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Benefits of physical training in esports:

Do esports players experience physical training beneficial for successful gaming?

ABSTRACT

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The purpose of this survey was to collect straight data from esports players globally to find out the possible similarities about experiencing physical training beneficial and how it contributes to more successful gaming.

The research was implemented by creating an online survey via Google Forms and sharing the link to international Discord channels. Quantitative questions and answer options helped to see the bigger picture while qualitative information added details and was able to give the results of the survey a human perspective. The content of the survey was designed in cooperation by a pro striving esports player, who helped to select the most relevant questions and modifying the survey as short and easy for players to reply.

The survey reached 60 respondents in one month period. The main results of the survey showed that there were no major differences between the players age, sex, continent, game, or the amount of PC training or physical training per week according to the options selected on if and how the respondents have experienced physical training being beneficial for more successful gaming performance.

The theory part of this research discloses briefly to the history of esports, features of a professional esports player and how physical activity may improve the gaming performance.

CoD	-	Call of Duty, *a first-person shooter video game*
CS:GO	-	Counter-Strike: Global Offensive, *a first-person shooter video game*
Esports	-	Electronic sports, *a competitive form of sport played alone or in teams using information technology*
FPS	-	First person shooter, *a game form where the game image is diplayed to the player through the game character's perspective*
LoL	-	League of Legends, *a multiplayer online battle arena video game*
MHR	-	Maximal heart rate, *training intensity is divided into five heart rate zones from very light to maximum intensity. Heart rate zones are calculated as a percentage of your maximum heart rate*
BPM	-	Beats per minute, *measurement how fast heart beats per minute*
MMORPG	-	Massively multiplayer online role play game, *an online role-playing video game with a very large number of players participating simultaneously*
MOBA	-	Multiplayer online battle arena, *a game form where the goal of two opposing teams is to destroy the enemy base and defend their own base*
PC	-	Personal computer
PUPG	-	PlayerUnknown's Battlegrounds, *a game form with the goal to be the last team or player alive on the mapped area*
RTS	-	Real time strategy, *a game form against other players where they have to act in real time*
TFT	-	Teamfight Tactics, *a turn-based strategy game where you battle against seven other players in a free-for-all game format*

TABLE OF CONTENTS

1   INTRODUCTION

Esports industry has grown into a multi-million-dollar business and will be expected to continue its growth even more. Due to its massively increasing popularity it is a current topic to explore since the sources of information and researches are still rather fresh. This research will look into the brief history of esports and what it is all about, following what is the relationship between esports and traditional sports and how it has been considered and included into gaming through the features of a professional esports player. The research will focus on pro PC esports players or those striving for a pro career, because for example their gaming endurance, stress tolerance and cognitive functioning are in a key role. The research was implemented in a form of a quantitative survey in order to find out if and how the players experience traditional physical activity to be beneficial for more successful gaming.

1.1   Background

The topic has been researched before (Tuomas Kari, Do E-athletes move? A Study on Training and Physical Exercise in Elite Esports, 2017) which offers possibly the first peer-reviewed study on the training routines of pro esports players with special focus on the players physical exercise routines. This research has been influenced by the mentioned study but focuses more on the certain positive effects on more successful gaming performance that the players have possibly experienced through physical training.

1.2 Limitations

The research phase included a number of limitations that added certain challenges in its implementation. One limiting factor was the lack of time that could have an effect on the number of the final responses of the survey and the variations in the average responses. The researcher's own personal limited knowledge of the topic also forced to seek and use diverse sources. Esports in general is a very recent topic, so retrieving certain sources was incomplete but generally applicable. Another limiting factor was the challenge of disseminating the survey, in which

an external factor had to be used. Despite several distributions, the number of responses to the survey remained relatively short. Most players may not pay attention to or otherwise show interest in surveys that require them to spend extra time. For this reason it was important to keep the whole survey as short and easy to respond to.

2   ESPORTS

Esports (abbreviation from words electronic sports) is a competitive form of sport which utilizes information technology such as computer or game consoles. Esports are played in a team or individual form, depending on the game and form of play, against the opponents and the challenges created by the game in a competitive situation. Esports can be played by anyone alone or to play with other people either through a local network, game console or globally over the internet. Online software's like Discord and TeamSpeak enables the players to communicate remotely together. Competing is possible with almost any type of game, but according to Games Radar list of the most popular PC games in 2020, professional gaming has so far been centered around only few games with large number of players. According to the Games Radar list of most popular PC games in 2020 are first person shooter (FPS) games, real time strategy (RTS) games, multiplayer online battle arena (MOBA) games, massively multipalyer online role playing games (MMORPG) and Battle Royale survival games. (Ford, Top esports games 2020: Which titles are the biggest in competitive gaming?, 2020) Not all gaming is esports, but hobbies become a sport at the time when they start competing purposefully against each other. A professional esports player can be defined for example by their team contracts or achievements in international tournaments (Tuomas Kari, Do E-athletes move? A Study on Training and Physical Exercise in Elite Esports, 2017)

