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“I still wake up with nightmares”...The long-term psychological impacts from
gymnasts’ maltreatment experiences

Date of re-submission: 24 May 2022

Abstract

Within the elite environment, female gymnasts have been exposed to various forms of maltreatment. While the effects of child maltreatment have documented physical and psychological consequences stemming into and throughout adulthood, no researchers in the sporting context have included neglect within their focus of athlete experiences. This study sought to provide an understanding of retired gymnasts' maltreatment experiences, including both acts of commission (physical and emotional abuse) and omission (neglect), and the subsequent long-term psychological impacts from being part of the elite gymnastics culture. One semi-structured interview ($M = 96$ min, $SD = 46.62$) was conducted with 12 retired International and National level women's artistic gymnasts (M age = 29 years, $SD = 4.76$). Participants reported being retired from the sport between seven and 20-years ($M = 12$; $SD = 4$ years), with career lengths between eight and 15-years ($M = 11$; $SD = 2.1$ years). Through reflexive thematic analysis three themes were constructed: what we went through; how it's affecting us now; and will things ever change? Findings highlighted the multiple forms of maltreatment endured by gymnasts, had a prolonged psychological impact, including clinically diagnosed disorders, on their lives up to 20-years post-retirement, lending initial support to attachment theory. We hope this understanding demonstrates the need to change the beliefs surrounding the culture and the relational coaching practices. Further, that effective provisions are implemented to both prevent the abuse from happening and support those gymnasts who have been affected both during and after their retirement from the sport.

Keywords: Gymnastics, Culture, Abusive Practices, Neglect, Qualitative

“I still wake up with nightmares”...The long-term psychological impacts from gymnasts’ maltreatment experiences

Over the last decade, maltreatment in sport has received a great deal of attention (e.g., Kavanagh et al., 2017; Kerr & Stirling, 2019; Kerr et al., 2020; McMahon & McGannon, 2021). Crooks and Wolfe (2007) defined maltreatment as: “volitional acts that result in or have the potential to result in physical injuries and/or psychological harm” (p.640). Stemming from the child development literature, maltreatment has been conceptualized as an umbrella term, encompassing a range of specific types of abuse (physical, sexual, and emotional) and neglect (Fortier et al., 2020). Neglect refers to a lack of reasonable care and an all-round deprivation of attention, resulting in significant harm or risk of significant harm (Matthews, 2004). However, while neglect has been investigated within the child maltreatment literature (e.g., Norman et al., 2012), it has not tended to be the focus of athlete experiences within the sporting context (Stirling, 2009).

The three different forms of abuse, namely: physical, sexual, and emotional, have been reported by athletes from a variety of sports (Wilinsky & McCabe, 2020). In their systematic review of child abuse in the context of sport, Alexander et al. (2011) found physical abuse to occur in three ways, including: acts of physical assault inflicted on the child athlete; forced overtraining leading to risk of injury; and being forced or encouraged to train while injured or exhausted. Sexual abuse referred to interactions perpetrated against the athletes’ will and included touching and/or non-touching sexual offenses (Matthews, 2004). While emotional abuse (used synonymously in the literature as psychological abuse), was defined as a pattern of deliberate non-contact behaviors by a person within a critical relationship role, that has the potential to be harmful (Stirling & Kerr, 2010). Within the sporting context, the most common forms of emotional abuse were found to be shouting, belittling, threats, and acts of humiliation (Gervis & Dunn, 2004).

Fundamental to understanding maltreatment in sport, is the misuse of power to engage in inappropriate behaviors (Kerr et al., 2019), including both acts of commission (abuse) and omission (neglect). Within women's artistic gymnastics, authoritarian coaching - one that is based on a power differential between the coach and athlete - is notably prominent (Kerr, 2014). The coach-athlete interaction has been conceptualized as a critical relationship, in which one individual should be dependent on another for their sense of safety, trust, and fulfilment of needs (Crooks & Wolfe, 2007). This is particularly important in gymnastics, given the young age of elite gymnasts and considerable time spent with their coaches, often training between 20-30 hours per week (Jacobs et al., 2017). Conversely, authoritarian coaching patterns of emotionally and physically abusive or neglectful behaviors, can result in physical and/or psychological harm within a critical relationship (Stirling & Kerr, 2010). For example, coaches through this power differential have been known to create uncompromising environments that caused short- and long-term injuries, emotional disorders, and abusive coach-gymnast relationships (Jacobs et al., 2017; Stirling & Kerr, 2014).

Authoritarian coaching has been viewed as normative within the performance culture and 'win at all costs' narrative, producing gymnasts who are compliant and do not question their training intensity, content, or potential risks (Barker-Ruchti & Schubring, 2016; Cavallerio et al., 2016; Pinheiro et al., 2014; Smits et al., 2017). Cruickshank and Collins (2012) defined culture as: "the shared values, beliefs, expectations, and practices across the members and generations of a defined group" (p.340). While the coach is often seen as the main perpetrator of maltreatment, it is important to recognize that organizational systems and wider sporting personnel also play a role in this culture. Indeed, in the Jacobs et al. (2017) study, high-performance directors highlighted that winning is what constitutes elite sport and although acknowledged that some of their coaches' actions could be seen as inappropriate, they rarely intervened and accepted these behaviors as part of the gymnastics culture.

