Offsides! Surveying Mental Health in Sport Officials across Canada

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Master of Science in Kinesiology/School of Human Kinetics and Recreation

Memorial University of Newfoundland

August 20th 2024

St. John's, Newfoundland and Labrador

Abstract

The objective of this study was to establish a baseline of knowledge surrounding sport officials' mental health in Canada. A survey comprised of several adapted validated questionnaires was distributed to sport officials across Canada. 229 participants (77.9% male; M_{age} = 42.2 years) completed this survey, representing 10 sports. Results indicated a prevalence of mental health symptoms including depression (18.8%), post traumatic stress disorder (15.0%), attention deficit hyperactivity disorder (12.6%), generalized anxiety disorder (6.2%), and eating disorders (3.6%). 16.6% of officials warranted a diagnosis of a mild mental disorder, 12.5% of a moderate mental disorder, and 9.4% of a severe mental disorder. While officiating, 5.1% felt sexually harassed in the past year, 16.8% reported exposure to physical violence, and 44.4% reported being threatened, bullied, or harassed. Significant differences were present between genders on the Mental Health Literacy Scale (p = .01), Kessler 10 (p = .007), and Patient Health Questionnaire 4 (p = .001) and indicated that female officials have higher mental health literacy, but more distress than their male counterparts. The high prevalence of mental health outcomes reported by sport officials in Canada supports the current literature indicating that mental health is affecting sport officials.

General Summary

The importance of sport officials is often overlooked, yet without them, organized sport cannot exist. There is growing awareness on the mental health of sport officials as an organizational concern. The goal of this study was to learn about the current state of mental health among sport officials in Canada. The results of a national survey showed that sport officials experienced negative mental health outcomes and had a poor understanding of mental health. Demographic analysis unveiled that female officials experienced significantly more negative mental health outcomes. Similarly, young sport officials were also more likely to experience negative mental health outcomes and to be less satisfied in their role. Many sport officials reported they had been bullied, threatened, or harassed in the past year while on the job. It is important that sport organizations and researchers act to address these concerns to provide a psychologically safe work environment for their officials.

Acknowledgements

To my supervisor, Dr. David Hancock, thank you for your support and patience. You have provided me with the opportunity to succeed and excel in collaborative and independent projects. Even when those projects ended with creative icons and colourful markers.

To my lab mates, thank you for your understanding, encouragement, and critical feedback. From the last-minute assignment reminders, to proofreading work before submission. The genuine friendships made have forged an unforgettable Master's experience.

To my friends and family around the world, thank you for your constant support. From 3am phone calls, to "what am I doing with my life" chats, your patience as I work through my Master's has meant everything to me. I cannot stress how imperative my support network has been in the successful completion of this degree.

Thank you to the faculty of the School of Human Kinetics and Recreation at the Memorial University of Newfoundland. As a previous graduate of Memorial, I am honoured to have been able to continue my studies in a supportive and personable environment where students are treated like family.

To the academic and sport organizations who partnered with me on this project, across the country and the world, thank you for your invaluable help in tackling a project of this size. A special thank you to all of my participants who took the time to fill out my survey, and offer incredible insight on their experiences with mental health.

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Chapter One: Introduction

Introduction

Sport is a global, social phenomenon. Sport differs from physical activity in its collective intentionality; it is a rule-based, skill-based, competitive, physical activity where cooperation leads to the fulfillment of a predetermined goal (Borge, 2021). In Canada, adults and children flock to sport for enjoyment and physical activity. According to the Canadian Fitness and Lifestyle Research Institute's most recent data, 27% of Canadian adults (Canadian Fitness and Lifestyle Research Institute, 2018) and 75% of 5- to 17-year-olds (Canadian Fitness and Lifestyle Research Institute, 2013) participate in sport. Many initiatives surrounding population health have promoted physical activity and sport participation as a way to improve mental well-being and health. Given the historic stigmatization of negative mental health in sport, many organizations are working to improve the sporting environment for athletes to better express their feelings in a safe and positive environment.

An important and often overlooked actor in sport is the officials who guide and implement the rules of the competition. Sport officials play a key role within organized sport; without them, there are no organized competitions. Growing attrition rates in this occupation have left many organizations concerned about their operational capacities. One reason that has been suggested to contribute to these attrition rates is the mental health of sport officials. Sport officials are victims of abuse, harassment, and non-accidental violence (Webb et al., 2021). This comes from many sources, including, but not limited to, coaches, athletes, other officials, spectators, the media, and even sport organizations. The normalization of these actions towards sport officials might have

contributed to the increased attrition rates of sport officials around the world. Some researchers have speculated that these factors have also contributed to poor mental health among sport officials.

Mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2022). The concept of mental health in global society focuses on the prevalence of mental disorders. In Canada, mental health related issues and mental illnesses cost approximately $50 billion per year (Government of Canada, 2018). This is a significant economic burden. Additionally, almost 30% of disability claims in the country are related to mental health (Sairanen et al., 2011). This is a major concern for health authorities and the workforce in Canada.

Mental health is an occupational health concern (World Health Organization, 2022). It is important to remember that sport officiating is a job, whether it is paid or unpaid; officials are employees of their respective sport organizations. A safe and healthy working environment is not only a fundamental human right but also contributes to a work culture that minimizes tension and conflict, and improves employee retention, performance, and satisfaction (World Health Organization, 2022). For sport officials, this is clearly not the case given the high prevalence of abuse, harassment, and non-accidental violence experienced in the profession (Webb et al., 2021). On the other hand, a non-supportive work environment can negatively affect someone's mental health, especially for those living with pre-existing mental health conditions, and can affect their ability to

enjoy their job and/or do it well (World Health Organization, 2022). This has been shown to undermine employee attendance at work and increase attrition rates (World Health Organization, 2022). Perhaps this is why so many sport organizations are seeing alarming rates of officiating attrition. There are many risk factors that can contribute to a workplace conducive to poor mental health outcomes. Of those noted by the World Health Organization (2022), several are salient to sport officials in the workplace: excessive workloads, poor working conditions or organizational culture, limited support from colleagues or supervisors, violence, harassment, bullying, discrimination, exclusion, under or over promotion, job insecurity, inadequate pay, poor career development, and conflict between work, and home demands (World Health Organization, 2022).

There are effective actions that can be taken to reduce mental health risks at work, and to promote positive mental health outcomes, as well as support workers with mental health conditions (World Health Organization, 2022). This might include manager training to recognize and respond to supervisees' emotional distress, training for employees in mental health literacy, and individual interventions aimed at stress management techniques. These interventions could all easily be applied by sport organizations to help alleviate some of the negative mental health outcomes experienced by sport officials. However, sport officiating has historically been regarded as an informal work environment, and thus, sport organizations have offered limited protection from the risk factors.

When it comes to mental health, sport officials are an understudied population. The focus of this thesis is to understand the current state of sport officials' mental health

in Canada. Chapter Two is an extensive literature review consisting of available studies based on the topic of sport officials' mental health. The existing literature is limited, but what is available in peer-reviewed journals covers topics surrounding negative mental health outcomes including anxiety and depression, as well as protective factors such as emotional intelligence. The literature review also discusses findings on sport officials' mental health literacy and stigma, and delves into demographic variables that influence sport officials' mental health (e.g., age, experience, gender). Chapter Three is a manuscript that will be submitted to the *International Journal of Sport and Exercise Psychology*, and contains information regarding the study conducted, participants, data collection/analysis, results, and discussion. The version presented is formatted according to journal standards; however, the actual journal submission will be shorter to adhere to journal regulations. Chapter Four summarizes all chapters, outlines key findings, and provides a layout of how sport scientists and organizations might use these findings for research or to guide sport policy. This section also includes a principal researcher reflection. The appendices include the ethics approval letter, informed consent form, and study survey.

The overarching funding for this project stems from the Social Sciences and Humanities Research Council Partnership Development Grant (Award number: 890-2021-0004). The project began as a collaboration between academic (David Hancock [Memorial University of Newfoundland], Ian Cunningham [Edinburgh Napier University], Duncan Mascarenhas [Edinburgh Napier University], Paul Gorczynski [University of Greenwich], Philip Sullivan [Brock University], Tom Webb [Coventry

University], and Lori Livingston [Ontario Tech University]) and sport organization partners, namely Rugby Canada, Canada Basketball, Rugby Ontario, and the non-profit organization No Refs No Games. A research meeting was held in December 2022 with the aforementioned partners, as well as other sport partners who showed interest in partaking in the research dissemination and participation, but were not included in the original grant application. This included Football Canada, Hockey Canada, Lacrosse Canada, and Softball Canada. The meeting was used to inform the research direction, resulting in the focus of this thesis project. This is the second project on this grant, with the first being a scoping review on the topic of sport officials' mental health.

This project was also funded by the FA Aldrich Fellowship and the Social Sciences and Humanities Research Council Canadian Graduate Scholarship (Master's). Funding received supported the researcher in executing the study (e.g., data collection, data analysis, and disseminating results).

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Chapter Two: Literature Review

Literature Review

According to the World Health Organization, mental health is "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization para. 1, 2022b). Mental health and well-being are key aspects of human health. Mental health differs from mental illness, which is the summation of mental disorders as diagnosed by clinicians that contribute to a person's inability to function effectively over a prolonged period of time (Public Health Agency of Canada, 2017). Mental health encompasses more than just mental disorders, however this a notable portion of concern. Mental health can manifest as a culmination of signs and symptoms. This facet of health can be affected by biological factors (genetics), interpersonal and intrapersonal factors (knowledge, attitudes, self-efficacy), interindividual factors (social networks), organization factors (culture, physical environment) and political factors (rules, regulations) (Webb et al., 2021). In 2016, mental health and addictive disorders affected more than 1 billion people worldwide, which contributed to 7% of the global burden of disease (Rehm & Shield, 2019). Stigma and lack of treatment have contributed to the increased prevalence of these disorders over the past several decades (Rehm & Shield, 2019). The stigma surrounding mental health has contributed to barriers in accessing health services and early intervention, while leading to chastising help-seeking behaviours (Rehm & Shield, 2019; Zweiful, 2021). The social stigma associated with mental health can cause individuals suffering from

mental conditions to conceal it and refuse to seek care from speciality providers (Zweiful, 2021). This has significant direct and indirect costs to one's mental health.

As noted, mental health can be affected by a multitude of external and internal factors. From physical activity to social media and culture, genetics and the people in your life – there are numerous events that have the potential to influence one's mental health. Within modern society, individuals spend a significant amount of time at work, with colleagues, or with customers/consumers. Occupational health and safety has recently expanded to recognize mental health as a major concern (Leka & Nicholson, 2019). It is the responsibility of the employer to ensure the mental health and well-being of their employees is not being negatively affected by their employment (World Health Organization, 2022a). Workplace health and safety is often depicted within the typical nine-to-five corporate workspace or in industrial workplaces full of visible hazards. However, several non-traditional work environments exist that would benefit from the implementation of an occupational health and safety lens. One such work environment is that of sport officials. This workplace is particularly interesting, as the culture surrounding sports and competition has historically boasted toughness and berated fragility. This has contributed to the heavy stigmatization of mental health in the sporting world (Tingle et al., 2021). While some organizations have begun working to change this narrative and create safe spaces for athletes to seek the help they need, sport officials have been mostly overlooked. Since mental health in sport officials might be considered a critical occupational health and safety issue contributing to officials' rising attrition rates, dedicated research in this field is warranted.

Before continuing, it is important to clarify the term "sport officials", which is a collective term that encompasses referees (e.g., ice hockey, soccer, and football referees), judges (e.g., gymnastics and tennis line judges), umpires (e.g., baseball and softball umpires), and officials (e.g., swimming timers) (Hancock & Ste-Marie, 2013). There are three types of sport officials: (a) interactors, (b) reactors, and (c) monitors (MacMahon et al., 2014). Interactors, as stated within the name, have a high level of interaction with athletes as they are typically within the field of play; they also attend to a high number of cues. The majority of team sport officials are interactors, such as a baseball umpire. Monitors are sport officials who attend to a high number of cues to assess the quality of performance but have limited interaction with the athletes, such as artistic sport judges. Finally, reactors typically have a fewer number of responsibilities or one specific responsibility and limited interaction with athletes, like tennis line judges. Across all categories, sport officials are tasked with maintaining order, ensuring rules are followed, enhancing athletes' safety, and adjudicating sport contests in a wide variety of indoor and outdoor sporting venues (Al-Haliq et al., 2014; Livingston & Forbes, 2016). Historically, sport officials have been understudied in comparison to other key actors within the sporting world (e.g., coaches and athletes). This has led to a dearth of literature surrounding sport officials' mental health.

Sport Officiating

Sporting culture has historically praised toughness and aggression and frowned upon weakness or vulnerability (Tingle et al., 2021). This has contributed to the heavy stigmatization of mental health in the sporting world (Tingle et al., 2021). Today, many

sport organizations prioritize creating positive and safe environments for athletes to share their own stories about mental health battles. Despite this changing outlook on mental health in sports, sport officials are still abused, harassed, and victims of non-accidental violence—all of which can negatively influence their mental health (Webb et al., 2021). Sport officials' high-pressure work environment includes making quick and accurate decisions during competitions, ensuring athlete safety, and adjudicating competitive outcomes. Somewhere along the way, sporting culture has normalized abusive behaviours towards officials from the media, spectators, athletes, coaches, and even organizations (Sors et al., 2019). Sport officials are expected to be able to handle this abuse, not take it to heart, and brush it off. The accumulation of this abuse and workplace stressors could be detrimental to these individuals' mental health.

Over the past few decades, a dramatic global increase in sport officials' attrition has left many youth and recreational sports leagues concerned about their operational ability. Research on Canadian sport officials' attrition rates shows that 10,000 hockey officials, for example, quit each year (Deacon, 2001) and that there was a 38% drop in active sport officials from 1998-2010 (Canadian Heritage, 2013). Further research on Canadian sport officials' attrition rates shows there has been a 27% decline in the number of hockey officials in the past decade (Hockey Canada, 2011, 2022). Similarly, the number of active soccer officials in Canada declined 38% between 2016 and 2021 (Canada Soccer, 2022). While there are many possible reasons for these officiating attrition rates, it is likely that sport officials' mental health is a contributor (Gorczynski & Webb, 2021). Organized sports cannot exist without sport officials, and losing these key

actors in sport would reduce opportunities for athlete development and youth sport participation. As such, it is important to uncover how participating in this profession impacts sport officials' mental health. In doing so, this could improve sport officials' working conditions and retention while offering support to those who need it (Gorczynski & Webb, 2021). Researchers have identified several factors contributing to poor mental health among sport officials, including mental health literacy (Gorczynski & Thelwell, 2022; Gorczynski & Webb, 2021), emotional intelligence (Fernández et al., 2022; Louvet & Campo, 2019), psychological well-being (Brick et al., 2022; Carson et al., 2020), anxiety (Johansen & Haugen, 2013; Sors et al., 2019), and depression (Gouttebarge et al., 2017). Additionally, demographic factors, including age, experience (Fernández et al., 2022; Louvet & Campo, 2019), and gender (Gorczynski & Thelwell, 2022; Tingle et al., 2022; Webb et al., 2021) further influence these variables. The following sections expand upon these identified factors in relation to their influence on sport officials' mental health.

Mental Health Literacy

Mental health literacy is the knowledge and beliefs people have about mental disorders that can help recognize, manage, and prevent them. It is essential for knowing when and where to seek help and how to self-manage one's mental health. Thus, understanding sport officials' mental health literacy is essential to understanding their mental health (Gorczynski & Webb, 2021); however, only one study has examined this area. In an online survey launched by Gorczynski and Thelwell (2022), mental health literacy was examined among soccer match officials. The 313 respondents (14.37%

female and 85.63% male) completed the 35-item Mental Health Literacy Scale (MHLS), where scores can range from 35 to 160. Results indicated that mental health literacy within this population was lower than in other sport populations previously surveyed; yet within the population, female sport officials had significantly higher MHLS scores (102.82) than males (98.13). This represents lower knowledge of mental health symptoms among male sport officials. The survey also indicated that many negative attitudes were expressed towards others living with poor mental health. This may further exacerbate the stigma associated with seeking help in this profession (Gorczynski & Thelwell, 2022).