Once at the top level or on the way to it talented players usually strive for two esports career paths: streaming or playing in a professional team. The best pro esports players are wanted to play in teams. Players and teams are given leagues and tournaments where the most common games are played. The biggest competitions can be held in live arenas full of spectators and fans and they are also shown on streaming services such as Twitch and YouTube which enables even tens of millions of viewers to watch the tournaments live. Streaming players on the other hand make their profits with partnerships with influencer marketing agreements and product placements on their videos through the streamer's manager or an organization. (PMG, 2018)

2.1 History of esports

In the 1950s the first pre-existing games such as chess began to be digitalized to the screen. Over the decades the games eventually evolved to home computers and console games. The first steps of competitive gaming were taken in 1970s when a tournament took place at Stanford University for the game called Spacewar. In 1980s a game publisher Atari hosted a tournament for a game Space Invaders which ended up participating over 10 000 players across the United States, and so competitions became mainstream. In 1990s many gaming companies started to get interested in competitive gaming. For example, Nintendo hosted its own World Championships.

The playing possibilities of esports expanded as games developed into individual and team games. The next big step was taken when playing over the Internet offered people the opportunity to compete with distant opponents. In the late 1990s, the first global organizations hosting esports tournaments were established. At that time the most popular esports games were Quake, Warcraft and Counter-Strike. In the West, FPS games such as Counter-Strike were very popular, while in Asia the most played game genre was the RTS games, especially StarCraft.

The popularity of esports continued its growth to the 2000s. Organizations and the events they organized also grew in number and size. For example, in 2001 the first World Cyber Games were played with prizes worth more than 300 000 USD. Professional gaming was made possible when the value of the prize pools in the tournaments held and the amount of salaries paid by the gaming organizations grew large enough for the player to be able to support themselves financially with them.

2.2 Esports today

Today, tournaments played are more evenly distributed than ever before in games of different genres. In this way, the top players of more game genres have got the opportunity to advance their careers as professionals. (SEUL, SEUL, n.d.) (TESK, n.d.) For the best tournament players, sponsors fund for competition trips and often also equipment for the use of the player or maintenance organization. In addition, players can receive rewards of up to thousands of dollars. The cash prizes for the biggest tournaments can reach tens of millions of dollars. In 2019 the total prize money for the tournaments had already exceeded 200 million USD.

The question of whether esports are sports, divides opinions among the electronic sports enthusiasts. In sports districts, many do not consider esports to be a real sport due to it does barely includes any physical movement. However, according to the guidelines issued by the International Olympic Committee in 2017, esports can be considered a real sport. Esports has been nominated as an official sport for the 2022 Asian Games. However, access to it is not yet secure because esports does not have a required international umbrella organization but many international organizations. (Keskisuomalainen, 2018) Esports has also been proposed for the 2024 Olympics in Paris. However, Thomas Bach, the President of the International Olympic Committee, said in 2018 that esports cannot be included in the Olympic movement because of its violence. (Wade, 2018)

2.3 Features of a professional

The picture of esports players is not particularly athletic or social, in fact it is totally opposite. For example, the amount of cortisol hormone, also called the stress hormone, produced while playing is about the same level as a race car driver. This is combined with a high pulse, sometimes as high as 160 to 180 BPM (beats per minute), which is equivalent to a fast running. (Esportwissen, n.d.)

According to the Finnish esports Association, esports players train more varied than ever before and teams pay more attention to their physical and mental features. Constantly sitting in front of the computer can be detrimental for the player, and will eventually erode the player's good qualities, unlike in traditional sports where the performance itself helps to develop the athlete physically. Because esports players need to sit for long periods of time, they should especially focus on back and core exercises to maintain the posture while sitting in aim to avoid neck and back pain.

Posture is defined as the position that we put our bodies in while we are sitting, standing our lying down. A good posture is the correct alignment of body parts supported by the right amount of muscle tension against gravity, which means the most optional position so that the muscles are not working too hard to hold the certain structures up. In principle, seated position is not optimal to human bodies be in for long periods of time. (Healthcare, 2020)

Cardio training is important to prevent to get fatigued too fast during a tournament. Despite the importance of overall physicality in the players locomotor abilities such as working out, esports players are not required to have the same physical exertion as most athletes of traditional sports. Locomotor skills mean using large muscle groups for example in running but using a computer mouse and keyboard requires an excellent eye-hand coordination, reflexes and muscle memory, which are called fine motor skills. Diet can also play a big role in helping the players mental focus, which is why it is important to also eat right and follow a balanced diet. If the player eats something heavy in carbs or fat before training, it will influence on the performance afterwards like sleepiness and slower reactions. (Brockbank, 2017)

