



The Expectations of eSport Becomes Part of Sports

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Abstract

The development of science and technology in the 21st century is increasingly rapid, as can be seen by the race of telecommunications companies to create communication tools that offer convenience. As a global industry considered from a financial perspective, eSport is receiving attention from various circles and is being developed to increase competition interest and financial benefits. Sports usually include forms of physical exercise that require strength, endurance, and motor skills. Sports and eSport are different. eSport players don't always move physically despite participating in competitions and rivalries. According to some experts, eSport are a subset of sports. The method used is library research in the form of article review. The implementation of library research consists of investigating, mapping, combining, and evaluating previous research findings on a particular topic or field of knowledge. This method uses various sources of information, including primary articles (n=29). The point is that eSport players tend to be sedentary lifestyle players, which results in problems with fitness and health, so it is not in accordance with the impact of traditional sports physical activities that use large muscles to move body parts while moving. The status of eSport in sport is being questioned in Sport Science studies, as it does not have a positive impact on the fitness and health of eSport players unlike traditional sports athletes. It is increasingly clear that eSport should be seen as electronic entertainment and competition rather than as part of a sport that includes dominant physical activity.

Keywords: *eSport; Health; Fitness; Sport Science*

Introduction

Electrical energy has marked a major transformation in human civilization since the early 19th century. The discovery of electricity by Thomas Edison and Nikola Tesla paved the way for technological advancements in a different direction. With the use of electricity, machines can work efficiently without relying on human or animal power. The use of electricity in housing and office industrial businesses changed the lives and work of people at that time (Chen & Li, 2018, p. 14; Christian, 2008, p. 194). During the industrial revolution 2.0, many industries used electrical energy. The utilization of electrical energy has an impact on the advancement of transportation and communication. With the advent of steam locomotives, steamships, and airplanes, the movement of people and goods became faster than ever. Radio and Telegram as a means of long-distance communication that was previously difficult to do became easier and faster. People from the countryside migrated to cities to work in factories, which caused the growth of cities to become a significant phenomenon.

Furthermore, in the industrial revolution 3.0, the initial stage of digitization of the manufacturing industry and the design and manufacture of 3D printing products. The use of environmentally friendly electricity technology and the development of the internet were popularized massively (Chen & Li, 2018, p. 14). It did not take long from 1957-1970s, digital technology in the form of modern computers was discovered and developed, which resulted in better work efficiency than before (Chen & Li, 2018, p. 14). Resulting in the social era of society 4.0 with the tendency for the distribution of information using digital to become more massive and widespread, this is reinforced by the enactment of big data, nanotechnology, biotechnology, cyber physical systems, robotics, and artificial intelligence as symbols of entry into the industrial revolution 4.0 (Chen & Li, 2018, p. 14). Although until the 2000s human civilization was still in the social 4.0 and industrial revolution 4.0, it does not mean that the future is finished and there is no change. This technological development is predicted to continue to develop even better. With the possibility that the development of the industrial revolution can affect the social development of society.

The development of science and technology in the 21st century is increasingly rapid, as can be seen by the race of telecommunications companies to create communication tools that offer convenience. Telecommunications and information technology previously only sent and received audio messages, now it has become audio-visual. Telecommunication companies offer other features in the form of entertainment software, social media, digital markets, and online games offered as technological and marketing advantages. Games that developed in the early 2000s were still offline video games and few online video games. Then it developed with the emergence of online virtual games offering a virtual-environment experience to Gadget users in particular. With the number of players and the organization of online game competitions, the term eSport has become more easily accepted by the public. eSport has the meaning of a sports competition that uses the physical and mental abilities of players in playing various kinds of online games in electronic and virtual environments (International ESports Federation, 2021a; Jacobson, 2021, p. 1; Stringfield, 2022, p. 110). eSport consist of many different genres and audiences, such as Real-Time Strategy (RTS), First-Person Shooter (FPS), Multiplayer Online Battle Arena (MOBA), Fighting Games, battle royales, collectible card games and Simulated Professional Sports (SPS) (Collis, 2020, p. 14; Finch et al., 2020, p. 11; International ESports Federation, 2021a). Games can be either player versus player or player versus environment (PVP or PVE). Each genre has unique characteristics that affect the player's personality.

