be addressed (Smallman, Sowa & Young, 1991). The disparity between the responses for a minority athlete and a non-minority athlete could provide significant in feelings of efficacy (Ayiku, 2005). Similarly, if minority athletes participating in an "ethnic majority" are treated differently and subsequently put at a disadvantage, this could have a comparable effect. Understanding the relationship between self-efficacy and its role in ethnic minority athletes' performance is important for coaches and psychologists, as having a way to optimize self-efficacy could prove to be crucial in improving their teams and athlete's sporting performance.

The difficulties faced by minority student-athletes aligns with the purpose set forth by the Critical Race Theory (CRT), which focuses on "studying and transforming the relationship

between race, racism and power” (Delgado & Stefanic, 2012). By understanding if the experiences of the ethnic minority athletes differ from that of ethnic majority athletes, the study can create an avenue into further research to investigate any existing racial biases or discrimination within institutions. This can also occur for those issues pertaining to gender and other social injustices, aligning with one of the main goals of CRT (Parker & Lynn, 2002) in which racial subjugation is eradicated from society.

Duda and Allison (1990) investigated the ways in which sport and exercise psychology research may be able to systematically include factors of race and ethnicity into an area of research with limited literature. The researchers emphasize that in a world of sport that is often characterized by cultural diversity, there is a lack of research to determine what values and meanings are derived from sport and are held among different cultural groups. Understanding this can aid in moving to a pluralistic culture, where theories developed about sport aren't misleading due to a lack of comparisons or understanding of other cultures' relationship with sport. Qualitative research is highlighted by Parker and Lynn (2002), as an effective way to link theory and understanding regarding race from critical perspectives to actions that aim to promote social justice related change. According to Duda and Allison (1990), their paper “calls for the systemic incorporation of racial/ethnic factors as meaningful categories of human behavior and urges that those in the field of sport and exercise psychology begin to examine the influence of these factors on sport related behavior” (pp. 115-116).

Ethnic minorities are underrepresented in research (Redwood & Gill, 2013; Sheikh, 2006), which provides a gap in literature that needs to be addressed. According to Wendler et al. (2005), this underrepresentation isn't due to the commonly held belief that ethnic minorities do not want to participate, but instead, due to the lack of outreach to these communities within

health research. They suggest that this needs to be addressed, rather than attempting to change the minority attitude to one of being more willing to participate (Wendler et al., 2005). It was found that an ‘American = White association’ existed within research (Devos & Banaji, 2005) which negates the minority experience and therefore overlooks the potential differences that may exist. According to the research, being American within research experiments is synonymous with being “white”. Upon an investigation of six studies that looked at the relationship between ethnic minority groups and their association with the category of being “American”, they found that ethnic groups are not viewed as being as American as White Americans are. Further, in several cases, ethnic minorities weren’t differentiated within studies (Devos & Banaji, 2005). In an updated study of Duda and Allison (1990), Ram, Starek & Johnson (2004) explain that “when examining the number of substantive references to race/ethnicity, it becomes apparent that there has been little if any research in sport and exercise psychology which attempts to understand the experience of diverse individuals” (p. 262). Specifically, only 19.86% of 982 manuscripts studied between 1987 and 2000 referenced race/ethnicity, emphasizing that lack of a systematic attempt to include racially marginalized groups’ experience in sport psychology literature (Ram, Starek & Johnson, 2004). Science tends to reflect the values and views of the dominant culture, so perhaps there is an apathy towards conducting research on minorities. There may be some cultural misunderstandings and unconscious beliefs held by researchers that ignore the reality of a racial society and instead deal with racial and ethnic issues by adopting a “color-blind” approach, ignoring any sociocultural factors that could be relevant to race and ethnicity (Ram, Starek & Johnson, 2004). This has subsequently led to implications whereby diverse populations are excluded from the majority of research, and subject to misdiagnosis or mistreatment due to experiences of the majority group being applied to all groups (Iijima Hall, 1997).

In terms of qualitative research, the representation of diversity is important, and many qualitative methods produce the expression of sociocultural perspectives (Ram, Starek & Johnson, 2004). However, due to the nature of qualitative research's small samples sizes, the need for representation is often attained through the proliferation of research, opposed to stipulation. The minimal amount of research and differentiation of ethnic populations within research highlights an existing gap that needs to be filled. A way to do so is through the commissioning of research into neglected areas, which will subsequently produce research that represents the diversity of the population (Allmark, 2004).

The gap in research investigating the different experiences of the minority athlete, compared to the ethnic majority, creates a need for research that sheds light on this issue (Ayiku, 2005; Duda & Allison, 1990; Ram, Starek & Johnson, 2004). There is a significant gap that explores the levels of confidence and efficacy within minority student-athletes and consequently their ability to be successful in different situations (Ayiku, 2005). The use of a qualitative research design where open-ended questionnaires are utilized allows minority athletes a platform where their story can be shared, aligning with another key value of the CRT. Therefore, research that allows for the discussion of racial disparities within sport, through providing ethnic minority athletes a platform to share their experiences, not only begins to fill a gap in research (Ayiku, 2005; Duda & Allison, 1990; Ram, Starek & Johnson, 2004), but also provides an opportunity for further research into similar topics.

Research has highlighted the importance of self-efficacy on sporting performance, but Ram, Starek & Johnson (2004) discuss how despite an increase in literature that references race and ethnicity, there has been no attempt to include the experiences of marginalized groups within research. Thus, reinforcing the need for investigation into the effect of self-efficacy on ethnic

minority athletes, a field in which research is scarce. Consequently, the purpose of this phenomenological study is to investigate how self-efficacy affects ethnic minority student-athletes' sporting performance, through providing a platform from which they can share their lived experiences. The study will look at the following question: How does self-efficacy affect minority athletes' sporting performance?

METHODS

The purpose of this study was to phenomenologically explore the role of self-efficacy in minority student-athletes. The current study addresses the following research question: How does self-efficacy affect ethnic minority athletes' sporting performance? The study received IRB approval on February 27th, 2023, study number: IRB-FY2023-363 (see Appendix).