From a psychological point of view a good player is required to own strong cognitive abilities. First comes concentration. The player must be aware of all the details on the screen for hours and stay sharp. The second essential skill is planning. Strategy is a crucial part of esports, and it requires quick and smart problem-solving skills. The third ability is memory. This ability consists of using all cognitive resources for one task. The aim is to be able to combine what is currently displayed on the screen and what has already happened. Also, the ability to control moods and focus on one goal is one important skill required in esports. One crucial aspect of gaming is also to ignore potential distractions in the gaming environment. (Psychology of esports, 2019)

When playing as a team, teamwork and team spirit are the most important aspects. Without a functioning team, there will be no success. A good team invests in achieving a common goal, failing to act, and understanding that potential conflict situations can be resolved in a professional way. If the player is not able to commit for the team for example by taking part in practices or the values and goals does not match with the team, substitutes are sought quickly. Many high level esports teams and organizations today have even hired sports psychologists to maximize the outcome of their players to in aim to guarantee success. (Tang, 2018)

3   POSITIVE HEALTH EFFECTS OF PHYSICAL ACTIVITY

Physical inactivity can lead to several health issues. A good physical, mental and social functioning and a supportive environment help people to be strong, to find their place in society, to cope in working life and to cope with everyday life independently.

For an esports player the most relevant health issues are for example obesity, body posture problems, injuries such as carpal tunnel syndrome in wrists and generally low energy levels. Therefore, even an esports player should nevertheless focus on healthier lifestyle especially when aiming professional in order to improve overall gaming performance.

Regular physical activity will improve overall health status. It helps to reduce cortisol levels, which are straight connected to the stress response. Body releases endorphin hormones which triggers positive feeling in the body and remains mind optimistic. This is why many players find physical training as a relaxing factor after a long training session of gaming. (Dumić, Esports, Gaming and Physical Activity, 2019)

3.1 Training on the side

Then, what kind of side training helps an esports athlete in one's performance? Players usually start with everyday exercises and light endurance training. Endurance training helps to focus and cope with long and strenuous game sessions. Muscle training, in turn, can develop muscle balance, which inevitably distorts sitting for long periods of time, and improves the supporting muscles. This kind of ancillary training strengthens the player's weak muscles and stretches the tense muscles. Even a player's speed force can be practiced if the base for it is right. Esports players should also pay attention to the wellbeing of their working muscles especially in the shoulder area and the forearm muscles. The most efficient way for it is professional massaging.

Physical activity also has a positive impact on cognitive function of the brain. This helps to improve the players self-esteem, speed, and attention, and leads to increased self-confidence and better decision making. Physical activity has also been proven to improve motor function such as reaction time and hand-eye coordination, which are critical skills in esports. (Bergland, Want to Improve Blood Flow to Your Brain? Start Exercising, 2020)

As a result, all these health benefits boost the learning capabilities in improving and developing as an esports player. Aerobic training can make focus and concentration better, and through intense anaerobic training can enhance the players willpower.

A research study "Do E-Athletes move? A Study on Training and Physical Exercise in Elite E-sports" is possibly the first peer review on this topic (2017), illustrating whether esports players find exercising important according to their success. They examined the training routines of 115 elite esports athletes with a special focus on their physical training routines. As results, the 115 esports athletes trained approximately 5,28 hours every day year-round at the elite level, and approximately 1,08 hours of that time was physical training. More than half (55,6%) of these esports athletes were convinced that physical training has a positive effect on their esports performance. (Kari & Karhulahti, 2017)

3.2 Dimensions of functions in esports

There are certain dimensions of functions that an esports player needs for successful gaming performance. Functional capacity is a multidimensional concept that is structured in several different ways. The dimensions of functional capacity are linked to each other, to the requirements and conditions of the environment, and to an individual's state of health and other personal characteristics. A frequently used way is to divide operational capacity into the following dimensions: physical, cognitive, psychological, and social. To stay in the delimited topic, this research focuses to centralize the physical and cognitive functions.

A good physical, mental and social functioning and a supportive environment helps to stay strong, to find one's place in society, to cope in working life and to cope with everyday life independently.

Then, what is the connection between physical training and these functions for an esports player? Physical functioning refers to the players physical ability to cope with the tasks in the game that are major. Physiological characteristics of the body that are important for physical functioning including muscle strength and endurance, joint mobility, control of body position and movements and the central nervous system coordinating these factors.

Physical functioning is an external factor and manifests itself as the ability to move and move oneself. Sensory functions such as sight and hearing are also often considered to belong to the

area of physical functioning. Physical functioning is extremely important for esports players because of huge amounts of sitting and staying in static position. Physical training will then improve the players' ergonomics.