Overall, the low mental health literacy in the group surveyed may indicate a gap in knowledge surrounding mental health and contribute to negative mental health outcomes, reduce help-seeking behaviours, and increase stigma within the population. The lack of studies in this area represents a dearth of information surrounding the general knowledge of sport officials' mental health. Future research should look to expand on this area and branch into different sports for comparative analysis. Furthermore, Gorczynski and Thelwell's (2022) study was conducted in Europe and as such, cultural differences might yield different results in other countries and/or regions. Thus, future researchers should look to expand into more areas to determine if mental health literacy in sport officials is related to cultural influences.

Emotional Intelligence

Emotional intelligence (EI) refers to an individual's ability to perceive, express, understand, and manage their emotions (Bru-Lana et al., 2021). To explore EI among sport officials, Louvet and Campo (2019) recruited 139 male soccer referees, who then

completed the French version of the 153-question Trait Emotional Intelligence Questionnaire, which encompasses 15 facets of EI. In an effort to predict EI, the Coping Inventory for Competitive Sport was also distributed, which comprises 39 items on a 5-point Likert scale that assesses various coping strategies (task-oriented, distraction-oriented, and disengagement-oriented coping). The authors found that elite-level soccer referees reported higher levels of EI (Louvet & Campo, 2019). Further, multiple regression analyses revealed that higher scores on EI were indicative of the use of positive task-oriented coping; this relationship was particularly strong in the facets of emotionality ($t = 2.69$, $p < .01$), sociability ($t = 2.69$, $p < .01$) and self-control ($t = -2.15$, $p < .05$) (Louvet & Campo, 2019).

A study on soccer referees highlighted the importance of working on psychological variables to foster better performance, along with the need to promote training programs to ensure efficient emotional management, eliminating disconnection and exhaustion syndrome that might affect referee health (Fernández et al., 2022). The study was based on a sample of 4099 (92% male and 8% female) federated soccer referees from Spain who were between 14 and 66 years old. The Trait Meta-Mood Scale (TMMS-24; a self-reporting measure of EI), as well as the Spanish version of the 12-item General Health Questionnaire, were distributed to the participants. According to the results, there was a clear relationship between EI, health, and burnout. Specifically, referees with higher EI scores were less affected by the negative consequences associated with burnout and had a lower frequency of mental health problems. In short, EI was described as a factor that helped to protect against negative mental health outcomes

(Fernández et al., 2022). Overall, the study emphasized the importance of EI within soccer referees and highlighted the need to educate sport organizations on the importance of emotional competencies in combatting burnout, improving performance, and mitigating referee retention.

Understanding the role of EI in relation to sport officials' mental health may help guide sport organizations' policies and practices to support their officials. It is important to note that these studies only recruited participants from Western European countries; as such, differences in EI may be present in sport officials polled in other regions of the world.

Psychological Well-being

A sport official's psychological well-being (i.e., aspects of an individual's life such as life satisfaction, feelings of accomplishment, self-acceptance, and a sense of purpose) can be affected by their occupations (Brick et al., 2022; Carson et al., 2020). This was demonstrated in a study on sport officials (N = 217; Carson et al., 2020) from various sports (rugby, soccer, field hockey, cricket, netball, Australian Rules Football, basketball, boxing, athletics, and lacrosse) who were surveyed using an adapted version of the Areas of Worklife Scale, the Depression, Anxiety and Stress Scale, and the Warwick Edinburgh Mental Wellbeing Scale. Results showed that the inability to self-manage workload and demonstrate autonomy were strongly associated with higher levels of negative emotional symptoms and lower levels of psychological well-being. Participants reported high negative emotional symptoms, but also high levels of psychological well-being. These results highlight the fact that mental health and

psychological well-being are independent constructs. The high levels of psychological well-being were attributed to the high levels of autonomy that sport officials had pertaining to managing their own workload and higher levels of workplace control than general population norms (Carson et al., 2020). Demographic factors were also found to influence an individual's psychological well-being; sport officials who were younger, were not in a committed relationship, had lower levels of education, and had less officiating experience reported higher levels of negative emotional symptoms. Meanwhile, sport officials who were male, older than 50 years of age, in a committed relationship and had more officiating reported higher levels of psychological well-being (Carson et al., 2020).

A study conducted in Ireland furthered these conclusions (Brick et al., 2022). Four-hundred-thirty-eight participants were recruited (434 male, 4 female) spanning several sports (Gaelic football, rounders, camogie, and handball) to determine the prevalence of verbal/physical abuse, rates of distress, and mental health outcomes of sport officials. Sport officials experiencing physical abuse reported lower levels of psychological well-being. Subsequently, higher distress was associated with poorer mental health and greater intentions to quit. The results of these two studies indicate that the ability to manage workload and to express professional autonomy are important determinants of mental health and well-being levels of sports officials (Brick et al., 2022; Carson et al., 2020).

Referee engagement has been shown to be an antecedent for psychological well-being (Kim et al., 2021). A study examined basketball referees' (N = 410) engagement

(i.e., paid vs. volunteer, full-time vs. part-time) using an online survey comprised of the Referee Retention Scale, Individual Authenticity Measure at Work, Job Engagement Scale, and Flourishing Scale showed that referee engagement was not influenced by stress but rather by experiencing problematic social interactions with other sport actors (i.e., coaches, athletes, and spectators). This was cited as a common reason for attrition. Further, authenticity, or being true to oneself, positively influenced engagement (Kim et al., 2021); thus, the positive relationship between authenticity and engagement may relate to psychological well-being.

Psychological well-being was also investigated in European soccer referees (N = 391) in an observational prospective cohort study over the course of one season (Kilic et al., 2018). Results showed that referees who reported a lower degree of social support were more likely to present symptoms of common mental disorders. These individuals who lacked social support also reported signs of disordered eating, indicating there may be a relationship between social support and eating disorder prevalence (Kilic et al., 2018). Nearly half of the participants reported symptoms of common mental disorders at the baseline intake. Further, those sport officials who were suffering from injuries were three times more likely to report symptoms of anxiety and depression (Kilic et al., 2018).

Understanding the factors that contribute to psychological well-being in sport officials may help guide sport organizations to support their officials' autonomy, social support, and self-management. It is important to note that psychological well-being and mental health are two different constructs, and that these studies did not investigate mental health directly; however, the two constructs can and do influence each other.

Thus, future research should look to examine the differences between these constructs in further depth in this population.

Anxiety

Anxiety is classified as an uneasiness, apprehension, or tension that stems from the anticipation of danger (Griffin, 1990). Anxiety is apparent in sport officiating, from having to make difficult decisions and dealing with confrontation, it is almost unavoidable. However, the anxiety sport officials experience might vary based on the league in which an official is operating (Johansen & Haugen, 2013). This effect was demonstrated in a study based in Norway on elite soccer referees. A total of 83 participants (88% men, 12% women) aged 20 to 46 years old completed an online questionnaire adapted from the State-Trait Anxiety Inventory Form. This form consists of 20 statements describing how individuals generally feel before a competition and is rated on a 4-point scale from "almost never" to "always" (e.g., "I feel nervous and restless"). Results indicated that the mean anxiety for top-level referees was significantly higher (29.4) than for second-level referees (26.7). The results might be attributed to the experience high-level referees have in dealing with high-pressure situations and more abuse from spectators, media, and coaches, which heightens their anxiety. The study identified that anxiety could also be predicted by self-efficacy and self-confidence; if a referee had low self-efficacy and self-confidence, they scored significantly higher on anxiety than referees with high self-efficacy and self confidence. Aggressive behaviour from athletes and coaches influenced referee confidence, especially when it came to making correct decisions. In fact, when experiencing negative interactions with these

sport actors, 51% of referees reported that they were not confident they had made the correct decision. However, the study concluded that sport officials experienced no more than a moderate amount of stress while working (Johansen & Haugen, 2013).

The sporting environment is full of cheering and loud noises from spectators, coaches, and athletes. This could act as an additional stressor that triggers sport officials' anxiety. This was investigated in a study by Sors et al. (2019), who had 30 male basketball referees complete the Sport Anxiety Scale. This questionnaire consists of 21 statements on a 4-point Likert scale describing thoughts and feelings that are commonly experienced before and during sports competitions. Next, participants were tested individually in a quiet room in front of a laptop and were asked to judge whether each contact was a foul or a non-foul. The experimental session consisted of two blocks each with 20 trials. In each block, five trials had a foul with a calm crowd, five had a foul with a pressing (loud) crowd, five had a non-foul with a calm crowd, and five had a non-foul with a pressing crowd. Results indicated that the decision accuracy was lower in noisy conditions, which might have been influenced by external factors like high anxiety (Sors et al., 2019). This may be useful in directing referee training and screening for future professional sport officials, as officials who can handle these external stressors without negatively affecting their mental health may be better suited to a professional career.

Understanding anxiety in sport officials is essential, as it not only affects their personal well-being, but also limits their ability to perform their jobs. Sport organizations have a duty to provide support to their officials. This may be through formal (i.e., designated support people, teaching anxiety management, and formalized check-ins) or

informal avenues (i.e., check-ins between sport officials). Current research has only focused on referees, and so there is no understanding of how anxiety might influence other types of sport officials (i.e., umpires, judges). Future researchers should seek to broaden the official population surveyed across various sports, ages, levels and environments, as well as seek to understand effective anxiety management techniques within the population.

Depression

Depression is often associated with mental health and mental health awareness. Depression is a mood disorder that is marked by feelings of sadness, worthlessness, or hopelessness (Harrison et al., 2022). Depressive symptoms are notable within the sport official population. In their prospective study, Gouttebarge et al. (2017) screened 391 football referees for common mental disorders using the 12-item General Health Questionnaire and found that approximately 16% of sport officials had experienced depressive symptoms. Furthermore, 12% of participants indicated that they had experienced depressive symptoms to potentially warrant a diagnosis of major depressive disorder (Gouttebarge et al., 2017). Future researchers should directly compare the mental health of sport officials at elite and non-elite levels using data from validated screening questionnaires and self-reported diagnosis of mental disorders. Additionally, investigation into other sports outside of soccer might be useful in uncovering how various sporting environments may induce depressive symptoms in sport officials.

The Influence of Sex and Gender

In most sports, officiating is a male-dominated profession; innate sexism and gendered aggressions directly impact female sport officials (Tingle et al., 2022; Webb et al., 2021). This has been seen in several studies examining female sport officials' mental health. In one such study, 20 female basketball referees were interviewed, and findings revealed that gendered aggressions negatively impacted mental health (Tingle et al., 2022). Eighteen of the 20 referees who participated in this study indicated they had experienced gender-related macro- and micro-aggressions, which negatively impacted their mental health. This ultimately led to increased anxiety, stress, and fear, along with decreased self-esteem. Furthermore, 60% of the participants specifically mentioned the stress that existed because the officiating structure often operated like an 'old boys club'. These misogynistic environments and systematic macro-aggressions contribute to why women athletes are twice as likely to experience mental health challenges and might also explain why female sport officials are experiencing higher rates of negative mental health (Tingle et al., 2022). Moreover, participants recounted instances where they had been sexually objectified in the role and felt they were held to unrealistic expectations of how they should look, which sometimes led to body image issues. Negative body image perceptions have been linked to poor emotional regulation skills, which might affect an individual's EI. Losing EI as a moderating factor against poor mental health (Fernández et al., 2022; Louvet & Campo, 2019) might further increase negative mental health indicators and lower self-esteem.

Similar trends were found in another study that examined the mental health of female English soccer match officials (Webb et al., 2021). Semi-structured interviews of 12 referees revealed toxic, abusive, male-dominated environments that included sexist and derogatory language, negatively affecting the mental health of these female match officials (Webb et al., 2021). Thematic analysis unveiled four main themes, including (a) male and female soccer environments; (b) abuse, sexism, and homophobia in soccer; (c) formal and informal support networks; and (d) mental health knowledge and experience. Gender was identified as an indicator of how these referees were treated within their organizations. As an example, one participant felt that older male referees were exacerbating working conditions for female sport officials and negatively impacting their mental health. The notion of an 'old boys club' was prevalent in several interviews, with participants feeling that female referees were seen as less physically capable of progressing to high levels of officiating. This aligned with the second theme, where comments related to the competence of female match officials due to their gender were highly prevalent. Several participants denoted derogatory language and sexist comments made to them throughout their refereeing careers. In addition, feelings of isolation were reported due to a lack of formal and informal support networks between referees and their organizations. Finally, the theme of mental health knowledge was encompassed by reports of fragmented information and training within the profession despite progressive societal movements (Webb et al., 2021).

Mental health literacy and mental disorder prevalence have also been shown to be related to gender. A survey study on soccer referees ($N = 313$) determined that females

had significantly higher mental health literacy scores and depressive symptoms, and significantly lower levels of well-being (Gorczynski & Thelwell, 2022).

There was limited research conducted on female sport officials found in this review. However, the experiences described are similar to those of female athletes. This may indicate an overarching culture towards women in sport. Given this, diagnosing the issue is deeper than targeting officiating interactions and calls for a cultural shift in sport. The gender-based differences identified in sport officials' mental health represent an opportunity for organizations to investigate these issues and create a positive change. This may be issued through course development, gender-inclusive training, and organizational support. Moreover, future research should look to collect and compare male and female data across several sports (both male-dominated and female-dominated sports) to further understand how these differences present in different contexts. Further, targeting female-specific qualitative inquiries would be useful in understanding how sexism exists in sport and what factors are contributing to women officials' intention to quit.

The Influence of Age and Experience

Age and experience have also been investigated concerning sport officials' mental health. Trends in the literature show that more experienced soccer referees exhibited fewer symptoms of stress and burnout than newer referees (Fernández et al., 2022; Louvet & Campo, 2019). A group of 4099 (92% male and 8% female) Spanish soccer referees aged 14 to 66 years old were surveyed using self-reported measures of EI appraisal (The Trait Meta Mood Scale, the Oldenburg Burnout Inventory, and the 12-item

General Health Questionnaire) (Fernández et al., 2022). Results showed that older referees (38 to 43 years of age) had more pronounced decreases in burnout scores. This was coupled by age effects, indicating that as referees aged and gained more experience, they reported less burnout. The older participants also recorded better results in the emotional dimensions, with the referees between 38 and 43 years of age having the most favourable results. This relationship between age, experience, and burnout was attributed to a greater capacity for emotional management (Fernández et al., 2022).

EI, age, and experience were also investigated in a study that recruited 139 French male soccer referees aged 17 to 53 years old (Louvet & Campo, 2019). Participants completed two questionnaires concerning EI: (a) the French version of the 153-question Trait Emotional Intelligence Questionnaire, which encompasses 15 facets of EI and (b) the Coping Inventory for Competitive Sport, which comprises 39 items on a 5-point Likert scale that assess various coping strategies. Results noted no significant correlations between EI factors, age, and experience, although a significant positive relationship was reported between self-control and referees' experience (Louvet & Campo, 2019).

This discrepancy in the literature calls for further investigation into the relationship between age, experience, and mental health within this profession. This may help sport organizations improve recruitment and retention techniques across a wide variety of officials within their organization. The age of sport officials, particularly young officials, has brought media attention to the treatment of sport officials; however, the literature has not caught up to speed. Targeted qualitative inquiries on the experience of

young sport officials may provide insight into why and how sport organizations can improve the retention, training and experience of their employees.

Gaps in the Literature

There are relatively few studies examining mental health in sport officials. While several aspects of mental health in this population have been investigated (mental health literacy, EI, anxiety, depression, gender, age, and experience), most of the evidence supporting these important mental health aspects is drawn from singular studies. Furthermore, many of these studies are specific to a single context or specific group of people (e.g., soccer officials) and do not encompass mental health as a whole. In other words, this field of research is in its infancy. Thus, future researchers must be broader to understand sport officials' mental health and create robust findings that strengthen the literature. This is important in understanding how certain sport officiating environments might influence mental health. In addition to the limited literature on sport officials' mental health, the studies that have been conducted have only examined soccer and basketball officials. Thus, we cannot dissertate that these experiences are shared among other sport officials.

A closer look at the literature reveals several other gaps and shortcomings regarding the mental health of sport officials. For instance, no current studies address how being a person of colour and a sport official might influence mental well-being. Similarly, there is a dearth of information surrounding the mental health of gender-non-confirming sport officials. Understanding these and other sociocultural demographics

may assist in promoting a diverse and equitable sporting environment to ensure all individuals are protected within the profession.