As a global industry considered from a financial perspective, eSport is receiving attention from various circles and is being developed to increase competition interest and financial benefits. By the end of 2022, it is estimated that the number of eSport viewers will reach 532 million, and is expected to reach more than 640.8 million by 2025 (Stringfield, 2022, p. 106). As the number of online game enthusiasts and activists grows, the wheels of the economy are turning. International Competition, Professional Competition, Invitational Competition, Open Competition, are organized to give eSport players space to show their existence (International ESports Federation, 2021b). In addition, investors and sponsors are competing to make eSport a promising industry. Individuals involved in eSport previously only made a means of recreational media and self-existence in the virtual world, turning increasingly competitive and financially as professional players (Stringfield, 2022, p. 110).

The demand for more advanced gaming hardware has increased as a result of the popularity of eSport. Gaming devices, such as faster processors and graphics cards, are constantly evolving. With these technological advancements, players have the most suitable equipment to compete. Technology has made eSport infrastructure more robust. Online tournaments and live streaming are possible with higher internet speeds. A more immersive eSport experience is possible with virtual reality and augmented reality. These two technologies allow players to experience the game more immersively. This opens up new opportunities for audience experience and game design. The future of eSport is still full of potential to grow with all its dynamics.

The recognition of eSport as a Sport has sparked complex dilemmas and debates. Although some countries and sports institutions recognize eSport as part of the sports world, there are still some aspects that raise questions and disagreements. One of the main dilemmas is the definition of sport itself.

Sports usually include forms of physical exercise that require strength, endurance, and motor skills (Chandler et al., 2003, p. 3; Peter M. McGinnis, 2013, p. 191). In the scientific study of sport, sport is defined as the physical management that each individual has and can be developed gradually through a systematic training process (Finch et al., 2020, p. 3; Mumford, 2021, p. 59; Randolph Feezell, 2013, p. 227). An athlete will experience various phenomena that surround during physical training, including academic, socio-cultural, economic, psychological, and others. In sports, there are victories and defeats. Games are basically different from sports, but in sports there are games that become the process of competing athletes (Mumford, 2021, p. 49). Games are usually penalized as a sporting activity where athletes compete against each other for achievement and self-existence.

Sports and eSport are different (Andrews & Crawford, 2021, p. 329). eSport players don't always move physically despite participating in competitions and rivalries. According to some experts, eSport are a subset of sports. However, it is important to remember that eSport is currently a competition conducted through video games, so it does not require good physical condition to participate. People who are not in good physical condition can also participate in eSport, unlike sports that require regular physical training. Just as sports athletes can be judged on their physical condition, coordination, and mental strength. The question is whether the strategy and mental activities involved in playing games can be classified as sports (Railsback & Caporusso, 2019). Some members of the international Olympic committee doubt whether eSport qualifies as a sport, so the committee has yet to give eSport official recognition. They point out concerns about the effects of gaming on long-term fitness and health and the lack of physical activity of players.

