eSports: the need for a structured support system for players

Hee Jung Hong

View supplementary material ☐

Published online: 28 Jan 2022.

Submit your article to this journal ☐

Article views: 22

View related articles ☐

View Crossmark data ☐

Routledge
Taylor & Francis Group

eSports: the need for a structured support system for players

Hee Jung Hong 🔾

Faculty of Health Sciences and Sport, University of Stirling, Stirling, UK

ABSTRACT

Research question: This study investigates the roles and responsibilities of eSports stakeholders in ensuring eSports players' health and wellbeing through the following research questions: (1) What are the roles and responsibilities of different stakeholders in helping ensure eSports players' mental and physical health?; and (2) What are stakeholders' perspectives on criticisms which may affect players' health and wellbeing as well as the quality of their careers?

Research methods: Semi-structured interviews are conducted with 51 individuals from 18 nationalities including professional, semi-professional, amateur and retired players, a coach, game publishers, national eSports associations, a sponsor, a tournament organiser, and federations. Deductive analysis is applied to the data.

Results and Findings: The responsibility for ensuring eSports players' health and wellbeing should be shared by all stakeholders. Stakeholders are aware of criticisms of eSports and understand this; such criticisms may be deflected with a growing appreciation of eSports' value. The need for young players to balance training and commitment to eSports with broader educational requirements is highlighted.

Implications: The paper provides evidence on the need for a holistic developmental model for eSports players which provides better understanding of players' careers and developmental needs. The study highlights a need for collective engagement and effort by various stakeholders in developing player-centred support schemes. Drawing on evidence from key stakeholders, the study proposes a modified categorisation of the eSports ecosystem model.

Introduction

The eSports industry has grown rapidly over the past decade and is now recognised as a worldwide phenomenon (Himmelstein et al., 2017). Its popularity has led to a significant increase in the number of professional teams, with young people increasingly attracted by the prospect of making their career in the industry (Smith et al., 2019). eSports has also become an intriguing academic topic in sport management. Studies have focused on

the growth of the industry, its relationship to traditional sport, and on defining and under-standing eSports in a sport management context (e.g. Cunningham et al., 2018; Hallmann & Giel, 2018; Heere, 2018). eSports can be defined as 'a form of sports where the primary aspects of the sport are facilitated by electronic systems' where 'the input of players and teams as well as the output of the eSports system are mediated by human–computer inter-faces' (Hamari & Sjöblom, 2017, p. 211). In contrast, traditional sport is generally related to athletic or physical prowess (Summerley, 2020), characterised by 'a physical activity, requir-ing skill, that is competitive in nature and has a level of stability and institutional organis-ations' (Cunningham et al., 2018, p. 2). Bertschy et al. (2020) investigate how participation in sport simulation eSports games has influenced the meaning of football brands and suggest a need for more events linking traditional and eSports in order to highlight the key meaning of brands to both traditional and eSports fan communities. Qian et al. (2020) investigate eSports online spectatorship and provide insights on the significance of the eSports consu-mer market for sport management scholars and practitioners. Thus, eSports has the poten-tial for investigation in research areas already well-established in traditional sport contexts, e.g. spectator motivation, sport brands, sport events, and sport fans/communities.

Researchers from other disciplines have investigated eSports players' wellbeing and related issues. Bányai et al. (2019) argue that professional players experience significant stress during training and competition, suggesting further investigation is necessary to identify possible causes. Himmelstein et al. (2017) identify challenges faced by eSports players, e.g. limited anxiety-coping strategies, harassment from fans and other competi-tors, lack of self-development, and poor team dynamics/cohesion. Other researchers have focused on the negative consequences of eSports, e.g. players' sedentary lifestyles (Hat-tenstone, 2017), and the possible relationship between such sedentary behaviour and poor mental health (de Rezende et al., 2014; Owen et al., 2010). Heere (2018) also suggests that lack of physical activity is one of the major criticisms of eSports. However, it is unclear as to how stakeholders within the eSports ecosystem perceive such criticisms and how they have addressed the mental and physical health issues raised.

Stakeholders have been variously defined (see Ward & Chapman, 2008 for a full list of alternative definitions). Donaldson and Preston (1995) define stakeholders as those individ-uals/organisations which experience or anticipate experiencing potential benefits or dis-benefits as a result of an organization's actions. In the eSports context, Scholz (2020) pro-poses a 'Categorization of the eSports ecosystem' (Figure 1) detailing the industry's various stakeholders. They argue that 'every stakeholder will need to share some resources and potentially some sources of profit with other stakeholders to create a sustainable and thriv-ing business model network' (Scholz, 2020, p. 6). Since their perspectives are economic and business focused, they give limited consideration to health or social issues that may affect players' careers and lives (Peng et al., 2020). However, Scholz stresses the importance of sta-keholders sharing resources and good practice in order to ensure players' mental and phys-ical heath and combat criticisms of eSports. Scholz's (2020) work categorizing the eSports ecosystem is part of the theoretical basis of the study in terms of identifying key stakeholders within the eSports ecosystem.

In traditional sport contexts, researchers have argued that sport organisations and governing bodies are responsible for helping athletes to balance their lifestyles and develop well-rounded identities (Anderson & Morris, 2000). Other researchers have investigated organisational support (Hong & Coffee, 2018), family matters (Kossek
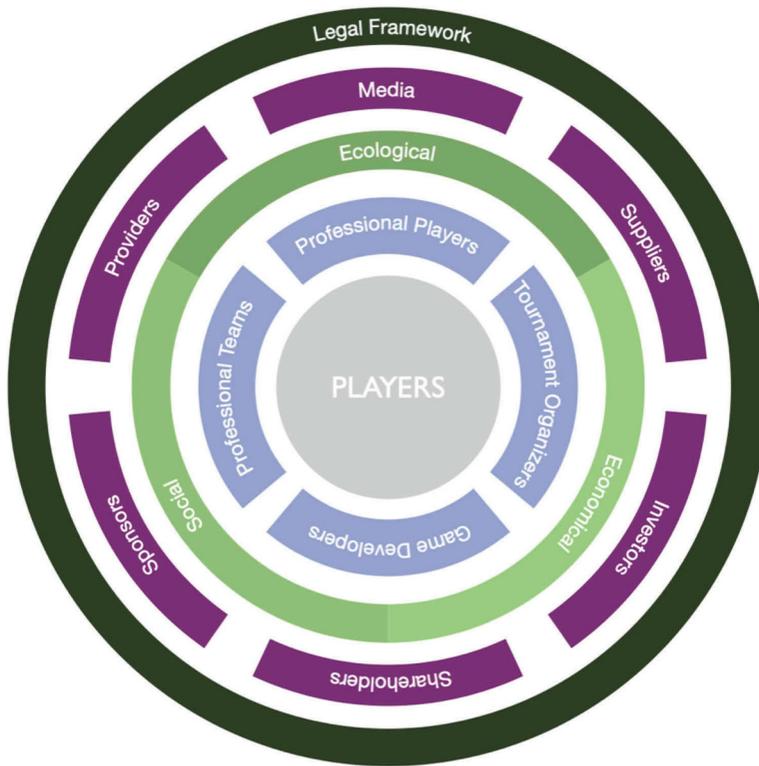
Figure 1. Categorization of the eSports ecosystem (Scholz, 2020).

et al., 2011), and educational and non-sports-related issues (Maier et al., 2016). In the context of increasing emphasis on support from sport organisations and governing bodies, Lavallee et al. (2001) found that some sport governing bodies and institutions had developed athlete support programmes. Hong and Coffee (2018) investigated such programmes in 19 different countries worldwide over more than a decade. Although their findings show that many national sport governing organisations have established support programmes to ensure athletes' career development and their psychological and (or) physical health, these are mainly available only to higher-level athletes (e.g. Olympians). In the UK, Grey-Thompson (2017) proposed seven priority areas for sport governing bodies and organisations to consider in relation to '*Duty of Care in Sport*': (1) Education, (2) Transition, (3) Representation of participants' voices, (4) Equality, diversity and inclusion, (5) Safeguarding, (6) Mental welfare, and (7) Safety, injury and medical issues. These areas are not limited to traditional sport. Evidence from traditional sport suggests a need to investigate ownership of responsibility to ensure eSports players' mental and physical health, career management and development. Although the eSports industry has only begun to develop such support systems, lessons may be learnt from traditional sports. However, the eSports industry has developed its own unique ecosystem, including stakeholders, e.g. game publishers, who do not feature in traditional sport (Scholz, 2020). It is important to identify how such stakeholders perceive their responsibilities in terms of protecting or enhancing eSports players' health and careers.

The present study aims, therefore, to identify the roles and responsibilities of eSports stakeholders in ensuring players' health and wellbeing and to explore their perspectives on criticism of eSports and issues relevant to the professionalism of players. There are two research questions: (1) What are the perceived roles and responsibilities of different stakeholders in helping ensure eSports players' mental and physical health?; and (2) What are stakeholders' perspectives on criticisms of eSports which may affect players' health and wellbeing as well as the quality of their careers?