While mental health encompasses more than mental disorders, no studies have investigated the prevalence of DSM-5-diagnosed mental illnesses among sport officials. The lack of knowledge surrounding clinical mental health outcomes using diagnostic tools presents an opportunity for collaboration amongst sport scientists and the medical community. This would allow for the identification of discrepancies between the prevalence of mental disorders between the general and sport officiating populations. Another avenue to begin this research could involve utilizing validated screening questionnaires to estimate the prevalence of these disorders within this population. While such a study would not provide diagnostic confirmation of mental illnesses within the population, it would be useful in creating a baseline understanding of how this population might be differently affected by mental health issues and allow sport organizations to start targeting this issue. This research is essential in furthering the initiative of promoting sport officials' mental health.

Chapter Summary

This chapter highlights the current mental health issues sport officials have offered to share in previous research. Understanding mental health in sport officials presents an important opportunity to improve retention and job satisfaction for this group. Through analyzing both qualitative and quantitative studies, previous researchers have identified important themes that bring attention to significant concerns around mental health in sport officials. Trends have shown that sport officials suffer negative mental

health symptoms, including anxiety, stress, and depression. The prevalence of these signs and symptoms might vary based on the official's sport, league, region, gender/sex, age, and experience. It is imperative to understand the current state of sport officials' mental health to guide policy and organizational frameworks. While current research on sport officials' mental health is not abundant, the existing literature offers some insights into ongoing problems surrounding this health outcome.

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Chapter Three: Manuscript

Manuscript

Offsides! Surveying Mental Health in Sport Officials across Canada

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Submitted to: *International Journal of Sport and Exercise Psychology*

Abstract

Rising attrition among sport officials is causing organizational concerns surrounding operational capacity; addressing mental health in this population may help resolve this issue. The objective of this study was to establish a baseline of knowledge surrounding sport officials' mental health in Canada. A survey comprised of several adapted validated questionnaires was distributed to sport officials across Canada. 229 participants (77.9% male; M_{age} = 42.2 years) from 10 sports completed this survey (most officiated basketball (46.7%)). There was a prevalence of mental health symptoms within this population, including depression (18.8%), post traumatic stress disorder (15.0%), attention deficit hyperactivity disorder (12.6%), generalized anxiety disorder (6.2%), and eating disorders (3.6%). Screeners indicated that 38.5% of officials surveyed warranted a diagnosis of a mild, moderate, or severe mental disorder. 5.1% of officials surveyed reported they were sexually harassed in the past year, 16.8% reported exposure to physical violence, and 48.0% reported being threatened, bullied or harassed. Female participants had higher mental health literacy and distress, and reported higher rates of sexual harassment. Younger officials were more likely to have a mental health disorder and reported lower levels of job satisfaction and support than older officials. Recreational officials also reported higher rates of sexual harassment than amateur and elite officials. The prevalence of mental health outcomes reported by sport officials in Canada supports the current literature indicating that mental health might be a factor in the rising attrition rates of sport officials. Further research is required to understand what factors influence the elevated prevalence of mental health issues within this population.

Introduction

Sporting culture has historically praised toughness and aggression and frowned upon weakness or vulnerability (Tingle et al., 2021). This has contributed to the heavy stigmatization of mental health in the sport world (Tingle et al., 2021). Today, many sport organizations prioritize creating positive and safe environments for athletes to share their own stories about mental health battles. Despite this changing outlook on mental health in sports, sport officials are still abused, harassed, and victims of non-accidental violence (Webb et al., 2021).

Sport officials are key actors in the sporting world. The term "sport officials", is a collective term that is used to describe referees (e.g., ice hockey, soccer, and football referees), judges (e.g., gymnastics and tennis line judges), umpires (e.g., baseball and softball umpires), and officials (e.g., swimming timers) (Hancock & Ste-Marie, 2013). There are three types of sport officials: (a) interactors, (b) reactors, and (c) monitors (MacMahon et al., 2014). Interactors have a high level of interaction with athletes as they are typically within the field of play, attend to a high number of cues, and are often found in team sports (i.e., baseball umpires). Similar to interactors, monitors are sport officials who attend to a high number of cues to assess the quality of performance. However, the key difference between these two types of sport officials is that monitors have limited interaction with the athletes, such as artistic sport judges. The final category of officials is reactors. These officials typically have fewer responsibilities and limited interaction with athletes, like tennis line judges. Regardless of what category a sport official falls into, an official's high-pressure work environment includes making decisions during

competitions, ensuring athlete safety, and adjudicating competitive outcomes (Al-Haliq et al., 2014; Livingston & Forbes, 2016).

Somewhere along the way, sport culture has normalized abusive behaviours towards officials from the media, spectators, athletes, coaches, and even organizations (Sors et al., 2019). Sport officials are expected to handle this abuse, not take it to heart, and brush it off. While not always recognized, it is important to acknowledge that, paid or unpaid, sport officials are the employees of sport organizations. Thus, it is the responsibility of the employer to ensure the mental health and well-being of their employees are not being negatively affected by their employment (World Health Organization, 2022). The accumulation of this abuse and workplace stressors can be detrimental to these individuals' mental health.

Over the past few decades, a dramatic global increase in sport officials' attrition has left many youth and recreational sport leagues concerned about their operational ability. Canadian sport officials' attrition rates have declined by 27% and 38% in ice hockey and soccer in the past 5-10 years, respectively (Canada Soccer, 2022; Hockey Canada, 2011, 2022). Organized sports require adjudication in order to allow for fair competition. As such, the consequences of the high sport officiating attrition rates are grave, as it would greatly reduce opportunities for athlete development and youth sport participation. While several reasons for these sport officiating attrition rates exist, researchers have speculated that officials' mental health is a key contributor (Gorczynski & Webb, 2021).

It is evident that sport officials' well-being is affected by their occupation (Brick et al., 2022). Given the current attrition rates and concerns of organizational capacity, sport organizations ought to be focused on improving these outcomes through evidence-based research. Current research has identified several factors contributing to poor mental health among sport officials, including mental health literacy (Gorczynski & Thelwell, 2022), emotional intelligence (Fernández et al., 2022; Louvet & Campo, 2019), psychological well-being (Brick et al., 2022; Carson et al., 2020), anxiety (Johansen & Haugen, 2013; Sors et al., 2019), and depression (Gouttebarge et al., 2017). Additionally, demographic factors including gender (Gorczynski & Thelwell, 2022; Tingle et al., 2022; Webb et al., 2021) and age/experience (Fernández et al., 2022; Louvet & Campo, 2019) appear to influence sport officials' mental health. These key concepts are unpacked further in the following paragraphs.

Mental health literacy is a key determinant of mental health, as it helps people to recognize, manage, and prevent negative mental health outcomes (Gorczynski & Webb, 2021). Our understanding of sport officials' mental health literacy is limited. The lone study in this field indicated that soccer match officials ($N = 313$) in the United Kingdom had lower mental health literacy scores (Gorczynski & Thelwell, 2022) than athletic staff (Sullivan et al., 2018) and coaches (Gorczynski et al., 2020). Further, the results demonstrated that many sport officials hold negative attitudes towards individuals living with poor mental health (Gorczynski & Thelwell, 2022). The dearth of literature on this subject, in addition to the cross-cultural limitations presented by the European-specific, soccer match official population affect the generalizability of the findings.

Sport officials' emotional intelligence has been examined on two occasions. Results from a study on soccer officials (N = 139) demonstrated that competitive level was related to emotional intelligence, with elite referees reporting higher emotional intelligence scores than non-elites (Louvet & Campo, 2019). A second study on soccer officials (N = 4099) uncovered that referees who had higher levels of emotional intelligence were less affected by the negative consequences associated with burnout and reported a lower frequency of mental health problems (Fernández et al., 2022). These findings indicate the importance of emotional intelligence as a protective factor against negative mental health outcomes. Since the only sport analyzed was soccer, it is unclear if these effects are evident in other sports, and if so, to what extent.

Sport officials' psychological well-being can be affected by their occupation (Brick et al., 2022; Carson et al., 2020). Carson and colleagues (2020) distributed a survey to sport officials (N = 317) from a variety of sports (rugby, soccer, field hockey, cricket, netball, Australian Rules Football, basketball, boxing, athletics, and lacrosse), which showed that the inability to self-manage workload and demonstrate autonomy in the workplace were associated with higher levels of negative emotional symptoms and lower levels of psychological well-being (Carson et al., 2020). Furthermore, high levels of psychological well-being were attributed to the high levels of autonomy that sport officials had pertaining to managing their own workload and higher levels of workplace control than general population norms (Carson et al., 2020). Subsequently, higher distress was associated with poorer mental health and greater intentions to quit. Similar research on sport officials in Ireland unveiled that officials (N = 438) who experienced physical

abuse reported lower levels of psychological well-being (Brick et al., 2022). The results of these two studies indicate that the ability to manage workload and to express professional autonomy are important determinants of sport officials' mental health and well-being (Brick et al., 2022; Carson et al., 2020).

Sport officials are prone to experiencing anxiety, which might vary based on the league in which an official is operating (Johansen & Haugen, 2013). A study on soccer referees ($N = 83$) demonstrated that the mean anxiety scores for top-level referees were significantly higher than for second-level referees. This might be the result of higher level referees experiencing more high-pressure situations and more abuse from other sport actors, which heightens their anxiety. External factors, like crowd noise, also play a role in sport officials' anxiety. Sors et al. (2019) studied this in basketball referees ($N = 30$), finding that participants who were more anxious had a decreased ability to discriminate between fouls and non-fouls during noisy experimental sessions (Sors et al., 2019). Clearly, anxiety is experienced by sport officials, though the extent to which this affects their overall mental health is still unclear.

Depressive symptoms are apparent in the officiating population, as noted in the observational prospective cohort study conducted by Gouttebarge et al. (2017). Soccer match officials ($N = 391$) were followed over the course of one season and results unveiled that approximately 16% of officials experienced depressive symptoms and 12% of participants indicated that they had experienced depressive symptoms to potentially warrant a diagnosis of major depressive disorder (Gouttebarge et al., 2017). Depression is clearly prevalent within the officiating population; however, similar to the other research

conducted in this field, the lack of literature outside of Europe and outside of soccer poses limitations in the applicability of these findings.

Demographic factors (e.g., gender) that influence sport officials' mental health have been researched and have revealed several trends. Semi-structured interviews of 12 female soccer match officials in the UK unveiled themes of abuse and sexism, and feelings of isolation as well as fragmented mental health knowledge (Webb et al., 2021). Similarly, a qualitative study uncovered that female sport officials ($N = 20$) described their work environments as misogynistic with systematic macro-aggressions, ultimately leading to negative mental health (Tingle et al., 2022). Such experiences are often cited as reasons why female athletes are twice as likely to experience mental health challenges than males (Breslin et al., 2019) and might also explain why female sport officials are experiencing higher rates of negative mental health than males (Tingle et al., 2022). A quantitative study ($N = 313$) discovered that female referees had significantly higher mental health literacy scores than their male counterparts, though females also scored significantly lower on measures of well-being (Gorczynski & Thelwell, 2022). Future inquiries require a female-specific lens, as well as a broader sample for direct comparisons between males and females on mental health outcomes in this population.

Other demographic variables related to sport officials' mental health include age and experience. For instance, more experienced soccer referees exhibited fewer symptoms of stress and burnout than newer referees (Fernández et al., 2022; Louvet & Campo, 2019). A survey study ($N = 4099$) conducted in 2022 unveiled that as referees aged and gained experience in officiating, they reported less burnout (Fernández et al.,

2022). This might be due to high emotional intelligence and capacity for emotional management. However, a similar study on soccer referees (N = 139) reported no significant correlations between emotional intelligence, age, and experience (Louvet & Campo, 2019). The discrepancy in the literature calls for further investigation into the effect of these demographic factors on mental health outcomes in the sport officiating population.

The existing literature outlines several occupational health concerns for sport officials and warrants further investigation into officials' mental health. Notably, there is a lack of research that has been conducted outside of Europe, which is important to understand how cultural/geographic differences might influence sport officials' mental health. Further, past investigations have focused on one mental health outcome (e.g., mental health literacy), so examining multiple variables in one study is warranted. Beyond that, there has been limited investigation across different groups of sport officials, with most studies focused on soccer and basketball officials—clearly there is a need to study sport officials' mental health across sports, ensuring heterogeneous samples with respect to age, competitive level, gender/sex, and experience.

Therefore, the purpose of this study was to investigate mental health and mental health outcomes among sport officials in Canada. Within the investigation, we explored various mental health outcomes (e.g., mental health literacy, substance abuse, anxiety, and depression) with intentional efforts to recruit a diverse sample of sport officials. In doing so, we were able to establish a baseline of knowledge on the status of mental health in the sport officiating population in Canada. It was hypothesized that mental health

outcomes would be more prevalent within this population than in the general Canadian population given the work environment they operate in and previous research in the field. It was also hypothesized that negative mental health outcomes would be more prevalent within marginalized groups (e.g., females and younger sport officials).

Methods

This quantitative project was conducted at the institution of the first and senior authors. The procedures used were approved by the research ethics (ICEHR: 20240418-HK) board at the institution and are explained below.

Recruiting & Participants

This study represents a collaborative effort from several sport partners (i.e., Canada Basketball, Rugby Canada, Rugby Ontario, No Refs No Games, Softball Canada, Lacrosse Canada, Hockey Canada, and Football Canada) and the study authors. The group met in December 2022, and identified this study as a priority research project. Leveraging this collaborative effort, participants were primarily recruited from partner organizations, as well as through social media advertising. To be included in the study, participants must have been active sport officials in Canada, of any age, gender/sex, and with any experience level.

After providing informed consent, participants completed an online Qualtrics survey with 110 questions. Completed surveys were received from 229 participants, of which 171 were male (74.7%), 55 were female (24.0%), and three identified as non-binary (1.3%). Sexual orientation was recorded with the majority of participants identifying as heterosexual (87.7%), and only a few identifying as homosexual (1.8%) or

bisexual (5.7%) and the rest preferred not to disclose (4.8%). The majority of participants (90.4%) self-reported as being White. Further, the majority of participants reported that they were married (49.1%) and had no dependents (59.8%), and had a mean income of 117,940$ and worked as officials on average for 11.12 hours per week. In regard to education, the majority of individuals who responded to this survey had completed a bachelor's degree (44.3%). Participants' mean age was 42.28 years, with a range from 18 to 83 years old. Participants averaged 16.58 years' experience, with a range from 1 to 55 years' experience.

Measures

All participants completed an online survey comprised of several adapted, validated questionnaires (based on Cronbach's alpha) to screen for baseline health information, mental health, well-being and non-specific psychological distress, substance abuse, sleep-related impairments, mental health literacy, and mental health stigma, as well as officiating specific and demographic questions (e.g., age, gender/sex, experience, and primary sport they officiated). Participants completed the demographic section first, followed by the section on mental health literacy and stigma. The remaining sections were randomized using the Qualtrics randomize feature such that each participant saw a different order of the questions.

Demographic Information

The first section of this survey was a 15-question demographic inquiry. Therein, participants were asked for information pertaining to their age, gender/sex, race, marital status, education, income, and geographic location. It further probed to identify which

sport the participants primarily officiated, their qualifications, as well as specific questions concerning their time dedications to officiating.

To ease data analysis, the age of the participants was grouped into three categories based on the equal division of participants: 18-31 years of age (n = 79), 32-51 years of age (n = 77), and 52-83 years of age (n = 73). Years' experience was also grouped into three categories based on the participants who responded: 1-10 years' experience (n = 79), 11-20 years' experience (n = 77), and 21-55 years' experience (n = 73). Data were collected from sport officials who operated at various levels of competition, which were again grouped into three categories: recreational (n = 21), amateur (n = 156) and elite (n = 52). Participants were recruited from various sports, including baseball (n = 4), basketball (n = 93), football (n = 20), ice hockey (n = 76), soccer (n = 2), softball (n = 10), artistic swimming (n = 1), rugby (n = 20), wheelchair rugby (n = 1), and lacrosse (n = 1). Given the low numbers in some groups, cross-sport comparisons only included basketball (n = 93), ice hockey (n = 76), softball (n = 10), rugby (n = 20), and football (n = 20).