Cognitive functioning is the co-operation of different aspects of information processing, which enables the player to perform in gaming. These functions are related to the reception, processing, storage and use information and may be incorporated for example for memory, learning, focusing, attention, perceiving, orientation, data processing and problem solving. It can also be connected to fine motor skills, which are necessary for an esports player. (Finnish Institute of Health and Welfare, 2019)

4 METHODOLOGY

The aim of the survey was to reach pro PC players and those who are seriously striving for a pro career. The purpose was to collect straight data from high level PC players to find out the possible similarities and differences about experiencing physical training beneficial and how it contributes to more successful gaming. The survey was implemented to be quantitative, which means that it was anonymous and only showed together the total results of all respondents in percentage. The results of the survey were meant to be public, so after the respondent had filled in the survey it was possible to see the total results of the other respondents so far.

4.1 Quantitative survey

A quantitative research clarifies issues related to numbers and percentages. It requires a sufficiently large and representative sample. Data collection often uses standardized research forms with ready-made answer exchange conditions and helps to map the existing situation, but it is not possible to sufficiently determine the causes of the issues. (Kabir, 2016)

In order to get consistent answers, it was best to mainly use closed-ended questions. The questions were created as multiple choice and check box answers, but in a few broader questions there is considered an answer option that allows the respondent to write their own answer if it is not listed in the pre-written options. When questions do not allow the respondent to give an individual or unexpected answer and the answer needs to be chosen from predetermined options, it makes it easier to answer the survey and will also save time.

4.2 Implementation

The survey was implemented by using Google Forms software, since it is easy to use and it is clear for the target group to use. As a theory material was used an existing research "Do E-athletes Move? A Study on Training and Physical Exercise in Elite Esports" and their survey questionnaire as a template for creating an applied survey suitable for this research. Unlike in the survey

mentioned above, this did not focus on the game levels or yearly esports incomes of the respondents. They would not have been relevant topics for this particular survey and in the end it could had gathered together responses from wider range, because in the end the purpose of the survey was to find out if the players experienced physical training beneficial for them what it comes to gaming.