Literature review

Esports players' careers and criticisms of eSports

High-performance athletes experience psychological (and other) challenges during their sporting careers including depression, loneliness, anxiety, and poor self-esteem (Taylor & Ogilvie, 2001; Webb et al., 1998). As sporting careers involve intense mental and physical demands, athletes may suffer from mental health issues and risk-taking behaviours (Hughes & Leavey, 2012). Rice et al. (2016) suggest that high-performance athletes experience stressors including injury, deselection, public and media attention and burnout. Rice et al. (2016) argue that athletes need to protect both their mental and physical health and that further intervention studies are required. Some researchers highlight the role of supporting programmes and interventions in ensuring athletes' wellbeing and in assisting them to experience successful transitions to retirement (Gouttebarge et al., 2015; Lardon & Fitzgerald, 2013). Wylleman (2019) also posit in their theoretical model that stakeholders (e.g. sport governing bodies, sponsors) and significant others (e.g. parents, coaches, teammates, peers, partners) play an important role in athletes' career development and transitions, enhancing athletes' health and wellbeing throughout their careers and (even) transitions out of sport.

Researchers have highlighted the short careers of high-performance athletes and the challenges they may face to ensure successful transitions out of sport (Douglas & Carless, 2009; Drawer & Fuller, 2002; Lally, 2007; Lavallee et al., 2014). High-performance athletes have discussed their post-retirement struggles publicly. For instance, Gail Emms, who won a silver medal at the 2004 Athens Olympic Games, has spoken about her mental health issues and financial struggles post-retirement (Lofthouse, 2017). There are tragic cases of high-performance athletes taking their own lives after experiencing a sense of loss and depression. Craig Fallon was Great Britain's 2005 Judo world champion and a twice Olympian at Athens 2004 and Beijing 2008. He suffered from severe depression and died by suicide after retirement (Coverdale, 2020). Athletes need to plan ahead in order to mitigate challenges, including mental illness, caused by retirement (Grove et al., 1998; Martin et al., 2014; Taylor & Doverspike, 2003). In their Conceptual Model of Adaptation to Career Transition, Lavallee et al. (2014) suggest that athletes' transitions require different resources (e.g. coping strategies, social support, and preretirement planning) and interventions (e.g. cognitive, emotional, behavioural, and social, organisational) to be successful. Similarly, researchers argue that sport organisations/governing bodies should be responsible for supporting athletes developing transferable life skills and preparing for life post-sport (Anderson & Morris, 2000; Park et al., 2013; Surujlal, 2016). This is particularly significant in the eSports context given that playing careers are short.

eSports, such as organised and competitive video-gaming (Jenny et al., 2017), resemble traditional sport in terms of strong spectator base, sponsorship, well-paid star players, professional teams, and club communities (Taylor, 2012). As is the case for traditional sports (e.g. football), young people have become interested in professional eSports careers in response to industry growth (Smith et al., 2019). As eSports become more popular, more players compete at a high level (Himmelstein et al., 2017). Individuals generally join the eSports community at a young age and some adolescents leave school early to become professional eSports players (Hattenstone, 2017; Martin, 2019). A 'community' can be defined as a virtual platform by which eSports players and fans communicate with each other; players join a game community to train and further their skills while fans watch players' performance to learn advanced skills (Hamari & Sjöblom, 2017). This is also not uncommon in traditional sport as adolescent athletes may prioritise sport over education (Cosh & Tully, 2014).

Andrejkovics (2016) argues that eSports players' mental preparedness and state of mind are closely related to improvement in performance. Similarly, Himmelstein et al. (2017) investigated psychosocial factors in eSports, finding that players face several barriers to performing optimally including pressure of competition, harassment, and poor communication between teammates. Playing eSports at higher levels requires in-depth knowledge of a specific game, strategic thinking, strong motivation and focus, and excellent motor control skills (Pedraza-Ramirez et al., 2020). Thus, players experience both physical and psychological stress, and need skills to cope with competitive environments (e.g. Barlett et al., 2009; Himmelstein et al., 2017; Smith et al., 2019) similar to those of traditional sport (Hallmann & Giel, 2018).

As is the case with high-performance athletes in traditional sport, professional eSports careers are short, with both groups being at risk of injury and mental illness. Playing eSports professionally may cause work-related illnesses including occupational overuse syndrome caused by repetitive movements, overuse of muscles, and computer vision syndrome (Rechichi et al., 2017; Tiric-Campara et al., 2014). Some professional players have ended their eSports careers prematurely or taken unexpected breaks due to injuries such as carpal tunnel syndrome, tennis elbow, and back pain (Jolly, 2019). Playing eSports for a sustained period can cause mental health issues such as sleep and mood disorders and poor performance (Eickhoff et al., 2015; Wenzel et al., 2009). The demands of training and competition may also cause stress, mental illness, and poor decision making (Apichai Wattanapisit et al., 2020). Researchers suggest that eSports team and staff members may offer social and emotional support to players to ensure their mental health (DiFrancisco-Donoghue et al., 2019; Freeman & Wohn, 2017). However, evidence on the support provided by teams or other stakeholders to eSports players remains scarce.

Researchers in traditional sport have endeavoured to address similar issues faced by high-performance athletes and have urged appropriate supportive action from sporting governing bodies/organisations. However, there remains a lack of clarity as to which stakeholders should be responsible for monitoring eSports players' mental and physical health. Thus, the present study explores stakeholders' perceived roles and responsibilities with a view to facilitating the development of support systems for eSports players.

Criticism of eSports has focused on the adverse consequences of excessive gaming, particularly gaming addiction (Grüsser et al., 2007). Adverse consequences include

psychological issues, sedentary behaviour, and gaming disorder (Lemmens et al., 2009). Hattenstone (2017) reported that eSports professional players spend up to 15 hours a day training or competing. This may be considered as excessive sedentary behaviour (Tremblay et al., 2017) and be associated with poor physical, psychological, and cognitive health (de Rezende et al., 2014; Owen et al., 2010). Tuomas and Veli-Matti (2016), however, investigated eSports players' ($n = 115$) engagement in physical activity and found that 64.3% ($n = 74$) engage in physical activity for more than the 1 hour per day which the World Health Organization (WHO) recommends (WHO, 2010). Moreover, 55.6% ($n = 64$) also suggested that physical activity, as part of structured training programmes, could positively affect performance.

Theoretical frameworks

As mentioned earlier, Scholz's (2020) categorisation of the eSports ecosystem provides the theoretical basis of the study and is used to identify key stakeholders within the eSports ecosystem. Since the eSports environment is highly diverse, a number of stakeholders have contributed to the growth of the industry (Scholz, 2020). As described in Figure 1, players are the core stakeholders. Primary stakeholders include game developers (game publishers), professional teams, professional players, and tournament organisers. These groups play a critical role in establishing appropriate infrastructures for eSports titles (Scholz, 2020); for instance, there are approximately 400 game titles that are played in a competitive manner (Besombes, 2019). The primary stakeholders identified in Scholz (2020) were the main subjects of the present study. However, since the secondary stakeholders identified in Figure 1 are also part of the eSports ecosystem and contribute to development of the industry, some of them were also considered as subjects of the study. Freeman's (1984) stakeholder theory encourages organisations to recognise stakeholders and their needs when developing strategies to enhance their performance. The key idea of stakeholder theory is that an organisation is dependent on the management of stakeholder relationships (Freeman & Phillips, 2002). While the eSports ecosystem cannot be considered as an organisation, it can be understood as a stakeholder network, 'a series of actors or stakeholders connected by a set of ties' (Morrow & Idle, 2008, p. 316). The focus of stakeholder theory has shifted from organisation-centric (Friedman & Miles, 2002) to how organisations position themselves in a stakeholder network and how their positions and the nature of the network affect their responses to demands from the stakeholders (Morrow & Idle, 2008; Rowley, 1997). Hence, the importance of establishing good networks and relations among stakeholders within the ecosystem may be considered central to the sustainable growth of the industry and the success of each associated organisation. Scholz (2020) also pointed out that the network of stakeholders plays a critical role in establishing a base of amateur and grassroots level for further growth of the industry.

Along with Scholz's (2020) Categorization of the eSports ecosystem, the Holistic Athletic Career (HAC) model (Wylleman et al., 2013) serves as the theoretical basis of the study. In a traditional sports context, researchers argue the need to understand athletes' career development holistically (Stambulova et al., 2009). In relation to this, Wylleman and Lavallee (2004) proposed the developmental model of athlete transitions. This considers the athletic, psychological, psychosocial, and academic/vocational levels of

athletes' development. This model was expanded to incorporate an additional 'financial' level by Wylleman et al. (2013) (see Figure 2). The primary purpose of applying this model is to understand eSports players' careers holistically and provide insights for developing a unique theoretical framework for eSports. The ages of novice or developing eSports players may be similar to those of traditional athletes, but the mastery and discontinuation stages may occur earlier for eSports players. eSports performance relies on players' ability to respond to complex visual stimuli correctly and at high speed. Thompson et al. (2014) suggest that this ability is likely to decline at about age 24. Thus, eSports players' peak performance period is very short (Smithies et al., 2020) – the careers of about 20% of professional eSports players are only about 2 years (Ward & Harmon, 2019).