Mental Health Literacy & Stigma

The Mental Health Literacy Scale (MHLS) is a 32-question survey that was used to gain an understanding of sport officials' knowledge of mental health. Two sections comprise the MHLS. First is a 4-point (ranging from *very unlikely* to *very likely*) Likert scale questionnaire that presents the individual with scenario-based questions (e.g., 'To what extent do you think it is likely that the diagnosis of Agoraphobia included anxiety about situations where escape may be difficult or embarrassing'). Second, there is a 5-

point (ranging from *strongly disagree* to *strongly agree*) Likert scale section that discusses mental health literacy, but also probes to understand the individual's view on mental health (mental health stigma) (O'Connor & Casey, 2015).

Mental Health: Screening, Psychological Distress & Substance Abuse

The section inquiring about mental health was comprised of adapted questions from both the Kessler Psychological Distress Scale (K10; Kessler et al., 2002) and the Patient Health Questionnaire-4 (PH4; Lowe et al., 2010). The K10 is a 10-item questionnaire that yields a global measure of distress based on questions about anxiety and depressive symptoms that a person may have experienced within the past four weeks. It uses a 5-point Likert scale that asks the individual to indicate if they have experienced the prompt anywhere from *none of the time* to *all of the time* (e.g. 'During the last 30 days, about how often did you feel tired out for no good reason?'). Likewise, the PH4 is a 4-item questionnaire on a 4-point Likert scale, from *not at all* to *nearly every day*, which measures the core signs and symptoms of depression and anxiety. While neither of these tools are diagnostic, they are indicative of potential mental health issues and in a clinical setting, would prompt further inquiry to establish the presence or absence of a clinical disorder (Kessler et al., 2002; Lowe et al., 2010).

Given the prevalence of substance abuse associated with mental health issues, the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) developed by the WHO was included in the survey (WHO ASSIST Working Group, 2022). ASSIST is an 8-item questionnaire designed to screen for the use of tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, benzodiazepines, hallucinogens, inhalants,

opioids, and 'other' drugs. The first question asked the participant to indicate which substances they had used in their lifetime by selecting *yes* or *no.* The following questions asked the participant to respond on a 5-point Likert scale ranging from *never* to *daily or almost daily.* ASSIST determines a risk score for each substance (lower, moderate or higher), as well as information concerning lifetime use of substances.

Well-being

Participant well-being was assessed using a 28-question adapted version of the NIOSH Worker Well-Being Survey. This tool provides an integrated assessment of worker well-being across multiple dimensions including quality of life, circumstances outside of work, and physical/mental health status to measure overall well-being, sexual harassment, and physical violence exposure (Chari et al., 2018). This tool is salient as sport officials are integral in the sport world; these (often) paid workers are responsible for upholding the integrity of sport and maintaining safe play. The tool uses 4-point (ranging from *not at all satisfied* to *very satisfied*, *strongly disagree* to *strongly agree,* and *very unsafe* to *somewhat* unsafe) and 5-point (ranging from *never* to *always*) Likert scales and binary responses.

Data Analysis

The Qualtrics survey data were coded to represent numeric values, and then downloaded into an Excel spreadsheet where it was cleaned for analysis in SPSS 28.0. Data were screened for bots, outliers, missing data, and indices of non-normality (at a significance level $p < .05$). Further, a visual inspection of histograms of each outcome

and each group was conducted to analyze skewness and kurtosis; normal distributions were concluded for each group.

Analyses were conducted on each block of the survey (e.g., MHLS, K10, PH4, etc.). For each measure, we reported relevant descriptive statistics, and then ran appropriate inferential tests to examine group differences. To explore gender-based differences for each measure, we employed *t*-tests and used Levene's test to ensure equality of variance between groups ($p < .05$). We also calculated effect sizes for each *t*-test using Cohen's *d*. Therein, 0.2, 0.5, and 0.8 were considered small, medium, and large effect sizes, respectively (Cohen, 1988). For the remaining group differences (i.e., sport, age, experience, and competitive level), we implemented one-way ANOVAs. Again, Levene's test was employed to ensure the equality of variance between groups ($p < .05$). Partial-eta squared was used to measure effect sizes, with the following guiding values: small effect size if $n^2 = .01$, medium effect size if $n^2 = .06$, large effect size if $n^2 = .14$ (Cohen, 1988). When ANOVAs were significant, Bonferroni post-hoc tests were used to detect which groups were significantly different from each other (Lee & Lee, 2018). For all inferential tests, we reported test power ($1 - \beta > .80$ was considered acceptable; Hintze, 2008) to make inferences about the tests' sensitivity to detect meaningful effects.

Results

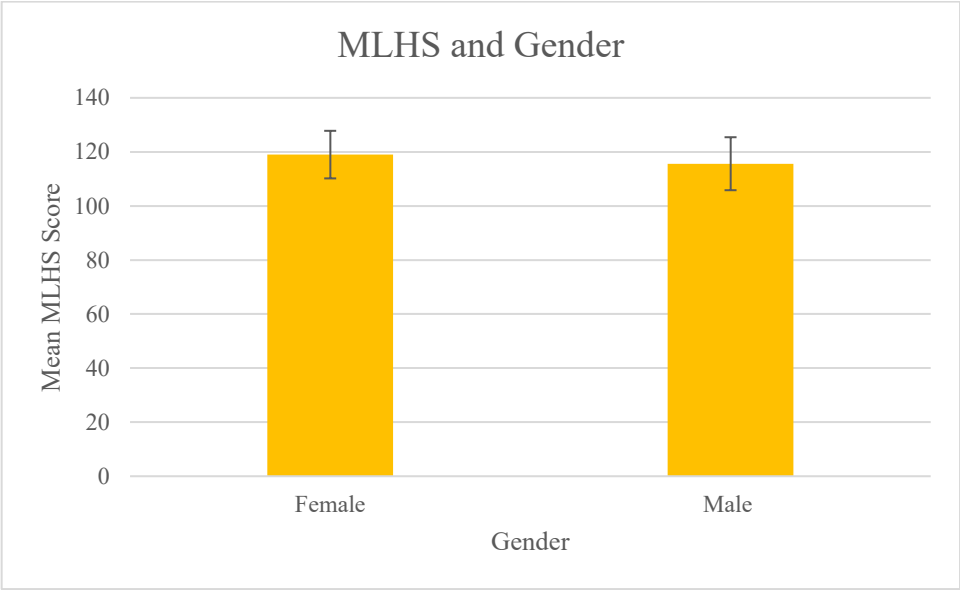
Before investigating the outcomes from the different sections of the surveys, several mental health trends were noticed within these results. Participants reported the following rates of mental health issues: 18.8% with depression, 15.0% with post-traumatic stress disorder (PTSD), 12.3% with attention deficit hyperactivity disorder

(ADHD), 4.9% with anxiety, 2.6% with an eating disorder, 2.2% with a panic disorder, and 2.2% with obsessive compulsive disorder (OCD). Results from mental health screeners showed that 16.6% of officials surveyed warranted a diagnosis of a mild mental disorder, 12.5% of a moderate mental disorder, and 9.4% of a severe mental disorder.

MHLS

The MHLS was incorporated into this survey to gain an understanding of sport officials' knowledge on mental health. Herein, participants had a mean score of 116.75 (SD = 9.66, range = 74-134), with the maximum possible score on the MHLS being 160. Females (M = 119.00, SD = 8.80) had significantly higher mental health literacy scores than males (M = 115.62, SD = 9.80) ($t_{(187)}$ = 2.610, p = .01, d = 0.442, 1 – β = .829) (see Figure 1). A series of one-way ANOVAs revealed no significant group differences for MHLS based on age ($F_{(2, 189)}$ = 0.740, p = .478, n^2 = .008, 1 – β = .174), experience ($F_{(2, 180)}$ = 1.718, p = .182, n^2 = .019, 1 – β = .358), competitive level ($F_{(2, 189)}$ = 1.775, p = .172, n^2 = .018, 1 – β = .369), and sport ($F_{(4, 177)}$ = 2.340, p = .057, n^2 = .050, 1 – β = .670).

Figure 1: Mental Health Literacy According to Gender



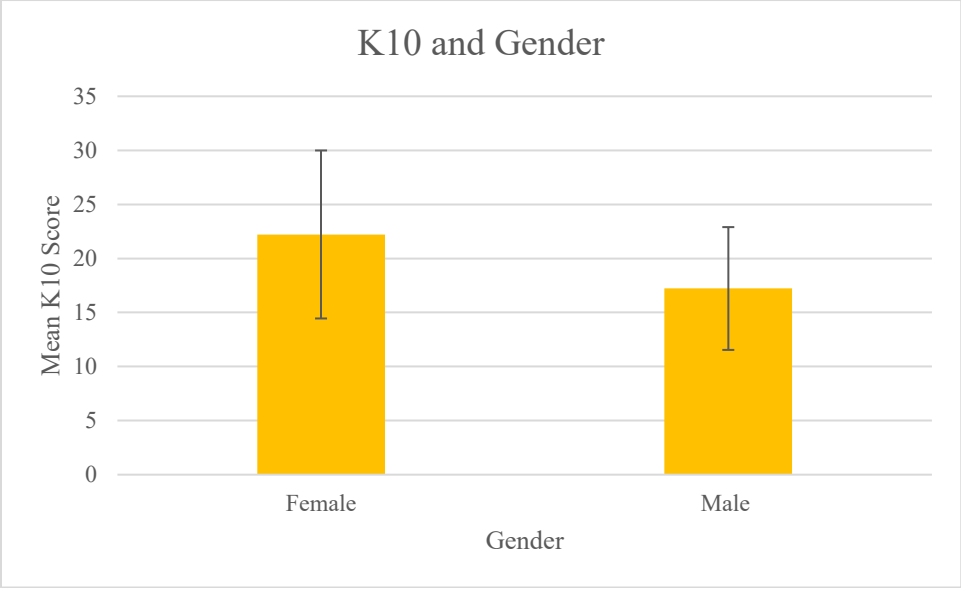
Note. Mean scores for the sample were 119 for female and 115.63 for male, where the maximum possible score was 160.

K10

The K10 yields a global measure of distress based on symptoms that a person experienced in the past four weeks, with the maximum score being 50. Results of the K10 indicated that 16.6% of officials warranted a diagnosis of a mild mental disorder, 12.5% of a moderate mental disorder, and 9.4% of a severe mental disorder. Participants' mean score for the K10 was 18.60 (range = 10-45, SD = 6.80). Females (M = 22.22, SD = 7.77) scored significantly higher than males (M = 17.22, SD = 5.88) on K10 screening, ($t_{(217)}$ = 4.983, p =.007, d = 0.781, 1 – β = .999) (see Figure 2). One-way ANOVAs revealed significant group differences for K10 scores based on age ($F_{(2, 219)}$ = 25.054, p = .001, n^2 = .186, 1 – β = 1.0), experience ($F_{(2, 209)}$ = 14.124, p = .001, n^2 = .119, 1 – β = .998), and sport ($F_{(4, 208)}$ = 3.394, p = .010, n^2 = .061, 1 – β = .845). Regarding age groups, the 18- to

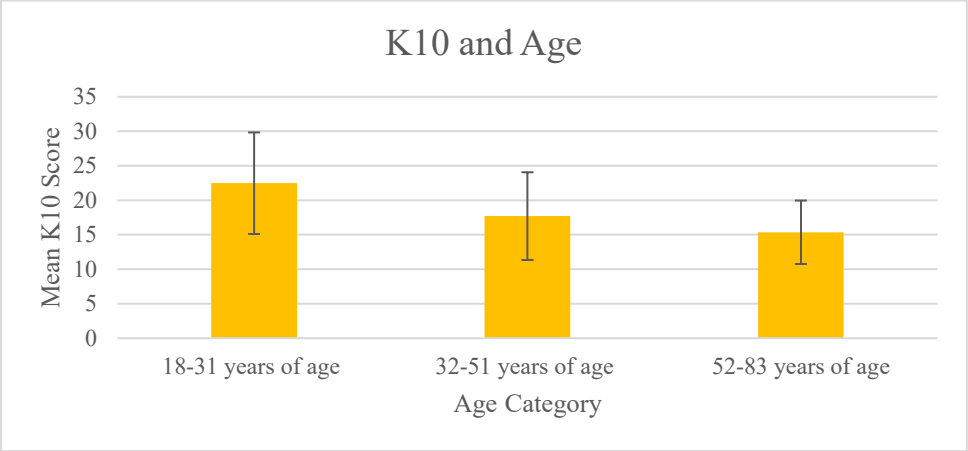
31-year-old group (M = 22.47, SD = 7.36) had significantly higher scores than the 32- to 51-year-old group (M = 17.70, SD = 6.36, p = .001) and the 53- to 83-year-old group (M = 15.36, SD = 4.60, p = .001). There were no significant differences between the 32- to 51-year-old (M = 17.70, SD = 6.36) and 53- to 83-year-old group (M = 15.36, SD = 4.60, $p > .05$) (see Figure 3). Statistical differences were also noted between the experience groups, with the newest officials (M = 21.00, SD = 7.30) having significantly higher scores than the medium experienced officials (M = 18.00, SD = 6.40, p =.015) and most experienced groups (M = 15.20, SD = 4.97, p = .042) (see Figure 4). The K10 revealed differences between distress levels in hockey and basketball referees (p = .005), where ice hockey officials (M = 20.91, SD = 7.30) scored significantly higher than basketball (M = 17.10, SD = 6.45) (see Figure 5). Finally, no significant differences were found based on participants' competitive level ($F_{(2, 219)} = 0.085$, p = .919, n^2 = .001, 1 – β = .063).

Figure 2: Kessler 10 According to Gender



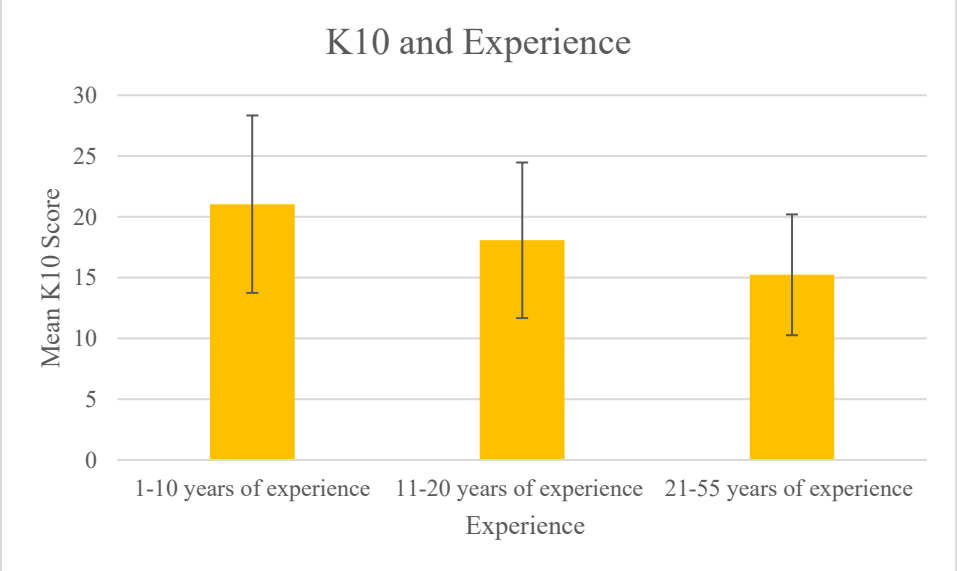
Note. Mean scores for the sample were 22.22 for female and 17.22 for male, where the maximum possible score was 50.