Before launching the survey it was sent for 5 esports players to test it and to let them give feedback in case there were any relevant questions missing or if there was something not essential for the subject. This method also gave the chance to see how the results will look like and gave a prospect on how the analyzation could be implemented afterwards. One of the test respondents was a pro striving player, who voluntarily offered to help with collecting the data and shared the link of the survey for international Discord channels with thousands of esports players from all over the world. In principle the goal was to reach around 100 responses during the time starting from 10th of June until 10th of July. The survey ended up reaching 60 respondents, assuming them to be pro players or players striving for pro career. The results are presented in pie charts except topic 4 with a bar chart.
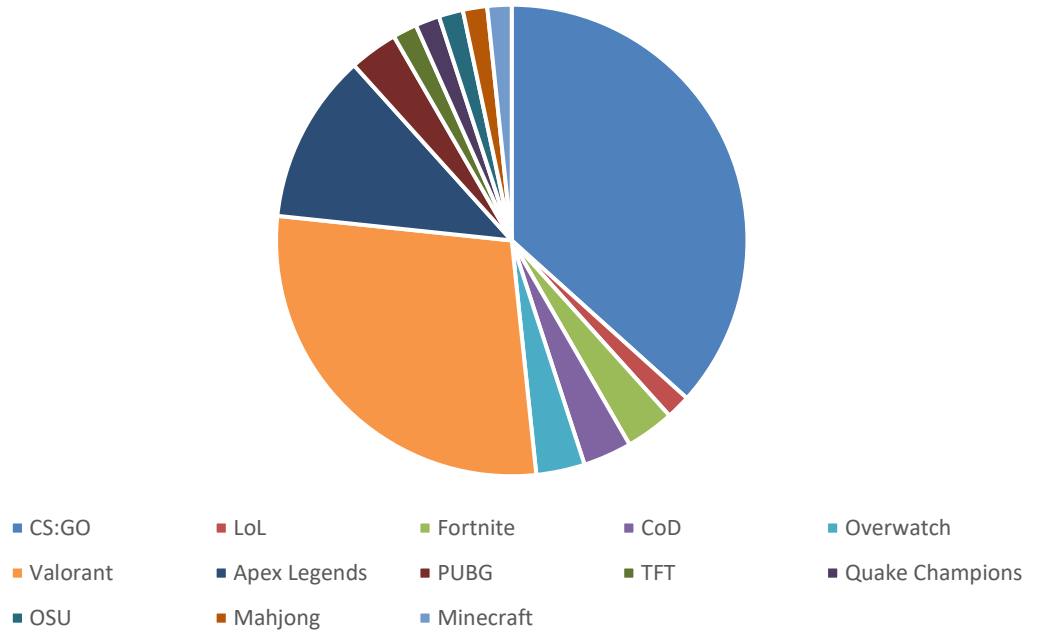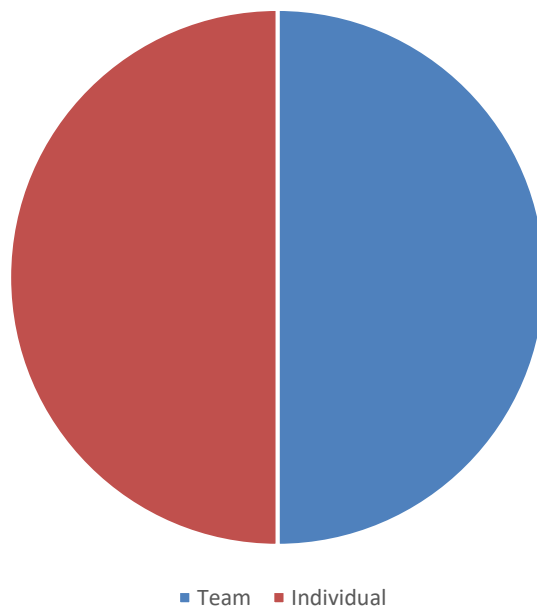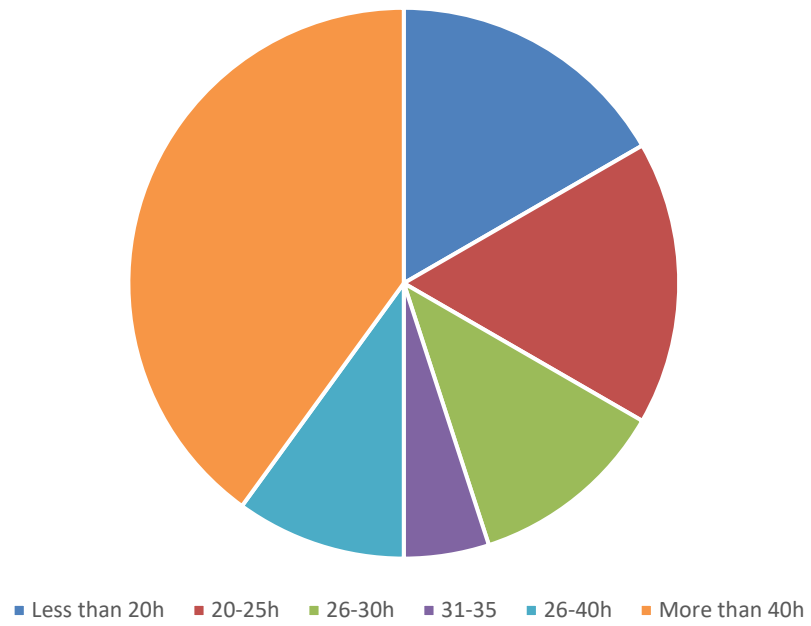
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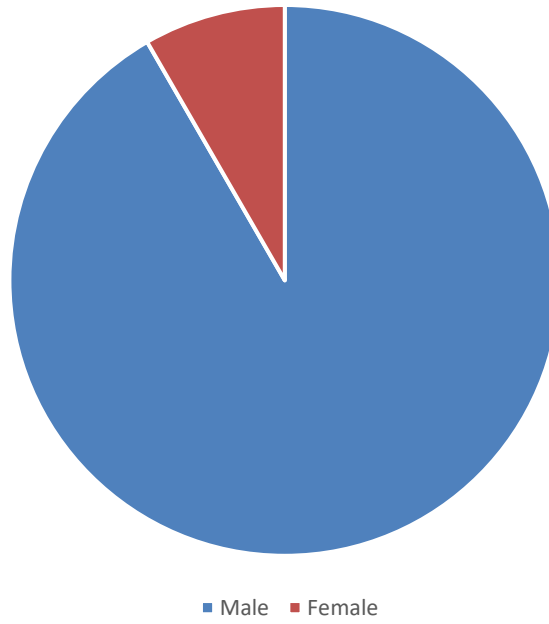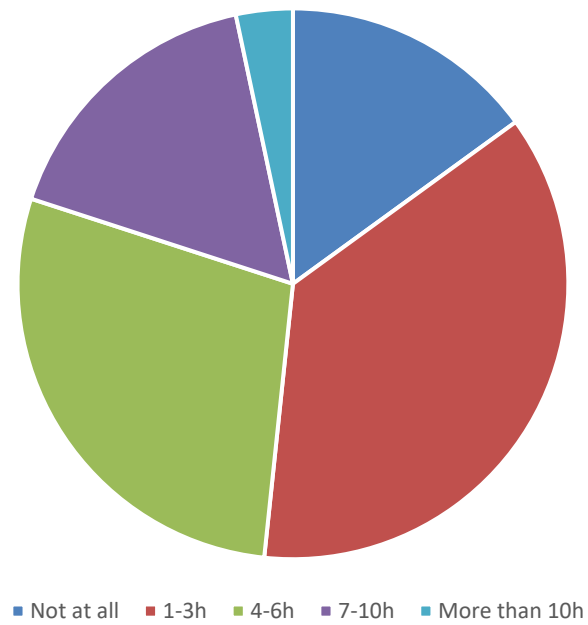