A phenomenological research approach was instilled to answer the research question. To portray the student-athletes' experiences, the approach gathered comprehensive descriptions of the experiences which were subject to reflective analysis (Moustakas, 1994). This provided the basis from which the subsequent experiences of self-efficacy could be shared. Instead of attempting to create theory from responses, phenomenologists work from student-athletes' specific responses and experiences, to express what each student-athlete has in common (Creswell, 2007). This is suited for a study that aims to give minority athletes a voice and a platform to express their experiences. An object of human experience, such as a certain behavior or emotion experienced (Moustakas, 1994) e.g., self-efficacy was highlighted. The researcher then developed a portfolio of descriptions regarding each individuals' experience (Creswell, 2007) of self-efficacy and its relationship with their sporting performance. The aim was to articulate what an experience meant for those living it (Moustakas, 1994), hence providing a platform on which these experiences can be shared.

Procedures

Due to the study's purpose of investigating the role of self-efficacy in ethnic minority athletes' sporting performance, a sample of ethnic minority student-athletes were recruited for

this study. Endurance sport student-athletes at a mid-sized Midwestern University were recruited. Inclusion criteria stated that student-athletes must identify as a visible ethnic minority (i.e. non-Caucasian). Approximately 10-15 student-athletes were aimed for (or until saturation was reached) however only six student-athletes were recruited for the sample, due to difficulties in recruitment co-operation from coaches. To compensate student-athletes for their time, gift cards worth \$25 were provided as an incentive.

Participants comprised of six female student-athletes, all identifying as members of an ethnic minority. Three student-athletes identified as Black or African American, while two identified as biracial (both African American and White). One student-athlete identified as being from Hispanic, Latino or Spanish origin. In total, three endurance sports were represented: three members of the Track and Field team, two soccer players, and one tennis player. Within the sample, one student-athlete was a freshman, four were sophomores, and one was a senior. The mean age of the student-athletes was 19.6 years.

To gain access and build rapport with the teams, an email script was sent to Head Coaches as well as other relevant members of staff e.g., Assistant Coaches of the university's endurance sport teams. The email script contained a brief background of the study and highlighted the study's purpose and methods. The email message concluded with a request for coaches to send the invitation to participate in the study to their athletes. Interested athletes completed a demographic survey composed of closed ended/multiple choice responses. Once the demographic surveys were completed, data was screened to see if athletes made the inclusion criteria for this study. One-on-one interviews were scheduled with the student-athlete either in person, in an environment such as a study room, or virtually via audio visual software. Audio recordings were taken, without any accompanying video. The use of qualitative transcribing

software was used to transcribe the interviews during data collection. Student-athletes were asked a set of questions related to a modified version of the Endurance Sport Self-Efficacy Scale. This scale was modified to ensure that the four sources of self-efficacy: past performance, vicarious experiences, verbal persuasion and physiological states (Bandura 1997), were represented in the questions asked. The questions were open-ended and allowed for responses to be detailed and subjective. There were also predetermined follow-up questions that were implemented if student-athletes did not provide detailed responses that contributed to the study's investigation. Each interview lasted for approximately 45 to 60 minutes.

To ensure that student-athlete privacy is maintained, the data that was collected has been encrypted and downloaded to a personal laptop. This is stored away in a location that is password protected, and only accessible to the researchers. The audio recording from the semi-structured interviews has also been downloaded and stored in the same way. Voice recordings were deleted after transcription. Transcriptions are stored on Microsoft Word and student-athletes' names have been given pseudonyms to further ensure privacy.

Interviews were transcribed verbatim. Once interviews were conducted, they were relisted to ensure transcription was correctly documented by the transcription software. Once transcriptions were completed and interviews were transcribed, interviews were emailed to student-athletes for member checking so student-athletes could make sure their experiences were captured correctly. This is a common procedure within qualitative research (Candela, 2019). During the member checking stage, the coding and theming of the data took place using qualitative analysis software.

Organization and analysis initially occurred by considering every response from the student-athlete as having equal value. The meaning derived from these responses was grouped

into common themes that were utilized to develop a description of the study. Although commonalities were identified, the researchers ensured that there was no overlapping of themes or responses (Moustakas, 1994). In the first data analysis, the transcripts from the interviews were read and highlighted for answers or statements that provided an understanding of the experience, (i.e., the effect of self-efficacy on performance). The next stage consisted of grouping these instances into broader themes, followed by the re-analysis of the transcripts for contexts in which the themes occurred. To fully describe the essence of self-efficacy, a paragraph at the end of the study was constructed that described the different experiences and varying contexts in which the experiences occurred (Creswell, 2007).

Bracket Interview

A bracket interview was implemented to ensure there was rigor to the study. According to Creswell (2007), bracketing allows researchers to address the phenomenon from a vantage point that limits their own experiences and biases. Being a current student-athlete, and also identifying as mixed race, therefore representing an ethnic minority, I was interested in understanding what factors of self-efficacy lead to increased sporting performance. Therefore, going in to the study, I was motivated by providing ethnic minority student-athletes an opportunity from which they could express their lived experiences of how self-efficacy affected their sporting performance. With this opportunity, and from a student-athlete viewpoint, I looked to understand how increased sporting performance could be attained through levels of self-efficacy. I was interviewed by one of the members of my thesis committee to practice the interview protocol, as well as providing an opportunity to practice coding and analyzing the data using qualitative and analyzing software. I am similar to the target population which made a

bracketing interview beneficial in providing rigor to the study. This also allowed for me to assess the interview protocol as a researcher before conducting a pilot study to further investigate the validity and efficiency of the protocol.

Pilot Study

A pilot study was also conducted. This provided a test run that highlighted any potential issues or shortcomings with the interview protocol, allowing for amendments prior to conducting the actual study (Kvale, 2007). Furthermore, conducting a pilot study allowed for the researcher to record the time it took to complete the interview protocol, as well as receiving feedback from the student-athlete. The amount of detail given in a response from the student-athlete highlights the effectiveness of each question and gives an indicator regarding how the questions need to be edited to elicit more detail (van Teijlingen & Hundley, 2001).