Figure 3: Kessler 10 According to Age



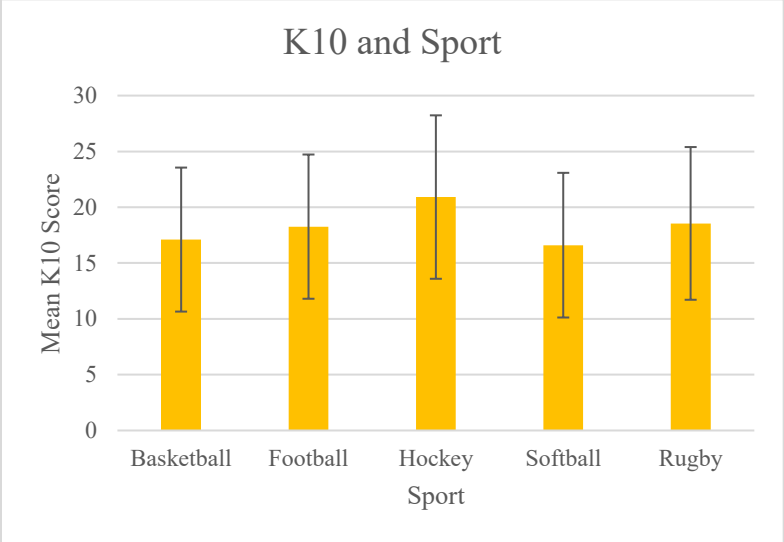
Note. Mean scores for this sample were 22.47 for 18 to 31-year-old group, 17.70 for the 32 to 51-year-old group and 15.36 for the 53 to 83-year-old group.

Figure 4: Kessler 10 According to Experience



Note. Mean scores for this sample were 21.04 for the 1-10 years of experience group, 18.07 for the 11-20 years of experience group and 15.23 for the 21-55 years of experience group, where the maximum score was 50.

Figure 5: Kessler 10 According to Sport



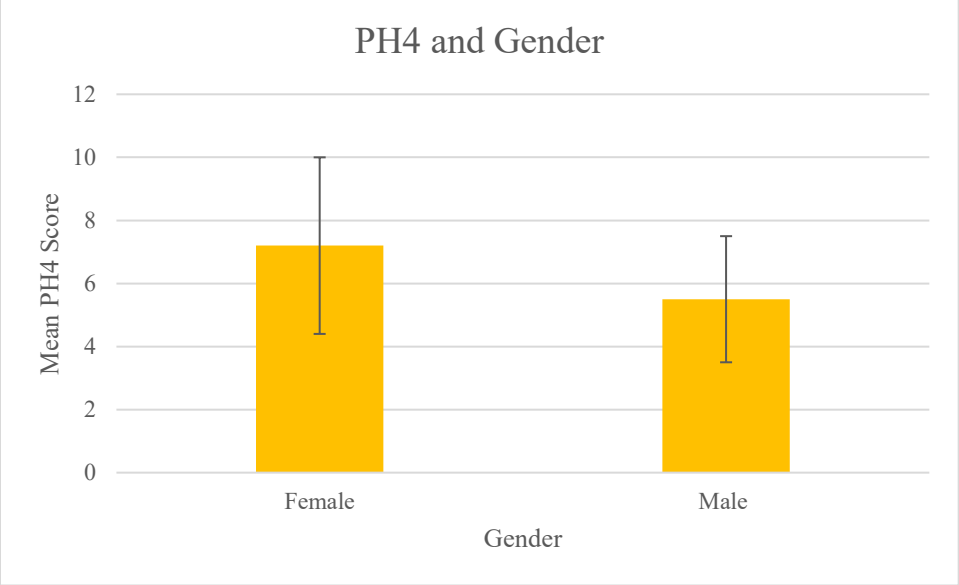
Note. Mean scores for this sample were basketball (17.10), football (18.26), hockey (20.91), softball (16.60), and rugby (18.55), where the maximum score was 50.

PH4

The PH4 questionnaire was used to screen for depression and anxiety, and is scored out of a total of 16 points. The mean score reported on the PH4 questionnaire was 5.99 (range = 4-16, *SD* = 2.37). There was a significant difference between males and females in the PH4 scoring. Females (*M* = 7.20, *SD* = 2.80) scored significantly higher than males (*M* = 5.50, *SD* = 2.00) ($t_{(223)} = 4.750$, $p = .001$, $d = 0.737$, $1 - \beta = .999$) (see Figure 6). A series of one-way ANOVAs revealed significant group differences for age ($F_{(2, 225)} = 13.232$, $p = .001$, $n^2 = .105$, $1 - \beta = .997$), experience ($F_{(2, 215)} = 8.885$, $p = .001$, $n^2 = .076$, $1 - \beta = .971$), and sport ($F_{(2, 213)} = 2.580$, $p = .038$, $n^2 = .046$, $1 - \beta = .721$). Significant differences were present between the youngest (*M* = 6.94, *SD* = 2.61) and middle-aged groups (*M* = 5.88, *SD* = 2.35; $p = 0.01$), as well as the youngest and oldest groups (*M* = 5.06, *SD* = 1.63; $p = 0.001$) (see Figure 7). Significant differences also were seen between the newest (*M* = 6.60, *SD* = 2.40) and most experienced groups (*M* = 5.00,

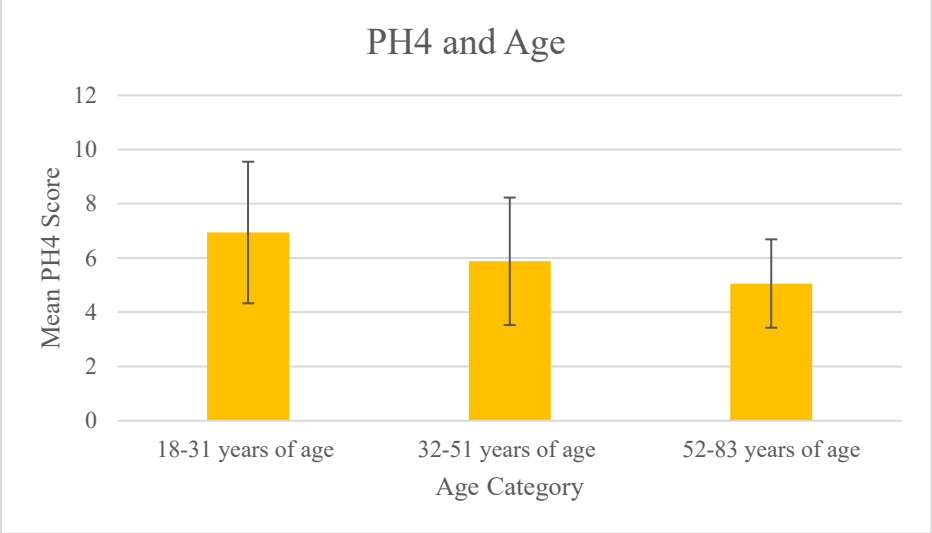
SD = 1.80; *p* = .001), and the most experienced and middle groups (*M* = 6.00, *SD* = 2.40; *p* = .029) (see Figure 8). Though the ANOVA indicated significant differences based on sport, post-hoc tests revealed no differences (see Figure 9). Lastly, no significant differences existed for PH4 based on competitive level ($F_{(2, 225)} = 0.461$, $p = .631$, $n^2 = .004$, $1 - \beta = .125$).

Figure 6: Patient Health Questionnaire 4 According to Gender



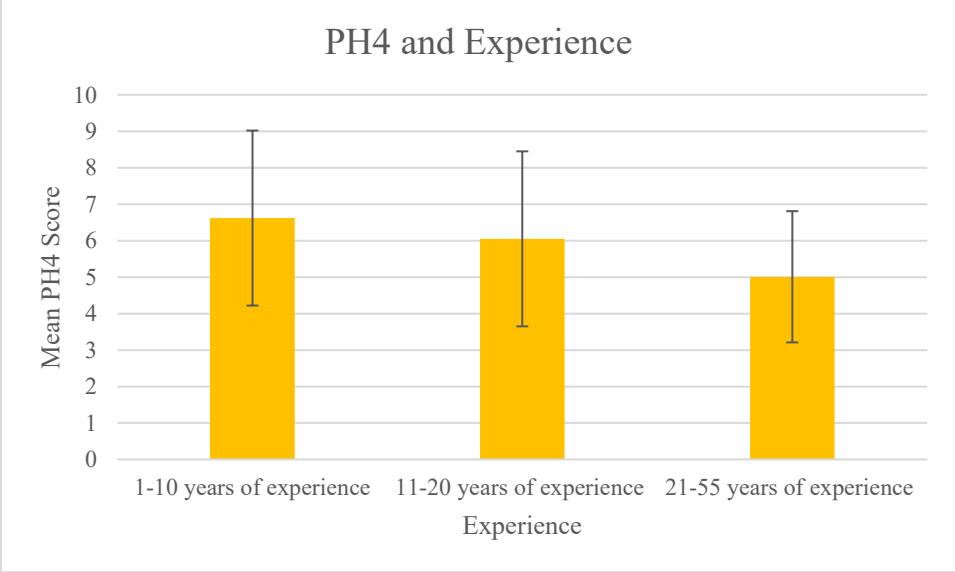
Note. Mean scores for the sample were 7.20 for female and 5.50 for male, where the maximum score was 16.

Figure 7: Patient Health Questionnaire 4 According to Age



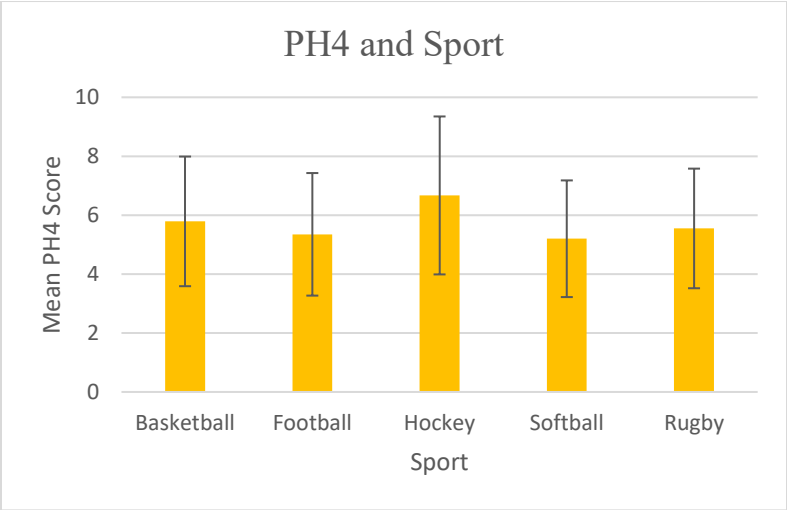
Note. Mean scores for this sample were 6.94 for 18 to 31-year-old group, 5.88 for the 32 to 51-year-old group and 5.06 for the 53 to 83-year-old group, where the maximum score was 16.

Figure 8: Patient Health Questionnaire 4 According to Experience



Note. Mean scores for this sample were 6.62 for the 1-10 years of experience group, 6.05 for the 11-20 years of experience group and 5.01 for the 21-55 years of experience group, where the maximum score was 16.

Figure 9: Patient Health Questionnaire 4 According to Sport



Note. Mean scores for this sample were basketball (5.79), football (5.35), hockey (6.67), softball (5.20), and rugby (5.55), where the maximum score was 16.

ASSIST

The ASSIST questionnaire determines a risk score for substance use that categorized individuals into risk category to determine the appropriate level of intervention. Given the lack of abuse indicated within the population, there was no need to report group comparisons. Furthermore, participants reported using the following substances daily or almost daily: alcohol (13.2%), tobacco (5.7%), THC (3.5%), sedatives (2.2%), cocaine (0.9%), amphetamines (0.4%), and opioids (0.4%).

Worker Well-being

Questions were selected from the NIOSH Worker Well-being Questionnaire in order to assess occupational factors relating to the role of sport officials. The mean score recorded was 11.85 (SD = 2.50, range = 4-16) out of a possible 16 total points. No significant differences in job satisfaction existed between male and female officials ($t_{(222)}$

= 1.567, p = .059, d = 0.243, 1 – β = 0.466). A series of one-way ANOVAs revealed group differences for age ($F_{(2, 224)}$ = 5.757, p = .004, n^2 = .049, 1 – β = .864) and experience ($F_{(2, 214)}$ = 3.898, p = .022, n^2 = .035, 1 – β = .699) on job satisfaction. Post-hoc testing identified that younger officials (M = 11.66, SD = 2.02) had significantly lower job satisfaction than the older officials (M = 12.62, SD = 2.35; p =.048). The middle-aged officials (M = 11.30, SD = 2.90) also had significantly lower job satisfaction than older officials (M = 12.62, SD = 2.35; p =.004) (see Figure 10). Significant differences were also present on job satisfaction ratings between experience groups, where the most experienced groups (M = 12.50, SD = 2.50) were more satisfied with their job than the newest officials (M = 11.40, SD = 2.20; p = .021) (see Figure 11). No significant differences were found for job satisfaction based on participants' competitive level ($F_{(2, 224)}$ =1.335, p = .265, n^2 = .012, 1 – β = .286) or sport ($F_{(4, 212)}$ = 1.322, p = .263, n^2 = .024, 1 – β = .409).

Figure 10: Job Satisfaction According to Age

Note. Mean scores for this sample were 11.65 for 18 to 31-year-old group, 11.30 for the 32 to 51-year-old group and 12.62 for the 53 to 83-year-old group, where the maximum score was 16

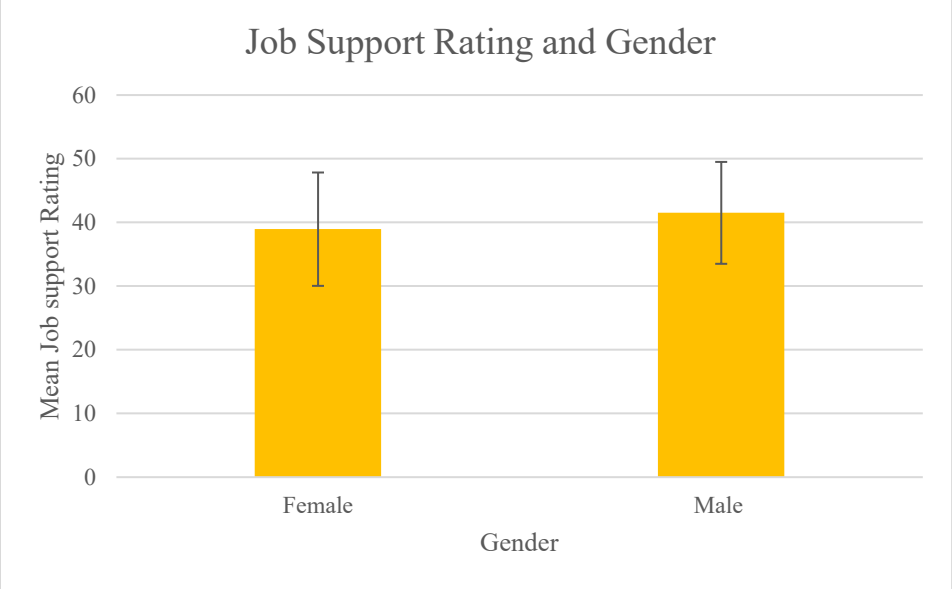
Figure 11: Job Satisfaction According to Experience

Note. Mean scores for this sample were 11.40 for the 1-10 years of experience group, 11.66 for the 11-20 years of experience group and 12.53 for the 21-55 years of experience group, where the maximum score was 16.

The mean level of job support reported was 40.86 (*SD* = 8.33, range = 15-52), out of a possible 52 points. For job support, significant differences were discovered between

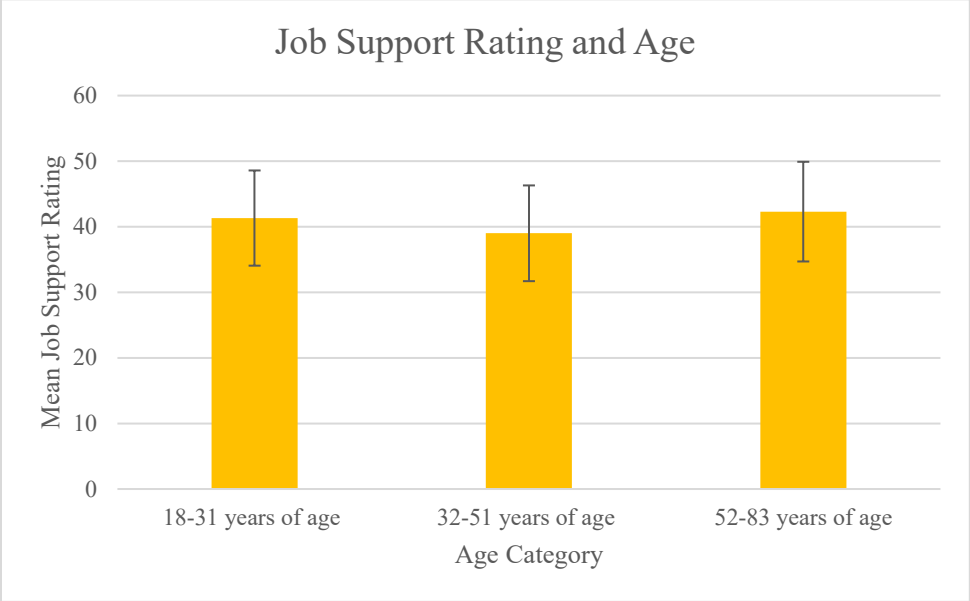
male (M = 41.50, SD = 8.00) and female officials (38.94, SD = 8.90) ($t_{(217)}$ = 1.990, p = .048, d = .314, 1 – β = .633) (see Figure 12). Job support was significantly different between age groups ($F_{(2, 219)}$ = 3.114, p = .046, n^2 = .028, 1 – β = .595), specifically the middle aged middle (M = 39.00, SD = 7.30) group reported feeling less support than the oldest group (M = 42.30, SD = 7.60; p = .049) (see Figure 13). No significant differences in job support were found for experience ($F_{(2, 209)}$ = 1.863, p = .158, n^2 = .018, 1 – β = .385), competitive level ($F_{(2,219)}$ = 1.590, p = .206, n^2 = .014, 1 – β = .335), and sport ($F_{(4, 207)}$ = 0.548, p = .701, n^2 = .010, 1 – β = .181).