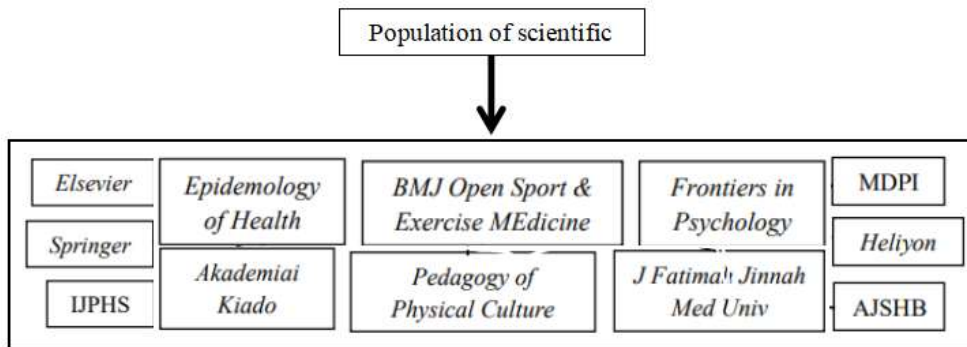
The concerns raised about the impact of gaming effects on long-term health do not stem from wild assumptions. However, based on comparisons made between the fitness and health effects of eSport and sports. When eSport players spend a lot of time on the screen, it has an impact on their physical health (International ESports Federation, 2021a). eSport players often complain of tired eyes, wrist pain, and blurred vision. They also experience neck and back pain. Professional eSport players are prone to injuries due to irregular movements and poor posture. In contrast to the effects that occur after regular exercise. Hormones generated during exercise boost the muscles' ability to absorb amino acids. Muscles can be shaped, developed and strengthened through this process. Cardiovascular exercise improves blood circulation by strengthening the heart muscle and increasing lung capacity. This allows the body to expel carbon dioxide and take in oxygen more efficiently. The result is a better metabolism and a better immune system. Habitual movement also lowers the risk of heart disease and stroke.

This research aims to review global scientific reports on eSport, based on the fitness and health impacts that occur in eSport players through scientific studies of articles published in international journals. The researcher hopes to find a new pattern and understanding that can be summarized in groups based on the scientific results analyzed.

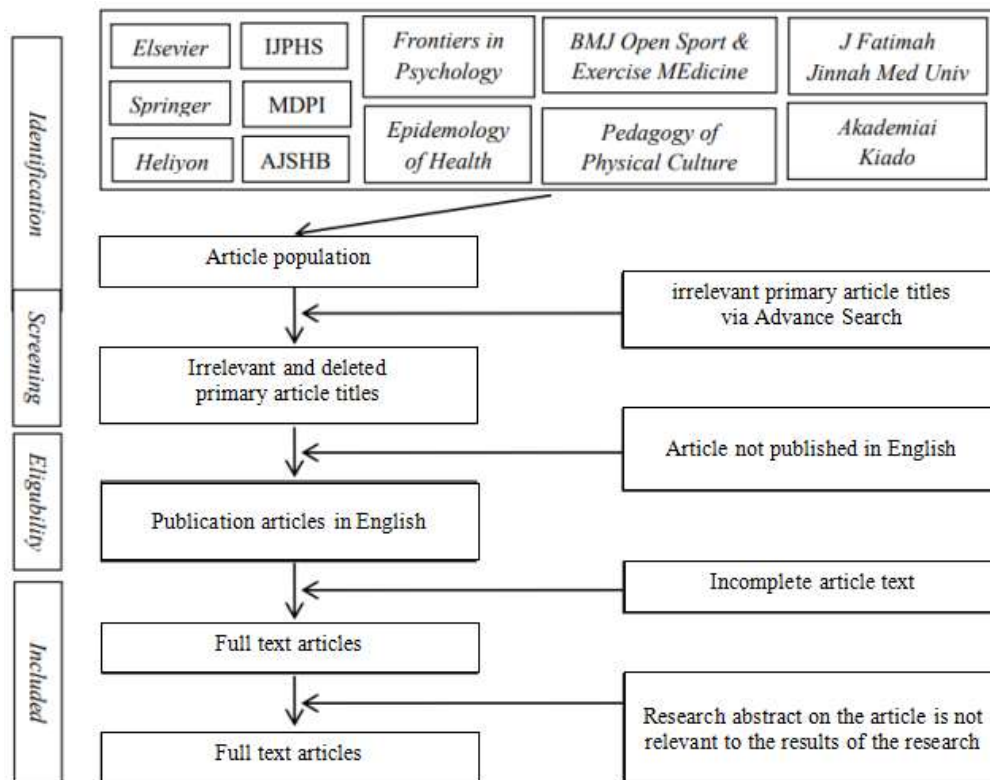
Research Methods

The method used is library research in the form of article review. The implementation of library research consists of investigating, mapping, combining, and evaluating previous research findings on a particular topic or field of knowledge (Hidayatullah, 2022, p. 1). This method uses various sources of information, including primary articles. The method for selecting articles is based solely on the research topic and the quality of international journals that have been published over the past five years. A rigorous process of finding, assessing and synthesizing articles related to the research topic forms the search strategy. The research results from the reviewed articles were combined with the problem found, namely

the impact of fitness and health of eSport players through the study of sports science. Search engines for scientific articles and journals use keywords according to the topic. Next, the articles were distributed to the population and sample.



