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A study of organisational stressors, mental health, and mental wellbeing within the Irish Olympic Team pre and post the 'Tokyo 2020' (2021) Olympic Games

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Abstract

Aims: The primary aim of the present study was to assess the relationship between organisational stressors and mental health and wellbeing indicators of the Irish Olympic Team, pre- and post- the 'Tokyo 2020' Olympic Games. A secondary aim was to also examine the differences in mental health and wellbeing between the athletes and staff of Team Ireland pre and post Games. **Method:** The Irish Olympic Team comprised of 271 members (116 athletes and 155 team staff). Participants were sent an online survey package 2-weeks pre-games (Time 1) and 4-weeks post-games (Time 2). A total of 98 participants (36% response rate) responded at Time 1, and 70 participants (26% response rate) responded at Time 2. Measures included the Organisational Stressor Indicator for Sport Performers (OSI-SP), the Mental Health Continuum-Short Form (MHC-SF), and the Sport Mental Health Assessment Tool-1 (SMHAT-1). **Results:** There was a significant inverse association between organisational stressors and mental wellbeing at both Time 1 ($\beta = -.46$), and Time 2 ($\beta = -.35$), and from pre- to post-games ($\beta = -.48$). There was a significant positive association between organisational stressors and risk of mental health symptoms at both Time 1 ($\beta = .69$), and Time 2 ($\beta = .67$), and from pre- to post-games ($\beta = .34$). At Time 1, team staff (75%) reported significantly greater risk of mental health symptoms than athletes (50%), however, at Time 2, athletes (80%) reported significantly greater risk of mental health symptoms than staff (50%). The overall number of participants flourishing decreased from pre-games (43%) to post-games (31%). **Conclusion:** Findings have implications for mental health support provision which tends to be athlete focused but might forget about team staff, and to consider both pre-event provision but to also not forget about post-event care.

Keywords: elite sport; high-performance; mental health; mental wellbeing; sport organisational stressors; Olympics.

A study of organisational stressors, mental health, and mental wellbeing within the Irish Olympic Team pre and post the ‘Tokyo 2020’ (2021) Olympic Games

Over recent years, there has been a significant increase in the amount of sport psychology research pertaining to the mental health and wellbeing of elite athletes (Küttel & Larsen, 2020; Poucher et al., 2021; Purcell et al., 2022). This could be due to the impact of ever-increasing competitiveness between sport organisations and nations, or it may in part be due to increasing reports of abuse towards athletes from persons within sport organisations (e.g., Kerr et al., 2019; Kerr & Stirling, 2019; Willson et al., 2022). However, there has been comparatively less research focus about the mental health needs of coaches and support staff (Pilkington et al., 2022). This research gap is concerning as previous studies indicate the reciprocal nature of the athlete-coach relationship and how coach stress has a negative impact on this relationship (Thelwell, Wagstaff, & Chapman et al., 2017; Thelwell, Wagstaff, & Rayner et al., 2017). In broader society, mental health difficulties have been the main cause of disability in many European countries and present major personal health and economic costs (Saxena et al., 2015). Elite athletes are said to have similar prevalence rates of mental health disorders as the general population, although the evidence base is lacking high-quality systematic studies (Gouttebarga et al., 2019; Poucher et al., 2021). Evidence regarding elite coaches and elite support staff is even more limited, even though research has acknowledged the coach as a performer in their own right (Olusoga et al., 2014), although is indicative of being similar to the general population (Kim et al., 2020). Reardon et al. (2019) provide a comprehensive review of prevalence rates for mental health disorders in elite athletes, noting that disordered eating, relative energy deficiency in sport (RED-S; Mountjoy et al., 2018), and sport related concussion with ensuing mood disorders, have a higher prevalence in athletes.

Determinants of mental health include environmental factors such as government and social policies, living standards, working conditions, and social supports; and individual factors

such as cognitive and social-emotional skills. Adverse experience at a young age is a risk factor for mental health disorders (Marmot, 2005; Saxena et al., 2015; WHO, 2014). Mental health supports people in reaching their potential, contributing to their community, and coping with typical life stresses. Indeed, the World Health Organization (WHO, 2005) defines mental health as: “a state of wellbeing 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”.

Another challenge surrounding mental health is the associated stigma. Stigma is identified as a primary barrier to support seeking for elite athletes (Castaldelli-Maia et al., 2019; Gulliver et al., 2012). Poucher et al. (2021) suggest this may stem from a societal view of ‘mental toughness’ (Bauman, 2016), or ‘winning at all costs’ regarding elite athletes (Chen et al., 2019). They speculate that the capacity to ‘push through’ difficulties associated with being an elite athlete, may influence athlete beliefs that it would be a sign of weakness to admit having mental symptoms and to ask for help. Protective factors for athlete mental health include social support (DeFreese & Smith, 2014), coach mental health literacy (Topping et al., 2023), psychological safety (Cooke et al., 2024), and basic needs satisfaction (Kuettel & Larson, 2020). Comparatively, a coaching support network, having work/life balance, and a secure working environment are some protective factors for coaches’ mental health (Sarkar & Hilton, 2020). Facilitators for the public and elite athletes alike in seeking support for mental health symptoms include: previous positive experiences with services, social support, and increased mental health literacy (Fogaca, 2021; Gulliver et al., 2010; 2012; Velasco et al., 2020).

Sport psychology researchers have traditionally focused on individual elite athletes’ processes and have typically given less attention to societal, cultural, and organisational factors, associated with performance development (Fletcher & Wagstaff, 2009). However, as Hardy et al. (1996) highlighted, “elite athletes do not live in a vacuum” (pp. 239-240) and they

are highly influenced by the complex social and organisational settings in which they work and compete. As an example, an Olympic medal, the main aspiration of many elite athletes', is often seen as a score for nations to demonstrate their own 'success'. Many nations will actively seek to enhance their athletes' performance with funding and training supports, resulting in a change of focus from the athletes' performance to a system's performance (Jensen et al., 2014). This phenomenon of international competition, which influences athletes and nations, was termed 'the spiral of competition' (Heinilä, 1984). Common to all members of an elite team is that they are human, complex, social beings whose mental health can be impacted by stressors, from their sport organisation. As Wagstaff and Hanton (2016) indicate, it is time to dispel the 'myth of individualism' and recognise that sporting outcomes happen within systems.

Much of the work in sport psychology has been conducted on the stressors encountered by performers (Arnold & Fletcher, 2012; 2021). To elaborate, elite athletes face unique sport specific stressors such as injury, overtraining, de-selection, lack of access to education, financial insecurity, and increased public scrutiny, (Gouttebarga et al., 2019; Hainline & Reardon, 2019; Küttel & Larsen, 2020). Elite coaches face stressors including managing competition environments, pressure from governing bodies, isolation, lack of social support, and sacrificing personal time (Olusoga et al., 2012). In one of the few studies regarding stressors experienced by sport science staff and management staff, Arnold et al. (2019) found four main areas of organisational stressors including: relationships, physical resources, performance development, and organisational structure. That these stressors are experienced so broadly indicates a need to support the mental health of the full sporting entourage.

Organisational stressors have been defined as "the environmental demands associated primarily and directly with the organisation within which an individual is operating" (Fletcher et al., 2008, p. 359). Fletcher and Scott's (2010) meta-model of stress, emotions, and performance helps to explain the relationship between organisational stressors and pertinent

outcomes. The health, performance, and economic costs of stress for the elite team may be significant. Consequences of organisational stress can be feelings of anger and frustration which can impact job performance and personal wellbeing (Arnold et al., 2019). One study, investigated the specific organisational stressors encountered by international disability footballers (Whittingham et al., 2021). Their findings enabled them to advance targeted, stressor reduction, recommendations for the athletes. A synthesis of the research suggests that athletes encounter four main categories of organisational stressors, relating to a) leadership and personnel, b) cultural and team, c) logistical and environmental, and d) performance and personal issues (Arnold & Fletcher, 2012). Elite athletes often experience more organisational stressors and at greater intensity than non-elite athletes (Fletcher & Arnold, 2017).