In addition to empirical evidence, the sport of gymnastics has been in the spotlight following the conviction of USA team doctor Larry Nassar, who was found guilty of sexually abusing 256 gymnasts between 1998 and 2015 (Mountjoy, 2018). Since then, gymnasts from Australia, New Zealand, and the United Kingdom (UK) have started to speak out about the physical and emotional abuse they endured throughout their careers. This has resulted in enquiries, such as the Whyte Review commissioned by Sport England and UK Sport, and the Australian Human Rights Commission to independently examine the allegations and review the policies currently in place for safeguarding children in gymnastics. Kerr and Stirling (2019) note the term safeguarding refers to measures to assure athletes' safety and human rights. They critiqued safeguarding research within sport as still being in its infancy, with many important questions in need of exploration. For example, while the emergence of interest into the occurrence of maltreatment within sport and specifically abuse in gymnastics is clear, little is known about the possible lasting consequences, where safeguarding measures have arguably fallen short.

Attachment theory offers a framework for understanding maltreatment and focuses on the child's responses as opposed to the maltreater's behavior. Originally proposed by Bowlby (1982) attachment theory describes the origins of interpersonal bonds (secure, avoidant, ambivalent, and disorganized attachments) with significant others, particularly those who should offer the promise of security. A secure attachment is considered important for the development of positive social-emotional competence, cognitive functioning, mental health, and well-being (Mónaco et al., 2019). Whereas avoidant, ambivalent, and disorganized-insecure attachment styles are negatively linked to relationship and sport satisfaction (i.e., dissatisfaction with training and instruction, personal treatment, and performance) and athlete affective well-being (Davis & Jowett, 2014). Fundamental to each attachment style is the underlying construct of internal working models of self-worth, that are cumulative

representations of the self and of significant others. In line with our study, it takes the gymnast's perspective with respect to the long-term impacts of their childhood maltreatment experiences on self-worth, perception, and functioning (Bacon & Richardson, 2001).

Drawing upon literature outside of the sporting context, the long-term effects of child maltreatment have been investigated, with documented physical and psychological consequences stemming into and throughout adulthood (Norman et al., 2012). For example, child maltreatment has been associated with greater internalizing symptoms (e.g., depression, self-esteem), externalizing behaviors (e.g., aggression, substance abuse), as well as clinical diagnoses including anxiety disorders, eating disorders, and post-traumatic stress disorder (Arata et al., 2005; Higgins & McCabe, 2001; Springer et al., 2007). Within the sporting domain, contemporary researchers have started to explore the impacts of abuse post-sport (Kerr et al., 2020; McMahon & McGannon, 2020, 2021). For example, across a range of individual and team sports, Kerr et al. (2020) interviewed eight retired, elite, female Canadian athletes who reportedly experienced emotionally abusive coaching practices. Of particular significance was the observation that negative effects persisted in the long-term, including disruption of relationships, avoiding talking about traumatic events, intrusive nightmares, and negative self-concepts. In storied form, McMahon and McGannon (2020, 2021) represented how former swimmer's experiences of abuse and ill-treatment permeated their lives post-sport. They self-managed their abuse by using indirect self-injury, for example purging food, abuse of prescription medications, excessive alcohol use, and sexual promiscuity.

Taken together, the findings of these studies as well as those from the general child abuse literature indicate the need for further research devoted to understanding the long-term effects of maltreatment in sport. To date, no researchers within the sporting domain have included neglect within their focus of athlete experiences. As a result, the aim of our study was to provide an understanding of retired gymnasts' maltreatment experiences, including

both acts of commission and omission. Adopting an interpretivist paradigm will allow valuable insights to be obtained, in relation to the sport's impact during their elite women's artistic careers through to their lives post-gymnastics. The following research questions underpinned the study: (1) What specific omission (neglect) and commission (emotional and physical abuse) practices did gymnasts encounter during their time in the sport? (2) What do their current experiences tell us about the long-term psychological effects of athlete maltreatment? By answering these research questions, we hope to advance the knowledge of this potential culture of maltreatment and offer support for attachment theory by focusing on the gymnast's perspective with respect to the long-term impacts of their childhood experiences. Developing an understanding of retired gymnasts' maltreatment experiences, may go one step towards questioning some of the assumptions that prevail in the sport and raise awareness to safeguard future athletes.

Method

Philosophical Underpinning

Our aim to provide an understanding of retired gymnasts' maltreatment experiences was underpinned by interpretivism, specifically ontological relativism (reality is multiple, created, and mind-dependent) and epistemological constructionism (knowledge is constructed and subjective; Smith & Sparkes, 2017). The lead author's prior immersion within elite gymnastics led to a personal insight to the culture and potential impacts of the sport. Thus, we used semi-structured interviews as a method of data collection to foster the co-construction between researcher and participant, bringing their experiences and understanding to influence a topic (Braun & Clarke, 2022). Reflexive thematic analysis (Braun & Clarke 2019) was chosen as our method of data analysis based on our interpretive paradigm and due to its flexibility; it enabled us to analyze the data inductively (e.g., new experiences), deductively guided by previous research (e.g., attachment theory), and

reflexively (e.g., considering our position within the study). Braun and Clarke (2021) stated that reflexive thematic analysis is suited to relativist and constructionist framings of language, data, and meaning.