RESULTS

The four main components of self-efficacy proved to be the most prevalent themes within the student-athletes' responses when reflecting on questions that were adopted using the framework used in the Endurance Sport Self-Efficacy Scale (ESSES). This study aimed to understand the role of self-efficacy in minority student-athletes' sport performance. The themes of 'coaching' and 'mental toughness' also materialized as key themes, being influential in providing self-efficacy to minority student-athletes and affecting performance. (Full results can be found in Table 1 through Table 6).

Past performance was examined using questions that asked student-athletes about past performances, and what allowed them to perform successfully during those performances. The most common subtheme derived from this was the use of mental skills, which are psychological skills used to improve performance e.g., positive self-talk. Vicarious experiences were understood using questions that asked student-athletes to consider how another person's performance (e.g., a teammate or a role model) affected their thoughts and feelings about their performances. Among all the student-athletes, various aspects of 'positive emotions' were expressed through vicarious experience, leading to levels of self-efficacy. Physiological states and the impact on self-efficacy among the student-athletes was inferred using questions that asked about the physical barriers during competition, and how these were managed to enable performance. 'Mindfulness' was reported as the most common subtheme across student-athletes for contributing to the role of physiological states in self-efficacy. The understanding of verbal persuasion, the fourth source of self-efficacy, was carried out through questions that asked about the use of verbal persuasion in difficult situations, as well as its role generally in self-efficacy

during performance. The most common subtheme that emerged was the positive influence that verbal persuasion had on student-athletes. The subsequent themes of coaching and mental toughness were also prevalent in their role of self-efficacy. These themes are the overarching sources of self-efficacy for minority student-athletes, which have been reduced to subthemes for a more specific understanding of the factors that influence levels of self-efficacy in athletic performance.

Past Performance

The first section of questions focused on student-athletes' past performances and what led to their success in these performances. From these responses, across student-athletes, it was revealed that mental skills, concentration, anxiety, and flow/the zone, were most influential in affecting levels of self-efficacy in reference to past performance. Across student-athlete responses, mental skills were the most common factor that contributed to self-efficacy. The effectiveness of this is demonstrated by Chloe, a soccer player, who describes how she uses mental skills prior to performance. She says "I go into the locker room 10 [to 20] minutes before practice... and just kind of sit there and visualize what I want to do during practice. And it's just helped me like my mental game, like has gone up so much. Like I've always been like, positive, but like visualizing what I want to do like helps me because then I can like, see I see myself doing it and then I do it in real life". As well as visualization/imagery, there are frequent references to positive thinking/self-talk and breath work that have ensured successful past performance. Concentration was also referred to frequently, being mentioned by over 80% of student-athletes. Components such as using music for focus and quick thought processes during performance were mentioned to be effective methods of concentration. Student-athletes

emphasize the importance of blocking out external factors so to focus and concentrate on their performance. There are also factors that negatively contribute to levels of self-efficacy and based off responses from student-athletes, anxiety is one of them. This is characterized as negative feelings associated with sporting performance, and is comprised of nerves, rumination, fear, frustration, overthinking, worry and doubt. Research has indicated that being in a state of flow, can lead to optimal performance within sport (Gould & Weinberg, 2018). This is echoed by Tessa, a tennis player, who explains “I like literally black out during matches. Like I'm in just my own little bubble and ... some people say like, oh, like you're being really Zen but like I just feel like I'm just so locked in, into my court and into that point... I'm just like only in that moment and trying to not pay attention to the outside factors... because there is so much going on. I try to stay like in that little bubble as hard as I can”. This focus and concentration is an example of how being in the zone or a state of flow can enhance feelings of self-efficacy within performance, and subsequently shows the influence of past performance over self-efficacy and sporting performance.

Vicarious Experience

The key subthemes that emerged from student-athletes' responses included positive emotions, achieving success, individual athlete vs team sport athletes, and role models. The influence of positive emotions was evident across all student-athletes, as it was the most referred to subtheme within vicarious experience. As Cadence, a track athlete, says “So when, for example, let's just say one of my teammates, she's running before me, and she does good. I'm like okay, I got it like she did good. I'm gonna do good and I typically do good”. This feeling of positivity relating to her upcoming performance based on watching someone else's success,

highlights the importance of positive emotions elicited from vicarious experience. Behaviors and emotions that are implemented by an individual to achieve success are labeled as ‘achieving success’. These are comprised of the following behaviors: hard work, motivation, persistence, and determination. These attributes were common among responses that related to vicarious experience. Both individual and team sport student-athletes participated in this study, hence the dynamic between individual performances in individual sports and individual performance in team sports. This created a subtheme that allowed the researchers to examine the impact of teammates on individual performance. Although teammates can benefit from witnessing one another perform successfully, the responsibility of having an individual performance may affect the influence of that in certain situations. Whilst some athletes benefited from seeing teammates succeed, others viewed their personal performance as separate, and unaffected by teammates’ performance. Further, in team sports, instances were highlighted where negative performance from a teammate decreased levels of self-efficacy in a student-athlete, because this could have a negative effect on their own performance. Witnessing role models succeed was influential, especially when watching these other athletes face challenges and struggles. Ivory, a soccer player, describes the influence of her role model: “I think it's because I, I identify myself with him [role model]. I think if it were another athlete, I would be happy or sad, but it's the fact that I see myself in some things that he's done. And some things that I had been through. And I think that's why whatever he does, makes me want to be better or worse.” She states that the identification of herself within her role model causes her to feel heightened levels of vicarious reinforcement for his behaviors.