Many sport organisations have developed statements regarding the mental health of athletes (Gorczyński et al., 2019; Henriksen, Schinke, McCann et al., 2020; Henriksen, Schinke, Moesch et al., 2020; Chang et al., 2020). These statements often focus on ways to support athletes' mental health. They tend to not, however, examine how sport organisations can impact mental health. It is likely that further inclusive discussion will need to take place on this matter, with all parties involved. The International Olympic Committee statement regarding mental health in elite athletes (Reardon et al., 2019) put forward 13 suggestions for research and practice, however, the majority of these applied to the individual athlete, hence perpetuating the individualism myth (Wagstaff, 2019) and did not consider the wider sport stakeholders. There is a shared understanding, however, that mental health is important and that mental ill-health can have significant personal, social, and economic costs. The International Olympic Committee, Mental Health Action Plan (2023) has incorporated mental health and duty of protection towards athletes into its mission, vision, values, and policies. It was hypothesized that the well being and mental health of athletes, coaches, and staff of Team Ireland, would be negatively influenced by organisational stressors pre and post Games.

Supporting the argument that an organization can impact sport performers' mental health and wellbeing, evidence has demonstrated that organisational stressors can negatively impact performers' perceived physical and psychological health, and performance (Arnold et al., 2017; 2018; 2024; Roberts et al., 2019; Simms et al., 2021). However, these studies have focused on the impacts of organisational stressors on competitive and semi-elite performers; therefore, further focus is needed on the unique organisational stress experiences of elite (i.e., Olympic) athletes and their support staff and the impact of organisational stressors on their mental health and wellbeing. Indeed, the work on the organizational stress experiences of support staff in sport to date has predominantly been qualitative, with little knowledge on how these demands might change over time for those tasked with supporting athletic performers. Furthermore, work on organisational stressors in sport has typically been cross-sectional (Arnold & Fletcher, 2021); therefore future research needs to adopt advanced and more robust designs to examine experiences over multiple time points. Pre- and post-Olympic Games are considered particularly challenging periods for participants (Gould et al., 1999; 2002; Henriksen, Schinke, McCann et al., 2020). Thus, better understanding of these challenges may contribute to the development of support strategies for participants attending future Olympic Games. Findings could then guide implementation changes, for the benefit of athletes and staff.

Therefore, the primary aim of the present study was to assess the relationship between organisational stressors and mental health and wellbeing indicators of the Irish Olympic Team, pre- and post- the 'Tokyo 2020' Olympic Games. A secondary aim was to also examine the differences in mental health and wellbeing between the athletes and staff of Team Ireland pre and post Games. To the authors knowledge, this was the first study to investigate the relationship of organisational stressors on elite athletes', coaches', and support staffs' mental health and wellbeing, before and after an Olympic Games, using the International Olympic Committee (IOC) recommended SMHAT-1 questionnaire with a sample of Olympic athletes.

Method

Design

A multi-time point, pre-post design was used with online surveys administered to collect data from participants at two time points. Some follow-up informal qualitative contextual feedback (see Figures 1 and 2) was also obtained from participants deemed at-risk.

Participants

The members of Team Ireland, attending the 'Tokyo 2020' Olympic Games, including athletes, coaches, and support staff, all aged 18 years or over, were invited to participate in this study. All 271 Team Ireland members were contacted. These included 155 staff (43 female and 107 male) and 116 athletes (48 female and 68 male). The age range was 19 to 75 years (Time 1 Mean age = 38.3, SD = 11.78; Time 2 Mean age = 36.9, SD = 11.63). The staff members included: coaches, representatives from the Olympic Federation of Ireland (OFI), support staff, and team leaders. Participants were sent an online survey 2-weeks pre-games (Time 1) and 4-weeks post-games (Time 2). A total of 98 participants (36% response rate) responded at Time 1, and 70 participants (26% response rate) responded at Time 2. Team Ireland competed in 21 summer sports: Athletics, Aquatics (Dive), Aquatics (Swim), Badminton, Boxing, Canoe, Cycling (Track), Cycling (Road), Equestrian, Golf, Gymnastics, Hockey, Judo, Modern Pentathlon, Rowing, Rugby (Men's 7s), Sailing, Shooting, Taekwondo, Triathlon, Weightlifting. A total of 46% (n = 124) Team Ireland members responded to at least one of the two online surveys. A total of 44% of staff (n = 68) and 48% athletes (n = 56) completed at least one of the two surveys. In total, 35 staff and 9 athletes completed both Time 1 and Time 2 surveys. At Time 1, 48% of females and 30% of males completed the survey. At Time 2, 45% of females and 16% of males completed the survey. Most participants were at their first Olympic Games (See Table 1 for further sample information). In keeping with the General Data Protection Regulation (GDPR), it was not possible to obtain the reasons for non-

participation. To preserve participants' confidentiality, the number of respondents to the survey from each specific sport, are not identified; however, 18 of the 21 sports were represented by the respondents. Similarly, numbers in the categories of staff (coaches, reps from the OFI, support staff, and team leaders) are not reported but all staff categories were represented.

Measures

Three validated questionnaires were used to assess organisational stressors, mental health, and wellbeing of participants. Some informal qualitative contextual feedback (see Figures 1 and 2) was shared by participants deemed at-risk during follow-up check-in calls.

Organisational Stressors. The Organisational Stressor Indicator for Sport Performers (OSI-SP; Arnold et al., 2013) was used to assess organisational stressors, experienced by Team Ireland athletes and staff pre and post the 'Tokyo 2020' Olympic Games. The OSI-SP is a 23-item questionnaire that assesses organisational stressors in competitive sport. It measures the frequency, intensity, and duration of the stressors and has five subscales including: *Goals and Development, Logistics and Operations, Team Culture, Coaching, and Selection*. Responses are provided by a 6-point Likert-type scale with higher scores indicating a greater dimension (i.e. frequency, intensity, or duration) of organisational stressors. The OSI-SP has been found to be a valid and reliable measure (Arnold et al., 2013).

For the purposes of the present study, to reduce participant burden and to ensure ease of use on mobile phones, only the OSI-SP frequency response scale was collected from participants. Athletes were sent the original frequency questions of the OSI-SP while, with the scale's lead author's permission, the OSI-SP was modified for use with non-athletes. To ensure meaning for the coaches and staff participants, two types of modification, were implemented and modifications were kept to a minimum. The first modification type (6 of the 23 items) included changing a word to make sense for all support staff (e.g., Item-9 in the OSI-SP states 'In the past month I have experienced pressure with how my team is selected' only the latter

part of this was changed to read ‘... ‘how my athletes are selected’). The second modification type (3 of 23 items) included changing ‘the atmosphere surrounding my team’ to ‘the atmosphere surrounding my work team.’ All the changes were as above, involving nouns and did not alter the meaning of the question.

Mental Health and Wellbeing. Two measures were used to assess the participants’ mental health and wellbeing. The first measure used was the Mental Health Continuum – Short Form (MHC-SF; Keyes, 2009). The MHC-SF is a 14-item questionnaire measuring emotional, social, and psychological wellbeing. Responses are provided on a 6-point Likert-type scale with higher scores indicating greater wellbeing. The MHC-SF has demonstrated good reliability and validity (Keyes, 2009; Franken et al., 2017). Underpinning the MHC-SF is the mental health continuum (Keyes, 2002). Keyes (2002) posits that adults with full mental health are ‘flourishing’ and experience high levels of wellbeing. In contrast, adults with poor mental health are ‘languishing’ and experience low levels of wellbeing, with associated severe limitations of daily living (e.g., lost days of work). In between these extremes are adults with moderate mental health and wellbeing (Keyes, 2002; Keyes, 2005).