Picture 1 – Gender
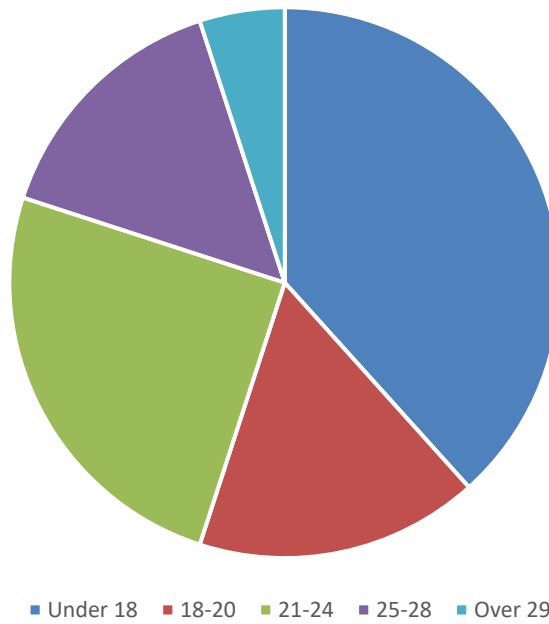
Picture 2 – Age

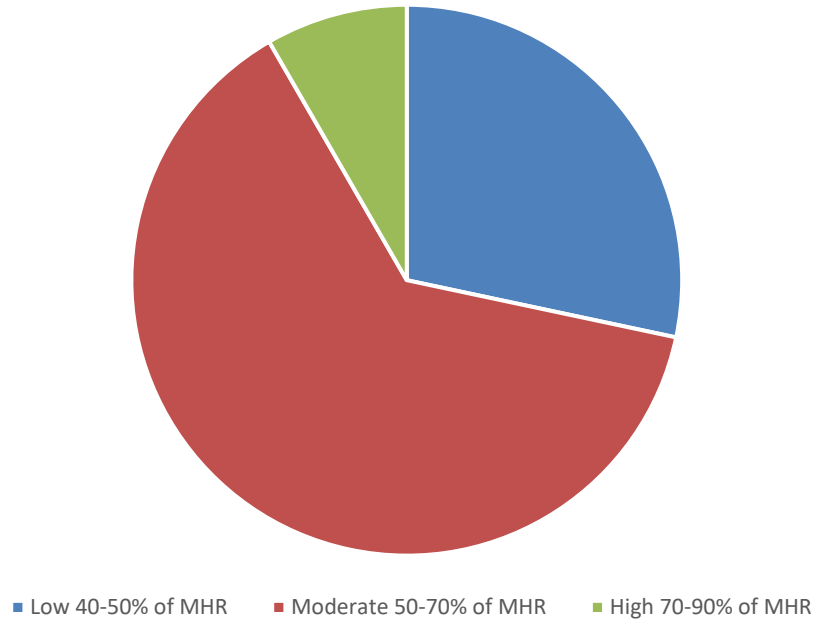*Picture 3 – main game*

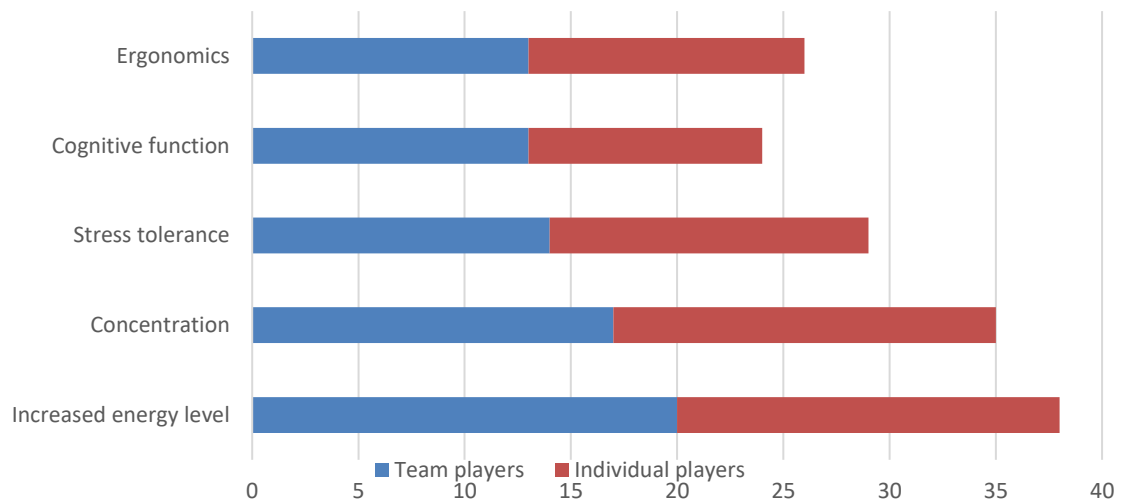*Picture 4 – team or individual player?*

Picture 5 – amount of training per week on PC

Picture 6 – amount of physical training per week

Picture 7 – average level of intensity in physical training

Picture 8 – influence to gaming quality

5.1 Analysis

The survey was active from 10th of June until 10th of July reaching 60 respondents, assuming them to be pro players or players striving for pro career. The results are presented in pie charts except the influence on gaming quality with a bar chart. The survey was divided into four main topics, personal info, gaming background, training habits and the influence for their gaming quality.

As seen from picture 1, 92% (55) of the respondents were males, and 8% (5) were females. An estimated percentage of female pro esports players is only 5%, even that nearly 60% of women between ages of 18-29 play videogames. Pro gaming is dominated by males, who take up 95% of the spots. (Hilbert, 2019) Picture 2 represents the age division between the respondents. 38% of the respondents were under 18 years old, and just 5% over 29 years. Overall, the age range is nevertheless divided surprisingly evenly, and perhaps the age selection in the survey could have been even more wide. Perhaps it would have added the variation in the other parts of the survey. Picture 3 shows that 92% of the respondents were from Europe. In retrospect, the answer could have been more specific for example how many of the respondents in Europe were for instance Finnish. It still was a positive surprise to also have responses from other continents.

To research if there were major differences or similarities between the physical training habits of the players of different games, the respondents were asked their main PC game (picture 4). The results could also interpret which games are the most popular, or in which types of Discord channels the survey had reached. If choosing the continent would have been categorized more specifically, it would have been possible to see in which countries for instance CS:GO or Valorant was played the most. 50% of the respondents played either on a team or individually, as seen in picture 5.