Physiological States

Mindfulness was found to be the most influential factor in self-efficacious behavior in terms of physiological states. Injury and self-negativity were the two other factors that influenced levels of self-efficacy. A soccer player, Chloe, explains this connection and how she can use mindfulness to ensure greater self-efficacy and subsequent performance. She says “Like when the negative thoughts come in just like push them out and think because your brain will like you'll believe anything you tell yourself. So just try to keep the negative things out.” This connection between her mind and body and being aware of the negative thoughts arising has enabled her to increase her levels of self-efficacy. Ivory, a soccer player, highlights the impact of self-negativity, stating “I let external factors define my self-confidence. And if I was able to just believe in myself and have fun for me and not for others, then I would definitely enjoy the sport much more.” These thoughts can affect levels of self-efficacy. Injuries also prevailed as a commonly mentioned topic. Having physical barriers such as injuries provides an additional challenge for athletes to overcome.

Verbal Persuasion

Verbal persuasion strengthens an individual’s belief in their capabilities to complete a task. An individual is able to sustain a sense of efficacy for longer if faith in their capabilities are expressed by significant others (Bandura, 1997). The positive influence of verbal persuasion was the most common theme within student-athletes’ responses to questions regarding verbal persuasion, while sense of belonging and feedback were also prevalent. Positive influences of verbal persuasion was the most common theme within student-athletes’ responses when exploring the role of verbal persuasion in self-efficacy. When discussing this role, Michelle, a track athlete, says “I think from the crowd, or just people watching. It's a really positive thing.

Like a lot of the times if I get to hear someone out there, it like gives me like an exertion and like gives me a certain push when I'm running.” Sometimes it’s difficult for student-athletes to give that internal support to themselves, so having verbal support from others enables them to use positivity to help with sporting performance. A key factor in affecting student-athletes’ levels of self-efficacy is having a sense of belonging. As Vanessa mentions, “...her[coach] giving me positive words and just telling me that you'll be okay. Just have fun. At the end of the day, I'm always going to be proud of you. And like, honestly, those words are like... her [coach] just talking to me in general, and just saying all these things and then me repeating those things to myself. It just helps tremendously... and it's really, really important to me, and that really helped me overcome like a lot of things especially when performing”. From student-athletes’ responses, being reassured and feeling comfortable within their environment materialized as factors that could have a positive relationship with self-efficacy. Negative feedback has been shown to have both positive and negative impacts on performance, potentially impacting levels of self-efficacy.

Coaching

Across responses, the significance of the role of the coach was apparent, with each student-athlete frequently mentioning the impact of their coach, both positively and negatively. Ivory discusses the positive role of her coach, stating that “Positive feedback reassures me a lot, especially from the coach...He's like the higher person, the one that decides everything. So, at least in my case, I give the coach a place where his opinion really matters to me when it's negative feedback.” The coach’s status and influence affects the student-athletes’ perception of the feedback and opinion given, due to their authority. While this positively affects Ivory, a track athlete, Michelle, views the influence of coaching in a more negative light. She says “When they

[coaches] give me words of encouragement, sometimes I take it positively sometimes I take it negatively because sometimes their...words of encouragement are coming from a good place. But then sometimes it's coming from just like that eh place ... because they're a coach and they're going through the motions. When a coach goes through the motions for me it does not work. It actually makes me shut down a lot of times, and then I just don't end up listening to what you say. I'm just gonna go do my own thing and know what works.” This contrasting attitude towards coaching highlights the differing influence that coaches can have over a student-athletes’ levels of self-efficacy.

Mental Toughness

Based on responses from student-athletes, it is apparent that having traits associated with mental toughness could be related to increases in self-efficacy. Cadence, a track athlete, describes the use of mental toughness when attempting to maintain proper form during performance: “[maintaining] proper form...it's like heavy on lactic acid ... You kind of feel your body like tense and lock up and that's definitely where like the mental comes in where it's just like hold it together or like you just feel like your body is literally like burning and pain and you just have to have that mental strength and that's all part of practice and like we're on like killing yourself at practice. So like when you're actually competing, you can push through that like pain and not think about it in your head.” This ability to push through pain and have self-belief to overcome struggles and challenges is what comprises of mental toughness and can lead to increased levels of self-efficacy.

DISCUSSION

The purpose of this study was to understand how self-efficacy affected minority student-athletes' sporting performance. This study was conducted using student-athletes from a medium-sized Midwestern University. This study used a phenomenological approach via interview questions that were aimed at exploring the role of self-efficacy in minority student-athletes' sporting performance.

Based on the limited research into minority athletes and self-efficacy, this study is able to add novel contributions to a gap in knowledge. Further, very little research has been conducted using only female, ethnic minority student-athletes, highlighting the novelty of this study. Our findings revealed that the themes of coaching (the role of coaching both positively and negatively), and mental toughness, were significant contributors to athletic performance, through influencing levels of self-efficacy within minority student-athletes. This novel finding adds to a wealth of research that has mainly focused on the traditional sources of self-efficacy (i.e. past performance, vicarious experience, verbal persuasion and physiological states) (Bandura, 1977).

The responses to our interview protocol reinforced findings that self-efficacy is important in affecting athletic performance. The four main sources of self-efficacy: past performance, vicarious experience, verbal persuasion and physiological states (Bandura, 1977), were significant in affecting the role of self-efficacy, as were the themes of coaching and mental toughness. Within each of these themes, subthemes were created based on their influence on self-efficacy. Past performance included subthemes of mental skills; psychological skills used to improve performance, concentration; the student-athletes' ability to remain focused, anxiety; negative feelings and flow/the zone; a deep state of facilitative concentration. Self-efficacy

gained through vicarious experience was affected by positive emotions; the student-athletes' positive emotional reaction to experiencing vicarious experience, achieving success; behaviors and emotions implemented to succeed such as hard work, motivation, persistence and determination, individual vs team sport athletes; the difference in sports and therefore different dynamics between teammates/individual relationships, and role models; someone that the student-athlete identified with and look up to. Verbal persuasion and the role it played in affecting self-efficacy in performance was affected by positive influence; the positive reactions verbal persuasion elicited in student-athletes, sense of belonging; positive and reassuring social support, and feedback; the way in which negative feedback was internalized and used either positively or negatively. Physiological states as a source of self-efficacy were comprised of mindfulness; the awareness of thoughts and emotions regarding the mind and body connection, self-negativity; self-detrimental thoughts and processes that negatively affect performance, and injury; references to physical pain/athletic injury and how this was dealt with during performance. The two additional themes described throughout each of the main four themes of self-efficacy (Bandura, 1977), across all student-athletes' responses, was coaching; the influence of the student-athletes' coach on their performance, both positively and negatively, and mental toughness; attributes such as mental resilience and self-belief.