Indeed there are other valid and reliable commonly used measures of well-being, and sport researchers have used a wide range of measures (Poucher et al., 2021). For example, the The Warwick-Edinburgh Mental Well-being Scale (WEMWBS), which is often used to evaluate intervention programmes. However, a limitation of the WEMWBS includes its susceptibility to social desirability bias, which was higher than that of other comparable scales (Tennant et al., 2007). The fact that the MHC-SF focuses on well-being as a continuum and not simply a positive state, meant that with this measure, it could identify participants that were struggling with their well-being, even if they did not have mental health difficulties.

The second measure used was the International Olympic Committee (IOC) Sport Mental Health Assessment Tool 1 (SMHAT-1). This 10-item questionnaire aims to identify

elite athletes at risk of or experiencing mental health symptoms, to facilitate timely support. The responses are provided by a 5-point Likert-type scale, with a cut off score of 17 or above to indicate mental health concerns, out of a total score of 50. The SMHAT-1 must be administered by a sports medicine physician or licensed/registered health professional (i.e., the first author). In its current form, it was found to have moderate to good internal consistency. With the scale's lead author's permission, some of the statements (4 items) were minimally modified to make contextual sense for the support staff of Team Ireland (e.g., 'It was difficult to be around my teammates' was changed to 'It was difficult to be around my colleagues'). The word 'training' was substituted by 'work'; 'off-field' was substituted by 'outside of work', and 'injury and or my performance' was substituted by 'my health or my performance at work'. Again, this was to ensure relevance to the participant.

Procedure

Ethical approval for the present study was obtained through the lead author's university research ethics committee. An online survey package was sent to all eligible participants with an information sheet, consent form, and the three questionnaires, along with demographic questions. The 33rd Olympic Games was due to be held in Tokyo, Japan in the summer of 2020. Unfortunately, due to the Coronavirus Pandemic, the Games were postponed by one year and took place between 23rd July and 8th August 2021. However, despite taking place in 2021, these Games maintained the title 'Tokyo 2020'. The survey was sent out two weeks before the opening ceremony (Time 1) and four weeks after the closing ceremony (Time 2) of 'Tokyo 2020'. While it would have been interesting, to have participants complete the survey during the 'Tokyo 2020' Games it was thought this may actually be a stressor or a distraction for participants, given the demands they would already be managing at that intense time. Likewise, responses would likely have been lower given their focus on their respective competitions. The Time 1 survey was sent out two weeks before the Games to insure inclusion of 'late qualifiers'

and yet not to be at a time, when athletes were finalising their preparations for the Games. The Time 2 survey was delayed to four weeks after the Games, due to an awareness that athletes and staff, may not engage with surveys earlier, as many take holidays immediately after the Games. All surveys were closed one week after they were sent out. Support staff were sent the Time 1 and Time 2 surveys via email by Sport Ireland (Governing body for Team Ireland). The athletes were sent the Time 1 survey, with the Sport Ireland medical broadcast and were sent the Time 2 survey by Sport Ireland email, as the medical broadcast was no longer in existence.

The participant information sheet described the study being undertaken, the required consent and information regarding specific procedures, such as the follow-up procedure if anyone scored above the cut-off score on the SMHAT-1. Responses of the SMHAT-1 were scored, by the researcher (who was also a qualified Clinical Psychologist), within hours of being received. If the respondents score was 17 points or over, they were sent an email requesting to arrange a follow-up phone call to check in. If arranged, the phone call involved the researcher checking in with and as required, supporting the respondent. The respondent was also provided with contact details of further psychological supports available before, during, and after the Games. With their permission, some informal qualitative contextual feedback was obtained from those deemed at risk during these follow-up check-in phone calls.

Data Analysis

Statistical analysis was performed using IBM SPSS Version 27.0. Descriptive statistics were calculated for Time 1 and Time 2. To understand the population that scored above the SMHAT-1 cut-off (17) and to investigate possible differences between athletes and staff, Pearson's chi-square analysis was used. Keyes's (2009) SPSS Syntax was used to calculate the participant categories, of Languishing, Moderate, and Flourishing mental health, at Time 1 and Time 2, for both athletes and staff. To assess the association between organisational stressors and mental health, Pearson correlations were run with the OSI-SP, MHC-SF, and SMHAT-1,

for Time 1 and Time 2 and for athletes and staff. Linear regressions were run to assess the relationships between variables (organisational stressors as the IV; wellbeing and mental health symptoms as the DVs) separately at each time point (e.g., Time 1 relationships, Time 2 relationships) and between each time point (from pre-games at Time 1 to post-games at Time 2) for the overall sample.

Results

Table 1 shows the participants demographics. As shown in Table 2, for staff at Time 1, there was a significant negative correlation between the OSI-SP and MHC-SF total scores ($r = -.49, p < .01$), suggesting that increases in organisational stressor scores were accompanied by decreases in mental wellbeing. However, for athletes at Time 1, there was no significant correlation between the OSI-SP and MHC-SF total scores ($r = -.36, p > .05$).

As shown in Table 3, for staff at Time 2, there was a significant negative correlation between the OSI-SP and MHC-SF total scores ($r = -.51, p < .01$), meaning that increases in organisational stressor scores were accompanied by decreases in mental wellbeing. However, for athletes at Time 2, there was no significant correlation between the OSI-SP and MHC-SF total scores ($r = -.06, p > .05$).

As can be seen in Table 4, most respondents on the SMHAT-1 were considered at-risk of mental health symptoms at both Time 1 and Time 2. When this was investigated further, at Time 1, 17 athletes (51.5%) and 48 staff (75.0%) scored in the at-risk range. At Time 2, 25 athletes (80.6%) and 18 staff (50.0%) scored in the at-risk range. Therefore, at Time 1 significantly more staff scored in the high-risk range than athletes ($\chi^2 = 5.4; p < 0.05$), and at Time 2 significantly more athletes scored in the high-risk range than staff ($\chi^2 = 6.8; p < 0.05$). Scores from the MHC-SF showed that staff had a higher percentage in the Flourishing category than athletes in both Time 1 and Time 2 (Time 1: Staff 46.5%, Athletes 39.3%; Time 2: Staff

36.6%, Athletes 25.0%). The overall number of participants flourishing decreased from Time 1 (43%) to Time 2 (31%).

At Time 1, there was a significant positive correlation between the OSI-SP and SMHAT-1 total scores for both athletes ($r = 0.66, p < 0.01$) and staff ($r = 0.69, p < 0.01$), meaning that increases in organisational stressor scores were accompanied by increases in risk of mental health symptoms (see Table 5). These significant correlations were also shown at Time 2: athletes ($r = 0.88, p < 0.01$); staff ($r = 0.62, p < 0.01$).

The following linear regressions were also conducted for the overall sample across timepoints to assess and compare the relationships between organisational stressors as the IV, and wellbeing and risk of mental illness as the DVs between and across timepoints (pre-games and post-games, and change over time from pre- to post-games).