Figure 12: Job Support According to Gender



Note. Mean scores for this sample were 38.94 females and 41.50 for males, where the maximum score was 52.

Figure 13: Job Support According to Age



Note. Mean scores for this sample were 41.32 for 18 to 31-year-old group, 39.00 for the 32 to 51-year-old group and 42.30 for the 53 to 83-year-old group.

The worker well-being survey indicated that 4.4% of participants experienced sexual harassment while on the job in the past year. Female officials reported significantly higher rates of on-the-job sexual harassment (14.5%) compared to males (1.2%), ($t_{(224)} = 4.350$, $p = .001$, $d = 0.674$, $1 - \beta = .646$). One-way ANOVA analysis revealed significant differences in sexual harassment based on competitive level ($F_{(2, 226)} = 4.397$, $p = .115$, $n^2 = .019$, $1 - \beta = .755$). Significant differences were seen in sexual harassment reports while on the job between the competitive levels of the officials surveyed, where elite officials ($M = 1.98$, $SD = 0.13$) reported higher rates of sexual harassment than recreational ($M = 1.93$, $SD = 0.25$; $p = .01$) and amateur officials ($M = 1.96$, $SD = 0.20$; $p = .01$). There were no significant differences between sexual harassment reports based on age group ($F_{(2, 226)} = 3.024$, $p = .51$, $n^2 = .026$, $1 - \beta = .582$),

experience ($F_{(2, 216)} = 1.166$, $p = .076$, $n^2 = .011$, $1 - \beta = .254$), and sport ($F_{(4, 214)} = 0.080$, $p = .525$, $n^2 = .015$, $1 - \beta = .255$).

Results indicated that 15.8% of officials surveyed were exposed to physical violence within the last 12 months while working. Significant differences were seen in reports of physical violence exposure between males (15.7%) and females (84.3%) ($t_{(223)} = 1.782$, $p = .001$, $d = 0.276$, $1 - \beta = .551$). Results showed that there was a significant difference between age in terms of reports of physical violence experienced while on the job ($F_{(2, 225)} = 3.150$, $p = .045$, $n^2 = .027$, $1 - \beta = .600$); however, post-hoc tests were not sensitive enough to identify where the differences occurred. Further, analysis revealed significant differences in reports of physical violence based on sport officiated ($F_{(4, 213)} = 3.621$, $p = .007$, $n^2 = .064$, $1 - \beta = .871$). Physical violence exposure was significantly higher for rugby ($M = 2.00$, $SD = 0$) than hockey officials ($M = 1.51$, $SD = 0.50$, $p = .032$). No significant differences were found between competitive levels of officiating ($F_{(2,225)} = 2.182$, $p = .115$, $n^2 = .019$, $1 - \beta = .443$) or experience groupings ($F_{(2, 215)} = 2.605$, $p = .076$, $n^2 = .019$, $1 - \beta = .515$) on physical violence exposure. Finally, 44.3% of officials surveyed reported that they were bullied, threatened or harassed by someone while on the job. There were no significant differences in reported bullying, threats, or harassment reports between genders ($t_{(223)} = 0.138$, $p = .445$, $d = 0.021$, $1 - \beta = .065$), age ($F_{(2, 225)} = 0.193$, $p = .825$, $n^2 = .002$, $1 - \beta = .080$), experience ($F_{(2, 221)} = 1.949$, $p = .145$, $n^2 = .018$, $1 - \beta = .401$), competitive level ($F_{(2, 225)} = 1.976$, $p = .141$, $n^2 = .017$, $1 - \beta = .499$) or sport ($F_{(4, 213)} = 1.636$, $p = .166$, $n^2 = .030$, $1 - \beta = .499$).

Discussion

The purpose of this study was to examine mental health and mental health outcomes among sport officials in Canada. Part of this aim was to evaluate any differences in mental health between sport officials of different genders, ages, experience levels, competitive levels, and sports.

Mental Health

Overall, the prevalence of mental health issues were reported as higher in the sport official population than in the general Canadian population. According to Statistics Canada (2023), approximately 7.6% of Canadians suffer from depression, and 2.1% suffer from anxiety. In comparison, 18.8% of sport officials reported suffering from depression, and 4.9% reported suffering from anxiety. There are several factors within the workplace that can put an individual at an elevated risk of depression, including role conflict, competitive climate and violence (Mezerai et al., 2006). These factors, specifically violence in the workplace, are present within sport officiating and perhaps this is a contributor to the high prevalence of depression reported within the population. Similar research on depression in sport officials has shown a high prevalence of sport officials who self-reported depression, and that even more officials indicated depressive symptoms that could warrant the diagnosis of major depressive disorder (Gouttebarge et al., 2017). For the results on anxiety, the increased prevalence of anxiety reported might be related to the work environment that sport officials operate in. Sport officials are responsible for attending to multiple cues, maintaining player safety and adjusting a fair contest. Within competition, there is often conflict between the official and other sport actors (i.e., coaches, athletes, media, fans) that can escalate into non-accidental violence

and aggression (Ackery et al., 2012; Webb et al., 2017; Webb et al., 2018), which might explain the increased prevalence of reported anxiety among this population. Previous research conducted on sport officials and anxiety has been more situational in nature (i.e., stress and stressors incurred while working that contribute to anxiety levels) (Johansen & Haugen, 2013; Sors et al., 2019). The conclusion was drawn that sport officials experience no more than a moderate amount of stress while working; while this is not reported levels of anxiety, is it still contradictory to our findings. This may be due to cross-cultural differences or sporting differences, as the previously cited research was conducted on European officials and only focused on two sports (soccer and basketball).

Additionally, sport officials reported higher rates of PTSD (15%) than the general Canadian population (9.2%) (Van Ameringen et al., 2008). Research has shown that exposure to just one traumatic event (assault, exposure to violence/injury, unexpected death) is sufficient enough to cause PTSD in 76.1% of cases (Van Ameringen et al., 2008). In the case of officials, the higher rate of PTSD may be attributed to the exposure to violence, abuse and harassment while working. The incidence of non-accidental violence towards sport officials is not a novel finding; in fact, previous Canadian research has shown that more than 90% of hockey referees were recipients of aggression and anger, and in 71% of cases, this increased aggression led to injury (Ackery et al., 2012). This is not isolated to Canada; studies conducted in Europe have denoted that 22% of soccer and 20% of rugby match officials experience verbal abuse every match (Webb et al., 2017; Webb et al., 2018). Further, the high prevalence of PTSD may be linked to a

high percentage of sport officials who hail from first responder backgrounds (paramedics, police officers, and military personnel).

Eating disorder prevalence within the sport official population (2.6%) is on par with national averages (2-3%) (National Initiative for Eating Disorders, 2017). Sport officials typically work hours that are not conducive to a normal eating schedule since many competitions occur during mealtime. However, it does not appear to be a significant deterrent in a healthy relationship with eating and food, given the similarity to the general population eating disorder prevalence.

Sport officials reported double the rates of ADHD (12.3%) than the general Canadian adult population; ADHD is estimated to affect 4-6% of adults in Canada (Centre for ADHD Awareness Canada, 2024). People with ADHD incur issues with task performance over time due to a decrease in task novelty that results in a less optimal energetic state of performance. Given the high task novelty associated with sport officiating (multiple visual cues, fast-paced environment, multiple environmental stimulators), this may be an attractive position for those with ADHD (Tucha et al., 2017).

MHLS

The results indicated higher average mental health literacy scores in the Canadian officiating population than previously surveyed officials in the United Kingdom (116.75 versus 98.81, respectively). This score reflects a higher symptom knowledge, better attitudes towards those living with poor mental health, and positive attitudes towards seeking professional support services. This may indicate a cultural difference surrounding mental health awareness in sport officials between the two countries. While these are

promising results, the sport officials surveyed in this study still scored lower on mental health literacy than other sport actors, including coaches (Gorczynski et al., 2020) and athletic staff (Sullivan et al., 2018). Perhaps this is due to the formal training organizations offer to staff and coaches in an effort to reduce barriers towards help-seeking behavior in athletes. As sport officials do not have a supervisory role over athletes, similar educational opportunities might not be readily available to sport officials.

The results of this study illustrated distinct sex differences in the mental health of sport officials. Results showed that although females had significantly higher mental health literacy scores, they experienced significantly worse mental health outcomes. This trend is noted in the general population as well, where males have typically been found to demonstrate poorer mental health literacy and greater stigma towards mental health problems than females (Swami, 2012). Previous researchers have noted similar findings in soccer match officials in the United Kingdom (Gorczynski & Thelwell, 2022). It is unclear why exactly this occurs, as previous research has established that having good mental health literacy is a significant determinant in having good mental well-being, as it allows the individual to effectively identify and manage their symptoms (Jorm, 2000; Sampaio et al., 2022). One explanation may be that a higher mental health literacy allows females to self-identify their negative mental health outcomes, whereas the males may not be as insightful into the issues they are experiencing. As such, the results may be more relevant to societal standards than male-female officiating experiences.

K10 & PH4

The results of the K10 indicated that, on average, participants were likely to be mentally well. However, the PH4 questionnaire used to screen for depression and anxiety indicated, on average, that officials were mildly distressed. This discrepancy between the results may be due to the differences in the framing of the questions, as the K10 asks about the last 30 days, whereas the PH4 only asks about the last two weeks. The results of these screeners might be for similar reasons as stated previously for why officials reported a high prevalence of depression, anxiety and PSTD. Gender-based differences were present, as females scored higher than males on both the K10 and the PH4, indicating they were experiencing higher levels of distress and were more likely to have anxiety/depression. This is consistent with literature describing the general population, where females reported more mental health problems and symptoms than males, regardless of measurement scale (Otten et al., 2021). Nonetheless, sport officiating is a male-dominated field, and research has shown that males and females employed in occupations where their own gender is dominant have better mental health than those in gender neutral occupations; meaning females in male-dominated fields would experience poorer mental health (Milner et al., 2018). This has been seen in previous research where female officials have reported feelings of isolation and sexism, as well as describing their work environment as misogynistic and have reported being victims of gendered-aggressions (Gorczynski & Thelwell, 2022; Tingle et al., 2021: Webb et al., 2021). Perhaps this is a contributor to the higher prevalence of negative mental health outcomes within this population.

The K10 and PH4 results also revealed age-related trends in mental health outcomes in sport officials. Younger sport officials were scored as more likely to have a mild mental disorder than older officials and more likely to have anxiety and/or depression. Similar findings were seen in a previous study conducted by Dosyilmaz (2017), in which younger and less experienced officials were less satisfied and more susceptible to burnout than older and more experienced officials. Recent social trends follow a similar pattern, in which recent research has explained that younger generations are rating significantly worse on mental health indices than older generations (Grelle et al., 2023). Thus, this effect is likely not due to officiating as the sole contributor to age-related mental health outcomes. These rates of dissatisfaction may be contributing to the increasing rates of attrition among sport officials. It is imperative that steps are taken to ensure younger and less experienced officials are supported to continue to grow within their role as a sport official.

Minimal differences were seen between officials from different sports; however, ice hockey officials were significantly more likely to have a mild mental disorder than basketball officials. This is not the first-time ice hockey referees have been singled out, as previous research has denoted that these officials were more likely to experience physical abuse than other officials (Ackery et al., 2012). In Canada, ice hockey is the official winter sport. The sport boasts values of being fast and tough as the only way to succeed within the league. Canadian men's hockey has been described to privilege those who demonstrate hegemonic masculinity while simultaneously marginalizing those who do not demonstrate this characteristic (Allain, 2008). The culture of masculinity typically

frowns upon help-seeking behavior and prevents early intervention; perhaps this is why ice hockey officials have a higher likelihood of having a mild mental disorder.

ASSIST

Substance abuse is often influenced by one's mental health; poor mental health can increase the risk of experiencing substance abuse disorder (Khan, 2017). Given the high prevalence of negative mental health outcomes (depression, anxiety, PTSD) reported in this survey and the lack of substance abuse, the results are not consistent with current literature concerning mental health outcomes and substance abuse. It is important to note the distinction between use and abuse, as an individual can use substances and not be abusing them (McLellan, 2017), as indicated by the ASSIST outcomes in this survey. To be considered to have an issue with substance abuse or a substance use disorder, there are specific diagnostic criteria within the DSM-5 that an individual must meet (McLellan, 2017). It was surprising to see that no substance abuse was reported within this population, given the prevalence of drinking culture within sports. Previous literature has identified that many athletes consume harmful levels of alcohol as it contributes to maintaining a social hierarchy and acts as a way to initiate reciprocity between teammates (Harris et al., 2022). The lack of response pertaining to alcohol use may be due to response bias within the survey. A pointed investigation of specific sports specifically on drinking culture, may unveil more accurate ratings.

Worker Well-being

Sport officiating, whether volunteer or paid, is an occupation and all workers have the right to a safe and healthy environment at work. Preventing negative mental health

related outcomes at work means managing the psychosocial risks in the workplace (World Health Organization, 2022). Previous research has shown that sport officials are experiencing occupational burnout (Orvis-Martinez et al., 2021); as such, exploring job satisfaction and job support among officials was important in furthering this understanding. Results showed that younger sport officials reported lower job satisfaction and job support than older officials. This aligns with the finding that younger sport officials were more likely to report negative mental health outcomes. Since age and experience often coincide, it is no surprise that results showed that newer sport officials were less satisfied with their jobs than more experienced officials. This might be due to the learning curve that comes along with officiating, from learning rules, attending to multiple cues and learning to deal with conflict management. This may also be due to external factors like social support networks that are well established through work and non-work avenues that come with ageing. Job support also varied among demographic groups; specifically, males felt more supported within their roles as a sport official than females. This aligns with previous findings where female sport officials reported feelings of isolation, misogyny, and gender-based discrimination in the workplace (Gorczynski & Thelwell, 2022; Tingle et al., 2021; Webb et al., 2021). Such experiences are not limited to female sport officials—research has shown that females in male-dominated field face barriers to progression in their careers and often feel unsupported by their organization (O'Brien et al., 2023). This is consistent with trends on the national stage, as women, on average, experience more discrimination in their workplace than men (10% compared to 4%) (Statistics Canada, 2021). The relationship between social support and mental health

is extensive; social support, especially for women, is imperative in maintaining good mental health (Harandi et al., 2017). Future sociological research should focus on the group dynamics between officials to understand how support networks within officiating can become more inclusive to females in order to protect their mental health.

Understanding the differences in job support reported between males and females, it does not come as a surprise that the levels of job satisfaction also vary between the genders. Females reported being significantly less satisfied in their positions than their male counterparts. Similar results have been seen in research exploring female athletes, where conditions in male-dominated sports – like officiating – exposed athletes to factors that negatively influenced their mental health status. Further, high levels of dissatisfaction have been reported in elite female athletes given lower salaries, dual careers, and extensive travel (Johansson et al., 2023). A pointed inquiry into female sport officials job satisfaction using qualitative methodology may be useful in further understanding the reasons for job dissatisfaction and understanding any similarities between female athletes and officials. There was also a relation between job satisfaction and age, given that more experienced groups reported a higher level of job satisfaction than newer officials. This may be due to the steep learning curve of officiating for newer officials and might also be a contributor to the poorer mental health outcomes reported in the newer officiating group surveyed.