The aim of this research study was to understand how self-efficacy affected minority student-athletes' sporting performance. The main themes responsible for influencing levels of self-efficacy, and subsequently performance, were past performance, vicarious experience, verbal persuasion, physiological states, coaching and mental toughness.

Past Performance

Past performance proved to be a significant source of self-efficacy instrumental in positively affecting performance, as supported by Bandura (1997), and prior research conducted by Valiante and Morris (2013). Furthermore, a meta-analysis conducted by Sitzmann and Yeo (2013) on a within-person self-efficacy domain, highlighted the importance of past performance by revealing that self-efficacy is a product of past performance, more than self-efficacy is a predictor of future performance. Accordingly, this study's findings regarding past performances' significance are supported by this research. Findings also alluded to the contributing factors towards past performance's impact on self-efficacy. It was found that past performance was affected by mental skills, concentration, anxiety and flow/being in the zone. This is supported by Hasanah and Refanthira (2020), who discuss the arising of anxiety and negative emotions. They highlight that anxiety and negative emotions are usually due to an increase in competitive pressure, such as during sporting performance. This increase in pressure can reduce concentration which ultimately decreases the performance of the athlete. This supports this study's findings that concentration is influential in improving sporting performance through strengthening self-efficacy, as well as supporting the findings that anxiety can negatively affect performance. Additionally, self-talk, imagery and relaxation (breath work), components of the subtheme mental skills, were listed as methods that were effective in helping to reduce competitive anxiety (Hasanah & Refanthira, 2020), highlighting their importance in self-efficacy and sporting performance.

Vicarious Experience

A key subtheme within vicarious experience was that of 'individual sport vs team sport athlete'. This explored the dynamic between those athletes that competed in a team sport, and

those that competed individually. Those individual sport athletes, such as Tennis and Track, still belonged to a team of other athletes that also competed in their sport. Therefore, both individual and team sport athletes were able to benefit from vicarious experiences/reinforcement. This is in line with past research (Bandura 1997; Helper, Hill, Chase & Feltz, 2021) that cites vicarious experiences as one of the main sources of self-efficacy. However, responses from the student-athletes revealed that vicarious experience wasn't consistent when it came to individual sport vs team sport athletes. Lent and Lopez (2002), refer to the concept of 'other-efficacy beliefs', whereby an individual's beliefs about someone else's ability affects their own actions and behaviors, influencing their levels of self-efficacy. In a situation where a desired outcome is attained through teamwork, an individual may avoid interacting or using a particular teammate if this is likely to result in an outcome that isn't the desired outcome. This inconsistency between our student-athletes is demonstrated by the contrasting nature of athletes' responses. While one athlete mentions the lack of impact a teammates' performance has on her levels of self-efficacy in her upcoming performance, two other respondents discuss opposing experiences. Therefore, one example refers to relational efficacy, sourced from 'other-efficacy beliefs' (Helper, Hill, Chase & Feltz, 2021), improving a student-athletes' levels of self-efficacy regarding the upcoming relay event at the end of the track meet, while the other does the opposite.

Furthermore, role models were also discussed as sources of vicarious experiences and subsequently self-efficacy. Again, within this subtheme, there was some conflicting feedback regarding the influence of role models. There was an emphasis on the student-athletes' wanting to be able to identify with both the wins and losses of their role models, emphasizing the need for relating to their role model in order to feel familiarity. One athlete even discussed how seeing the success of one of their role models when running against them created a temporary feeling of

decreased self-efficacy. This idea is supported by Downes et al. (2021), who discuss that through the social comparison theory, role models may represent “self-evaluative referents”, whereby due to comparison, self-efficacy declines. However, through the social-cognitive theory, if these role models are perceived as sources of instruction regarding success, they can subsequently increase self-efficacy and performance (Downes et al., 2021). This inconsistency found within this subtheme of vicarious experiences can be attributed to vicarious experiences being weaker and more susceptible to change in terms of self-efficacy beliefs than past performance and has received mixed findings from similar research (Anstiss, Meijen & Marcora, 2020; Helper, Hill, Chase & Feltz 2021).

Physiological States

When referring to physiological states, student-athletes primarily referred to physical appraisals, regarding how they felt during performance. While this was the main way in which physiological states were discussed, references to physical appraisals prior to competition were also mentioned. Mindfulness was generated as a subtheme due to this physical appraisal, whereby athletes were able to express the physical sensations that were present during performance, and how they were able to deal with these to ensure they could continue. Research conducted by Wong, How & Cheong (2022) on Malaysian squash athletes found that a focus on improving mindfulness via a training program resulted in an improvement in athlete’s trait mindfulness but also performance, supporting the student-athletes’ responses relating to the importance of mindfulness during performance. Injury was also classed as a subtheme, which is supported by research that has stated that endurance sport athletes may benefit from self-efficacy’s ability to aid in exercise induced pain (Astorkorki & Mauger, 2016).