Picture 6 represents the division between the respondents approximate hours trained on PC per week, and it can be seen that majority of the respondents (40%) play more than 40 hours per week, and from those slightly over the half had responded to play in a team. Picture 7 on the other hand shows the approximate weekly physical training hours. Majority of the respondents claim to be physically active approximately 1-3 or 4-6 hours per week. By reviewing the respondents answers through individually, it was noticeable that most of the respondents who answered to do least physical training (not at all or 1-3h per week) tended also belong to the group of the highest hours played on PC. 63% (38) of the respondents estimated their average level of intensity

in physical training to be moderate training (picture 8). Half of the ones who responded low intensity do not do physical training at all.

When reviewing the bar table 9 and examining all the responses individually, it was noticeable that the most unified options selected in the influence of physical activity according to the gaming quality was to tick them all. There were no quantitative differences between individual or team playing respondents since the answers spread veritably evenly. The most common picked options were all 5 selected. Over half (32) of the respondents ended up choosing over three options. The most popular option chosen was increased energy levels.

6   DISCUSSION

When examining the responses through individually and comparing them as whole there were no clear segmentations or observations between them. The most distinct results were between the respondents' sex and continent but they were not relevant according to the other results. According to a research on VB Games Beat, 77% of men between ages 18-29 confess to play video games, but only 33% of them identify themselves as "gamers". For women in the same age group, the percentage was 57%, but only 9% as "gamers". (Takahashi, 2019)

Respondents who did less physical training than others did not matter in the average results in the influence for gaming quality or the number of options selected in that question. Age or the main game played had neither a clear distribution to the amount of physical training or PC training.

Comparing the research "Do E-athletes Move? A Study on Training and Physical Exercise in Elite Esports", e-athletes train on PC approximately 5,28 hours per day on elite level, and approximately 1,08 hours of that training is physical training. More than half of the respondents (55,6%) believed that physical training has a positive effect on their e-sports performance, but just 47% of them actually do physical training to maintain their overall health. (Kari & Karhulahti, 2017)

6.1 Thoughts

Esports as a topic is extremely fascinating for its continually growing popularity and has reached more visibility among people during the past years. This topic however has not been researched too much yet but will surely increase over the upcoming years.