The results clearly indicate a concerning rate of sexual harassment reported by female participants (14.4%), despite it being lower than the national average of sexual harassment reported by females in the workplace (25%). This may be due to the male-

dominated environment that officiating and sport presents. It is documented that females in male-dominated fields are more susceptible to sexual harassment than those in non-male-dominated occupations (Riddle & Heaton, 2023). Previous research has indicated themes of misogyny and gendered-aggression against female sport officials at work (Tingle et al., 2021; Webb et al., 2021); it might be that this culture escalates into sexual harassment against female officials. For the competitive level comparisons, the highest reports of sexual harassment occurred in the recreational group, then the amateur group, and then the elite group. This may indicate a lack of policies or protection from organizational standpoint in recreational and amateur officiating, which are strengthen at professional/national/international levels. Differences between reports of sexual harassment between age groups (more in recreational than amateur and elite) indicate a further need for sport organizations to prioritize interventions at all levels but especially at lower levels, as younger officials are often in recreational officiating categories.

Ice hockey officials reported significantly more exposure to physical violence than rugby; these differences may be due to the culture surrounding violence within the sport. While both sports are contact sports, rugby is often characterized by a culture of mutual respect between athletes and officials. There is limited external conflict in rugby due to the high level of sportsmanship and low tolerance for retaliation from match officials (Cunningham et al., 2018). Mimicking this to lower exposure to physical violence in other officiating organizations may prevent officials from exposure to harmful external triggers. This could play a role in reducing the prevalence of PTSD (Van Ameringen et al., 2008).

Another dimension of the worker well-being section of this survey saw tremendous feedback; 44.3% of sport officials surveyed reported that they were bullied, threatened or harassed by someone while on the job. This is not a novel finding, as aforementioned, verbal abuse and harassment against sport officials are prevalent across multiple sports and levels (Ackery et al., 2012; Webb et al., 2017; Webb et al., 2018). Experiencing this antagonistic behavior while at work can cause stress, anxiety, depression and lower levels of positive attitudes towards work (Manier et al., 2017). This aligns with the high prevalence of mental health outcomes reported in the survey and might also contribute to the high attrition rates seen currently in sport officiating.

Limitations and Future Directions

There are several strengths and limitations that should be noted for this study. This is the first study to assess mental health in sport officials using occupational health markers, and as such, provides new information concerning officials' well-being. This is essential information, not only in identifying the gaps in our understanding of sport officials' mental health but also for applying it to job-related outcomes. This is critical knowledge for sport organizations to take action toward solving these issues. Further, this was the first study to directly compare female and male sport officials, and shows the disparity in their officiating experiences. This information will help sport officials advocate for themselves on a broader scale given this new evidence concerning poor mental health outcomes within the population.

While this study was recruited across Canada, a relatively homogeneous sample was obtained (mostly heterosexual, middle-aged, White men). As such, the results may

not be applicable to all populations. The sample did, however, have diversity across sport, age and experience. This can be attributed to our partnerships with national and provincial sport organizations that shared our extensive call for participation. Future research should utilize targeted sampling techniques in order to ensure that under-represented and marginalized groups are studied (e.g., Black or homosexual officials).

As second limitation was the design of the study and the use of a survey. Firstly, those who chose to partake in the survey are different than those who chose not to respond (Mazor et al., 2002). People that choose to take part in surveys might have values or goals that align with the surveys goals and the type of information needed, and their views may not align with that of the broader population. Like any cross-sectional survey study, the self-reported nature can lead to social desirability bias within the population (Junior, 2022). This is the possibility that respondents give inaccurate answers for a variety of reasons. It is especially common in surveys that focus on individual behaviours, as perception often causes the inflation of positive responses (Mazor et al., 2002). As such, individuals might not be truthful in reporting things they may not see as socially acceptable, even though the survey is anonymous and confidential. Further, the survey was fully quantitative, which might not capture participants' experiences in the same way that qualitative research can. Nonetheless, establishing a baseline of knowledge using this comprehensive survey was an important first step in exploring mental health outcomes in sport officials in Canada. We hope that this survey lays the framework for future quantitative and qualitative inquiries into sport officials' mental health.

A third limitation is test power. Many inferential tests concluded non-significant results, and had low test power, which may have been due to the low sample size in some of the sub-groups that were analyzed (gender, age, experience, competitive level and sport). Given a larger sample, the test power would likely be improved. Future research should look to recruit a larger sample from underrepresented groups in order to enhance statistical power and improve the likelihood of detecting true effects.

A final limitation of this study stems from the recruitment methods used to attract participants to engage with the survey. Recruitment efforts were centralized using national sport organizations partnerships. The partners were asked to distribute the survey to their officials within the organization, however this may have limited the participation within the study as these organizations are often located within bigger centers and it is possible that the survey was not as widely distributed as possible or in an equitable manner.

Overall, this study offers a baseline of information regarding the mental health of sport officials within Canada. Much remains to be studied in this population in order to better support the well-being of officials in an occupational capacity and ensure a safe and healthy workplace.

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Chapter Four: Conclusions

Conclusions

Sport officials are essential to organized sport. Without qualified sport officials, competitions would be forced to stop, and organized sport would cease to exist. The appeal of working as a sport official is limited, especially given the growing prevalence of abuse, harassment and non-accidental violence directed towards officials (Ackery et al., 2012; Webb et al., 2017; Webb et al., 2018). Now, with the expanding evidence on the low mental health of sport officials, it is impossible to ignore the fact that there might be a correlation between being a sport official and incurring negative mental health outcomes. Why would anyone want to engage in this as a career or part-time job? This is seen in the dramatic decrease in retention and recruitment of officials (Hockey Canada, 2011, 2022; Canada Soccer, 2022). It is the employer's responsibility to uphold a safe working environment for its employees (World Health Organization, 2022). The question remains: what are sport organizations willing to do to stop these workplace violations?

The informality of sport officiating as employment has contributed to the open-ended cycle of abuse tolerated and perpetuated by sport organizations and key sport actors (i.e., coaches, athletes, spectators). Thus, a shift in perspective is the first step in mediating these outcomes and subsequently addressing recruitment and retention issues. An occupational health and safety lens should be utilized when investigating sport officials' health outcomes, whether that is physical or mental. Collaboration between sport scientists and occupational epidemiology offers an opportunity to broaden the scope of research conducted on these key sport actors.

Sport officials time in the spotlight needs to shift from blaming and insulting to exposing the ongoing issues in the profession. The growing field of research on these understudied sport actors offers a vast opportunity for both sport scientists and sport organizations to work together to further understand and improve working conditions for this group. While there is much work to do in this field, the following is a list of ways researchers may begin this journey:

- Expand the scope of future quantitative inquiries to target marginalized populations, including women, LGBTQIA2S+ individuals, youth, persons of color, and Indigenous populations.
- Conduct qualitative inquiries to further the understanding of demographic trends (i.e., gender-based differences) within the sport officiating population.
- Collaborate with sport organizations to integrate research into policy.
- Collaborate with researchers outside of sport science (i.e., epidemiology, occupational health and safety, and psychology) to introduce new waves of thought and solutions on this topic.
- Utilize knowledge translation techniques to broaden the reach of research findings (i.e., infographics, podcasts, social media).
- Create targeted inquiries that explore the culture of abuse of sport officials, taking a multi-sport and multi-country approach.

Similarly, the following is a list of how sport organizations might take action to address and improve sport officials' mental health:

- Collaborate with researchers to conduct inquiries into officiating mental health.

- Develop and implement evidence-based policies to act towards improving mental health outcomes in sport officials.
- Lead by example—take action against the normalization of abuse against sport officials.
- Work with stakeholders to provide mental health education and training opportunities for sport officials, especially marginalized officials.
- Consult sport officials to learn what organizations can do to improve the work environment in an effort to enhance officials' job satisfaction and support.
- Conduct environmental scans in the workplace in order to uphold a high standard of working conditions.

Principal Researcher Reflection

Throughout my time at Memorial University of Newfoundland, I have been enamoured by research, which is what initially led me to pursue this Masters. My passion for mental health in sport has made the process of writing this thesis the most rewarding challenge. Being involved in a novel area of research, like studying the mental health of sport officials, has been a privilege. Being able to establish a baseline of understanding in a population such as this gives me hope for future explorations. Coming into this program, I held a great passion for actionable research and this project was the perfect fit for me. The goal of this research is to create positive change in the real world by partnering with national sport organizations across the country. Forming these connections and leading the research to inform policy change has been a very rewarding opportunity.

Throughout this program, I have been given the opportunity to travel several times: twice to the Canadian Society for Psychomotor Learning and Sport Psychology Conference, once to the European Congress of Sport and Exercise Psychology, and once to a stakeholder development meeting. Being able to share my research findings with the academic community has been a truly rewarding experience. Given the limited research on this area, I was often met with curiosity and excitement and generated conversations of personal experience and enthusiasm around sport officiating mental health research.

While my thesis was the end goal of this degree, as it is for any Masters student, I have been afforded the opportunity to lead and collaborate on several side projects over the last two years. I have learned to embrace the constant questions that flood my mind, and know that a perpetual curiosity is much more a strength than I had previously imagined. From being offered a chance to first author a scoping review, to leading a project on body image and even the eventual opportunity to dip my toes into the qualitative side of my thesis project alongside my lab mate, Chris. With all of these projects has come the task of data analysis. I have learned to use a new software, SPSS, and dealt with all the frustrations that come along with that. I have learned more Excel shortcuts than I thought existed, and that my Microsoft Word really likes to edit things in French. The knowledge I have gained will undoubtedly help me to excel in my future endeavours.

While there is much to debate when it comes to my future plans, one thing is certain: my passion for mental health is the driver behind that wheel. I have debated several career paths over the course of this degree. I aspire to help people get back to

their normal, or when that's not possible, be a kind voice in the storm guiding them through this new reality. Whether this dream actualizes itself through a career in Medicine or through a Doctorate in Clinical Psychology, only time will tell. In the meantime, I am grateful to continue collaborating with the SPORT Lab on research projects and serve the Western Zone of NLHS as a community health educator. Memorial University of Newfoundland has shaped me into the person I am today. I am forever grateful for all of the friendships, mentorship, and lessons this Masters has provided me.

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Appendix A: Ethics Approval Letter

MEMORIAL UNIVERSITY

Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

St. John's, NL Canada A1C 5S7
Tel: 709 864-2561 icehr@mun.ca
www.mun.ca/research/ethics/humans/icehr

ICEHR Number:	**20240418-HK**
Approval Period:	August 10, 2023 – August 31, 2024
Funding Source:	SSHRC [RIS# 20222037]
Responsible Faculty:	Dr. David Hancock School of Human Kinetics and Recreation
Title of Project:	*Exploring Sport Officials Mental Health*

August 10, 2023

Ms. Tori Carter
School of Human Kinetics and Recreation
Memorial University

Dear Ms. Carter:

Thank you for your correspondence addressing the issues raised by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) for the above-named research project. ICEHR has re-examined the proposal with the clarifications and revisions submitted, and is satisfied that the concerns raised by the Committee have been adequately addressed. In accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2)*, the project has been granted *full ethics clearance* for **one year**. ICEHR approval applies to the ethical acceptability of the research, as per Article 6.3 of the *TCPS2*. Researchers are responsible for adherence to any other relevant University policies and/or funded or non-funded agreements that may be associated with the project. If funding is obtained subsequent to ethics approval, you must submit a Funding and/or Partner Change Request to ICEHR so that this ethics clearance can be linked to your award.

The *TCPS2* **requires** that you **strictly adhere to the protocol and documents as last reviewed** by ICEHR. If you need to make additions and/or modifications, you must submit an Amendment Request with a description of these changes, for the Committee's review of potential ethical concerns, before they may be implemented. Submit a Personnel Change Form to add or remove project team members and/or research staff. Also, to inform ICEHR of any unanticipated occurrences, an Adverse Event Report must be submitted with an indication of how the unexpected event may affect the continuation of the project.

The *TCPS2* **requires** that you submit an Annual Update to ICEHR before **August 31, 2024**. If you plan to continue the project, you need to request renewal of your ethics clearance and include a brief summary on the progress of your research. When the project no longer involves contact with human participants, is completed and/or terminated, you are required to provide an annual update with a brief final summary and your file will be closed. All post-approval ICEHR event forms noted above must be submitted by selecting the ***Applications: Post-Review*** link on your Researcher Portal homepage. We wish you success with your research.

Yours sincerely,

James R. Drover

James Drover, Ph.D.
Vice-Chair, Interdisciplinary Committee on
Ethics in Human Research

JD/bc

cc: Supervisor – Dr. David Hancock, School of Human Kinetics and Recreation
Director, Research Initiatives and Services

Appendix B: Informed Consent
Informed Consent Form

Title: Exploring Sport Officials' Mental Health
Researchers: Tori Carter (Student; tbcarter@mun.ca) & Dr. David Hancock (Supervisor; dhancock@mun.ca); School of Human Kinetics and Recreation, Memorial University of Newfoundland

You are invited to take part in a research project entitled "Exploring Sport Officials' Mental Health." To take part in this study, you must be **18 years old or older**, read/write in English or French, have internet access, and be registered with an officiating organization at the time of survey completion. Participation in the study is **voluntary** and is not a requirement of any officiating or sport organization; it will not influence your job as a sport official in any way. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

This form is part of the process of informed consent. It explains what the research is about, what your participation involves, and your right to withdraw from the study. To decide if you wish to participate in this study, you should understand enough about its risks and benefits to be able to make an informed decision. Please read this carefully to understand the information given to you. Please contact the researcher, Tori Carter, if you have any questions about the study or would like more information before you consent.

Purpose of Study: The purpose of this study is to establish a baseline of knowledge surrounding the mental health of sport officials in Canada and around the world. We will examine if there are any differences in mental health outcomes across a variety of factors including sports, gender, age, experience, level, and geographic location.

What You Will Do in this Study: If you decide to volunteer, you will complete an anonymous online survey. The survey includes demographics questions, and then you will be asked about mental health literacy, stigma, health, and well-being. None of the questions contain information that would identify who you are.

Length of Time: The survey will take approximately **15-25 minutes** to complete.

Withdrawal from the Study: Participation in this study is **voluntary**. You may skip any questions. If you wish to withdraw from the study, you may close the browser window at any time. It will not be possible for participants to ask the research team to remove your responses from the study dataset once they have been submitted; this is because the survey is anonymous, so we have no way to identify your individual survey results.

Possible Benefits: You will not benefit directly from participation in this study, but you may benefit from sharing your knowledge and experiences regarding your mental health and well-being as a sport official. This project represents an important contribution to limited available literature regarding sport official mental health by establishing a baseline of knowledge concerning mental health in this population and help to inform future research initiatives. This information can also help to inform sport organizations about the mental health of their officials and initiate the development of policies and guidelines to promote positive mental health outcomes, reduce stigma, and raise mental health literacy.

Possible Risks: The survey will ask you to reflect on your experiences related to mental health and to provide some potentially sensitive personal information. While this may make you feel uncomfortable or remind you of a potentially distressing event, the risks involved in completing this survey are no more than would be encountered in everyday life. You may decline to answer any questions that you do not wish to answer. If you experience any negative psychological/emotional outcomes upon completing the survey, please contact Wellness Together Canada at 1-866-585-0445. In case of an emergency please call 911.

Confidentiality: The ethical duty of confidentiality includes safeguarding participants' identities, personal information, and data from unauthorized access, use, or disclosure. It is important for you to know that any information that you provide in the survey will be confidential. All of the data will be anonymous, and no individual can be identified from these results.

Anonymity: Anonymity refers to protecting participants' identifying characteristics, such as name or description of physical appearance. The responses you share will not include any personally identifiable and will remain anonymous at all times. If you decide to contact researchers to discuss your survey, your participation will no longer be anonymous. In such a situation, we will not disclose your participation to anyone, and your specific responses will remain anonymous.

Recording of Data: The data will be recorded using Qualtrics Survey Software.