Organisational Stressors (IV) and Wellbeing (DV). First, organisational stressors were inversely associated with wellbeing at Time 1 pre-games (OSI-SP-Time 1 and MHC-SF-Time 1: $R = .46, R^2 = .21, \nabla R^2 = .20, t = 24.01$, standardized $\beta = -.46, p < .001$); at Time 2 post-games (OSI-SP-Time 2 and MHC-SF-Time 2: $R = .35, R^2 = .12, \nabla R^2 = .11, t = 20.31$, standardized $\beta = -.35, p = .003$); and from Time 1 pre-games to Time 2 post-games (OSI-SP-Time 1 and MHC-SF-Time 2: $R = .48, R^2 = .23, \nabla R^2 = .21, t = 16.45$, standardized $\beta = -.48, p = .003$), thus meaning that as organisational stressors increased, wellbeing decreased at both pre- and post-games, and over time for both athletes and staff.

Organisational Stressors (IV) and Mental Health Symptoms (DV). Likewise, an increase in organisational stressors was positively associated with an increase in mental health symptoms at Time 1 pre-games (OSI-SP-Time 1 and SMHAT-1-Time 1: $R = .69, R^2 = .48, \nabla R^2 = .47, t = 14.88$, standardized $\beta = .69, p < .001$); at Time 2 post-games (OSI-SP-Time 2 and SMHAT-1-Time 2: $R = .67, R^2 = .45, \nabla R^2 = .44, t = 9.46$, standardized $\beta = .67, p < .001$); and from Time 1 pre-games to Time 2 post-games (OSI-SP-Time 1 and SMHAT-1-Time

2: $R = .34$, $R^2 = .11$, $\nabla R^2 = .09$, $t = 5.32$, standardized $\beta = .34$, $p = .04$), thus meaning that as organisational stressors increased, mental health symptoms increased at both pre- and post-games, and over time. Overall results demonstrate a clear inverse association between organisational stressors and wellbeing, and positive associations between organisational stressors and mental health symptoms in elite athletes and support staff of Team Ireland leading into and following the Olympic Games.

Summary of Findings and Contextual Information

At Time 1, the MHC-SF results highlight significant decreases in social and psychological wellbeing associated with organisational stressors for staff. All sub-scales (Goals and Development, Logistics and Operations, Team and Culture, Coaching, and Selection) of the OSI-SP were stressors for staff but Team and Culture were the most significant. Team and Culture, Goals and Development, and Selection, were the most significant organisational stressors for athletes. Athletes' decreases in wellbeing were in the MHC-SF Emotional category. Contextual information (see Figures 1 and 2) provided in follow up phone calls, suggests that some athletes were experiencing a type of nervous excitement emotionally, pre-games and that some staff were experiencing tension among colleagues and personal stress, due to overwhelming logistical and operational demands as the Tokyo 2020 Olympic Games was delayed by 1-year and had many restrictions in place due to the pandemic.

At Time 2 the association of organisational stressors and mental wellbeing remained significant for staff, particularly in the MHC-SF psychological domain and for all categories of the OSI-SP. For athletes, the association was significant in the emotional domain (MHC-SF) and for the Logistics and Operations and Team and Culture categories of the OSI-SP. Contextual information from the follow up phone calls at Time 2, suggested extreme tiredness, lack of psychological safety (Cooke et al., 2024; Edmondson, 2018) and contractual and funding issues as being prevalent, post-games concerns.

Discussion

The primary aim of the present study was to assess the relationship between organisational stressors and mental health and wellbeing indicators of the Irish Olympic Team, pre- and post- the 'Tokyo 2020' Olympic Games. A secondary aim was to also examine the differences in mental health and well being between the athletes and staff of Team Ireland pre and post Games. The results of the current study speak to both of these aims. Mental health was explored with a focus on mental wellbeing and mental health symptoms. Using the MHC-SF, more participants were flourishing and less were languishing than in Keyes (2005) findings of the U.S. national sample (2016), indicating greater mental wellbeing amongst elite sportspeople. This is not unexpected as the participants in this study are not representative of the general population and may have more access or opportunity to facilitators of mental health (e.g., Leyland et al., 2022), than the general population. However, trends in the data from the current study show that there was a higher percentage of staff than athletes, in the flourishing category, across both time points. Interestingly, there was a decrease in number of both athletes and staff, in the flourishing category, from Time 1 to Time 2, perhaps indicating a presence of the 'post-Olympic blues' for both staff and athletes (Howells & Lucassen, 2018; Bradshaw et al., 2022; DeWolfe et al., 2022).

Current findings showed that for staff, there was a significant relationship between organisational stressors, and decreased mental wellbeing, and increased risk of mental health symptoms at both time points and over time. While for athletes, there was a significant relationship between organisational stressors and increased risk of mental health symptoms only. Similar findings between organisational stressors and mental health and wellbeing are supported by other studies looking at athletes and coaches (Arnold et al., 2017; Kegelaers et al., 2021; McLoughlin et al., 2022). The present study is the first to demonstrate the relationship between organisational stressors, mental wellbeing, and mental health over multiple time

points in an elite population around an Olympic Games, including both athletes and support staff. Whilst similar results have been found previously in qualitative and single time point studies with either athletes (e.g., Leyland et al., 2022) or support staff (e.g., Pilkington et al., 2022) and in semi-elite samples (e.g., Simms et al., 2021), it is to the best of the authors knowledge the first time a relationship has been found over multiple time points in an elite sample around an Olympic Games, and with both groups of athletes and support staff.

A higher number of athletes and staff were above the at-risk score, for mental health symptoms (SMHAT-1) than not, for both Time 1 and 2. As this is a relatively new assessment, there are not sufficient comparative studies to fully compare and contrast this finding. However, this could perhaps be explained by the heightened psychological distress caused by the postponement of the Tokyo Olympics for athletes and staff (Hakansson et al., 2021) or the observation that major events such as an Olympic Games can illuminate and at times worsen athletes' mental health symptoms (Jia et al., 2022). Findings of the current study are also supported by recent studies in athlete samples (Leyland et al., 2022), which highlighted that female athletes, and athletes under 25 tended to have higher prevalence of wellbeing issues and in coaches and support staff samples (Pilkington et al. 2022) which highlighted that approximately 40% of the sample had "probable casenes" of mental health.

Most organisational stressors (apart from coaching and selection for athletes in Time 2) had a significant relationship with an increased risk in mental health symptoms on the SMHAT-1. Lundqvist and Andersson (2021) contend that the impact of stressors on mental wellbeing and mental health symptoms is highly complex, with an interplay of biological, psychological, and socio-environmental variables. Given this novel finding in an elite sample, qualitative research methods could provide a deeper understanding of participants' lived experiences of organisational stress and mental health pre, during, and post- major competitions.

The main findings of note from the current study are that staff were at significantly higher risk for potential mental health symptoms than athletes at Time 1 (pre-games) and that athletes were at significantly higher risk of mental health symptoms than staff at Time 2 (post-games). This may in part, be explained by the fact that, the significant logistic and cultural issues, experienced by staff at Time 1 (pre-games), were greatly reduced or alleviated at Time 2 (post-games). All the athletes who completed the Time 1 survey, were already selected to go to 'Tokyo 2020' and as a result may have been more excited and experienced less stressors at this time (e.g., selection, logistics). However, at Time 2 they may have been experiencing disappointment about their performance, coping with the consequences of their Olympics outcome, and/or facing concerns about future funding or dealing with career transitions to life after sport (Gould et al., 1999; Howells & Lucassen, 2018). The differing athlete and staff needs, at different times in the Olympic cycle (pre and post), should be further investigated and supported in an appropriate, targeted manner. While most of the athlete welfare attention is provided pre and during games, it is important not to forget post-games needs.