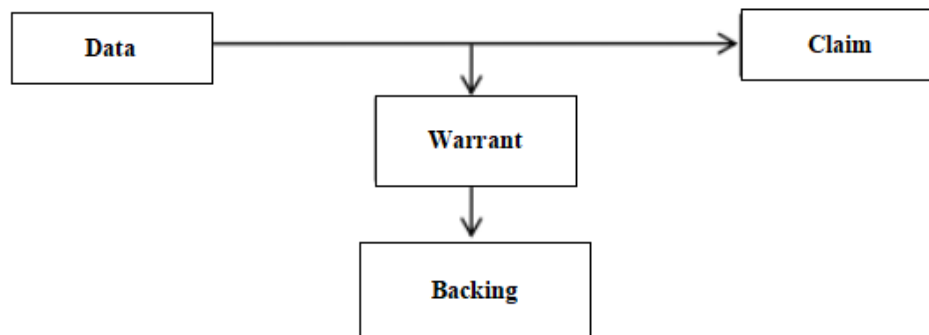
Picture 1. The Population



Picture 2. PRISMA Information Stream

The identified articles were then included in the population category of 677 data. The research sample is articles whose journal publications are included in the Q1 and Q2 Scopus categories. In addition, the sample articles used English and had full text. This procedure is included in the elimination stage of relevant articles through the information flow from PRISMA. Inclusion and exclusion criteria from a population of 677 articles using Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA). Then it became a sample with a total of 159 articles, further processed by strictly eliminating and adjusting the research topic, in order to obtain the expected results. Articles were classified according to the topic of fitness and health of eSport players as many as 29 relevant articles.

Eligible articles were organized according to the background discussion of the problem. To facilitate grouping using the causal interpretation method, the results were re-evaluated to determine how the variables relate to each other. If X is eSport activity, then Y is the fitness condition of eSport players. If X is eSport activity, then Y is the health condition of eSport players. And if X is the fitness and health condition of eSport players, then Y is the status of eSport in sports science studies (Hidayatullah, 2022, p. 123). Every variable has been taken into consideration while processing and evaluating the research findings. This is done to find a strong and rational reason to answer the research problem. Toulmin's Argumentation Drafting Model can be used to describe the argumentation drafting process as Data (D) that supports Claims (C) (Toulmin, 2003, p. 90), so that the emergence of claims is caused by or Warrant (W), and causes or Backing (B) (Toulmin, 2003, p. 95). Furthermore, the conclusions to be drawn will be based on logical thinking arguments generated from the research results.



Picture 3. Modification of Toulmin's Argumentation Model

The initial argument is that eSport is one of the most highly regarded global issues. eSport players are highly concentrated while playing online games and even while competing. eSport players may develop a habit of sitting and staring at a computer screen for long periods of time, which can lead to poor fitness, health and lifestyle issues. Human physiological degeneratives will become an unavoidable problem worldwide if there are more cases of sedentary behavior. Due to its effects on physiological, psychological health and social behavior, the World Health Organization (WHO) has included Internet Gaming Disorder (IGD) in the international classification of diseases.

Findings

Once the articles were identified, 29 relevant articles were categorized based on the topic of eSport player fitness and health. There are 18 articles published in Q1 Scopus and 11 articles published in Q2 Scopus in reputable International Journals. The results obtained from each article show some similarities in conclusions according to research topics.