The second layer, psychological level, which includes childhood, adolescence, and (young) adulthood, reflects the key stages relating to athletes' psychological development. Each stage requires athletes to develop competences allowing them to manage given tasks and continue developing their psychological skills and competences (Wylleman, 2019). Wylleman (2019) argued that such psychological development is crucial for athletes to prepare for their transitions out of sport since retirement ages may be earlier than planned as well as sport dependent. For example, a female gymnast may retire while still an adolescent whereas a retiring female golfer may be a mature adult. This also applies to eSports players who may retire at different ages depending on their game(s), performance level, and financial and job security (Smithies et al., 2020).

The third layer, the psychosocial, refers to individuals who form part of athletes' social support networks. eSports teams have hired specialist support staff including coaches,
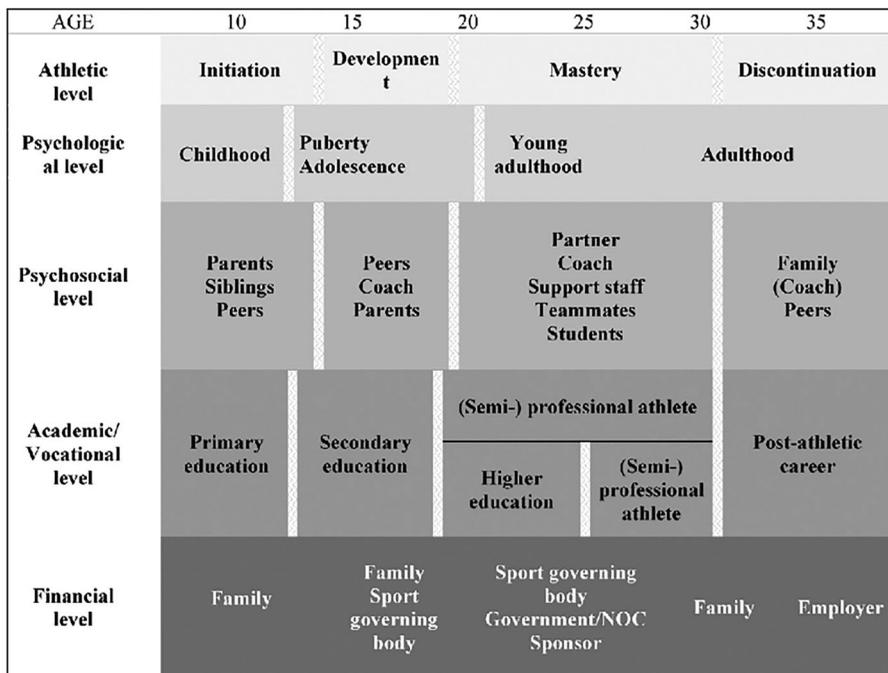
Figure 2. Holistic Athletic Career (HAC) model (Wylleman et al., 2013).

managers, strategists and sport psychologists, to increase players' competitiveness (Smith et al., 2019). However, empirical evidence on social support from other stakeholders and significant others (for example, parents, teammates, family members, and partners) remains sparse. The academic and vocational levels play crucial roles in guiding athletes to prepare for life after sport. Evidence shows that athletes who commit to education while competing tend to be characterised by retirement planning, well-rounded identities, strong social support, and effective coping strategies (Aquilina, 2013; Torregrossa et al., 2015). Given that some adolescents finish school prematurely to play eSports professionally (Hattenstone, 2017; Martin, 2019), the academic and social levels should assist eSports players, in particular adolescents, to pursue education while training and competing. The financial level indicates how financial support is provided by stakeholders, e.g. sponsors and governing bodies. Financial issues can be critical to athletes' retirement planning and may cause difficulties post-sport career (Alfermann et al., 2004; Kadlcik & Flemr, 2008; Kuettel et al., 2017). Such issues should be addressed during eSports players' careers so that they may be better prepared for possible problems during and post-sport. Given the nature of eSports, most players experience short and financially unstable careers, with limited focus on life after eSports due to poor pre-career planning and education (Smithies et al., 2020). Thus, the financial layer of the HAC model should also be incorporated into eSports support systems.

Methods

Exploratory studies may contribute to theory-building within the subject area (Mollick, 2014). This study provides empirical evidence on eSports players' health and wellbeing and on stakeholders' roles supporting players. A qualitative approach was applied to collect in-depth narratives of stakeholders to enable a better understanding of both players' and stakeholders' perspectives. Fifty-one players and stakeholders (see Table 1) were interviewed, and the data were analysed both inductively and deductively.

Participants

Participants include professional, semi-professional and amateur players, retired players (coach and team owner), coach, game publishers, national eSports associations, a sponsor, a tournament organiser, and federations; these captured most stakeholders

Table 1. Participants.

Type of participants	Numbers	Code Names
Professional players	21	Professional 1, 2, 3, etc.
Semi-professional players	6	Semi 1, 2, 3, etc.
Amateur players	4	Amateur 1, 2, 3, etc.
Retired players (coach and team owner)	2	Retired 1, 2, 3, etc.
Coach	1	Coach 1
Game publishers	6 (5 Game publishing companies)	Publisher 1, 2, 3, etc.
National eSports Associations	3 (2 National eSports Associations)	National Association 1, 2
Sponsor	2 (1 Sponsor)	Sponsor 1
Tournament organiser	2 (1 tournament organiser)	Tournament Organiser 1
Federations (officials)	4 (3 Federations)	Federation 1, 2, 3
Total	51	

included in the Categorization of the eSports ecosystem (Scholz, 2020) (see Table 1). All are male except one female semi-professional player. Nations represented are Australia, Bulgaria, China, Finland, Georgia, Germany, Italy, Japan, Philippines, Saudi Arabia, South Korea, Slovakia, Singapore, South Africa, Sweden, Thailand, Tunisia, and the United States (18 countries). Players are aged between 17 and 36. For ethical reasons, players were asked, when signing off interview consent forms, to confirm that they were over 18. Some indicated their exact age and others did not; most indicated that they were in their 20s. In the case of the one player under 18, his manager agreed to their participation.

Procedure

To collect in-depth narratives, semi-structured interviews were conducted. Semi-structured interviews allow researchers to interact with participants directly and to explore specific situations and events through people with first-hand experience (Pezalla et al., 2012). In some cases, two or three participants were interviewed simultaneously at their request. Thus, 40 interviews were conducted with 51 participants. An interview guide based on the research questions (Brewster et al., 2015), and the extant literature on the mental and physical health of eSports players and high-performance athletes and their respective experiences in competitive settings, ensured consistency. Thus, the interviews addressed themes relevant to the research questions (Kvale, 1996; Mason, 2004). The interview questions were finalised after review by the head of eSport at an international organisation, an individual who has worked with key industry stakeholders. Two different interview guides were developed for players and stakeholders respectively. Themes addressed by both included: (a) role/positions and brief career background (e.g. could you tell us about your game and career as an eSports player?; what is your organisation and role within it?); (b) the perceived roles/responsibilities and expectations of key stakeholders in supporting players' mental and physical health and wellbeing (e.g. as a stakeholder, what roles do you play in supporting players?); what expectations do you have of key stakeholders regarding support for your mental and physical health?; (c) perspectives on criticisms of eSports (e.g. what are your thoughts on the existing criticism such as physical inactivity, sedentary lifestyle, gaming-addiction, too much screen time, etc.?); and (d) perceived requirements and recommendations for young people wishing to become professional players. Assistance from the international organisation enabled the author to invite the key stakeholders included in Table 1 to participate in the study and help recruit players.

Most interviews were conducted face-to-face while visiting three major international eSports tournaments over the period October to December 2019 and took place in offices and conference rooms. Interviews with three Chinese participants were conducted via video call. The interviews of 40 individuals were carried out in English while 11 individuals were interviewed in Chinese ($n = 3$), Japanese ($n = 5$), or Korean ($n = 3$). Chinese and Japanese players were interviewed with support from translators. Each interview lasted for between 6 and 99 minutes and the total duration of all interviews is 480 minutes. The interviews conducted at the events were much shorter ($n = 25$) (between 6 and 22 minutes) than those conducted at pre-arranged times ($n = 15$) (between 30 and 99 minutes).