This research will hopefully arouse interest among players and organizations worldwide and also help others in the future for researching similar topic. It is worth investing in the well-being of players in the future, helping them to understand the importance of holistic well-being and the impact of healthy lifestyles on career length. The know-how of traditional sports and organizations can be used here, in this way everyone can add value to each other. Competence and development of esports currently requires a holistic investment, a hunger for learning, the

identification of trends and a huge number of working hours. The health effects of physical activity are based on changes in vital functions and metabolism. Changes in organ systems and almost all organ functions are caused by varying exercise. If you do not exercise or it is really limited it will not do you any good for your well-being or health. The body is a system that acts as a chain. For physical performance, you need the help of the nervous system and the musculoskeletal system to work together. For longer exercise performance, you need the energy with which your muscles work. When breathing, oxygen is transported faster to the body. Regular exercise improves well-being and fitness.

6.2 Reliability and validity

The speed, affordability and ease of processing responses are the advantages of online surveys. Human error is avoided when the information obtained is never processed by man. The weakness of online surveys can be seen in that they cannot follow the principles of traditional probability sampling by taking a random sample from a predefined population.

Quantitative research is used to clarify issues related to numbers and percentages. Quantitative research requires a sufficiently large and representative sample. Data collection usually uses standardized research forms with ready-made answer exchange conditions. Things are described using numerical quantities and often the interdependencies between different things or the changes that have taken place in the phenomena under study are also explained. Quantitative research usually helps to map the existing situation, but it is not possible to sufficiently determine the causes of the issues.

Reliable research gives accurate, non-random results. It is also reproducible with similar results. To obtain reliable results, it must be ensured that the sample is large enough, the sample is representative (as similar as possible to the population). Data collection, input and processing are done carefully and correctly.

In this research, the internet was used as a tool in compiling an online survey, for collecting and analyzing data. The network as a research subject is challenging because it is constantly changing, for example due to updates or changes made by users, and its features are difficult to delineate. There are also problems with research ethics and representativeness of the Internet and its

research. There is a lot of material and material online. Online research requires the researcher to remember for which the material has been made. The researcher must be able to outline how public and intimate the subjects can experience the content, and whether the material can then be published. The researcher must respect the subjects, and remember that the online environment is constantly mutating, and the related research ethical challenges are case-specific. To ensure the ethics of the research, the survey was conducted anonymously, and no other information was collected in addition to the responses.

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Benefits of physical training in high level esports

PLEASE READ!

The aim of this survey is to reach PRO PC players and those who are seriously striving for a PRO career.

The purpose of this survey is to collect straight data from high level PC players to find out the possible similarities and differences about experiencing physical training beneficial and how it contributes to more successful gaming.

This survey is quantitative, which means that it is anonymous and only shows the total results in percentage. The results of this survey are also public, so after you have responded, it is possible to see the total results between other respondents.

If you want to help to reach more respondents and find this survey interesting, feel free to share the link with your co-players.

▸ Anni Ylönen, thesis in Bachelors Degree in Sports and Leisure Management in Kajaani University of Applied Sciences, Finland.

TOPIC 1. Personal info

This information will be useful for reviewing the respondents genders, ages and nationalities

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Your gender? *

○ Male

○ Female

Your age? *

○ Under 18

○ 18 - 20

○ 21 - 24

○ 25 - 28

○ Over 29

Your continent? *

- ◯ Europe
- ◯ North America
- ◯ South America
- ◯ Africa
- ◯ Asia
- ◯ Australia

TOPIC 2. Gaming background

This information will be useful for reviewing differences between the respondents on different games and if they play in a team or not

Your main game? *

Select one option or type it down below

- ◯ Counter-Strike: Global Offensive
- ◯ League Of Legends
- ◯ Fortnite
- ◯ Dota 2
- ◯ Call Of Duty
- ◯ Overwatch
- ◯ Other...

Do you play individually or in a team? *

- ◯ Individual
- ◯ Team

TOPIC 3. Training habits

Description (optional)

Amount of training per week approx. (on PC) *

- ◯ Less than 20h
- ◯ 20 - 25h
- ◯ 26 - 30h
- ◯ 31 - 35h
- ◯ 36 - 40h
- ◯ More than 40h

Amount of physical training per week approx. *

- ◯ Not at all
- ◯ 1 - 3h
- ◯ 4 - 6h
- ◯ 7 - 10h
- ◯ More than 10h

Average level of intensity in your physical training *

- ◯ Low 40-50% of your MHR (I.e. walking)
- ◯ Moderate 50-70% of MHR (I.e. jogging, gym, cycling)
- ◯ High 70-90% of MHR (I.e. HIIT workout, crossfit)

TOPIC 4. Influence to gaming quality

This information is for reviewing results between the respondents on which parts they experience physical activity contributional for more successful gaming

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Select the options which features you believe has improved in your gaming through physical training *

You can select more than one and type your own answer below

☐ Increased energy level

☐ Concentration

☐ Stress tolerance

☐ Cognitive functioning (memory, perceiving, problem solving skills)

☐ Ergonomics (posture, back & neck problems, arms & wrists)

☐ Other...