The study in this research discusses several main topics, with a deductive thinking process. These topics include the health of eSport players and the fitness of eSport players in the study of sports science, thus having an impact on the status of eSport in sports science. There are 21 articles in the eSport player health status group. There are 7 articles in the eSport player fitness status group. And there is 1 article in the eSport status group in Sports Science.

The grouped articles were evaluated based on title, and research results. After that, the discussion of each topic group focused on comparing the results of each article. This was further reviewed to obtain information on existing facts and the development of previous facts. The causal relationship between the results of each article was interpreted, with the aim of providing a basis for discussion in the preparation of the argument.

Table 1. Interpretation of Articles

No	Title	Quartile	Result
1	<i>Adverse Childhood Experiences, Dissociation, and Anxious Attachment Style as Risk Factors of Gaming Disorder</i> (Grajewski & Dragan, 2020).	Q1	The study revealed a non-direct path mediated by the propensity to secede, in addition to the direct association between the amount of ACEs and anxiety and GD.
2	<i>Metacognitions and Emotion Recognition in Internet Gaming Disorder Among Adolescents</i> (Aydn et al., 2020).	Q1	The IGDT factor and its overall score are significantly predicted by daily internet use and metacognition, while the IGDT salience and tolerance factor and its total score are significantly predicted by the negative factor of RMET.
3	<i>The Mediating Effect of Motivations Between Psychiatric Distress and Gaming Disorder Among Esport Gamers and Recreational Gamers</i> (Bányai et al., 2019).	Q1	The mediation model demonstrated a strong positive direct mediation effect between greater degrees of psychiatric distress and gaming disorder through escapism (i.e., excessive gaming to avoid real-life difficulties).
4	<i>Spine Posture, Mobility, and Stability of Top Mobile Esports Athletes: A Case Series</i> (Lam et al., 2022).	Q2	The findings demonstrated that compared to non-athletes, professional eSports players had far poorer spinal posture as well as decreased spinal mobility and stability. Compared to non-athletes, they might be more vulnerable to musculoskeletal issues relating to the spine, like neck or back pain.
5	<i>Managing The Health of The Esport Athlete: An Integrated Health Management Model</i> (Difranco-Donoghue et al., 2019).	Q1	This study indicates that wrist and palm pain is common among eSports athletes.
6	<i>Musculoskeletal Pain is Common in Competitive Gaming: A Cross-Sectional Study Among Danish Esports Athletes</i> (Lindberg et al., 2020).	Q1	Back pain affects eSports athletes frequently. Compared to athletes without pain, individuals with musculoskeletal discomfort trained for eSports at a lower rate, indicating that pain may have a detrimental impact on esports involvement.
7	<i>Physiological and Cognitive Functions Following a Discrete Session of Competitive Esports Gaming</i> (Sousa et al., 2020).	Q2	The current study looked at changes in the brain and body after playing two different kinds of eSports games: multiplayer online battle arena games and first-person shooters.
8	<i>The Effects of Competitive and Interactive Play on Physiological State in Professional Esports Players</i> (Watanabe et al., 2021).	Q1	Professional eSports players' physiological states are impacted by competitive and interactive games. During competitive play, HR (heart rate) increases in specific game conditions (start of game, end of game, or match). This suggests that, depending on the game situation, the level of competitiveness activates the sympathetic nervous system of esports players.
9	<i>Abnormal Psychological Performance as Potential Marker for High Risk of Internet Gaming Disorder: An Eye-Tracking Study and Support Vector Machine Analysis</i> (S. Wang et al., 2022).	Q2	In HIGD, psychological performance is lower. Response inhibition combined with aberrant emotion control could be a useful indicator for HIGD patients.
10	<i>Associations of Binge Gaming (5 or</i>	Q1	When it comes to gaming disorders and mental health,