Verbal Persuasion

Student-athletes' levels of self-efficacy and performance were generally positively affected by verbal persuasion. Feedback was established as a subtheme of verbal persuasion, and more specifically, constructive criticism, or reacting positively to potentially negative feedback. Approximately half of the student-athletes would explain that hearing negative or constructive feedback from their coaches helped in increasing their performance levels. Interestingly, this was also the case when hearing their competitors receive positive feedback. Over 60% of student-athletes reported that they would internalize positive feedback for their opponents as positive feedback for themselves, in order to help increase their self-efficacy and performance. According to Lent and Lopez (2002), verbal derogation can be interpreted as a challenge, which can subsequently increase Relation inferred self-efficacy (RISE). RISE is an individual's belief regarding how others view them (Helper, Hill, Chase & Feltz 2021; Lent & Lopez 2002). If an athlete receives negative feedback, assuming they believe they are seen as competent by their coach, their RISE can increase (Lent & Lopez, 2002), as described by the student-athletes in our sample. This supports our findings that self-efficacy can improve performance via constructive or negative feedback. The use of corrective feedback was also mentioned by student-athletes when describing the role of verbal persuasion. Either hearing such feedback from the stands, or having their coach take the pressure off their performance by providing them with this, proved to be significant in improving performance. As Helper, Hill, Chase & Feltz, (2021) mention, verbal support is most effective when given by a trustworthy source. Multiple student-athletes suggested that hearing feedback from a coach held greater weight than hearing it from teammates, further supporting the idea that Helper, Hill, Chase & Feltz, (2021) alluded to regarding a trustworthy source. This may also be due to the authority that the coach has over the

student-athletes' performance, (i.e. picking them for a certain event or in the starting line-up). However, feedback is most effective when paired with additional information such as corrective feedback (Bandura 1997; Helper, Hill, Chase & Feltz, 2021). Furthermore, the positive influence of verbal persuasion through verbal support was also cited as a source of self-efficacy, and subsequently a source that greatly improved performance. Student-athletes alluded to instances where they struggled for self-belief and motivation that they could succeed, but the external social support provided them with those performance inducers. As Anstiss, Mejjen & Marcora (2020) state, verbal support from both coaches, training partners and significant others, were key sources of self-efficacy regarding verbal persuasion. In this study, family and teammates played a major role in providing this verbal support.

Coaching

The athlete's relationship with their coaches, and the influence that they had over performance was primarily positive. This relationship and influence over performance can somewhat be explained by the relational efficacy model, whereby those athletes that have higher relational efficacy are also likely to have higher self-efficacy beliefs (Helper, Hill, Chase & Feltz, 2021). Other efficacy looks at the belief in someone else's ability, such as an athletes' view of their coaches' ability. The relational efficacy model states that those with more positive RISE and other efficacy are more likely to have higher levels of self-efficacy, due to positive sport relationships, such as those between coaches (Helper, Hill, Chase & Feltz, 2021). Within the student-athletes' responses, there was some overlap with the theme of verbal persuasion, where feedback and support was designated as an influential trait for coaches to have. In some situations, student-athletes may perceive their coach to be too variable with the amount of

support given, which can affect the development of RISE beliefs. Having a high level of self-efficacy may provide a buffer against any negative interactions with their coach (Helper, Hill, Chase & Feltz, 2021), so in situations where there is a breakdown in communication between the athlete and coach, high levels of self-efficacy can still prevail in terms of positive performance. However, one of the respondents referred to a situation where their coach created a toxic environment. Having lower levels of self-efficacy, caused by low RISE beliefs, could explain poor performance. Other efficacy perceptions are also based on past performance and observations of the coach (Helper, Hill, Chase & Feltz, 2021).

Mental Toughness

According to Bandura (1997), “a resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort.” Mental toughness was referenced frequently by the student-athletes in the study. Mental toughness as a theme comprised of facing struggles or challenges, self-belief and pushing through pain. Bandura (1997) highlighted that success faced from overcoming challenges would contribute to self-efficacy greater than if that success was reached without difficulties. He discusses the intertwining and overlapping nature of the sources of self-efficacy, which can explain the similarities between the themes mental toughness and physiological states. As mentioned, for endurance sport athletes, self-efficacy may aid performance due to pain tolerance and perception of effort (Anstiss, Mejjem & Marcora, 2020); factors that are prevalent during endurance sports. Research conducted by Astokorki and Mauger (2016) showed that an ability to tolerate exercise induced pain led to greater results within endurance performance. Self-efficacy is also suggested to be able to improve pain tolerance, as it can promote the use of coping strategies (Peerdeman, Laarhoven, Peters & Evers, 2016),

explaining why student-athletes referenced to pushing through pain and overcoming challenges when discussing factors that helped with performance.

The novelty of this study stems from the sample used. Using ethnic minority female student-athletes studying and playing at a predominately white institution has offered one of the very few glances into the dynamic between self-efficacy and sporting performance for this population. Furthermore, the variety of sports included such as soccer; a team sport, track; an Olympic sport, and tennis; an individual sport, has provided the opportunity to understand how self-efficacy differs among female ethnic minority athletes across different sports. This dynamic was also explored through the responses of the student-athletes. Those that were part of individual sports often reported feelings of loneliness when explaining performance. This was navigated through the verbal and social support received from teammates that weren't competing. For a team sport athlete, this wasn't something that was discussed. Additionally, the relationship between being an ethnic minority athlete and receiving verbal support from family members proved to be insightful. Candence and Vanessa are athletes that alluded to being away from family and indicated how this resulted in having less social support. Accordingly, there was more dependence on receiving social support and verbal persuasion from trustworthy sources, such as coaches. As Bandura (1997), alludes to, this is the most effective way of utilizing verbal persuasion. This may also be related to another novel finding. The majority of athletes reported internalizing verbal support that their opponents received as verbal support and encouragement for their own performance. As the athletes interviewed in this study were often away from family, this may have been a way to compensate for that lack of social support, and instead feed off the support given to other athletes to increase their self-efficacy and subsequent performance.

Furthermore, the emergence of mental toughness and coaching as major themes alongside the four generated sources of self-efficacy based off literature; past experience, vicarious experience, verbal persuasion and physiological states (Bandura, 1977), highlights the novelty of this study's findings.

Implications

This study was one of the first to look at self-efficacy and the role it plays in sporting performance in ethnic and gender minorities. Furthermore, it was also one of the few to look at the role of self-efficacy in endurance sports (Anstiss, Mejjen & Marcora, 2020). Our study, aligning with previous research (Bandura 1997; Anstiss, Mejjen & Marcora, 2020) also established the overlapping and interchangeable nature of the sources of self-efficacy, and how this affects performance.