Use, Access, Ownership, and Storage of Data: Qualtrics (Qualtrics Provo, UT) will be used to collect your anonymous responses. The data, with no personal identifiers, collected from this study will be maintained on a password-protected computer. The data will be accessed and used by the members of the research team. After the study has been completed, the anonymous data will be kept for a minimum of five years as required by Memorial University's policy on Integrity in Scholarly Research. The retention and disposal plans will be overseen by Dr. David Hancock after completion of the study.

Third-Party Data Collection and/or Storage: Data collected from you as part of your participation in this project will be hosted and/or stored electronically by Qualtrics and is subject to their privacy policies, and to any relevant laws of the country in which their servers are located. Therefore, anonymity and confidentiality of data may not be guaranteed in the rare instance, for example, that government agencies obtain a court order compelling the provider to grant access to specific data stored on their servers. If you have questions or concerns about how your data will be collected or stored, please contact the researcher, and/or visit the provider's website for more information before participating. The privacy and security policy of the third-party hosting data collection and/or storing data can be found at: https://www.qualtrics.com/privacy-statement/.

Reporting of Results: Survey results will be reported in Tori Carter's Master's thesis. This will be published in the QEII Library repository at https://research.library.mun.ca/ . It will also be reported in a knowledge sharing session with several sport organizations, and social media infographics. Lastly, the research will be submitted to a peer-reviewed journal. Data from the survey will be reported in aggregate form (summaries of significant findings and trends) only so

that no individual can be identified.

Questions: You are welcome to ask questions before, during, or after your participation in this research. If you would like more information about this study, please contact: Tori Carter, tbcarter@mun.ca.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to follow Memorial University's ethics policy. If you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at 709-864-2861.

Consent: By completing this survey, you agree that:
• You have read the information about the research.
• You are 18 years old or older.
• You are satisfied that any questions you had have been addressed.
• You understand what the study is about and what you will be doing.
• You understand that you are free to withdraw from the study by closing your browser window or navigating away from this page, without having to give a reason and that doing so will not affect you now or in the future.
• You understand that the survey will take about 15-25 minutes of your time and you may skip any questions you do not wish to answer.
• You understand that your participation in this study is voluntary, is not a requirement of your job as a sport official and will not affect your job in anyway.
• You understand that this data is being collected anonymously and therefore your data cannot be removed once you submit this survey.

By consenting to this online survey, you do not give up your legal rights and do not release the researchers from their professional responsibilities.

By entering the survey, I indicate that I have read the information provided and agree to participate.

○ I agree to participate, I am at least 18 years of age, and I am a registered sport official.

○ I do not wish to participate, and/or I am not 18 years of age, and/or I am not a registered sport official.

Appendix C: Survey – Exploring Sport Officials' Mental Health
Section 1: Demographic Information

This survey asks sensitive questions that may be triggering for some – as noted in the risk section of the consent form. You may skip any questions that you do not want to answer.

1) Age: _____
2) Gender:
   Male Female Non binary Other: _____
3) Sexual orientation:
   Heterosexual Homosexual Bisexual Other: _____
4) Race:
   Indigenous Asian Black/African American
   Pacific Islander White Other: _____
5) Marital status:
   Single Common law Married Separated/Divorced Widowed
6) Highest level of education achieved:
   Some high school High school Diploma Bachelors Graduate/Masters
7) Household income: _____
8) How many dependents do you have? _____
9) In which province or territory do you live?

Alberta	British Columbia	Manitoba
New Brunswick	Northwest Territories	Newfoundland & Labrador
Nova Scotia	Nunavut	Ontario
Prince Edward Island	Quebec	Yukon
Saskatchewan		

10) Please indicate the primary sport which you officiate: _____

Please answer the following with relation to the primary sport you officiate:

11) Please state the number of years you have been a qualified official: _____
12) What level do you officiate?
    Recreational Club/Varsity Provincial
    National International Professional
13) How many hours a week do you officiate? _____
14) How many hours are spent officiating alone? _____
15) How many hours are spent officiating with others? _____

Section 2: Mental Health Literacy

The purpose of these questions is to gain an understanding of your knowledge of various aspects to do with mental health. When responding, we are interested in your degree of knowledge. Therefore, when choosing your response, consider that:

Very unlikely = I am certain that it is NOT likely
Unlikely = I think it is unlikely but am not certain
Likely = I think it is likely but am not certain
Very Likely = I am certain that it IS very likely

16) If someone became extremely nervous or anxious in one or more situations with other people (e.g., a party) or performance situations (e.g., presenting at a meeting) in which they were afraid of being evaluated by others and that they would act in a way that was humiliating or feel embarrassed, then to what extent do you think it is likely they have **Social Phobia**

Very unlikely Unlikely Likely Very Likely

17) If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense muscles and feeling fatigued then to what extent do you think it is likely they have **Generalized Anxiety Disorder**

Very unlikely Unlikely Likely Very Likely

18) If someone experienced a low mood for two or more weeks, had a loss of pleasure or interest in their normal activities and experienced changes in their appetite and sleep then to what extent do you think it is likely they have **Major Depressive Disorder**

Very unlikely Unlikely Likely Very Likely

19) To what extent do you think it is likely that Personality Disorders are a category of mental illness

Very unlikely Unlikely Likely Very Likely

20) To what extent do you think it is likely that **Dysthymia** is a disorder

Very unlikely Unlikely Likely Very Likely

21) To what extent do you think it is likely that the diagnosis of **Agoraphobia** includes anxiety about situations where escape may be difficult or embarrassing

Very unlikely Unlikely Likely Very Likely

22) To what extent do you think it is likely that the diagnosis of **Bipolar Disorder** includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood

Very unlikely Unlikely Likely Very Likely

23) To what extent do you think it is likely that the diagnosis of **Drug Dependence** includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)

Very unlikely Unlikely Likely Very Likely

24) To what extent do you think it is likely that in general in Canada, **women are MORE likely to experience a mental illness of any kind compared to men**

Very unlikely Unlikely Likely Very Likely

25) To what extent do you think it is likely that in general, in Canada, **men are MORE likely to experience an anxiety disorder compared to women**

Very unlikely Unlikely Likely Very Likely

26) To what extent do you think it would be helpful for someone to **improve their quality of sleep** if they were having difficulties managing their emotions (e.g., becoming very anxious or depressed)

Very unlikely Unlikely Likely Very Likely

27) To what extent do you think it would be helpful for someone to **avoid all activities or situations that made them feel anxious** if they were having difficulties managing their emotions

Very unlikely Unlikely Likely Very Likely

28) To what extent do you think it is likely that **Cognitive Behaviour Therapy (CBT)** is a therapy based on challenging negative thoughts and increasing helpful behaviours

Very unlikely Unlikely Likely Very Likely

29) Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply. To what extent do you think it is likely that the following is a condition that would allow a mental health professional to **break confidentiality**: *If you are at immediate risk of harm to yourself or others*

Very unlikely Unlikely Likely Very Likely

30) Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply.

Very unlikely Unlikely Likely Very Likely

31) To what extent do you think it is likely that the following is a condition that would allow a mental health professional to **break confidentiality**: *if your problem is not life-threatening and they want to assist others to better support you*

Very unlikely Unlikely Likely Very Likely

Section 3: Mental Health Stigma

	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly agree
32) I am confident that I know where to seek information about mental illness					
33) I am confident using the computer or telephone to seek information about mental illness					
34) I am confident attending face to face appointments to seek information about mental illness (e.g., seeing the family doctor)					
35) I am confident I have access to resources (e.g., family doctor, internet, friends) that I can use to seek information about mental illness					
36) People with a mental illness could snap out if it if they wanted					
37) A mental illness is a sign of personal weakness					
38) A mental illness is not a real medical illness					
39) People with a mental illness are dangerous					
40) It is best to avoid people with a mental illness so that you don't develop this problem					
41) If I had a mental illness I would not tell anyone					
42) Seeing a mental health professional means you are not strong enough to manage your own difficulties					
43) If I had a mental illness, I would not seek help from a mental health professional					
44) I believe treatment for a mental illness, provided by a mental health professional, would not be effective					
45) I would be willing to be friends with someone who has a mental illness					
46) I would be willing to work alongside another official with a mental illness					
47) I would be willing to employ an official knowing they had a mental illness					

Section 4: Chronic Conditions

This section is asking about long-term health conditions which you may have. We are interested in "long-term conditions" which are expected to last or have already lasted 6 months or more and that have been diagnosed by a health professional.

48) Have you ever been diagnosed with a mood disorder? If so which one
    I have not been diagnosed with a mood disorder
    Depression
    Bipolar disorder (manic depression)
    Mania
    Dysthymia
    Other
49) Have you ever been diagnosed with an anxiety disorder such as a phobia, obsessive-compulsive disorder or a panic disorder?
    I have not been diagnosed with an anxiety disorder
    Phobia
    Obsessive-compulsive disorder (OCD)
    Panic disorder
    Other
50) Do you have post-traumatic stress disorder? Yes or No
51) Do you have attention deficit disorder? Yes or No
52) Do you have an eating disorder such as anorexia or bulimia? Yes or No
53) Do you have any other long-term mental health condition that has been diagnosed by a health professional? Yes or No

Section 5: Mental Health Screening Questions

The next questions are about your well-being and areas of your life that could affect your physical and emotional health. Take your time to think about each question before answering.

	1 None of the time	2 A little of the time	3 Some of the time	4 Most of the time	5 All of the time
60) During the last 30 days, about how often did you feel tired out for no good reason?					
61) During the last 30 days, about how often did you feel nervous?					
62) During the last 30 days, about how often did you feel so nervous that nothing could calm you down?					
63) During the last 30 days, about how often did you feel hopeless?					
64) During the last 30 days, about how often did you feel restless or fidgety?					
65) During the last 30 days, about how often did you feel so restless you could not sit still?					
66) During the last 30 days, about how often did you feel depressed?					
67) During the last 30 days, about how often did you feel that everything was an effort?					
68) During the last 30 days, about how often did you feel so sad that nothing could cheer you up?					
69) During the last 30 days, about how often did you feel worthless?					

	1 Not at all	2 Several days	3 More than half the days	4 Nearly every day
70) Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?				
71) Over the last 2 weeks, how often have you been bothered by little interest or pleasure in doing things?				
72) Over the last 2 weeks, how often have you been bothered by feeling nervous, anxious, or on edge?				
73) Over the last 2 weeks, how often have you been bothered by not being able to stop or control worrying?				

	Never	Rarely	Sometimes	Often	Always
74) In the past 7 days, how often did you have a lot of trouble falling asleep?					

75) In your life which of the following have you ever used (non-medical use only)?

Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	No	Yes
Alcoholic beverages (beer, wine, spirits, etc.)	No	Yes
Cannabis (marijuana, pot, grass, hash, etc.)	No	Yes
Cocaine (coke, crack, etc.)	No	Yes
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	No	Yes
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	No	Yes
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	No	Yes
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	No	Yes
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	No	Yes
Other – specify	No	Yes

76) In the past three months, how often have you used the substances indicated above?

	Never	Once or Twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
Cocaine (coke, crack, etc.)	0	2	3	4	6
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	2	3	4	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	2	3	4	6
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	2	3	4	6

Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	2	3	4	6
Other – specify	0	2	3	4	6

If you responded "never" to all items in this question, please skip to question 82.

77) During the past three months, how often have you had a strong desire or urge to use (first drug, second drug, etc.)?

	Never	Once or Twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
Cocaine (coke, crack, etc.)	0	2	3	4	6
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	2	3	4	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	2	3	4	6
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	2	3	4	6
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	2	3	4	6
Other – specify	0	2	3	4	6

78) During the past three months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial problems?

	Never	Once or Twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
Cocaine (coke, crack, etc.)	0	2	3	4	6
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	2	3	4	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	2	3	4	6
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	2	3	4	6
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	2	3	4	6
Other – specify	0	2	3	4	6

79) During the past three months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?

	Never	Once or Twice	Monthly	Weekly	Daily or almost daily
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	2	3	4	6
Alcoholic beverages (beer, wine, spirits, etc.)	0	2	3	4	6
Cannabis (marijuana, pot, grass, hash, etc.)	0	2	3	4	6
Cocaine (coke, crack, etc.)	0	2	3	4	6
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	2	3	4	6
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	2	3	4	6
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	2	3	4	6
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	2	3	4	6
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	2	3	4	6
Other – specify	0	2	3	4	6

80) Has a friend or relative or anyone else ever expressed concern about your use of (first drug, second drug, etc.)?

	No, never	Yes, in the past 3 months	Yes, but not in the past 3 months
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
Cocaine (coke, crack, etc.)	0	6	3
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	6	3
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	6	3
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	6	3
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	6	3
Other – specify	0	6	3

81) Have you ever tried to cut down on using (first drug, second drug, etc.) but failed?

	No, never	Yes in the past 3 months	Yes, but not in the past 3 months
Tobacco products (cigarettes, chewing tobacco, cigars, etc.)	0	6	3
Alcoholic beverages (beer, wine, spirits, etc.)	0	6	3
Cannabis (marijuana, pot, grass, hash, etc.)	0	6	3
Cocaine (coke, crack, etc.)	0	6	3
Amphetamine-type stimulants (speed, meth, ecstasy, etc.)	0	6	3
Inhalants (nitrous, glue, petrol, paint thinner, etc.)	0	6	3
Sedatives or sleeping pills (diazepam, alprazolam, flunitrazepam, midazolam, etc.)	0	6	3
Hallucinogens (LSD, acid, mushrooms, trips, ketamine, etc.)	0	6	3
Opioids (heroin, morphine, methadone, buprenorphine, codeine, etc.)	0	6	3
Other – specify	0	6	3

82) Have you ever used any drug by injection (non-medical use only)?

	No, never	Yes in the past 3 months	Yes, but not in the past 3 months
Please tick the appropriate box.	0	6	3

Section 6: Worker Well-Being

For the following section, we ask that you answer each question in relation to your work experience as a sport official.

	1 Not satisfied at all	2 Not too satisfied	3 Somewhat satisfied	4 Very satisfied
83) Overall, I am ____ with my job.				
84) I am ____ with my wages.				
85) I am ____ with the benefits provided by my officiating organization.				
86) I am ____ with my chances for advancement on the job.				

	1 Strongly disagree	2 Somewhat disagree	3 Somewhat agree	4 Strongly agree
87) I can count on my supervisor for support when I need it.				
88) I can count on my coworkers for support when I need it.				
89) I feel my job is secure.				
90) The work I do is meaningful to me.				
91) At my organization, I am treated with respect.				
92) My organization values my contributions.				
93) My organization cares about my general satisfaction at work.				
94) My organization is willing to extend resources in order to help me perform my job to the best of my ability.				
95) I receive recognition for a job well done.				
96) I trust the management at my organization.				
97) My organization is committed to employee health and well-being.				
98) My organization encourages me and provides opportunities to engage in healthy behaviors, such				

as being physically active, eating a healthy diet, living tobacco free, and managing my stress.					
99) I have the freedom to vary my work schedule.					

	1 Never	2 Almost never (a few times a year or less)	3 Rarely (once a month or less)	4 Sometimes (a few times a month)	5 Often (once a week)	6 Very often (a few times a week)	7 Always (every day)
100) How often do the demands of your job interfere with your personal life?							
101) How often do the demands of your personal life interfere with your work on the job?							

	1 Strongly disagree	2 Somewhat disagree	3 Somewhat agree	4 Strongly agree
102) I feel discriminated against in my job because of my age.				
103) I feel discriminated against in my job because of my race or ethnic origin.				
104) I feel discriminated against in my job because of my gender.				

105) In the past 12 months, were you sexually harassed by anyone while you were on the job? Yes or No
106) In the past 12 months, were you exposed to physical violence while you were on the job? Yes or No
107) In the past 12 months, were you bullied, threatened, or harassed in any other way by anyone while you were on the job? Yes or No
108) In the past 12 months, have you been in a situation where any of your superiors or coworkers put you down or were condescending to you, made demeaning remarks about you, or addressed you in unprofessional terms? Yes or No
109) During the past 12 months, did you experience any work-related injuries? Yes or No
110) If you experienced any work-related injuries in the past 12 months, did any of them require any first aid or medical treatment, change in job activities, or lost time from work? Yes or No