<i>more Consecutive Hours Played) With Gaming Disorder and Mental Health in Young Men</i> (Marmet et al., 2023).		binge gaming patterns--especially those that involve daily or almost daily binge gaming--should be taken into account.
11 <i>Depression and Social Anxiety Predict Internet Use Disorder Symptoms in Children and Adolescents at 12-Month Follow-Up: Results from a Longitudinal Study</i> (Leo et al., 2021).	Q2	Adolescents with depression and social anxiety are more likely to develop behavioral addictions, demonstrating the independent influence of predictors on symptoms of Internet use disorder
12 <i>Gaming Disorder and Well-Being Among Emirati College Women</i> (Verlinden et al., 2021).	Q1	This study sheds light on IGD in an Arab community that is predominately female. It discovers associations with symptoms of mood disorders and points to a gradual rise in problematic gaming. The findings are examined in relation to the theory of mood improvement and the potential dual disorder status of IGD.
13 <i>Internet Gaming Disorder, Risky Online Behaviour, and Mental Health in Hong Kong Adolescents: The Beneficial Role of Psychological Resilience</i> (Tsui & Cheng, 2021).	Q1	According to the findings, 4% of the participants had a high risk of IGD, and 6% had an overall risk of IGD. Risky online conduct and IGD were both positively correlated with depressive symptoms, while psychological resilience mitigated these relationships.
14 <i>Need Frustration, Gaming Motives, and Internet Gaming Disorder in Mobile Multiplayer Online Battle Arena (MOBA) Games: Through the Lens of Self-Determination Theory</i> (T'ng et al., 2022).	Q1	The results imply that IGD is positively impacted by frustration. The connection between need frustration and IGD was significantly mediated by social incentives, escape, competition, coping, and skill.
15 <i>Psychometric Evaluation of the Russian Version of The Gaming Disorder Scale for Adolescents</i> (Nazari et al., 2022).	Q2	Results indicate that gamers with a higher risk of GD are more likely to have psychological comorbidities (such as anxiety and sadness).
16 <i>Risk factors and Outcomes of Internet Gaming Disorder Identified in Korean Prospective Adolescent Cohort Study</i> (Byeon et al., 2022).	Q1	The findings demonstrated that IGD is a substantial risk factor that raises the possibility of physical disease and trauma in teenagers.
17 <i>Social Bullying Among Undergraduates: The Roles of Internet Gaming Disorder, Risk-Taking Behavior, and Internet Addiction</i> (Nwanosike et al., 2022).	Q2	Regression analysis results indicated a positive correlation between risky conduct and social bullying, as well as gaming disorder (GD).
18 <i>Impact of Victory and Defeat on The Perceived Stress and Autonomic Regulation of Professional Esports Athletes</i> (Machado & Travassos, 2022).	Q2	The findings indicate that the Victory Group (VG) exhibited superior Heart Rate Variability (HRV) response, characterized by increased parasympathetic activation and lower perceived stress levels. Conversely, the Death Group (DG) demonstrated the worst HRV response, characterized by increased sympathetic activation and higher stress levels.
19 <i>Reciprocal Effects of Esport Participation and Mental Fatigue Among Chinese Undergraduate Students Using Dynamic Structural</i>	Q1	According to our research, engaging in more esports increases mental exhaustion both during and after gameplay. Long-term high levels of eSports engagement are also linked to stable levels of mental exhaustion and