Practical Application of Findings

Evidence Based Practice (EBP) in psychology tends to outperform clinical decision making alone. It enables informed decision making and demands accountability and transparency (Bowes et al., 2020). However, it is also vital to consider Practice Based Evidence (PBE) when implementing research, to fully understand the social, political, and cultural context of participants (Bowes et al., 2020). With this in mind, participants of this study, with their agreement, were telephoned if their scores were above the at-risk threshold on the SMHAT-1. These phone calls aided the clinician in understanding the context and possible needs of the participants and in providing them with information regarding available supports. Some participants discussed their level of coping strategy awareness and implementation. The context of the postponement of the 2020 Games to summer 2021, due to the Covid-19

pandemic, was expressed as having a significant impact on the stress levels of participants. A survey by the Swedish Olympic Committee found four main themes of psychological challenges for athletes which included, 1) low mood, 2) coping with uncertainty, 3) adjusting to decreased training time and increased leisure time, and 4) anxiety and psychological reactions related to Covid-19 symptoms or worry about relatives who were considered in an at-risk group for Covid-19 (Lundqvist et al., 2022).

Poucher et al. (2021) called for more multi-time point studies to be able to pinpoint specific stressful times and suggested that elite athletes may experience a decline in mental health post Olympic Games. The current study attempted to answer this call and provide empirical evidence of this trend and therefore practical implications for intervention. Stress management interventions may be appropriate in these situations where identifying and limiting stressors or providing further coping strategies to manage and deal with those stressors that are unavoidable are offered. For example, pressure training (Fletcher & Arnold, 2021), could be a useful practical tool here for athletes, coaches, and support staff.

In the current study, pre-games, staff participants expressed increased stress due to plans affected by the Covid-19 regulations. They had considerably more than usual paperwork and arrangements to complete regarding travel, accommodation, dining, and socialising, which greatly increased their workload, while having fewer available staff, due to social distancing requirements. Other stressors named by participants included, leaving family behind who had business and childcare demands to manage while they attended the games, having no time to destress, relationship difficulties within their group, and career/contract concerns.

Post-games, concerns expressed by participants during the phone calls included, worries regarding future funding, contract renewal, life after sport, exhaustion and lack of motivation. Whilst practical support could take the form of a primary stress management intervention, where the aim is to eliminate or minimize the stressors that are encountered

(Arnold & Fletcher, 2021), it might also be useful to consider implementing a secondary stress management intervention which supports athletes' responses to demands. Indeed, participants expressed varying levels of knowledge and implementation of coping strategies. Some expressed 'pushing through' as their coping mechanism while others deliberately planned recovery activities or rest time. This was helpful to understand, in efforts to support the participant. Implementation of effective coping strategies and mental rest would seem to be an important area of focus and education prior to future Games for both athletes and staff (see Eccles et al., 2023; Fletcher & Arnold, 2021).

In speaking with staff, pre-games seems to be an especially demanding time. Some staff seemed to believe that supports were available just for athletes but were grateful to learn that the same supports were available to them also. In contrast, the clinician got a sense from the phone calls with some athletes, that they felt quite at a loss post-games (cf. Howells & Lucassen, 2018) not knowing what to do with themselves moving away from their highly structured routines. They had feelings of being demotivated and somewhat low and the support staff that they had spent so much time with in the previous months, were suddenly less intensely involved in their lives. This may also speak to the need to increase mental health literacy among participants, as sport governing bodies are beginning to encourage coaches and athletes to undertake such training to recognize the warning signs (Topping et al., 2023).

Appreciation was expressed for having the phone calls in themselves, which some athletes and staff expressed as being helpful and supportive, as were the outdoor organised activities/get togethers (compliant with the Covid-19 regulations) that were arranged, during the Games. These enabled the much needed connection and support for people, expressed by participants. Interestingly, interpersonal issues are frequently expressed organisational stressors but they can also be a coping strategy (Arnold et al., 2018; Staff et al., 2017; Simpson et al., 2021). The phone calls with athletes and staff were important in providing context and

meaning for their elevated scores, which in turn guided provision of support. These phone conversations with participants also highlighted timely support needs for athletes and staff going to future Games. Previous research has found correlates of poor wellbeing link to dissatisfaction with life balance and social support (Pilkington et al., 2022) which could speak to the importance of organisational culture. Previous research has also shown social support to have a reverse buffering effect if the source of the support may also come from the source of the stressor (Arnold et al., 2018). Thus highlighting the importance to have independent and neutral support systems in place such as what was done with Team Ireland.

Strengths and Limitations

The present study provides the first exploration of the relationship between organisational stressors, mental health, and wellbeing over multiple time points in a sample of elite athletes and support staff. A further strength was that the sample included representation from all members of Team Ireland athletes, coaches, and support staff, from a wide variety of sports who interact with and influence each other on a regular basis. Another strength is that the study included both a measure of mental wellbeing and one of mental health symptoms (Lundqvist & Andersson, 2021). It is one of the earliest studies to use the IOC SMHAT-1 measure, thereby contributing to the research in this area (Gouttebarga et al., 2021). The relatively small amount of informal qualitative contextual feedback shared by participants, while not representative, did provide some important context, worthy of being noted. It provided important contextual, affective information in relation to participants' mental health symptoms (Ekkekakis, 2013; Martin et al., 2019). It also highlights the importance of qualitative data for future studies, given the complexity of mental health and mental wellbeing.

Notwithstanding these strengths, it is important to note study limitations. First, only 35 staff and 9 athletes completed both Time 1 and Time 2 surveys. Also, the different sample size of the athletes and staff, meant that certain data was not directly comparable. This issue is

commonplace in multi-timepoint research, where there can be significant attrition rates. Additionally, even though it was a multi-timepoint study, the findings are still correlational. Further, in elite sport, athletes have numerous demands on their time and, at the time of a major competition such as the Olympics, can attempt to minimise all distractions and be protected from outside influences (including research participation) by their support team. Secondly, the sample was not randomised and was relatively small. Still, there is value in collecting data from small samples that are difficult to access but can still yield high value insights (Lakens, 2022).

In conclusion, the evidence regarding determinants, age of onset, and consequences of mental health symptoms needs to be joined with the understanding that organisational demands can impact individuals' mental health and wellbeing in elite sport settings. Indeed, the novel findings of the present study highlight the potential detrimental relationship that organisational stressors can have with athletes' and staffs' mental health and wellbeing in elite sport at the pinnacle event of elite sport careers. Thus, as well as directly addressing the stressors that are encountered in elite sport, the known protective and supportive factors that reduce mental ill-health, should be embedded in the culture of elite organisations for the benefit of all its members. Further, mental health support should be accessible to athletes and staff pre- and post-games, in an appropriate and needs based manner. With a mental health lens, this could include assessing and addressing cultural and logistical structures, organisational policies, integrated support teams, psychology, and clinical support. The study contributes to the understanding of the relationship between organizational stressors and mental health of elite athletes and support staff. It highlights the value of preventative screening to be able to target at risk athletes and staff, and to tailor support for individuals through follow up phone calls and independent, neutral services. It also highlights how organisations could allocate resources, in a timely fashion to better support athletes and staff both pre and post Games.