Data analysis

There were two phases of data analysis. In the first phase, guided by the Categorization of the eSports ecosystem (Scholz, 2020), deductive content analysis was applied to data related to identifying stakeholders in order to examine each stakeholder's roles and responsibility. Their roles and responsibility were then examined based on the HAC model to identify which development level they related to. The deductive approach uses a framework of themes to guide the coding process (Bradley et al., 2007; Braun & Clarke, 2006; Burnard et al., 2008). Content analysis is a systematic and objective way to describe phenomena (Downe-Wamboldt, 1992; Elo & Kyngas, 2008; Sandelowski, 1994), allowing researchers to make replicable and valid interpretations from data to their context and to enhance knowledge in the subject areas (Krippendorff, 1980). The key stakeholders most mentioned by participants feature in the Categorization of the eSports ecosystem while the perceived roles and responsibilities of stakeholders and players respectively were identified based on the HAC Model (see online Appendix 1). In the second phase, the remaining data related to interview guide (c) perspectives on criticisms of eSports and (d) perceived requirements and recommendations for young people wishing to become professional players were analysed by inductive thematic analysis (Braun & Clarke, 2006, 2019). All interviews were audio recorded and transcribed verbatim, thus allowing for better understanding of each account and participant responses (Thomas & Hodges, 2010). Each transcript was read multiple times to ensure familiarity with the participants' narratives (Ryan, 2015). Initial codes were identified and then collated into potential themes. The emerging themes were reviewed and finalised (Braun & Clarke, 2006) and were also reviewed by two different experienced qualitative researchers acting as 'critical friends' (Smith & Caddick, 2012). The codes and themes are presented in online Appendix 2. To ensure the trustworthiness of the data analysis, several measures were applied at each stage of the thematic analysis as follows: Prolonged engagement with data, Documented theoretical and reflective thoughts, Documented reflections on potential codes/themes, Storage of raw data in well-organized archives, Use of a coding framework, Audit trail of code generation, Theory triangulation, Diagrammatic representation of theme connections, Themes and subthemes vetted by other researchers, Documentation of theme naming (see Nowell et al., 2017 for alternative means of establishing Trustworthiness).

Results

The results are presented in relation to the research questions and the two phases of data analysis discussed in the previous section: Perceived Roles and Responsibilities of Stakeholders to Ensure eSports Players' Mental and Physical Health (RQ1, Data Analysis Phase 1); Perceived Criticism (RQ2, Data Analysis Phase 2); and Perceived requirements and recommendations for young people (Data Analysis Phase 2).

Perceived roles and responsibilities of stakeholders to ensure eSports players' mental and physical health

Professional teams

Most participants highlighted the importance of support from teams, recognising their role in employing eSports players and managing their careers. Publisher 3 stated: 'it's

entirely up to the teams but we are only in the process of building the system and giving the teams the ability to empower players, so in this phase we don't have the complete system in place yet'. Although their role in supporting mental and physical health was emphasised, many players stated that support from their teams was lacking while some commented that they had heard of other teams providing good support: 'I think some teams definitely have sports psychologists. Some teams do have this, but this is not standard yet' (Professional 6). In some cases, support from teams was superficial. Retired 2 stated, 'the team once got us a gym card and that's all'. Professional 6 also mentioned, 'in this team right now we don't have like a sports psychologist or anything. In the past I have had that but for little periods of time'. Professional 24 argued for clear standards for teams to ensure that all players receive sufficient support.

On the other hand, a few professional players and other stakeholders, including Sponsor 1, and Federation 2, believed that there was sufficient support from their teams to ensure players' mental and physical health. 'Our manager and the whole team help us to solve our problems' (Professional 12). Professional 15 also noted that his team received professional support from a mental health therapist and a physiotherapist. The representative from Federation 2 commented that professional sport teams (e.g. the NFL and NBA), have invested in eSports teams and provided support services to players comparable to those enjoyed by traditional professional athletes. Publisher 1 gave an insight into how teams will support players in the future.

A lot of the top teams at this point know that that is one of the things they should invest in. A lot of them will invest in therapists, they will invest in team chefs, they need to make sure that there are also physical trainers.

Professional 2 commented that they would also appreciate support from nutritionists. The representative from Federation 2 remarked that some top-level professional teams did provide such support to their players to ensure proper nutritional intake.

Three professional players were interviewed in their 'Gaming House'. While they claimed that their team did not provide any specific support for their mental and physical health, they did receive support in the form of accommodation, food, PCs, and relevant equipment, which they found to be beneficial for training and competition. Both players and stakeholders share similar perspectives and experiences as presented in online Appendix 1, but it was emphasised that players expected long-term and sustainable support from professional teams.

Game publishers

The publishers who participated in the research are all leading game developers. All pointed out that good practice in supporting eSports players should be shared with key stakeholders to help develop support structures through which players could manage their mental and physical health. Game Publisher 1 had proactively established a team to identify players' challenges and provide information on coping with such issues and managing eSports careers. This only applies to one national region at the time of interview although there are plans to establish such schemes in other geographical areas. The role of games publishers was highlighted in interviews with Association 1 and Tournament Organiser 1 – both claimed that publishers could help develop support structures similar to Federation Internationale de Football Association (FIFA) or global sport federations. Game Publisher 1 has developed a league-based international

competition featuring one of the most popular games in the world. With regard to the role of publishers such as Publisher 1, Tournament Organiser 1 commented:

> The game publisher is the federation. It is a global federation. Because if you compare it to traditional sports like football, the game publisher has been to every single football field in the world.

Development of educational support was emphasised by game publishers. In particular, Publisher 2 considered life after eSports important and planned to establish an educational support system through collaboration with educational institutions including universities. Publisher 4 developed a scheme to establish an eSports academy which would both foster talented players and provide support for life after eSports, e.g. by developing transferrable skills. Publisher 5 held similar views to Publishers 2 and 4 and highlighted issues with eSports players 'dropping-out' of education. eSports players needed to complete a programme of higher education if they wished to work in eSports management post-retirement. As shown in Table 1, players did not mention game publishers in relation to mental and physical health although some mentioned the need for a collective effort. This suggests that it is the responsibility of all stakeholders, including game publishers, to address players' health and wellbeing.

Sponsors

Professional players (Professionals 1, 7, 8, 9, 10, and 21), all of whom enjoyed sponsorships, claimed that these were crucial to successful eSports careers and their overall wellbeing. Sponsor support included travel expenses for competing abroad, professional services such as counselling, mental coaching and physiotherapy, and equipment for training and competing. Professional 1 commented that their sponsor provided holistic professional support services, which were provided to high-performance athletes in traditional sport, and that they appreciated their value: 'meeting doctors and physical therapists, they know that I sit down too much. After checking my body … they were able to tell me so many things, and that was very eye-opening for me'.

Professional 21 highlighted the importance of sponsors for aspiring players who needed financial support. They also claimed that sponsors and players could mutually support one another, with players providing support to sponsors by promoting their products and services to game communities and fans. This view was shared by Sponsor 1, 'they also give us feedback on product so that we continue to evolve and grow over time and therefore our sponsorship and our involvement in these sports has been since day one'. Sponsor 1 claimed that sponsorship is about understanding players and providing support that helped players better understand their careers and the industry. They commented,

> An eSports athlete is probably at their peak [for] probably less than 10 years. Some of them will grow to be a coach, some of them will grow to be team owners. […] we hope that all of them will grow over time.

Tournament organisers

Tournament Organiser 1 discussed stakeholders' responsibility for eSports players' health and wellbeing: 'It actually goes back to that literally every stakeholder from

school, to sports, to press has a responsibility, including us as a tournament organiser'. The role of tournament organisers in the eSports ecosystem is to connect stakeholders with one another. They also highlighted the need for player-centred schemes and systems to ensure player health and wellbeing. As indicated in Table 1, players did not mention tournament organisers in connection with mental and physical health.

Parents

Parents are not included as key stakeholders within Scholz's Categorization of the eSports ecosystem (Scholz, 2020). However, their support was regarded by many players across all levels as very important in their eSports careers. Professional 1 discussed how parental support helped them achieve their eSports goals: 'luckily, my father was supportive, not many parents back then liked their children to play video games. […] he trusted them to be a good example and a good role model for me and I think he was right'. Amateur 1, a high school student, commented,

> my parents have always been supportive because they know me, they allow me to do what I want as long as they know that I understand what the repercussions can be if I - if it gets out of hand … So, they've been supportive.

Professional 21 also added, 'my parents are actually really open minded they just let me do whatever I want. […] I think if you have problematic parents maybe it's the biggest obstacle compared to anything else'. Tournament Organiser 1 claimed that parents should play a role in moderating young players' screen and playing time to protect their mental and physical health and wellbeing.

Conversely, other players claimed that they had to work hard to make their parents appreciate their eSports careers Professional 15 shared their experience; 'they were not okay with it at the beginning, but after they saw me competing that's where they saw the potential of eSports. So, that's when they started to support me'. Semi 5 also commented, 'Well, at first my mum wasn't very happy about it, but now she's very supportive'. Thus, parents' limited understanding and support could be challenging for early-career players in particular.