<i>Equation Modeling</i> (Luo et al., 2022).		persistent sensations of mental exhaustion.
20 <i>Prevalence and Risk Factors of Problematic Internet Use Among Hungarian Adult Recreational Esports Players</i> (Kósa et al., 2022).	Q2	This is the first study from Hungary to look into Internet addiction prevalence and risk factors in adult eSports participants. Among adult gamers, one in five experience Internet addiction
21 <i>The Association Between Mobile Game Addiction and Depression, Social Anxiety, and Loneliness</i> (J. Wang et al., 2019).	Q1	Addiction to mobile games has been positively correlated with loneliness, sadness, and social anxiety. Adolescent boys who have a mobile game addiction likely to report higher levels of social anxiety, according to additional research examining the gender variations in these outcomes and mental health.
22 <i>Longitudinal Relations Between Gaming, Physical Activity, and Athletic Self-Esteem</i> (Hygen et al., 2022).	Q1	Reduced MVPA (Moderate and Vigorous Physical Activity) predicts higher gaming, while increased gaming predicts reduced MVPA
23 <i>Esports Players, Got Muscle? Competitive Video Game Players' Physical Activity, Body Fat, Bone Mineral Content, and Muscle Mass In Comparison To Matched Controls</i> (DiFrancisco-Donoghue et al., 2020).	Q1	According to this study, participating in eSports while college was linked to excessive body fat, low bone mineral content, low LBM (low body mass), and sedentary behavior.
24 <i>Professional Esports Players: Motivation and Physical Activity Levels</i> (Giakoni-Ramírez et al., 2022).	Q2	According to the data, 92.7% of professional eSports players engaged in moderate to high levels of physical exercise. Conversely, gamers who engaged in low levels of physical activity scored highly on all motivational factors.
25 <i>Associations Between Digital Media Use and Lack of Physical Exercise Among Middle-School Adolescents in Korea</i> (Kim et al., 2023).	Q1	Excessive use of the Internet and streaming video games has been linked to a decrease in moderate-intensity physical activity (mPE) among male high school students in Korea.
26 <i>The Association Between Esports Participation, Health and Physical Activity Behaviour</i> (Trotter et al., 2020).	Q2	The majority of eSports players do not achieve recommended levels of physical activity, a tiny percentage of them are severely fat, and overall, eSports players seem healthy, suggesting potential health hazards in the future.
27 <i>The effect of Time Spent Sitting and Excessive Gaming on The Weight Status, and Perceived Weight Stigma Among Taiwanese Young Adults</i> (Kamolthip et al., 2023).	Q1	demonstrated a significant inverse relationship between excessive sedentary behavior. The main goals of prevention initiatives are to decrease sedentary behavior among university students by disseminating information and encouraging physical exercise.
28 <i>The Effects of Internet Gaming and Social Media Use on Physical Activity, Sleep, Quality of Life, and Academic Performance Among University Students in Hong Kong: A Preliminary Study</i> (Kwok et al., 2021).	Q1	The findings highlight how internet gaming and smartphone addiction frequently have a detrimental effect on sleep, academic achievement, physical exercise, and psychological well-being.
29 <i>Investigating the Human Factors in Esports Performance</i> (Railsback & Caporusso, 2019).	Q2	According to our survey data, 73% of sports players (all demographics) identify professional players as athletes, whereas 27% of participants do not think of eSports as an agonistic activity.

Discussion

1. Health Effect

Based on the interpretation of the research results, there were 21 articles that generally discussed the relationship between the overall health status of eSport players. 15 articles explicitly concluded that gaming disorder causes mental disorders, including addiction, mental fatigue, and escapism, which significantly negatively impact the health of the most common eSport players (Aydm et al., 2020). Furthermore, there are 6 articles that explicitly conclude that eSport players' addiction has developed into a habit of playing games for a considerable amount of time every day causing escapism, which is the tendency to avoid reality and daily activities by seeking entertainment in the virtual world.

Professional eSport players have weaker and worse spinal posture than non-professional players due to sitting for too long to play virtual games. In addition, eSport players are more likely to have injuries to the palms and wrists (Almutairi et al., 2023; Toth et al., 2021). After a while, it becomes a habit not to perform more complex movements and use large muscles (Kamolthip et al., 2023). The International Health Organization (WHO) took notice of the habit, known as sedentary lifestyle, and paid special attention to the effects of physical inactivity that can lead to further health problems later in life (Zwibel et al., 2019). Obesity, diabetes, heart disease and cancer are examples of potential future health risks.

The mental health of eSport players may be affected by other symptoms caused by gaming disorder (Kwok et al., 2021; Sabri & Yunus, 2021; Yamasaki et al., 2022). In general, the articles state that prolonged gaming leads to prolonged mental fatigue. In addition, eSport players who are in the high-risk category are reported to experience symptoms such as depression, frustration, anxiety and loneliness (Luo et al., 2022).