While this study focused on a population that has been underrepresented in self-efficacy research, conducting this research at a predominately white institution can provide an insight into the role that coaches and peers can play in influencing levels of self-efficacy. Our study aligned with findings regarding the role of self-efficacy on athletic performance but did so using an under researched and represented population within literature. This highlights the areas that are prevalent among minority student-athletes and can provide a spotlight regarding which areas should be focused on for athletic departments and coaching staff.

Limitations and Future Directions

It is important to understand the limitations for the study. Having a single session to investigate self-efficacy may have oversimplified the role that it played in performance.

Furthermore, the interviews were anticipated to last approximately 60-90 minutes, however the mean average time was 39 minutes. The questions asked required a great deal of concentration and focus, which may have resulted in a mental strain that caused fatigue. This sense of fatigue was picked up on by the investigator, which meant there weren't as many probing questions asked as anticipated to reach the target length time for the interview.

Discussing self-efficacy and its impact on sporting performance is a sensitive and personal topic, especially considering the use of an ethnic minority population and asking them to expand and share any experiences related to this. As such, student-athletes may have not felt comfortable disclosing fully, and hence may not have provided as detailed or expansive responses, thus limiting the depth of feedback collected. Additionally, while this study looked to understand the impact of self-efficacy on sporting performance in ethnic minorities, having only questions that focused on self-efficacy and performance, opposed to any that explicitly asked about the role of ethnicity in this relationship, may have resulted in responses that didn't entirely reveal the dynamics of being an ethnic minority. Therefore, any future research could look to include questions that specifically look to understand how the dynamic of ethnicity and self-efficacy works, in addition to understanding how self-efficacy affects performance. Additionally, the intersectionality of different ethnic identities, socioeconomic status, religion, class and gender, and how they relate to levels of self-efficacy would also be an area that future research could investigate.

Another limitation may stem from the sample. All student-athletes that participated belong to the same university. Any debilitating or facilitating factors related to self-efficacy and performance may affect the athletes similarly and ergo affect the generalizability to the rest of the student-athlete population. Further, this study's use of student-athletes also reduces the

study's ability to apply findings to the rest of the sporting or athletic world due to the vast differences in athletic environments. This lack of generalizability may also stem from the sample size used. Due to difficulties with recruitment and a lack of co-operation from the majority of collegiate coaches reached out to, the minimum sample size of six was used. Future research should aim to get a larger sample size in order to be more reflective of the population and therefore more generalizable.

Although this research study was one of the first to look at self-efficacy solely in minorities, both ethnic and gender, there was no deeper research into the connection explicitly between the intricacies of race and how this affected self-efficacy differently to how a gender or ethnic-majority student-athletes' experienced it. According to Rankin et al. (2011) and their report understanding the student-athlete climate on a university campus, they established that student-athletes experience harassment, under-represented minorities, and women disproportionately so. This was described as "in-house" harassment, which usually occurs at practice or during competition, carried out by coaches or other student-athletes. With this being said, it highlights the need for further research to investigate how a student-athletes' level of self-efficacy is affected by being part of an underrepresented minority, both ethnically and from a gender standpoint. Having research that compares this to that of gender and ethnic majorities will inform athletic departments of such occurrences and may provide a gateway from which changes can be made.

This study focused on the four primary sources of self-efficacy according to Bandura (1977), and subsequently ignored James Maddux's 2013 addition of imaginal experiences as an additional source of self-efficacy. Whilst alluded to within student-athlete responses and subthemes, it was not specifically included as a separate source of self-efficacy. The theme of

physiological states also alluded to psychological states, so the acknowledgement of this relationship within a singular theme may allow for future research to explore areas such as mental health, and how this effects levels of self-efficacy within ethnic minority student-athletes.

In conclusion, this study provides novel findings to the field of self-efficacy, specifically, the role of self-efficacy in sporting performance. The study's emphasis on the role of self-efficacy within ethnic minorities attempts to fill an existing gap due to the underrepresentation of ethnic minorities within research. The use of endurance sport student-athletes within this research also attempts to contribute to an area of limited research. The study was not only able to reinforce some of the key comprising themes of self-efficacy, but also identify the role of coaching and mental toughness in influencing levels of self-efficacy. The findings from this study can be considered when moving forward with addressing the influence of self-efficacy within ethnic minority student-athletes, and goes a step further attempting to fill a gap caused by the underrepresentation of ethnic minorities in research.

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Table 1. Overview of Theme and Sub-Themes of Past Performance

Past Performance		
Subtheme	Definition	Student-athlete example quote
Concentration	How the athlete remains focused whilst and prior to competing.	“I mean, it's basically... it's got to be quick [thought process] because you're in the game so you can't just take your time ...I think it and then I do it. It's hard to like, while, the whole game is going you have players passing the ball, you have to defend you have the coaches telling you something you have the crowd speaking... So...when ... that thought process becomes quick, then I can perform, and the external factors don't affect you.” (<i>Ivory, Soccer</i>)
Mental Skills	Psychological skills that are used to improve performance.	“I do a lot of positive thinking. I just tell myself what I want to do what I want to accomplish the day before a game.” (<i>Ivory, Soccer</i>)
Anxiety	Negative feelings associated with sporting performance.	“Yeah, and I went in and I remember I was like so nervous. And it just like affected my play. And it was just like, I think that having like acting nervous or feeling nervous, like did not help my play.” (<i>Chloe, Soccer</i>)
Flow/The Zone	The feeling of being in a state where concentration and focus is high and external sensations are shut out.	“That's when as soon as the gun starts, it's just the gun going off just tells my body and my knees and my legs to just pick up and go. And then from there it just, I can't really explain it. It just happens.” (<i>Michelle, Track</i>)