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References

- Arnold, R., Brown, D., & McLoughlin, E. (2024). An examination of the relationship between sport performers' organizational stressor dimensions, physical health, and well-being. *Journal of Sports Sciences*, 42(11), 1050-1060.
- Arnold, R., Collington, S., Manley, H., Rees, S., Soanes, J., & Williams, M. (2019). "The team behind the team": Exploring the organizational stressor experiences of sport science and management staff in elite sport. *Journal of Applied Sport Psychology*, 31(1), 7-26.
- Arnold, R., Edwards, T., & Rees, T. (2018). Organizational stressors, social support, and implications for subjective performance in high-level sport. *Psychology of Sport and Exercise*, 39, 204-212.
- Arnold, R., & Fletcher, D. (2012). A research synthesis and taxonomic classification of the organizational stressors encountered by sport performers. *Journal of Sport and Exercise Psychology*, 34(3), 397-429.
- Arnold, R., Fletcher, D., & Daniels, K. (2013). Development and validation of the organizational stressor indicator for sport performers (OSI-SP). *Journal of Sport and Exercise Psychology*, 35(2), 180-196.
- Arnold, R., Fletcher, D., & Daniels, K. (2017). Organisational stressors, coping, and outcomes in competitive sport. *Journal of Sports Sciences*, 35(7), 694-703.
- Arnold, R., & Fletcher, D. (Eds.). (2021). *Stress, well-being, and performance in sport*. Routledge.
- Bauman, N. J. (2016). The stigma of mental health in athletes: are mental toughness and mental health seen as contradictory in elite sport? *British Journal of Sports Medicine*, 50(3), 135-136.
- Bowes, S. M., Ammirati, R. J., Costello, T. H., Basterfield, C., & Lilienfeld, S. O.

- (2020). Cognitive biases, heuristics, and logical fallacies in clinical practice: A brief field guide for practicing clinicians and supervisors. *Professional Psychology: Research and Practice*, 51(5), 435-445.
- Bradshaw, H., Howells, K., & Lucassen, M. (2022). Abandoned to manage the post-Olympic blues: Olympians reflect on their experiences and the need for a change. *Qualitative Research in Sport, Exercise, and Health*, 14(5), 706-723.
- Castaldelli-Maia, J. M., Gallinaro, J. G. D. M., Falcão, R. S., Gouttebauge, V., Hitchcock, M. E., Hainline, B., & Stull, T. (2019). Mental health symptoms and disorders in elite athletes: a systematic review on cultural influencers and barriers to athletes seeking treatment. *British Journal of Sports Medicine*, 53(11), 707-721.
- Chen, Y., Buggy, C., & Kelly, S. (2019). Winning at all costs: a review of risk-taking behaviour and sporting injury from an occupational safety and health perspective. *Sports Medicine-Open*, 5(1), 1-21.
- Chang, C., Putukian, M., Aerni, G., Diamond, A., Hong, G., Ingram, Y., & Wolanin, A. (2020). Mental health issues and psychological factors in athletes: detection, management, effect on performance and prevention: American Medical Society for Sports Medicine Position Statement—Executive Summary. *British Journal of Sports Medicine*, 54(4), 216-220.
- Cooke, M., Paradis, K. F., Sharp, L. S., Woods, D., & Sarkar, M. (2024). Psychological safety: A qualitative study on coach and athlete perceptions. *International Sports Coaching Journal*.
- DeFreese, J. D., & Smith, A. L. (2014). Athlete social support, negative social interactions, and psychological health across a competitive sport season. *Journal of Sport & Exercise Psychology*, 36(6), 619-630.
- DeWolfe, C. E., & Dithurbide, L. (2022). Beware of the blues: wellbeing of coaches and

- support staff throughout the Olympic games. *International Journal of Sports Science & Coaching*, 17(6), 1243-1257.
- Eccles, D. W., Gretton, T. W., Harris, N., & Wolf, S. A. (2023). "Switching the mind off completely"—Understanding the psychology of rest in coaches. *Psychology of Sport and Exercise*, 102479.
- Edmondson, A. C. (2018). *The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth*. John Wiley & Sons.
- Ekkekakis, P. (2013). *The measurement of affect, mood, and emotion: A guide for health-behavioral research*. Cambridge University Press.
- Fletcher, D., & Arnold, R. (2017). Stress in sport: The role of the organizational environment. In C. R. D Wagstaff (Ed.), *The Organizational Psychology of Sport* (pp. 101-118). Routledge.
- Fletcher, D., & Arnold, R. (2021). Stress and pressure training. In *Stress, well-being, and performance in sport* (pp. 261-296). Routledge.
- Fletcher, D., Hanton, S., & Mellalieu, S. D. (2008). *An organizational stress review: Conceptual and theoretical issues in competitive sport*. In S. Hanton & S. D. Mellalieu (Eds.), *Literature Reviews in Sport Psychology* (pp. 1-53). Nova Science Publishers.
- Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts, research, and practice. *Journal of Sports Sciences*, 28(2), 127-137.
- Fletcher, D., & Wagstaff, C. R. (2009). Organizational psychology in elite sport: Its emergence, application, and future. *Psychology of Sport and Exercise*, 10(4), 427-434.
- Fogaca, J. L. (2021). Combining mental health and performance interventions: Coping and social support for student-athletes. *Journal of Applied Sport Psychology*, 33(1), 4-19.

- Franken, K., Lamers, S. M., Ten Klooster, P. M., Bohlmeijer, E. T., & Westerhof, G. J. (2018). Validation of the Mental Health Continuum-Short Form and the dual continua model of well-being and psychopathology in an adult mental health setting. *Journal of Clinical Psychology, 74*(12), 2187-2202.
- Gorczynski, P., Gibson, K., Thelwell, R., Papatomas, A., Harwood, C., & Kinnafick, F. (2019). The BASES expert statement on mental health literacy in elite sport. *The Sport and Exercise Scientist, 59*, 6-7.
- Gould, D., Greenleaf, C., Guinan, D., & Chung, Y. (2002). A survey of US Olympic coaches: Variables perceived to have influenced athlete performances and coach effectiveness. *The Sport Psychologist, 16*(3), 229-250.
- Gould, D., Guinan, D., Greenleaf, C., Medbery, R., & Peterson, K. (1999). Factors affecting Olympic performance: Perceptions of athletes and coaches from more and less successful teams. *The Sport Psychologist, 13*(4), 371-394.
- Gouttebauge, V., Bindra, A., Blauwet, C., Campriani, N., Currie, A., Engebretsen, L., & Budgett, R. (2021). International Olympic Committee (IOC) Sport Mental Health Assessment Tool 1 (SMHAT-1) and Sport Mental Health Recognition Tool 1 (SMHRT-1): towards better support of athletes' mental health. *British journal of Sports Medicine, 55*(1), 30-37.
- Gouttebauge, V., Castaldelli-Maia, J. M., Gorczynski, P., Hainline, B., Hitchcock, M. E., Kerkhoffs, G. M., & Reardon, C. L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: a systematic review and meta-analysis. *British Journal of Sports Medicine, 53*(11), 700-706.
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry, 10*(1), 1-9.

- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: a qualitative study. *BMC Psychiatry, 12*(1), 1-14.
- Hainline, B., & Reardon, C. L. (2019). Breaking a taboo: why the International Olympic Committee convened experts to develop a consensus statement on mental health in elite athletes. *British Journal of Sports Medicine, 53*(11), 665-666.
- Håkansson, A., Moesch, K., Jönsson, C., & Kenttä, G. (2021). Potentially prolonged psychological distress from postponed olympic and paralympic games during COVID-19—career uncertainty in elite athletes. *International Journal of Environmental Research and Public Health, 18*(1), 2.
- Hardy, L., Jones, J. G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. John Wiley & Sons.
- Heinilä, K. (1984). The totalisation process in international sport. In M. Ilmarinen (Ed.), *Sport and International Understanding* (pp. 20-30). Springer.
- Henriksen, K., Schinke, R., McCann, S., Durand-Bush, N., Moesch, K., Parham, W. D., & Hunziker, J. (2020). Athlete mental health in the Olympic/Paralympic quadrennium: a multi-societal consensus statement. *International Journal of Sport and Exercise Psychology, 18*(3), 391-408.
- Henriksen, K., Schinke, R., Moesch, K., McCann, S., Parham, W. D., Larsen, C. H., & Terry, P. (2020). Consensus statement on improving the mental health of high-performance athletes. *International Journal of Sport and Exercise Psychology, 18*(5), 553-560.
- Howells, K., & Lucassen, M. (2018). 'Post-Olympic blues'—The diminution of celebrity in Olympic athletes. *Psychology of Sport and Exercise, 37*, 67-78.
- Jensen, R., Christiansen, A. V., & Henriksen, K. (2014). The Olympic games: The

experience of a lifetime or simply the most important competition of an athletic career? *Physical Culture and Sport*, 64(1), 41.