A discussion of the relationship between the health impacts of eSport players, which shows an interconnected domino effect. As the main impact eSport players feel, gaming disorder is the cause of mental disorder. eSport players who experience mental health problems also experience physical health problems. What this means is that eSport players who have experienced mental disorder will have a lower propensity to engage in physical activity. With a lack of physical activity, movement functions are reduced. Lowering the physiological quality of the body such as spinal weakness and abnormal spinal shape.

The degenerative domino effect of mental health has an impact on the social conduct of eSports athletes. According to one study, the social behavior of eSports players caused odd reactions to the surroundings, such extreme dread or discomfort while assembling with others outside. Another case found that the influence of gaming disorder on eSport players' behavior has a positive correlation with social bullying.

2. Fitness Effect

Based on the interpretation of the research results, there are 7 articles that clearly conclude the impact of eSport activities can lead to degenerative physical activity. Furthermore, it can lead to the potential for a significant sedentary lifestyle (Aydm et al., 2020; Kamolthip et al., 2023). Professional eSport players have a very demanding training agenda, in order to improve their performance during competitions. As such, the intensity of sitting in front of a computer screen for long periods of time is very high. This is a major factor for degenerative physical activity. It was reported that male eSport players in Korea play excessive online games, which is associated with a lack of moderate-intensity physical exercise. In another article it was reported that the impact of physical inactivity can lead to sedentary behavior, low body mass (LBM), low bone mineral content (BMC), and increased body fat (DiFrancisco-Donoghue et al., 2020; Rudolf et al., 2022)

The decline in fitness of eSport players has a lot to do with sedentary lifestyle. WHO (World Health Organization) discusses the interesting topic of sedentary lifestyle. This topic evolved from many reports on the impact of media and technological developments. The intensity of playing online games usually tends to last for a long time. With the high intensity of playing online games, it reduces the intensity for more flexible movement activities in daily activities (Trotter et al., 2020). Another impact of eSport, it is reported that eSport players lose control in regulating sleep patterns and eating patterns (Kamolthip et al., 2023). In the long run, this can affect their nutritional status and health. Furthermore, obesity can be a very potential impact experienced by eSport players (Kwok et al., 2021).

3.eSport Status

An essay addressing the state of eSport in Sports Science is based on the interpretation of the research findings. The article aimed to investigate the relevance between pro-gamer athletes and traditional sports. The methods used were questionnaires and interviews of coaches and players of student teams and eSport leagues. The result data showed that 73% recognized pro-gamers as athletes, while 27% did not. Counter respondents think that eSport are not included as agonistic activities (Railsback & Caporusso, 2019).

The research was limited to a small survey. However, some of the results of the article can serve as a basis that can confirm that eSport is a non-agonistic activity. This is in line with the previous article that eSport activities have a tendency to stay in the same place. So that movement activities become very minimal and tend to become a sedentary lifestyle.

Conclusion and Suggestion

The findings obtained in this study show that the impact of eSport is a global issue that needs to be studied and developed further. The negative impact of eSport has a domino effect on the status of eSport in sports science studies. The point is that eSport players tend to be sedentary lifestyle players, which results in problems with fitness and health, so it is not in accordance with the impact of traditional sports physical activities that use large muscles to move body parts while moving sport (Kanosue et al., 2015, p. 67).

The fitness status of eSport players has decreased, which has an impact on their health status. This results in increased potential for sedentary lifestyle and the potential for diseases such as obesity, heart disease, stroke and decreased movement function in eSport players. The status of eSport in sport is being questioned in Sport Science studies, as it does not have a positive impact on the fitness and health of eSport players unlike traditional sports athletes (Chandler et al., 2003, p. 191; Peter M. McGinnis, 2013, p. 3). It is increasingly clear that eSport should be seen as electronic entertainment and competition rather than as part of a sport that includes dominant physical activity.

This research is expected to provide input to players, coaches and eSport teams to pay more attention to the fitness and health impacts that occur from eSport. Such as implementing a conventional sports physical training program to maintain the fitness and health status of eSport players during breaks from practicing online games. Sports academics need to examine more deeply the impact of eSport and the status of eSport in sports studies, at least for now.

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