Participants

Participants were recruited through snowball sampling. Twelve female individuals (M age = 29 years, $SD = 4.76$) who met the inclusion criteria accepted our invitation to participate and provided written informed consent. Participants were required to be retired from women's artistic gymnastics for a minimum of five-years and trained at their highest level for at least 18-months. Inclusion criteria were set to allow for exploration of the long-term impacts at an elite level and because previous researchers have reported athletes can normalize their experience while in the sporting context but provide more reflective experiences once retired (Kerr & Dacyshyn, 2000). During their careers, five of the gymnasts were of International standard (i.e., competed on the Commonwealth, Junior/Senior European, World, or Youth Olympic/Olympic stage) and seven were of National standard (i.e., qualified for the British Championships). At the time of the interview, participants reported being retired from the sport between seven and 20-years ($M = 12$; $SD = 4$ years), with career lengths between eight and 15-years ($M = 11$; $SD = 2.1$ years).

Interview Guide

To elicit their experiences and long-term impacts of being an elite gymnast, we conducted semi-structured interviews. This method provided participants the opportunity to discuss their experiences while also aligning to the aims of the study (Sparkes & Smith, 2014). Therefore, although the interview guide provided structure to the interviews, the order of questioning were dependent on how the participant responded. Interview questions were open-ended to allow the respondent considerable scope to express their perceptions and expand on views offered (Smith & Sparkes, 2017). Once developed, the interview guide was

piloted with a retired gymnast who had competed at National level. Following this process, some questions were removed from the interview guide to better align the study aims.

The final interview guide comprised of four sections. Section one involved finding out about the participants' background (When did you start gymnastics? What was your highest level of competition?). Section two encouraged participants to reflect on their experiences as a gymnast, such as their relationship with their coach(es) (Can you tell me what your coach(es) were like?), their teammates (Describe the relationships with your teammates?), the environment they trained and competed in (What do you remember most about your club? How did you feel when competing?), and their time outside of the sport (What did you do when you were not training?). Section three explored their life post-retirement, giving participants an opportunity to explain their leaving the sport and whether gymnastics has had an impact on their life as an adult (How do you feel talking about gymnastics now? Since retiring has gymnastics had any influence on your life?). The final section gave the participants a chance to reflect on responses and add to anything previously discussed. Throughout the interviews, participants were encouraged to elaborate on both positive and negative aspects of their experiences, with a variety of neutral probe and clarification questions employed to ensure complete understanding of respondents' comments.

Procedure

Participants were provided with information to read regarding the aims and requirements of the study and all ethical procedures were outlined. Given the sensitive nature of the topic, further aspirational ethics considerations were implemented, in addition to university ethical approval (Lahman et al., 2011). To support participant anonymity (outside of the interviewer), the authors purposely omitted any identifying information. The content presented in this article was subsequently approved by each of the participants, so they felt

comfortable with what was being shared (McMahon & McGannon, 2021). As the lead researcher who conducted the interviews was a former gymnast who had been subjected to maltreatment herself, self-ethics was another important consideration. Researching abuse in sport has been found to affect investigative researchers (Brackenridge, 1999). The co-author (a registered sport and exercise psychologist, trained in counselling) encouraged the lead researcher to talk about her feelings, understood counter-transference responses, kept in constant contact, and offered support throughout (Etherington, 2000). The 12 participants who agreed to take part, provided written consent and all stated their preference was for their interview to take place face-to-face in a venue of best convenience (e.g., the researcher booked a private meeting room). All interviews were audio recorded, lasting between 65 and 240-minutes ($M = 96$ min, $SD = 46.62$), and transcribed.

Data Analysis

A reflexive thematic analysis was used to construct themes from the data (Braun & Clarke, 2019). The process of reflexive thematic analysis involved six fluid and recursive phases. The initial phase involved the lead author immersing herself in the data by reading the transcripts multiple times and noting down initial ideas to gain an overall sense of the dataset. Initial codes were then constructed by highlighting interesting features and key points of interest that were interpreted as meaningful and relevant to the study. In the third phase, generating initial themes from clustering codes together was a creative and active process (Braun & Clarke, 2021). This process involved a dialogue between the interpretation of meaning from the codes and comparisons with previous research (e.g., attachment theory) to develop themes of shared meaning. The fourth phase included the co-author as a critical friend (Smith & McGannon, 2018) reviewing the entire dataset and the overall story the themes told about the participants' experiences. To further develop and refine the themes, the authors debated coherence and distinctiveness from one theme to another to ensure

meaningful representations of the data. During the fifth phase, final refinements were made, generating distinct names for each theme to reflect the description and how they aligned with the overall story in relation to the research questions. The analytic process continued throughout the final stage through the drafting of the reports. The reports were read by the co-author who encouraged further reflection and ensure a balance was achieved between data extracts and analytical commentary (Braun et al., 2017).

Methodological Rigor

Guided by our philosophical approach, the reader is encouraged to use the following indicators to judge the quality of this research: merit of the topic (e.g., significant contribution and timeliness), credibility (e.g., thick description), sincerity (e.g., transparency), and overall coherence of the work (Sparkes & Smith, 2014). Aligned with these quality indicators, three techniques were used to enhance the study's methodological rigour (Smith & McGannon, 2018). Firstly, given the lead author's prior immersion within elite gymnastics, personal reflexivity was deemed critical to document their insight into and articulation of their generative role in the research. Being a cultural insider was deemed a strength to the research process, in terms of developing rapport with participants, understanding the specific terminology, and allowing for deeper exploration during the interview. However, it was also important the lead author kept a reflexive journal to reflect on and interrogate their values and personal positioning, assumptions and expectations about the topic of research, and their relationship to and with participants (Braun & Clarke, 2022). This led to the co-author, taking on the role of a critical friend who encouraged reflection on, and exploration of, alternative explanations of the findings (Smith & McGannon, 2018). For example, the lead author presented her interpretations of the data on a regular basis to the co-author. As a critical friend, the co-author then offered constructive feedback and provided different plausible interpretations to findings and reworked themes, which aided in the construction of coherent

discussion points in relation to the data. Finally, to help create a meticulous, robust, and intellectually enriched understanding, member reflections on our analytical interpretations were also sought to enhance the study's methodological rigor (Cavallerio et al., 2020). Here findings were shared with participants to facilitate understanding through reflexive dialogues with the researchers and co-participants, further promoting ethical practice (McGannon et al., 2021). For example, some participants generated further insight and discussion points when being reflexive, regarding if change was likely to occur within the sport and coaching practices.

Transparency and Openness

In accordance with the transparency and openness promotion (TOP) guidelines (Nosek et al., 2015) the study design, data collection, and analytic methods are described and cited above for transparency, with the original interview guide available on request from the first author. The study was not preregistered in an independent, institutional registry and the raw data collected and interview transcripts are protected for confidential reasons as stipulated within the ethical approval for the study and information conveyed to participants.

Results

Participant maltreatment experiences within women's artistic gymnastics and the subsequent long-term psychological effects were categorized into three themes: (a) What we went through, (b) How it's affecting us now, and (c) Will things ever change? The themes are purposely presented in a temporal order to best tell the overall story, with representative verbatim quotes, and participant identities protected through pseudonyms.

What we went through

Participants reflected and shared their accounts of when they were training and competing as elite artistic gymnasts. Maltreatment experiences included the injuries they trained through, fear of their coach, shouting, belittling, acts of denying attention, physical

punishments, and weight shaming. During their careers, participants recalled: “We would train around 30-hours a week and typically spend more time with our coach than our parents” (Amy). Because of this, the relationship has been conceptualized as critical, where young gymnasts should be dependent on their coach for their sense of safety, trust, and fulfilment of needs. This led Izzy to admit: “On many occasions I accidentally called my coach ‘mum’. I craved more love and affection from her [coach] than I did my mum”. The term attachment refers to an individual’s ongoing emotional bond with a significant figure e.g., caregiver (Bowlby, 1982). To make sense of attachment theory within the gymnastics context, the coach would subsume the role of ‘caregiver’. On this premise, the coach should be a figure whom the gymnast has learnt to rely on for protection and care.

However, within the elite gymnastics system, it was not uncommon for participants to continue with these countless hours of training while injured. In fact, it was emphasized that training and competing while injured was simply what was expected: “Getting injured is just part of the sport, it was normal for us to train on injuries. I had a torn ligament in my knee which I competed on. My coach knew, but it was just what we did” (Emma). Being forced or encouraged to train while injured is a well-documented form of physical abuse in sport. Indeed, participants noted the pressure and fear from their coach to continue:

I was afraid to tell my coach I was injured because she always said that when I was resting, my opponent was competing. I also knew she would get angry at me so I would train until my body could not take it anymore. (Charlotte)

This highlights the complexity and interrelatedness of maltreatment experiences, because arguably from these scenarios, gymnasts were being exposed to emotional abuse (fear of the coach getting angry), physical abuse (training while injured), and neglect (lack of reasonable care from the coach and risk of significant harm to the gymnasts).

Participants recalled how the fear of their coach within the training environment, was often linked to the verbal threats and physical punishments they endured, as stated by Amy: “I kept falling off bars and I could hear my coach shouting and saying how useless I was. I got extra conditioning for those mistakes”. She went onto explain what this physical punishment consisted of: “I got told to do 100 leg lifts then still had to try and re-do my routine. When I didn’t manage it, I got more leg lifts or sent out the gym”. Conversely, some gymnasts recalled acts of denying attention from their coach: “When I started getting injured and new gymnasts started coming through, she pushed me aside like an old toy and made it clear I was no longer important to her” (Ellen). Though it could be interpreted as a positive that these gymnasts were no longer on the receiving end of the verbal threats (emotional abuse) and punishments (physical abuse), the intentional removal of attention and support is another form of neglect from within the critical coach-athlete relationship.

The culture of gymnastics, particularly within the women’s artistic discipline, tends to promote a small and light-weight physique. Participants reflected how belittling and degrading emotionally abusive comments were specifically linked to this, whereby coaches would refer to weight as something to be ashamed of:

My coach would call me fat in the gym or call me the ‘big girl’. I was bigger than the other girls in the squad, but that was just my build. My coach would make a point to highlight that I was bigger than other gymnasts and make it into a joke. It made me feel awful because looking back I was not fat. (Chloe)

In this regard, Alice spoke about her fear of putting on weight. Her coach used physical weights as an act of humiliation and to demonstrate the potential consequences of this: “My coach made us do floor and beam routines with weights wrapped around our waist. She said that if we put on weight, then this is what it would feel like”. There was unanimous

agreement across participants that putting on weight was something most gymnasts worried about. Building on from this, Josie provided an example that resonated from her experiences where her coach actively encouraged her to engage in unhealthy behaviors to lose weight:

I remember the time my coach told me that if she was my size then she would go and make herself sick. She would always tell me to watch what I ate and constantly commented on the amount of food I was eating. I got into the habit of making myself sick and hiding it from my parents because I thought it was the right thing to do.

Again, this provided an example, where a range of maltreatment practices were experienced within the elite women's artistic culture. In relation to weight shaming, gymnasts were exposed to degrading comments and forced to train with weights, which not only put them at harm from these emotional and physically abusive practices but also at risk of developing an eating disorder (neglect) by coaches encouraging self-induced vomiting. Stemming across their gymnastic careers, it was apparent both acts of commission and omission were not in isolation. Participants were subjected to a combination of maltreatment forms as child athletes, with coaches not fulfilling the safe or protective role of 'caregiver'.

How it's affecting us now

The multitude of maltreatment practices endured in their gymnastic careers, led participants to discuss their current psychological experiences post-retirement. Although a number of years had passed since being involved in the sport, symptoms were disclosed associated to various psychological disorders, including unhealthy relationships with food, low self-worth, depression, and post-traumatic stress. Participants further went on to divulge how they had sought or were still engaged in professional support, and for some, their symptomatology had been clinically diagnosed as a psychological disorder.

The range of maltreatment practices used by coaches to weight shame their gymnasts, impacted participant's long-term perceptions of their body. With Chloe, she still agonized

about this on a daily basis: “Since I can remember I have worried about my size. I will look at my stomach every day in the mirror and worry about getting fat...I am now obsessed with my weight and fret about any change in my body”. In addition to negative body image concerns and for some obsessive beliefs, this also led to participants engaging in disordered eating practices outside of the sport: “If I notice the smallest change in my weight, then I go on these extreme diets where I try to cut foods out or skip meals” (Anita). Beliefs can become deep-rooted and for these ex-gymnasts, an unhealthy relationship with food was apparent, stemming well into retirement years: “I still see eating as a bad thing, because that was what I was made to believe for so long” (Alice).

Participant beliefs were also expressed with regards to low self-worth. Low self-worth encompasses a negative overall opinion of oneself, judging, or evaluating oneself critically, and placing a general negative value on oneself as a person (Aron et al., 2019). This was articulated by Charlotte as follows:

My coach told me I was useless, and I believed it because I believed everything she said...I would never meet her expectations...Feelings like that become ingrained in you. My coach broke my mind as a young gymnast, and it stayed with me.

Artistic gymnastics is a sport whereby individuals are judged on their ability to successfully execute skills. Coaches teach gymnasts to strive for perfection and would constantly critique them. Participants explained how these perfectionistic standards impacted their self-worth and continued into their adult lives:

Even the time I came first, my coach made it clear that it was still not perfect. When I do things now, even at work, I need things to be perfect and will take a long time to get them done...If it is not perfect, then in my mind I have failed. (Ellen)

The feeling of not being good enough, was reiterated by Amy: “I have frequent lows and I genuinely believe it is because of what I experienced as a gymnast. Gymnastics left me

feeling like I am not good enough and I hate it”. Low self-worth in this regard was the result of participant’s gymnastic experiences. As child athletes, they were led to believe that they were not good enough and this narrative stuck with them into adulthood. Thus, athletes seemed to describe what is depicted in attachment theory as internal working models (Bowlby, 1982) of diminished self-worth, not just within a sporting context, but as a general description of themselves. This long-term psychological impact would appear indicative of an ambivalent-insecure attachment between the athlete and their coach. Attachment theory proposes the distress felt by ambivalent children results in diminished self-worth, whom as adults find it difficult to manage trauma and are often susceptible to mental health issues including depression, anxiety, and eating disorders (Bacon & Richardson, 2001).

Indeed, due to the extremity of what they encountered as child and adolescent athletes, participants sought or were still engaged in professional help for the long-term psychological impacts these maltreatment experiences had on them:

I had to get professional help because I have spent years feeling so rubbish about myself. I can’t believe that one person can make me feel so terrible about myself...I tried to forget, but I think it will always be part of me now. (Jasmine)

The professional help a number of participants were currently engaged with, included counselling and types of psychological therapy, as conversed by Carrie: “I have to have counselling to help me raise my low level of self-worth”. For Emma, she had received a clinical diagnosis and required long-term professional help:

I still wake up with nightmares. I have been having therapy for the last two years for post-traumatic stress. When I close my eyes, I see my coach in my face shouting. I feel terrified, small, and a waste of space...I wake up sweating with my heart racing.

Post-traumatic stress is a mental illness that typically occurs when a person experiences or witnesses a traumatic event, such as abuse (American Psychiatric Association,

2013). In Emma's case, she reported intrusive memories through recurrent nightmares, flashbacks, and marked physiological or psychological distress at cues that lead to recall of the traumatic event. Ultimately these psychological and clinically diagnosed disorders developed due to the fear coaches had created within their elite environments, their maltreatment practices, and insecure attachments, as stated by Hayli: "I spent years depressed from my experience of being a gymnast".

Will things ever change?

Across their retirement years, participants were attempting to come to terms with and understand their gymnastic experiences. This included the elite women's artistic culture, the training environment, maltreatment practices and their long-term psychological impacts. Participants were reflective regarding whether it was worth being an elite gymnast, trying to make sense of what happened and why, and questioning if things would ever really change in the sport. In relation to coaching behaviors, a dichotomy became apparent between participants who believed their coaches needed to act in that manner, to those who questioned the necessity of their actions. For example, Carrie perceived that to be successful it was a necessity for coaches to be hard on gymnasts and warranted at the elite level:

Gymnastics is a hard sport, you are training for four completely different apparatus and trying to master them all. Your coach needs to be hard on you, you need to make those sacrifices otherwise you won't make it to the top. How can you push your body to the limits without someone being there to do that for you?

There was a somewhat shared belief between some participants surrounding elite women's artistic gymnastics and justifying coaches' actions in order to be successful at this level. Anita had normalized the behavior of her coach and believed it was needed for success:

You can't be an elite gymnast without the shouting, crying, and punishment. My coach told me that her job was to make me do things I did not want to do, to succeed.

If my coach did not push me, I didn't train through those injuries, I would never have made the National squad...nobody gets to the top with the coach asking you what you want to do or having fun. Show me something different and I will change my opinion.

However, Josie had a different perspective. For her, training through injuries had left her experiencing pain later on in her life. The physical pain being experienced as an adult, also served as an additional reminder of feeling unaccomplished from the sport and subsequently questioning the culture and neglectful coaching practices:

I still have pain now. I cannot even recall the number of times I landed on my head, injuring my neck and back. To this day I wake up and go to bed with pain. Fifteen years on and I feel like this, for what? A 10-year career and I never made it to the Olympics. All I have now are sore bones and bad memories.

On the other side of the dichotomy, were the participants who questioned their coaches' practices, the necessity of their actions, and why the negative experiences had to occur: "I still wonder why my coach had to behave like that, there could have been another way" Jasmine went on to explain: "The times I had to train with a concussion, the countless times my coach sent me out the gym and threatened to drop me from the squad does not make sense to me. She must have had her reasons". It was evident, participants were still trying to make meaning from their maltreatment accounts. Interestingly, Hayli highlighted that although she once thought it was appropriate, over time she has started to reflect and question her coach's behaviors:

I used to think that was the only way to success but over time I have struggled to understand why it was necessary. Surely not all coaches coach this way? How can anyone treat children like that and think that is okay? I still constantly think about my life as a gymnast, and it makes no sense to me.

On reflection, participants were generally not hopeful that the sporting culture would change, since coaching practices have been embedded for so many years:

I cannot see the sport being any other way. My coach admitted to still making her gymnasts cry in pain because she believes it is necessary and said she will not change unless other people do, to make it a level playing field. The problem is this type of behavior leads to results and that seems to be the thing that coaches care about. (Izzy)

As a final note, it was encouraging to hear some participants were taking valuable lessons from their negative gymnastic experiences. This was to help change the future of the sport and ensure now as coaches, the safe and protective role of caregiver was being fulfilled:

My experience was bad, but I have learnt how to be better for future gymnasts. I have realized that we need to develop a culture of quality rather than quantity to ensure our gymnasts can make it past the age of 14 without physical and psychological problems. We should be trying to get our gymnasts training and competing later on into their life, without leaving them damaged as an adult. I am trying to embed this into my own gymnastics club... Yes, of course winning is great, but I want my gymnasts to have fun and enjoy themselves too. I want to try and ensure they have a good experience of the sport because when done right, it is one of the most wonderful sports in the world. (Chloe)

Discussion

The aim of this study was to provide an understanding of retired gymnasts' maltreatment experiences, including both acts of commission and omission. Specifically, in relation to understanding the sport's impact during their elite women's artistic careers through to their lives post-gymnastics. Unique insights were obtained from participants regarding the compound abusive and neglectful culture that existed in their sport and the long-term psychological impacts of athlete maltreatment. While findings support previous

literature investigating gymnastics (Barker-Ruchti & Schubring, 2016; Cavallerio et al., 2016; Jacobs et al., 2017; Tynan & McEvilly, 2017) and abuse in sport (Kavanagh et al., 2017; Kerr & Stirling, 2019; Kerr et al., 2020), it is the first to examine the long-term psychological consequences of suffering multiple forms of maltreatment (including neglect) as a child or adolescent athlete, within elite women's artistic gymnastics.

In relation to the first research question regarding the specific commission and omission practices gymnasts encountered during their time in the sport, a multitude of maltreatment experiences were reported: namely emotional, physical abuse, and neglect (Fortier et al., 2020). These maltreatment experiences included the injuries gymnasts trained through, fear of their coach, shouting, belittling, acts of denying attention, physical punishments, and weight shaming (Kerr, 2014; Pinheiro et al., 2014; Smits et al., 2017; Stirling & Kerr, 2014). In the 2019 International Olympic Committee (IOC) consensus statement, Reardon et al. note the different types of athletic maltreatment may occur in isolation or in combination, and may be a one-time occurrence, continuous or repetitive. Unanimous across the gymnast's accounts, were the interrelatedness of maltreatment experiences, occurring in a continuous and repetitive manner. For example, being forced to train while injured and degrading comments are conceptualized in the literature as physical and emotional abuse types respectively (Alexander et al., 2011). Our participants were continually exposed to both these abuse types, alongside the lack of reasonable care provided by their coaches. These neglectful acts, in combination with abusive practices, subsequently put the gymnasts at risk of significant psychological and physical harm (Fortier et al., 2020).

Non-accidental violence describes harm experienced by athletes because of an abuse of actual or perceived differentials in power, based on a cultural context of discrimination (Mountjoy et al., 2016). Specifically, within women's artistic gymnastics, authoritarian coaching is notably prominent, viewed as normative within the culture, and based on a power

differential between the coach and athlete (Kerr, 2014). According to attachment theory, the coach would subsume the role of caregiver (Bowlby, 1982). In stark contrast to this, deliberate acts of non-accidental violence and subsequent harm were instigated by the coaches of the gymnasts in this study (Stirling & Kerr, 2010). Researchers who have examined the coach's perspective, have found they justified acts of non-accidental violence (Jacobs et al., 2017; Kerr et al., 2020). For example, emotional abusive acts, such as shouting and belittling athletes were perceived to develop respect and discipline, with some coaches believing it develops mental toughness, motivates athletes to train harder, and enables them to push on to a higher level of competition (Jacobs et al., 2017). Whereas forms of physical abuse, such as exercise as punishment was perceived to deter athletes from making the same mistake, effective for conformity, and facilitated developmental outcomes (e.g., resilience). Coaches also believed this method was likely to have fewer damaging effects than emotional abuse would on an athlete's well-being (Kerr et al., 2020), though neglect was not considered.

Drawing upon the child abuse literature, multiple types of maltreatment have been investigated. For example, Higgins and McCabe (2001) reviewed 29 studies where information was available on the effects of multiple types of maltreatment and noted an apparent consensus between participants who had experienced two or more types of maltreatment being associated with greater internalizing symptoms (e.g., depression, self-esteem) and externalizing behaviors (e.g., aggression, substance abuse). Whereas, in the systematic review of the scientific literature and quantitative meta-analyses conducted by Norman et al. (2012), they identified 124 studies that examined the association between non-sexual child maltreatment, physical abuse, emotional abuse, and neglect in childhood. Despite some variability, overall, experiencing multiple types of childhood maltreatment were found to approximately double the likelihood of adverse mental health outcomes

(Norman et al., 2012). An additive model has thus been proposed within the child abuse literature, whereby the long-term psychological effects increase with the experience of different types of maltreatment (e.g., Arata et al., 2005). However, a distinction can be made when comparing our findings to the Higgins and McCabe (2001) review. The only reports of our participants exhibiting maladaptive externalizing behaviors as an adult, was through unhealthy relationships with food, which arguably can be placed on an internalizing symptom - externalizing behavior continuum (Bonci et al., 2008). A similar contrast is evident to McMahon and McGannon's (2020, 2021) body of research on legacies of abuse in sport. Their participants predominantly used externalizing behaviors as adults to self-manage their abuse and ill-treatment endured as swimmers, by using indirect self-injury, abuse of prescription medications, excessive alcohol use, and sexual promiscuity. Hence, our findings provide greater support for internalizing symptoms to manage the subsequent distress, which relates to our second research question: what participant current experiences tell us about the long-term psychological effects of athlete maltreatment.

Attachment theory (Bowlby, 1982) is one of social development that offers a framework for understanding maltreatment, focusing on the child's responses. The theory predicts individuals who have experienced insecure attachment styles tend to hold negative internal working models of themselves (Bowlby, 1982) which ostensibly guide patterns of cognition, affect, and behavior (Reardon et al., 2019). Gymnasts in this study disclosed symptoms associated to various sub-clinical psychological disorders, including negative body image concerns, unhealthy relationships with food, low self-worth, depression, post-traumatic stress and thus, seemed to describe what is depicted in attachment theory as negative internal working models resulting from their coach-athlete relationships. This is consistent with those described by attachment theory because of insecure attachments with significant adults, particularly those who should offer the promise of security (Davis & Jowett, 2014).

Specifically, these long-term psychological impacts would appear indicative of an ambivalent-insecure attachment where the unpredictability of the coaches' action causes the child athlete to be confused and often distressed. The distress felt by ambivalent children results in diminished self-worth, whom as adults find it difficult to manage trauma and are often susceptible to mental health issues including depression, anxiety, post-traumatic stress, and eating disorders (Bacon & Richardson, 2001).

Our findings therefore lend support for attachment theory, where insecure interpersonal bonds with significant others are negatively linked to mental health issues, that can persist throughout their life course (Mónaco et al., 2019). Indeed, for some participants their symptomatology had been clinically diagnosed as a psychological disorder. For example, post-traumatic stress disorder (PTSD) is a mental illness that typically occurs when a person experiences or witnesses a traumatic event, such as maltreatment (American Psychiatric Association, 2013). The core symptoms of PTSD are divided into four categories, with participants in this study reporting three out of the four categories: intrusive memories (e.g., recurrent nightmares and flashbacks), negative mood and thoughts (e.g., low self-worth), and affected state of arousal (e.g., sleep disturbance), demonstrating the interrelated nature of these core symptoms (Yehuda et al., 2015). In support of this, Aron et al. (2019) reported how athletes may exhibit greater rates of PTSD (up to 13-25% in some athlete populations) and other trauma-related disorders relative to the general population. They described common inciting events leading to symptoms of PTSD, included trauma incurred in sport through direct physical injury, secondary/witnessed traumatic events, and abusive dynamics within the sport – all apparent within our participant's gymnastic culture.

Culture plays an important role in sport; it can influence how athletes think, feel, and behave, in addition to impacting an individual's life and identity (McGannon & Smith, 2015). Some of our participants had been retired for up to 20-years, yet the memories and

psychological impacts have stayed with them throughout, arguably due to the culture created within their sporting environment. Interventions are therefore needed to change the culture of gymnastics and the normalization of maltreatment practices. It is important for the major stakeholders involved in women's artistic gymnastics (e.g., coaches, parents, educators, officials, support staff, performance director) to have greater awareness of the long-term implications when developing young athletes. Both parents and performance directors have been referred to as 'silent bystanders' allowing maltreatment to continue because they still held the belief these methods were necessary for performance (Jacobs et al., 2017; McMahon et al., 2018; Smits et al., 2017). Highlighting it is not a lack of understanding or awareness, but instead the perception that these are the required coaching practices for the desired outcome. Those involved within the sport accept unethical coaching behaviors because the culture at the elite level has typically prioritized performance above all else. If the narrative focuses on a 'win at all costs', this is problematic for the young elite athlete's well-being, leaving them vulnerable to maltreatment, and the justification and normalization of abusive practices will continue (Barker-Ruchti & Schubring, 2016; Cavallerio et al., 2016; Pinheiro et al., 2014). What it takes to be an elite athlete therefore needs to be reconsidered, paying particular attention to sports where the athletes are young children/adolescents (Wilensky & McCabe, 2020). In addition, it would be worthwhile to explore those high-performance coaches who have experienced success without using maltreatment practices and the positive impact this has on the well-being of the gymnasts (Kerr & Stirling, 2019). This in turn would provide valuable insights into best coaching practices for the future of the sport.

Despite provisions being in place to supposedly safeguard children from maltreatment (e.g., British Gymnastics safeguarding policies, the IOC consensus statement, child protection in UK sport, the implementation of welfare officers in clubs), none of these prevention strategies were able to protect the gymnasts in the current study. Barker-Ruchti

(2020) highlighted those current procedures need to be more effective. We would strongly agree with this, in terms of effectiveness (e.g., reporting and being heard), wrongdoings should be properly acknowledged (e.g., acknowledge the abuse or neglect and victims to have sustained support) and creating an effective athlete welfare (e.g., engage welfare officers whose role it is on a day-to-day basis to support the athletes), if future gymnasts are not to experience the same maltreatment practices and subsequent long-term psychological impacts our current participants have endured. Furthermore, sport psychologists have a role to play in safeguarding (Kerr & Stirling, 2019). The virtue of their role and nature of their work may provide sport psychologists with insights into potentially harmful practices and be the first point of contact for athletes to disclose distressing experiences. It is therefore essential for sport psychology consultants to be up-to-date and familiar with the processes for reporting misconduct to authorities and referrals for psychological support (Leahy, 2008).

Treatment for the array of negative disorders experienced, required psychological, sometimes clinical support. Our findings resonate with those by Kerr et al. (2020) whose elite female athletes all required professional psychological support to recover from their experiences of emotional abuse. Building on these findings, longitudinal research is needed with former athletes currently working with psychologists to navigate through their maltreatment experiences, so that the most appropriate support mechanisms can be provided, thus extending the duty of care for athletes' post-sport. Regardless of training and competence, all sport psychologists have a role to play in prevention efforts, creating a culture that safeguards athletes against maltreatment, including organizational policies, and promoting mental health literacy (Gorczynski et al., 2021). Moreover, it is important that educational programmes and professional bodies include mandatory content about maltreatment and methods of safeguarding if sport psychology practitioners are to fulfil their responsibilities to protect athletes. Future researchers and applied practitioners should

document case study work supporting the use of prevention and early intervention projects targeting maltreatment at the sport and/or organisational level for evidence of best practice. Finally, given the limitation associated with one-time interviews (McGannon et al., 2021), alternative qualitative approaches such as athlete autobiographies and case studies might be considered to further research athlete maltreatment experiences.

Overall, this study was the first to examine the long-term psychological impacts of experiencing multiple forms of maltreatment within elite women's artistic gymnastics, including both acts of commission and omission. Advancing previous literature, we highlight the combination of abusive and neglectful practices endured by gymnasts as children and adolescents can have a prolonged psychological impact on their lives up to 20-years post-retirement. Support is lent for attachment theory, specifically the various sub-clinical and clinical psychological disorders would appear indicative of negative internal working models resulting from their coaches' maltreatment and ambivalent-insecure attachments. This understanding demonstrates the need to change the beliefs ingrained within the sport, regarding maltreatment practices being a necessity for performance results at the elite level. Effective provisions therefore need to be implemented, to both prevent the abuse from happening in safeguarding future athletes and supporting those individuals who have already suffered. We hope the findings from this study raise awareness and encourage performance directors, coaches, educators, and sport psychologists, to think carefully about the culture that is being created within their own sporting organizations and the potential long-term psychological impacts it can have on athletes' mental health and well-being, both during and after their retirement from sport.

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