Jia, L., Carter, M. V., Cusano, A., Li, X., Kelly IV, J. D., Bartley, J. D., & Parisien, R. L. (2023). The effect of the COVID-19 pandemic on the mental and emotional health of athletes: a systematic review. *The American Journal of Sports Medicine*, 51(8), 2207-2215.

Kegelaers, J., Wylleman, P., van Bree, I. B. N., Wessels, F., & Oudejans, R. R. (2021). Mental Health in Elite-Level Coaches: Prevalence Rates and Associated Impact of Coach Stressors and Psychological Resilience. *International Sport Coaching Journal*, 8(3), 338-347.

Kerr, G., Battaglia, A., & Stirling, A. (2019). Maltreatment in youth sport: A systemic issue. *Kinesiology Review*, 8(3), 237-243.

Kerr, G., & Stirling, A. (2019). Where is safeguarding in sport psychology research and practice?. *Journal of Applied Sport Psychology*, 31(4), 367-384.

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207-222.

Keyes, C. L. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology*, 73(3), 539-548.

Keyes, C. L. (2009). Brief description of the mental health continuum short form (MHC-SF).

Kim, S. S. Y., Hamilton, B., Beable, S., Cavadino, A., & Fulcher, M. L. (2020). Elite coaches have a similar prevalence of depressive symptoms to the general population and lower rates than elite athletes. *BMJ Open Sport & Exercise Medicine*, 6(1), e000719.

- Küttel, A., & Larsen, C. H. (2020). Risk and protective factors for mental health in elite athletes: a scoping review. *International Review of Sport and Exercise Psychology, 13*(1), 231-265.
- Lakens, D. (2022). Sample size justification. *Collabra: Psychology, 8*(1), 33267.
- Leyland, S. D., Currie, A., Board, L., Mistry, A., Jacques, R., Ranson, C. (2022). A Survey of the Mental Health of UK Olympic and Paralympic Sport Athletes. *Journal of Athlete Development and Experience, 4*(2), 160-172.
- Lundqvist, C., & Andersson, G. (2021). Let's Talk About Mental Health and Mental Disorders in Elite Sports: A Narrative Review of Theoretical Perspectives. *Frontiers in Psychology, 2515*.
- Lundqvist, C., Macdougall, H., Noguchi, Y., Malherbe, A., & Abejean, F. (2022). When COVID-19 struck the world and elite sports: Psychological challenges and support provision in five countries during the first phase of the pandemic. *Journal of Sport Psychology in Action, 13*(2), 116-128.
- Marmot, M. (2005). Social determinants of health inequalities. *The Lancet, 365*(9464), 1099-1104.
- Martin, J. J., Beasley, V. L., & Guerrero, M. D. (2019). Sport psychology research: Proper standards and limitations. In M. H. Anshel, T. A. Petrie, & J. A. Steinfeldt (Eds.), *APA handbook of sport and exercise psychology, Vol. 1. Sport psychology* (pp. 17–40). American Psychological Association.
- McLoughlin, E., Arnold, R., Fletcher, D., Spahr, C. M., Slavich, G. M., & Moore, L. J. (2022). Assessing lifetime stressor exposure in sport performers: Associations with trait stress appraisals, health, well-being, and performance. *Psychology of Sport and Exercise, 58*, 102078.
- Mountjoy, M., Sundgot-Borgen, J., Burke, L., Ackerman, K. E., Blauwet, C.,

- Constantini, N., & Budgett, R. (2018). International Olympic Committee (IOC) consensus statement on relative energy deficiency in sport (RED-S): 2018 update. *International Journal of Sport Nutrition and Exercise Metabolism*, 28(4), 316-331.
- Olusoga, P., Maynard, I., Butt, J., & Hays, K. (2014). Coaching under pressure: Mental skills training for sports coaches. *Sport and Exercise Psychology Review*, 10(3), 31-44.
- Olusoga, P., Maynard, I., Hays, K., & Butt, J. (2012). Coaching under pressure: A study of Olympic coaches. *Journal of Sports Sciences*, 30(3), 229-239.
- Pilkington, V., Rice, S. M., Walton, C. C., Gwyther, K., Olive, L., Butterworth, M., Clements, M., Cross, G., & Purcell, R. (2022). Prevalence and correlates of mental health symptoms and well-being among elite sport coaches and high-performance support staff. *Sports Medicine-Open*, 8(1), 1-14.
- Poucher, Z. A., Tamminen, K. A., Kerr, G., & Cairney, J. (2021). A commentary on mental health research in elite sport. *Journal of Applied Sport Psychology*, 33(1), 60-82.
- Purcell, R., Pilkington, V., Carberry, S., Reid, D., Gwyther, K., Hall, K., & Rice, S. (2022). An evidence-informed framework to promote mental wellbeing in elite sport. *Frontiers in Psychology*, 13, 780359.
- Reardon, C. L., Hainline, B., Aron, C. M., Baron, D., Baum, A. L., Bindra, A., & Engebretsen, L. (2019). Mental health in elite athletes: International Olympic Committee consensus statement (2019). *British Journal of Sports Medicine*, 53(11), 667-69
- Roberts, G. A., Arnold, R., Tuner, J. E., Colclough, M., & Bilzon, J. (2019). A Longitudinal Examination of Military Veterans' Invictus Games Stress Experiences. *Frontiers in Psychology*, 10, 1934.

- Sarkar, M., & Hilton, N. K. (2020). Psychological resilience in Olympic medal-winning coaches: A longitudinal qualitative study. *International Sport Coaching Journal*, 7(2), 209-219.
- Saxena, S., Funk, M. K., & Chisholm, D. (2015). Comprehensive mental health action plan 2013–2020. *EMHJ-Eastern Mediterranean Health Journal*, 21(7), 461-463.
- Simms, M., Arnold, R., Turner, J. E., & Hays, K. (2021). A repeated-measures examination of organizational stressors, perceived psychological and physical health, and perceived performance in semi-elite athletes. *Journal of Sports Sciences*, 39(1), 64-77.
- Simpson, R. A., Didymus, F. F., & Williams, T. L. (2021). Organizational stress and well-being in competitive sport: a systematic review. *International Review of Sport and Exercise Psychology*, 1-29.
- Staff, H. R., Didymus, F. F., & Backhouse, S. H. (2017). The antecedents and outcomes of dyadic coping in close personal relationships: A systematic review and narrative synthesis. *Anxiety, Stress, & Coping*, 30(5), 498-520.
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., & Stewart-Brown, S. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health and Quality of life Outcomes*, 5, 1-13.
- Thelwell, R. C., Wagstaff, C. R., Chapman, M. T., & Kenttä, G. (2017). Examining coaches' perceptions of how their stress influences the coach-athlete relationship. *Journal of Sports Sciences*, 35(19), 1928-1939.
- Thelwell, R. C., Wagstaff, C. R., Rayner, A., Chapman, M., & Barker, J. (2017). Exploring athletes' perceptions of coach stress in elite sport environments. *Journal of Sports Sciences*, 35(1), 44-55.
- Topping, R., Paradis, K. F., & Ferguson, K. (2023). Assessing the Irish Football

- Association's "Ahead of the Game" coach education training programme on raising mental health literacy in youth football coaches. *International Sport Coaching Journal*, 1(aop), 1-8.
- Velasco, A. A., Santa Cruz, I. S., Billings, J., Jimenez, M., & Rowe, S. (2020). What are the barriers, facilitators and interventions targeting help-seeking behaviours for common mental health problems in adolescents? A systematic review. *BMC Psychiatry*, 20(1), 1-22.
- Wagstaff, C. R. (2019). Taking stock of organizational psychology in sport.
- Wagstaff, C., & Hanton, S., (2016). Emotions in Sport Organizations. In C. R. D. Wagstaff (Ed.), *The organizational psychology of sport: Key issues and practical applications*. Routledge.
- Whittingham, J., Barker, J. B., Slater, M. J., & Arnold, R. (2021). An exploration of the organisational stressors encountered by international disability footballers. *Journal of Sports Sciences*, 39(3), 239-247.
- Willson, E., Kerr, G., Stirling, A., & Buono, S. (2022). Prevalence of maltreatment among Canadian National Team athletes. *Journal of Interpersonal Violence*, 37(21-22), NP19857-NP19879.
- World Health Organization. (2005). *Promoting mental health: concepts, emerging evidence, practice: a report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne*.
- World Health Organization. (2014). Social determinants of mental health.

Table 1

Participant Demographics

Variable	Time 1			Time 2		
	N	Mean	SD	N	Mean	SD
Sample Size	98			70		
Number of Athletes	33			32		
Number of Staff	65			38		
Age ^{1,2}		38.3	11.78		36.9	11.63
Gender						
Female	44			41		
Male	53			29		
Missing Values	1			0		
Number of Olympics Attended						
1	61			43		
2	15			8		
3	12			10		
4+	9			9		
Missing Values	1			0		

Notes.

¹The age range for all participants at both Time 1 and Time 2 is 19-75 years.

Time 1 ($M = 38.3$, $SD = 11.78$) Time 2 ($M = 36.9$, $SD = 11.63$).

²The age range for athletes at Time 1 was 19-59 years ($M = 29.12$, $SD = 8.88$) and at Time 2 was 19-41 years ($M = 27.69$, $SD = 4.78$); for staff, the age range at Time 1 was 19-75 years ($M = 43.06$, $SD = 1.02$) and at Time 2 was 31-75 years ($M = 44.92$, $SD = 9.72$).

Table 2

Relationship between organisational stressors (OSI-SP) and mental health continuum (MHC-SF) scores at Time 1, for athletes and staff

OSI-SP Subscale	MHC-SF Emotional		MHC-SF Social		MHC-SF Psychological		MHC-SF Total	
	Athletes	Staff	Athletes	Staff	Athletes	Staff	Athletes	Staff
Goals and Development	-0.48**	-0.28*	-0.31	-0.39**	-0.44**	-0.36**	-0.43**	-0.42**
Logistics and Operations	-0.31	-0.23	-0.17	-0.33**	-0.16	-0.30**	-0.21	-0.35**
Team and Culture	-0.58**	-0.34**	-0.23	-0.47**	-0.33	-0.44**	-0.37*	-0.49**
Coaching	-0.41*	-0.24	-0.08	-0.18	-0.05	-0.36**	-0.15	-0.31*
Selection	-0.40*	-0.26*	-0.43**	-0.43**	-0.11	-0.27*	-0.17	-0.39**
Total	-0.53**	-0.32*	-0.47**	-0.47**	-0.31	-0.43**	-0.36	-0.49**

Note. * $p < 0.05$; ** $p < 0.01$.

Table 3

Relationship between organisational stressors (OSI-SP) and mental health continuum (MHC-SF) scores at Time 2, for athletes and staff

OSI-SP Subscale	MHC-SF Emotional		MHC-SF Social		MHC-SF Psychological		MHC-SF Total	
	Athletes	Staff	Athletes	Staff	Athletes	Staff	Athletes	Staff
Goals and Development	-0.18	-0.27	-0.01	-0.45**	-0.01	-0.49**	-0.04	-0.48**
Logistics and Operations	-0.09	-0.34*	-0.01	-0.39*	-0.03	-0.42*	-0.03	-0.44**
Team and Culture	-0.21	-0.38*	-0.08	-0.27	-0.07	-0.43*	-0.11	-0.40*
Coaching	-0.22	-0.13	-0.06	-0.29	-0.12	-0.46*	-0.13	-0.32*
Selection	-0.21	-0.22	-0.10	-0.26	-0.13	-0.34*	-0.15	-0.33*
Total	-0.13	-0.38*	-0.03	-0.47**	-0.04	-0.49**	-0.06	-0.51**

Note. * $p < 0.05$; ** $p < 0.01$.

Table 4

SMHAT-1 classification scores for mental health symptoms and MHC-SF scores for wellbeing: flourishing and languishing

Variable	Time 1	Time 2
SMHAT-1 Classification	n	n
No Identified Risk (<score of 17)	32	27
At Risk (score of 17+)	65	43
Missing Values	1	0
Flourishing (Overall)	55	40
Flourishing Athletes	22	14
Flourishing Staff	33	26
Moderate/Not Flourishing	69	86
Moderate Athletes	33	41
Moderate Staff	36	45
Languishing	3	1
Languishing Athletes	1	1
Languishing Staff	2	0

Table 5

Relationship between organisational stressors (OSI-SP) and mental health symptoms (SMHAT-1) scores at Time 1 and Time 2, for athletes and staff

OSI-SP Subscale	SMHAT-1 Time 1		SMHAT-1 Time 2	
	Athletes	Staff	Athletes	Staff
Goals and Development	0.60**	0.66**	0.88**	0.63**
Logistics and Operations	0.59**	0.51**	0.85**	0.40**
Team and Culture	0.48**	0.64**	0.71**	0.66**
Coaching	0.52**	0.47**	0.18	0.37*
Selection	0.37*	0.52**	0.58	0.51**
Total	0.66**	0.69**	0.88**	0.62**

Note. * $p < 0.05$; ** $p < 0.01$. There is more power to detect statistical difference in the (larger) staff sample; smaller correlation magnitudes produce lower p values for staff.

Figure 1**Issues raised by participants during pre-games phone calls**

- Covid-19 pandemic regulations were a main source of stress – coping with numerous PCR tests, having to drive miles to a specified PCR test centre, coping with sudden travel ban changes, flight changes etc. Worry of false positive/negative PCR test results
- Certificate requirements for Japan, waiting weeks for different approvals e.g., Equipment
- Higher workload for reduced number of staff, due to Covid-19 regulations
- Work schedule for this Games significantly more, than for previous Games. Emphasis on logistics, rather than performance
- Leaving family/reduced staff to manage business/tasks back in Ireland
- Having to chase others to complete paperwork
- No time to destress
- Relationship difficulties within groups
- Some staff managing full time job outside of sport
- Many feeling tense, in two weeks, prior to travel to Japan
- Athletes tended to express nervous/excitement stress and stated they had supports in place. The issues included training demands, selection, and injury

Figure 2**Issues raised by participants during post-games phone calls**

- Worries about psychological safety – not safe to say how they really feel/to volunteer concerns or frustrations to coaches, teams, governing bodies etc., without worry of repercussion
- Not sufficient recovery time (staff & athletes)
- Support felt available and focused for athletes – less so for staff
- Dissonance between what people were told and the reality of situations
- High value and appreciation for any organised activities/get togethers enabling connection and support for people
- Worries re no medal no funding
- Too much bureaucracy/form filling – less time re coaching/performance
- Worry re life after sport/contract renewal etc.
- Too much emphasis on 4-year cycle, instead of longer term
- Difficulty managing work/life balance across two time zones
- Exhaustion/extreme tiredness/lack of motivation
- ‘Tokyo’ = most challenging Games by far, particularly due to pandemic