Communities

Many players emphasised the importance of support from their communities. Players stressed the positive aspects of belonging to communities where they could build social networks and develop good relationships with people sharing similar interests. Federation 3 commented,

> It's more like it's a social event, like making social networks and making friends. It's a community. So, it's not like standing alone in a basement or anything like that. It's more like socialising with friends and of course other teams.

Players also stated that communities allowed them to develop their gaming skills and performance to higher levels. Professional 21 remarked, 'I think the gaming community is the most beautiful thing for me. They don't judge you by your looks and that's something that I think is very true in the social world'. Professional 1 was very proud of their community, 'everybody is very optimistic about the future of our game, and I think that's why we stand out among other games, other communities. We have a better mentality

about our game, our community'. Amateur 3 claimed that they regularly participated in events organised by their community and that this has enhanced their performance. Professional 7 suggested that communities act as channels to promote players' mental and physical health. It is worth noting that players who held positive views of their communities all played 'fighting' games including 'Street Fighter' and 'Tekken 7'. This may be because 'fighting' games are one of the most established games within the industry and stronger communities have been built around them. In contrast, Professional 24 stated that they felt their community held unrealistically high expectations of them which sometimes negatively affected their performance. While players identified communities as important stakeholders in terms of enhancing their mental and physical health, other stakeholders did not.

Federations and national eSports associations

The perspectives of national associations and federations on supporting players' mental and physical health were identified. National Associations 1 and 2 appreciated that they had responsibilities to assist players to improve their mental and physical health and had made efforts to address this. National Association 1 hosted workshops to help players manage their eSports careers, health and wellbeing. All three participating federations emphasised the need for structured support systems, developed collectively by key stakeholders and supported by governments. However, they also appreciated that the industry was still immature and had only begun to consider players' health and wellbeing. Some players mentioned social and financial support from federations. Although such support did not directly focus on health, they indicated that it was important for them in mitigating career stress. As presented in online Appendix 1, some players who competed at one of the international eSports tournaments where officers from federations also participated, discussed support from these federations, in particular financial and social support (e.g. checking in, arranging accommodations and food) for overseas competitions in particular

Perceived criticism

Limited understanding to be improved

Research participants were aware of criticisms of eSports and understood the reasons for these: for example, long hours spent training may be perceived as contributing to the development of sedentary lifestyles and physical inactivity. However, they perceived the criticisms as stigmatising and stereotypical and to be predicated on limited understanding of eSports. Referring to excessive gaming and training, Tournament Organiser 1 claimed: 'I think it's a generally wrong perception. Not that there are not cases like this, but in the grand scale of things, it's a micro percentage we're talking about'. They believed, therefore, that appreciation and understanding of the value of eSports could change negative public perceptions. For instance, the public could be encouraged to participate in tournaments and events in order to better understand the industry. Amateur 1 pointed out that:

> I think they just need to sit and watch and look at how these individuals actually perform at these tournaments. And just as much as a businessman would do what he does best - perform and do his best to get the most out of his work - the exact same is what these people are doing.

Federation 2 held similar views, 'I think one of the easiest ways to change perception is to go to an event, honestly, and to see it for yourself'. Publisher 2 highlighted the importance of communicating with the public and making them understand eSports is not just 'playing games for fun' but can be a serious profession, providing sustainable livings for players.

Positive aspects of eSports to be promoted

While some participants had observed changes associated with criticism and stigma and had rationalised such criticism as a positive factor in enabling the industry progress, others argued that there was a need to promote positive aspects (e.g. social networks, hard work, professional potential) to improve perceptions of eSports. Many players highlighted the positive effect of eSports on their careers and lives. Professional 1 remarked:

> In many ways, I am actually very grateful, and I owe a lot to the game. So I always think about that and that helps me always be motivated to play and always have a good mentality and be very positive.

Publisher 4 discussed the impact of games on players' professional potential, 'it's very tough to be a Barcelona or Manchester or Celtic player, but if you play good in games, you can be also a Barcelona player'. He mentioned this because some professional football clubs across the world also have their own eSports teams that represent their clubs.

Perceived requirements and recommendations for young people

Not limited to being a professional player

Many participants emphasised that young people should be realistic – being a professional player meant more than just 'playing a game' and required commitment and hard work. Professional 16 remarked, 'it's hard to become a pro'. National Association 1 and Sponsor 1 insisted that young people required to have a clear understanding of the eSports industry and of their skills set, in order to be able to contribute beyond playing. In particular, National Association 1 suggested that young players should consider realistically whether they had the required skills for a professional career. Sponsor1 shared this view, 'not everybody is going to be Messi or Ronaldo in football, but they are going to contribute in much better ways'. Sponsor 1 also believed that young players should understand and analyse the eSports industry in order to have a long-term career within it.

Importance of keeping balanced lifestyle

As many young players are students, the importance of balancing eSports participation with education, especially at the secondary school and university levels, was emphasised. Although some players (Professionals 9, 18, and 19) highlighted the challenges of balancing eSports careers with academic work, they appreciated the importance of completing their degrees. Publisher 2 pointed out that young players should invest as much time in education as in playing. Professional 21 shared their experience of dropping out of education to pursue a professional career. Although they did not regret their decision, they recommended that young players should complete degrees to better cope with their lives

after eSports. Amateur 1 also believed that young players should understand how eSports careers will impact their future.

Discussion

Participants perceive that the responsibility of ensuring eSports players' health and wellbeing should be shared among stakeholders and significant others such as parents, communities and federations/national associations. Several pointed out the importance of professional teams' responsibilities and roles in supporting eSports players. Similarly, Smith et al. (2019) found that teams were recruiting staff such as sports psychologists to help players cope with the psychological demands of professional eSports careers. Although some professional players emphasised their teams' support, and different stakeholders, including players, cited good practice among top tier teams, other participants argued that support from teams was lacking and that there was a need to establish clear guidelines on its provision. This supports previous research finding which suggested that eSports teams can provide both social and emotional support to enhance players' mental health (DiFrancisco-Donoghue et al., 2019; Freeman & Wohn, 2017).

Scholz (2020) recognises professional teams, game developers (publishers), professional players, and tournament organisers as primary stakeholders within the eSports ecosystem and argued that game publishers and tournament organisers contributed to eSports players' health and wellbeing. Publishers are proactive in their concern for eSports players' education and their lives post-eSports. Since some adolescents drop out of school to become professional eSports players (Hattenstone, 2017; Martin, 2019), publishers' efforts to establish educational support schemes should be highlighted. In traditional sport contexts, thoughtful planning by athletes is required to manage retirement issues, including those associated with mental health (Grove et al., 1998; Martin et al., 2014; Taylor & Doverspike, 2003). Thus, researchers (Carless & Douglas, 2012; Ryan, 2015) have highlighted the importance of active athletes having a 'dual' career, 'a career with major foci on (both) sport and studies or work' (Stambulova & Wylleman, 2015, p.1). Smithies et al. (2020) suggest that adolescent eSports players self-constrain their ability to pursue post-eSports careers because they sacrifice educational opportunities to pursue professional careers (Hollist, 2015). Thus educational/dual career support, along with health and wellbeing support, is critical for eSports players, especially adolescents. The importance of balanced lives was highlighted by research participants.

Support from other stakeholders and significant others was also identified. National eSports associations acknowledged that they shared responsibility with other stakeholders to support eSports players' health and wellbeing and had developed appropriate initiatives such as athlete workshops to deliver on this. Traditional sport researchers argue that sport organisations/governing bodies are responsible for supporting athletes (Anderson & Morris, 2000; Park et al., 2013; Surujlal, 2016). Similarly, the corresponding role of national eSports associations and federations should be developed in the same way, with many research participants emphasising that federation support was crucial to them competing internationally and establishing professional eSports careers. Some players emphasised the importance of sponsor support with financial support often being crucial to professional careers and participation in international competition.

This supports the argument that sponsors are a primary revenue source for the industry (Scholz, 2019). Different stakeholders stressed the need for governments to establish support systems for eSport players. The UK government has developed welfare guidelines for the traditional sport industry. Duty of Care in Sport (Grey-Thompson, 2017) emphasises seven areas: Education, Transition, Representation of participants' voices, Equality, diversity and inclusion, Safeguarding, Mental welfare, and Safety, injury and medical issues. Governments, and other key stakeholders, should develop guidelines promoting an ethos of collective duty of care in eSports.

Support from parents and game communities is also significant (Scholz, 2020) and it is suggested that this be incorporated in the eSports ecosystem. Some players stated that parental support was crucial to their ambitions. However, others had found it difficult to make their parents understand and support them. Evidence shows that parental support impacts not only adolescents' healthy development (Hart et al., 2003), but also their educational and vocational success (Upadyaya & Salmela-Aro, 2013; Wang & Eccles, 2012). Thus, parents should also be included in the eSports ecosystem. Support from game communities should also be considered as an important part of the eSports ecosystem. Playing eSports helps develop positive social relations and networks as a result of joining game communities (Trepte et al., 2012). Some players, however, argue that communities can have negative impacts such as encouraging abuse of poorly performing professional players, thereby affecting their mental wellbeing Players emphasised the roles/responsibilities of parents and communities while other stakeholders did not. On the other hand, the roles/responsibilities of game publishers and tournament organisers were highlighted only by non-playing stakeholders. The distinctive perspectives of different stakeholder groups should be further explored in the context of seeking to enhance players' mental and physical health.

In general, stakeholders are aware of criticisms of eSports but believe that they might be overcome as eSports becomes more appreciated and better understood. It was felt that it was crucial for the public to appreciate that eSports can be a serious profession able to support individuals financially. eSports careers should be understood as similar to general business and professional occupations – both may require strategic thinking, the establishment of action plans, training, and implementing, and meeting targets set. eSports may be particularly relevant to understanding societal technological change. Research participants stressed that young people should consider that professional eSports careers, unlike 'playing games for fun', demanded hard work and commitment. Despite eSports' appeal as a profession, aspiring players face various barriers and challenges that may affect their eSports and post-eSports careers negatively (Smithies et al., 2020).

Conclusions

This study aims to identify the roles and responsibilities of different stakeholders in safeguarding eSports players' mental and physical health and to explore stakeholders' perspectives on criticisms of eSports and advice for young people wishing to pursue professional careers. Following the HAC model, players' needs, and existing/expected support have been identified, covering all HAC levels: educational schemes developed by publishers (academic level), financial support from sponsors (financial level), training demands (athletic level), need for psychological/mental health support

(psychological level), and social support from families and game communities (psycho-social level). eSports players exhibit similarities to traditional high-performance athletes while also displaying some unique characteristics. For example, educational support schemes, established by game publishers, do not exist in traditional sport but are pivotal in eSports. Hence the need to develop a holistic developmental model for eSports players that better represents their career and developmental needs, and which may be applied to player-centred research. The model may also assist managers and professional teams in developing strategies and plans for sustainable growth and player development. There is a need for a collective approach, involving different stakeholders, to the development of player-centred support schemes. Additionally, the stakeholders identified by the present study – parents, game communities, and federations/national eSports associations – should be considered as integral to the eSports ecosystem given their critical role in establishing support systems for eSports players' health and wellbeing.

The research is subject to limitations. Professional teams' perspectives on the issues were not identified. Since their responsibilities were stressed by other stakeholders including professional players, future research might focus on investigating their perspectives and their practice in supporting eSports players' health and wellbeing. Although the tournament organiser and sponsor in this study are two of the most significant industry stakeholders, future research might include a greater number of such stakeholders in order to gain a broader understanding of them as primary stakeholders. While players at different levels participated, their perspectives were not analysed by professional level. Given that the challenges experienced and the available resources to cope with such challenges can be influenced by performance level, future research might examine similarities and differences between players at different levels in terms of how they ensure their health and wellbeing and manage their eSports careers. Similarly, future research should consider geographic influences (cultural, economic, social, political). Lastly, only one female participant (a semi-professional player) participated in this study. While eSports players are predominantly male, future research might examine female players' experience and perspectives and the different needs of female and male players.

Ethical approval

Ethical approval has been granted by the General University Ethics Panel (GUEP) at the University of Stirling (Reference number – GUEP 898).

ORCID

Hee Jung Hong 🔟 http://orcid.org/0000-0003-0045-8911

References

Alfermann, D., Stambulova, N., & Zemaityte, A. (2004). Reactions to sports career termination: A cross-national comparison of German, Lithuanian, and Russian athletes. *Psychology of Sport and Exercise*, *5*(1), 61–75. https://doi.org/10.1016/S1469-0292(02)00050-X

Anderson, D., & Morris, T. (2000). Athlete lifestyle programs. In D. Lavallee & P. Wylleman (Eds.), *Career transitions in sport: International perspectives* (pp. 59–80). Fitness Information Technology.

Andrejkovics, Z. (2016). *The invisible game: MINDSET of A winning team*. CreateSpace.

Apichai Wattanapisit, A., Wattanapisit, S., & Wongsiri, S. (2020). Public Health perspectives on eSports. *Public Health Reports*, *135*(2), 003335492091271. https://doi.org/10.1177/0033354920912718

Aquilina, D. (2013). A study of the relationship between elite athletes' educational development and sporting performance. *The International Journal of the History of Sport*, *30*(4), 374–392. https://doi.org/10.1080/09523367.2013.765723

Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The psychology of esports: A systematic literature review. *Journal of Gambling Studies*, *35*(2), 351–365. https://doi.org/10.1007/s10899-018-9763-1

Barlett, C. P., Anderson, C. A., & Swing, E. L. (2009). Video game effects-confirmed, suspected, and speculative: A review of the evidence. *Simulation & Gaming*, *40*(3), 377–403. https://doi.org/10.1177/1046878108327539

Bertschy, M., Mühlbacher, H., & Desbordes, M. (2020). Esports extension of a football brand: Stakeholder co-creation in action? *European Sport Management Quarterly*, *20*(1), 47–68. https://doi.org/10.1080/16184742.2019.1689281

Besombes, N. (2019). *Esports & competitive games by genre*. Medium. https://medium.com/@nicolas.besombes/esports-competitive-games-by-genre-61fcaf9c6a8f

Bradley, E. H., Curry, L. A., & Devers, K. J. (2007). Qualitative data analysis for health services research: Developing taxonomy, themes, and theory. *Health Services Research*, *42*(4), 1758–1772. https://doi.org/10.1111/j.1475-6773.2006.00684.x

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Brewster, A. L., Curry, L. A., Cherlin, E. J., Talbert-Slagle, K., Horwitz, L. I., & Bradley, E. H. (2015). Integrating new practices: A qualitative study of how hospital innovations become routine. *Implementation Science*, *10*(1), 168. https://doi.org/10.1186/s13012-015-0357-3

Burnard, P., Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Analysing and presenting qualitative data. *British Dental Journal*, *204*(8), 429–432. https://doi.org/10.1038/sj.bdj.2008.292

Carless, D., & Douglas, K. (2012). Stories of success: Cultural narrative and personal stories of elite and professional athletes. *Reflective Practice: International and Multidisciplinary Perspectives*, *13*(3), 387–398. https://doi.org/10.1080/14623943.2012.657793

Cosh, S., & Tully, P. J. (2014). "All I have to do is pass": A discursive analysis of student athletes' talk about prioritising sport to the detriment of education to overcome stressors encountered in

combining elite sport and tertiary education. *Psychology of Sport and Exercise*, *15*(2), 180–189. https://doi.org/10.1016/j.psychsport.2013.10.015

Coverdale, D. (2020, February 13). SPECIAL REPORT: 'We are chewed up and spat out … where's the duty of care?' - Many of our retired Olympic medal winners are plagued by mental health issues … and much of it stems from a lack of support. Daily mail. https://www.dailymail.co.uk/sport/olympics-2020/article-8001263/Many-British-Olympic-medallists-plagued-mental-health-issues-stemmed-lack-aftercare.html

Cunningham, G. B., Fairley, S., Ferkins, L., Kerwin, S., Lock, D., Shaw, S., & Wicker, P. (2018). Esport: Construct specifications and implications for sport management. *Sport Management Review*, *21*(1), 1–6. https://doi.org/10.1016/j.smr.2017.11.002

de Rezende, L. F., Rodrigues Lopes, M., Rey-Lopez, J. P., Matsudo, V. K., & Luiz, O. C. (2014). Sedentary behavior and health outcomes: An overview of systematic reviews. *PLoSOne*, *9*(8), e105620. https://doi.org/10.1371/journal.pone.0105620

DiFrancisco-Donoghue, J., Balentine, J., Schmidt, G., & Zwibel, H. (2019). Managing the health of the eSport athlete: An integrated health management model. *BMJ Open Sport & Exercise Medicine*, *5*(1), e000467. https://doi.org/10.1136/bmjsem-2018-000467

Donaldson, T., & Preston, L. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65–91. https://doi.org/10.2307/258887

Douglas, K., & Carless, D. (2009). Abandoning the performance narrative: Two women's stories of transition from professional sport. *Journal of Applied Sport Psychology*, *21*(2), 213–230. https://doi.org/10.1080/10413200902795109

Downe-Wamboldt, B. (1992). Content analysis: Method, applications and issues. *Health Care for Women International*, *13*(3), 313–321. https://doi.org/10.1080/07399339209516006

Drawer, S., & Fuller, C. (2002). Perceptions of retired professional soccer players about the provision of support services before and after retirement. *British Journal of Sports Medicine*, *36*(1), 33–38. https://doi.org/10.1136/bjsm.36.1.33

Eickhoff, E., Yung, K., Davis, D. L., Bishop, F., Klam, W. P., & Doan, A. P. (2015). Excessive video game use, sleep deprivation, and poor work performance among U.S. Marines treated in a military mental health clinic: A case series. *Military Medicine*, *180*(7), 839–843. https://doi.org/10.7205/MILMED-D-14-00597

Elo, S., & Kyngas, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Freeman, G., & Wohn, D. Y. (2017). Social support in eSports: Building emotional and esteem support from instrumental support interactions in a highly competitive environment. *CHI PLAY 17' Proceedings of the Annual Symposium on Computer-Human Interaction in Play*, pp. 435–447. https://doi.org/10.1145/3116595.3116635.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

Freeman, R. E., & Phillips, R. A. (2002). Stakeholder theory: A libertarian defense. *Business Ethics Quarterly*, *12*(3), 331–349. https://doi.org/10.2307/3858020

Friedman, A. L., & Miles, S. (2002). Developing stakeholder theory. *Journal of Management Studies*, *39*(1), 1–21. https://doi.org/10.1111/1467-6486.00280

Gouttebarge, V., Frings-Dresen, M. H. W., & Sluiter, J. K. (2015). Mental and psychosocial health among current and former professional footballers. *Occupational Medicine*, *65*(3), 190–196. https://doi.org/10.1093/occmed/kqu202

Grey-Thompson, B. (2017). *Duty of care in sport review – Independent report to government*. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/610130/Duty_of_Care_Review_-_April_2017__2.pdf

Grove, J. R., Lavallee, D., Gordon, S., & Harvey, J. H. (1998). Account-making: A model for understanding and resolving distressful reactions to retirement from sport. *The Sport Psychologist*, *12*(1), 52–67. https://doi.org/10.1123/tsp.12.1.52

Grüsser, S. M., Thalemann, R., & Griffiths, M. D. (2007). Excessive computer game playing: Evidence for addiction and aggression? *Cyberpsychology and Behavior*, *10*(2), 290–292. https://doi.org/10.1089/cpb.2006.9956

Hallmann, K., & Giel, T. (2018). eSports-Competitive sports or recreational activity? *Sport Management Review*, *21*(1), 14–20. https://doi.org/10.1016/j.smr.2017.07.011

Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? *Internet Research*, *27*(2), 211–232. https://doi.org/10.1108/IntR-04-2016-0085

Hart, C. H., Newell, L. D., & Olsen, S. F. (2003). Parenting skills and social-communicative competence in childhood. In J. O. Greene & B. R. Burleson (Eds.), *Handbook of communication and social interaction skills* (pp. 753–797). Lawrence Erlbaum Associates.

Hattenstone, S. (2017, June 16). *The rise of eSports: are addiction and corruption the price of its success?* The Guardian. https:// www.theguardian.com/sport/2017/jun/16/top-addictionyoung-people-gaming-esports

Heere, B. (2018). Embracing the sportification of society: Defining e-sports through a polymorphic view on sport. *Sport Management Review*, *21*(1), 21–24. https://doi.org/10.1016/j.smr.2017.07.002

Himmelstein, D., Liu, Y., & Shapiro, J. L. (2017). An exploration of mental skills among competitive league of legend players. *Journal International Journal of Gaming and Computer-Mediated Simulations*, *9*(2), 1–21. https://doi.org/10.4018/IJGCMS.2017040101

Hollist, K. E. (2015). Time to be grown-ups about video gaming: The rising eSports industry and the need for regulation. *Arizona Law Review*, *57*, 823–847.

Hong, H. J., & Coffee, P. (2018). A psycho-educational curriculum for sport career transition practitioners: Development and evaluation. *European Sport Management Quarterly*, *18*(3), 287–306. https://doi.org/10.1080/16184742.2017.1387925

Hughes, L., & Leavey, G. (2012). Setting the bar: Athletes and vulnerability to mental illness. *British Journal of Psychiatry*, *200*(2), 95–96. https://doi.org/10.1192/bjp.bp.111.095976

Jenny, S. E., Manning, R. D., Keiper, M. C., & Olrich, T. W. (2017). Virtual (ly) athletes: Where eSports fit within the definition of "sport". *Quest (grand Rapids, Mich)*, *69*(1), 1–18. https://doi.org/10.1080/00336297.2016.1144517

Jolly, J. (2019, July 29). *Esports injuries real for pros and at-home gamer, from finger sprains to collapsed lungs.* USA Today. https://eu.usatoday.com/story/tech/columnist/2019/07/29/video-games-esport-pros-face-serious-injuries-so-can-home-players/1832131001/

Kadlcik, J., & Flemr, L. (2008). Athletic career termination model in the Czech Republic: A qualitative exploration. *International Review for the Sociology of Sport*, *43*(3), 251–269. https://doi.org/10.1177/1012690208098544

Kossek, E. E., Pichler, S., Bodner, T., & Hammer, L. B. (2011). Workplace social support and work–family conflict: A meta-analysis clarifying the influence of general and work–family-specific supervisor and organizational support. *Personnel Psychology*, *64*(2), 289–313. https://doi.org/10.1111/j.1744-6570.2011.01211.x

Krippendorff, K. (1980). *Content analysis: An Introduction to its methodology*. Sage Publications.

Kuettel, A., Boyle, E., & Schmid, J. (2017). Factors contributing to the quality of the transition out of elite sports in Swiss, Danish, and Polish athletes. *Psychology of Sport and Exercise*, *29*, 27–39. https://doi.org/10.1016/j.psychsport.2016.11.008

Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing*. Sage Publications.

Lally, P. (2007). Identity and athletic retirement: A prospective study. *Psychology of Sport and Exercise*, *8*(1), 85–99. https://doi.org/10.1016/j.psychsport.2006.03.003

Lardon, M. T., & Fitzgerald, M. W. (2013). Performance enhancement and the sports psychiatrist. In D. Baron, C. Reardon, & S. Baron (Eds.), *Clinical sports psychiatry: An international perspective* (pp. 132–146). Wiley-Blackwell.

Lavallee, D., Gorely, T., Lavallee, R., & Wylleman, P. (2001). Career development programs for athletes. In W. Patton & M. McMahon (Eds.), *Career development programs: Preparation for life long career decision making* (pp. 125–133). Australian Council for Educational Research Press.

Lavallee, D., Park, S., & Taylor, J. (2014). Career transition among athletes: Is there life after sports? In J. Williams & V. Krane (Eds.), *Applied sport psychology: Personal growth to peak performance* (pp. 490–509). McGraw-Hill.

Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. *Media Psychology*, *12*(1), 77–95. https://doi.org/10.1080/15213260802669458

Lofthouse, A. (2017, August 2). *Gail Emms: Olympic badminton medallist on the struggles of life after retirement*. BBC Sport. https://www.bbc.co.uk/sport/badminton/40802004

Maier, C., Woratschek, H., Ströbel, T., & Popp, B. (2016). Is it really all about money? A study on incentives in elite team sports. *European Sport Management Quarterly*, *16*(5), 592–612. https://doi.org/10.1080/16184742.2016.1188841

Martin, H. (2019, May 22). Boy, 15, quits school to become full-time professional gamer and has already earned £25,000 in just three months as he now chases £23 m Fortnite World Cup cash. The Daily Mail. https://www.dailymail.co.uk/news/article7057239/Boy-15-quit-school-time-professional-gamer.html

Martin, L. A., Fogarty, G. J., & Albion, M. J. (2014). Changes in athletic identity and life satisfaction of elite athletes as a function of retirement status. *Journal of Applied Sport Psychology*, *26*(1), 96–110. https://doi.org/10.1080/10413200.2013.798371

Mason, J. (2004). Semi-structured interview. In M. S. Lewis-Beck, A. E. Bryman, & T. F. F. Liao (Eds.), *The Sage encyclopaedia of social science research methods* (pp. 1020–1021). Sage Publications.

Mollick, E. (2014). The dynamics of crowdfunding: An Exploratory study. *Journal of Business Venturing*, *29*(1), 1–16. https://doi.org/10.1016/j.jbusvent.2013.06.005

Morrow, S., & Idle, C. (2008). Understanding change in professional road cyc1ing. *European Sport Management Quarterly*, *8*(4), 315–335. https://doi.org/10.1080/16184740802461603

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, *16*(1), 160940691773384. https://doi.org/10.1177/1609406917733847

Owen, N., Healy, G. N., Matthews, C. E., & Dunstan, D. W. (2010). Too much sitting: The population health science of sedentary behavior. *Exercise and Sport Sciences Reviews*, *38*(3), 105–113. https://doi.org/10.1097/JES.0b013e3181e373a2

Park, S., Lavallee, D., & Tod, D. (2013). Athletes' career transition out of sport: A systematic review. *International Review of Sport and Exercise Psychology*, *6*(1), 22–53. https://doi.org/10.1080/1750984X.2012.687053

Pedraza-Ramirez, I., Musculus, L., Raab, M., & Laborde, S. (2020). Setting the scientific stage for esports psychology: A systematic review. *International Review of Sport and Exercise Psychology*, *13*(1), 319–352. https://doi.org/10.1080/1750984x.2020.1723122

Peng, Q., Dickson, G., Scelles, N., Grix, J., & Brannagan, P. M. (2020). Esports governance: Exploring stakeholder dynamics. *Sustainability*, *12*(19), 8270. https://doi.org/10.3390/su12198270

Pezalla, A. E., Pettigrew, J., & Millar-Day, M. (2012). Researching the researcher as instrument: An exercise in interviewer self-reflexivity. *Qualitative Research*, *12*(2), 165–185. https://doi.org/10.1177/1468794111422107

Qian, T. Y., Wang, J. J., Zhang, J. J., & Lu, L. Z. (2020). It is in the game: Dimensions of esports online spectator motivation and development of a scale. *European Sport Management Quarterly*, *20*(4), 458–479. https://doi.org/10.1080/16184742.2019.1630464

Rechichi, C., De Mojà, G., & Aragona, P. (2017). Video game vision syndrome: A new clinical picture in children? *Journal of Pediatric Ophthalmology and Strabismus*, *54*(6), 346–355. https://doi.org/10.3928/01913913-20170510-01

Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The mental health of elite athletes: A narrative systematic review. *Sports Medicine*, *46*(9), 1333–1353. https://doi.org/10.1007/s40279-016-0492-2

Rowley, T. J. (1997). Moving beyond dyadic ties: A network theory of stakeholder influences. *Academy of Management Review*, *22*(4), 887910. https://doi.org/10.5465/amr.1997.9711022107

Ryan, D. C. (2015). Factors impacting carded athlete's readiness for dual careers. *Psychology of Sport and Exercise*, *21*, 91–97. https://doi.org/10.1016/j.psychsport.2015.04.008

Sandelowski, M. (1994). Focus on qualitative methods: Notes on transcription. *Research in Nursing & Health*, *17*(4), 311–314. https://doi.org/10.1002/nur.4770170410

Scholz, T. M. (2019). *ESports is business. Management in the world of competitive gaming*. Palgrave Macmillan.

Scholz, T. M. (2020). Deciphering the world of eSports. *International Journal on Media Management*, *22*(1), 1–12. https://doi.org/10.1080/14241277.2020.1757808

Smith, B., & Caddick, N. (2012). Qualitative methods in sport: A concise overview for guiding social scientific sport research. *Asia Pacific Journal of Sport and Social Science*, *1*(1), 60–73. https://doi.org/10.1080/21640599.2012.701373

Smith, M. J., Birch, P. D., & Bright, D. (2019). Identifying stressors and coping strategies of elite esports competitors. *International Journal of Gaming and Computer-Mediated Simulations*, *11* (2), 22–39. https://doi.org/10.4018/ijgcms.2019040102

Smithies, T. D., Toth, A. J., Conroy, E., Ramsbottom, N., Kowal, M., & Campbell, M. J. (2020). Life after esports: A grand field challenge. *Frontiers in Psychology*, *11*, 883. https://doi.org/10.3389/fpsyg.2020.00883

Stambulova, N., & Wylleman, P. (2015). Dual career development and transitions. *Psychology of Sport and Exercise*, *21*, 1–3.

Stambulova, N., Alfermann, D., Statler, T., & Côté, J. (2009). ISSP position stand: Career development and transitions of athletes. *International Journal of Sport and Exercise Psychology*, *7*(4), 395–412. https://doi.org/10.1080/1612197X.2009.9671916

Summerley, R. (2020). The development of sports: A comparative analysis of the early institutionalization of traditional sports and E-Sports. *Games and Culture*, *15*(1), 51–72. https://doi.org/10.1177/1555412019838094

Surujlal, J. (2016). Influence of organizational support on retirement planning and financial management of professional soccer players. *Polish Journal of Management Studies*, *13*(2), 164–174. https://doi.org/10.17512/pjms.2016.13.2.16

Taylor, J., & Ogilvie, B. C. (2001). Career termination among athletes. In R. N. Singer, H. E. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (pp. 672–691). Wiley.

Taylor, M., & Doverspike, D. (2003). Retirement planning and preparation. In G. Adams & T. Beehr (Eds.), *Retirement: Reasons, processes and results* (pp. 53–82). Springer.

Taylor, T. L. (2012). *Raising the stakes: E-sports and the professionalization of computer gaming*. MIT Press. https://doi.org/10.7551/mitpress/8624.001.0001

Thomas, D. R., & Hodges, I. D. (2010). *Designing and managing your research project: Core knowledge for social and health researchers*. Sage Publications.

Thompson, J. J., Blair, M. R., & Henrey, A. J. (2014). Over the hill at 24: Persistent age-related cognitive-motor decline in reaction times in an ecologically valid video game task begins in early adulthood. *PLoS ONE*, *9*(4), e94215. https://doi.org/10.1371/journal.pone.0094215

Tiric-Campara, M., Krupic, F., Biscevic, M., Spahic, E., Maglajlija, K., Masic, Z., Zunic, L., & Masic, I. (2014). Occupational overuse syndrome (technological diseases): carpal tunnel syndrome, a mouse shoulder, cervical pain syndrome. *Acta Informatica Medica*, *22*(5), 333–340. https://doi.org/10.5455/aim.2014.22.333-340

Torregrossa, M., Ramis, Y., Pallares, S., Azocar, F., & Selva, S. (2015). Olympic athletes back to retirement: A qualitative longitudinal study. *Psychology of Sport and Exercise*, *21*, 50–56. https://doi.org/10.1016/j.psychsport.2015.03.003

Tremblay, M. S., Aubert, S., Barnes, J. D., Saunders, T. J., Carson, V., Latimer-Cheung, A. E., Sebastien, F .M. C., Altenburg, T. M., & Chinapaw, M. J. M. on behalf of SBRN Terminology Consensus Project Participants. (2017). SBRN Terminology Consensus Project participants. Sedentary Behavior Research Network (SBRN)—Terminology Consensus Project process and outcome. *International Journal of Behavioral Nutrition and Physical Activity*, *14*, 75. https://doi.org/10.1186/s12966-017-0525-8

Trepte, S., Reinecke, L., & Juechems, K. (2012). The social side of gaming: How playing online computer games creates online and offline social support. *Computers in Human Behavior*, *28* (3), 832–839. https://doi.org/10.1016/j.chb.2011.12.003

Tuomas, K., & Veli-Matti, K. (2016). Do e-athletes move? A study on training and physical exercise in elite e-sports. *International Journal of Gaming and Computer-Mediated Simulations*, *8*(4), 53–66. https://doi.org/10.4018/IJGCMS.2016100104

Upadyaya, K., & Salmela-Aro, K. (2013). Development of school engagement in association with academic success and well-being in varying social contexts: A review of empirical research. *European Psychologist*, *18*(2), 136–147. https://doi.org/10.1027/1016-9040/a000143

Wang, M.-T., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child Development*, *83*(3), 877–895. https://doi.org/10.1111/j.1467-8624.2012.01745.x

Ward, M. R., & Harmon, A. D. (2019). ESport superstars. *Journal of Sports Economics*, *20*(8), 987–1013. https://doi.org/10.1177/15270025198.59417

Ward, S., & Chapman, C. (2008). Stakeholders and uncertainty management in projects. *Construction Management and Economics*, *26*(6), 563–577. https://doi.org/10.1080/01446190801998708

Webb, W. M., Nasco, S. A., Riley, S., & Headrick, B. (1998). Athlete identity and reactions to retirement from sports. *Journal of Sport Behavior*, *21*(3), 338–362.

Wenzel, H. G., Bakken, I. J., Johansson, A., Götestam, K. G., & Øren, A. (2009). Excessive computer game playing among Norwegian adults: Selfreported consequences of playing and association with mental health problems. *Psychological Reports*, *105*(3), 1237–1247. https://doi.org/10.2466/PR0.105.F.1237-1247

World Health Organization. (2010). *Global recommendations on physical activity for health*. World Health Organization.

Wylleman, P. (2019). A developmental and holistic perspective on transiting out of elite sport. In M. H. Anshel, T. A. Petrie, & J. A. Steinfeldt (Eds.), *APA handbooks in psychology series. APA handbook of sport and exercise psychology, Vol. 1. Sport psychology* (pp. 201–216). American Psychological Association. https://doi.org/10.1037/0000123-011

Wylleman, P., & Lavallee, D. (2004). A developmental perspective on transitions faced by athletes. In M. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 507–527). Fitness Information Technology.

Wylleman, P., Reints, A., & De Knop, P. (2013). Athletes' careers in Belgium. A holistic perspective to understand and alleviate challenges occurring throughout the athletic and post- athletic career. In N. Stambulova & T. Ryba (Eds.), *Athletes' careers across cultures* (pp. 31–42). Routledge—ISSP.