Table 2. Overview of Theme and Sub-Themes of Vicarious Experiences

Vicarious Experiences		
Subtheme	Definition	Student-athlete example quote
Individual athlete vs Team sport athlete	The influence of teammates on an individual's performance, both in team and individual sports. The dynamic between teammates in an individual sport setting and how this impacts performance, as well as the direct influence of teammates in team sports.	<p>“And yeah, I don't really think it [teammates' performance] really affects me in a way negatively or positively. I really just separate that from like, the way I perform and stuff... But at the end of the day, as soon as I step on the line, I know that I have something I need to do ... because at the end of the day track is an individual sport” (<i>Vanessa, Track</i>)</p> <p>“I usually feel pretty happy for them when they can do that... I want to see you do good and be happy about it. So for me it makes me happy and it like makes me really eager to go play.” (<i>Tessa, Tennis</i>)</p>
Achieving Success	Behaviors and emotions that are implemented to achieve success.	<p>“And then like he [coach] was like, if you're not persistent, like how she is you're not going to get there. So I was like, Okay, so once I started doing that, and I see I saw myself basically following the same footsteps” (<i>Cadence, Track</i>)</p>
Role Model	The influence of an admirable individual in the participant's sport.	<p>“I felt like I could never get to the level that they [role model] were at, because we just see them succeed so many times...but it's like we want to see some failures too...just to see that like are you human... we're all going through these struggles and challenges and then I want to know, do you get to that too[?]....And a lot of the times or when it would come to like Olympics or a big like World Championships...she [Sayna Richards-Ross] didn't perform how she wanted to... but she still...got back up and...just dominated some more and then would ...blow her times out of the water... It just made sense to me. Because it's like, Oh, you are human...” (<i>Michelle, Track</i>)</p>

Table 3. Overview of Theme and Sub-Themes of Physiological States

Physiological States		
Subtheme	Definition	Student-athlete example quote
Injury	References to physical pain and athletic injuries and the behaviors that go into prevention and recovery from these. How the participant deals with these feelings during performance.	“like whenever you're racing like yeah, it's it's in physical pain, but it's like, as you're going your body is literally at 100% when you're running because you're giving it your all so like that pain, you know, you won't feel till later. So you just block it out unless you really physically cannot run or walk.” <i>(Michelle, Track)</i>
Self-Negativity	Self-detrimental psychological thoughts and process that can negatively affect performance.	“It's practice because like you tell sometimes I catch myself like being like, oh like you like I don't know like last year I feel myself like I didn't think you could pass on like the kind of like you don't deserve to be out here like this is an easy thing.” <i>(Chloe, Soccer)</i>
Mindfulness	Awareness of thoughts and emotions, and the connection between the mind and the body.	“Recently... I've realized that it's like It's mind over matter. And that has helped me like kind of ...connect my mind and body a lot more. I think in the past like I was just like my mind would be like negative but like I knew that my body could like do it...So like I can tell myself like you can run two more so then like I run two more...I just think that now I'm like listening to like the positive things I say in my head and just negating the negative things.” <i>(Chloe, Soccer)</i>

Table 4. Overview of Theme and Sub-Themes of Verbal Persuasion

Verbal Persuasion		
Subtheme	Definition	Student-athlete example quote
Sense of belonging	Positive and reassuring social support within participant's sport.	"Just like to feel like how I feel is valid validation in the sense that like it's okay to feel how I feel and that somebody sees that I'm not okay and that they're there for me. I do need that support, but just knowing that I have someone there just supporting me. Even if I didn't want it at anytime" (<i>Tessa, Tennis</i>)
Feedback	How potentially negative feedback is internalized and affects performance, both positively and negatively.	"I try to take... [feedback] as constructive criticism rather than negative. Just because, for me, I know if I take it as a negative well then I'm just gonna start playing worse because it's all I'm thinking about. But if I take it as constructive criticism, then it's something I can build on." (<i>Tessa, Tennis</i>)
Positive Influence	How verbal support positively affects participants' performance.	"I think it helps. It helps a lot. Especially if I can't give that if I can't give any positive words or affirmations to myself. Um getting that from other people really helps too, especially when I I feel like I can't perform well or I feel like I did bad or if I did poorly or anything, just getting that from other people, I think really helps a lot." (<i>Vanessa, Track</i>)

Table 5. Overview of Theme and Sub-Themes of Coaching

Coaching		
Subtheme	Definition	Student-athlete example quote
Coaching	The influence of the coach, both positive and negative, and how this affects participants' performance.	<p>“Whenever I feel down or anxious, I think because I'm really big when it comes to like words of like affirmations and I think that ... it's really important that I get it from my coach... she's always she's put in the time to like train me and everything. And obviously I just I just have the feeling that I want to do good for her. You know, I want to make her proud and just seeing that smile on her face.” (<i>Vanessa, Track</i>)</p> <p>“And the coaches will say like ok guys just suck it up, let's go and sometimes it's like frustrating because they're not the ones moving. They're not the ones performing and they definitely don't like they're not fighting for a spot in the starting 11.” (<i>Ivory, Soccer</i>)</p>

Table 6. Overview of Theme and Sub-Themes of Mental Toughness


Mental Toughness		
Subtheme	Definition	Student-athlete example quote
Mental Toughness	The impact of mental resilience and self-belief in overcoming difficult situations and the effect they have on successful sporting performance.	“Depending again, on the level of pain, my belief, I think my belief needs to grow, the more the higher level of pain the more I need to tell myself, come on. You can do it keep going, keep going” (<i>Ivory, Soccer</i>)

Appendix A: IRB Approval

IRB-FY2023-363 - Initial: Exempt

do-not-reply@cayuse.com
To: Hart, Algerian; McShan, Keith I; Woodard, Rebecca J; Singhgolden, Tomas A

Mon 2/27/2023 10:24 AM



To:
Rebecca Woodard
Diversity & Inclusion, Kinesiology
Keith McShan, Algerian Hart

Date: Feb 27, 2023 10:23:59 AM CST

RE: Notice of IRB Exemption
Study #: IRB-FY2023-363
Study Title: Phenomenological study into the role of self-efficacy in minority student-athletes' sport performance

This submission has been reviewed by the Missouri State University Institutional Review Board (IRB) and was determined to be exempt from further review. However, any changes to any aspect of this study must be submitted, as a modification to the study, for IRB review as the changes may change this Exempt determination. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Researchers Associated with this Project:
PI: Rebecca Woodard
Co-PI: Keith McShan, Algerian Hart
Primary Contact: Tomas Singhgolden
Other Investigators: