Received Date: 06 February 2022 I Accepted Date: 14 March 2022

RESEARCH ARTICLE

OPUS Journal of Society Research

A New Exhaustion Emerged with COVID-19 and Digitalization: A Qualitative Study on Zoom Fatigue

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March 2022
Volume:19
Issue:46
DOI: 10.26466//opusjsr.1069072

Citation:
Usta Kara, I. and Ersoy, E. G. (2022). A new exhaustion emerged with COVID-19 and digitalization: A qualitative study on zoom fatigue. *OPUS– Journal of Society Research, 19*(46), 365-379.

Abstract

The study aimed to reveal the physical, mental, and emotional effects of Zoom fatigue and the behaviors of the participants during the use of the video conference programs. Zoom fatigue refers to the feeling of exhaustion associated with the use of videoconferencing. Bailenson (2021) states that the concept of 'Zoom Fatigue', is used for general evaluations of video conferencing. With the COVID-19, education activities started to be carried out through video conference programs. Therefore, it is important to examine Zoom fatigue in the education sector. The sample of the study consists of 51 participants. 30% of the participants are teachers and 70% of the participants are academic staff. The data were obtained through the semi-structured interview form. Qualitative research methods were preferred to evaluate and interpret subjective experiences, perceptions, and feelings of the participants. The data were analyzed by descriptive analysis technique. According to the results of the study, Zoom fatigue affects the physical and mental well-being of the users negatively. Zoom fatigue causes exhaustion, stress and increases the mental and cognitive load. Especially among women, mirror anxiety is experienced. The study will guide employees and organizations about struggling with Zoom fatigue. Also, the study will contribute to organizational behavior literature.

Keywords: *Zoom fatigue, Exhaustion, COVID-19, Academic staff and teacher, Qualitative study.*

Öz

Bu çalışma Zoom yorgunluğunun fiziksel, zihinsel ve duygusal etkileri ile katılımcıların video konferans programlarını kullanımı sırasındaki davranışlarını ortaya çıkarmayı amaçlamıştır. Zoom yorgunluğu video konferans programlarının kullanımıyla ilgili tükenmişlik hissi olarak ifade edilmiştir. Bailenson (2021) video konferanslara ilişkin genel değerlendirmeler için 'Zoom Yorgunluğu' kavramını kullanmıştır. COVID-19 ile birlikte eğitim faaliyetleri video konferans programları aracılığıyla gerçekleştirilmeye başlanmıştır. Bu nedenle eğitim sektöründe Zoom yorgunluğunu incelemek önemlidir. Çalışmanın örneklemi 51 katılımcıdan oluşmaktadır. Katılımcıların %30'u öğretmen ve %70'i akademik personeldir. Veriler yarı yapılandırılmış görüşme formu aracılığıyla toplanmıştır. Katılımcıların öznel değerlendirmeleri, algıları ve duygularını değerlendirmek ve yorumlamak için nitel araştırma yöntemi tercih edilmiştir. Veriler betimsel analiz tekniği ile analiz edilmiştir. Çalışmanın sonuçlarına göre, Zoom yorgunluğunu kullanıcıların fiziksel ve mental iyi oluşlarını olumsuz etkilemektedir. Zoom yorgunluğu tükenmişlik ve strese neden olmakta, mental ve bilişsel yükü arttırmaktadır. Özellikle kadınlarda ayna kaygısı yaşanmaktadır. Bu çalışma Zoom yorgunluğu ile mücadele konusunda çalışanlara ve organizasyonlara yol gösterecektir. Ayrıca çalışma, örgütsel davranış literatürüne katkı sağlayacaktır.

Anahtar Kelimeler: *Zoom Yorgunluğu, Tükenmişlik, COVID-19, Akademik Personel ve Öğretmen, Nitel Araştırma.*

Introduction

Since the first known case of a patient infected with the COVID-19 virus in Wuhan, China in December 2019, the COVID-19 virus has affected the whole world and turned into a public health crisis (Shangguan, Wang & Sun, 2020, p.1) and the concept of pandemic made a rapid entry into people's lives. People whose physical distances have increased have started to meet in virtual environments instead of face-to-face, educational activities, business meetings, congresses have started to take place in virtual environments through internet-based programs. Video conferencing programs such as Zoom, Microsoft Teams, Skype, Google Meet have become a part of their professional life during the pandemic period.

It is stated that the download rates of Zoom and Skype, which are video conferencing programs, increased by one hundred percent in March 2020, and it is seen that the number of daily active users of Skype was 5.1 million and Zoom was 4.3 million in March. It is stated that while people use Skype in many areas, including daily communication, they prefer Zoom for special meetings (World Economic Forum, 2020). Video conferencing application Zoom is described as one of the video conferencing programs that have a significant usage rate in this process. Zoom had two million new users in the first two months of 2020 (Reisinger, 2020). In 2020, more than 90 thousand schools used this program at the peak of the pandemic, and meeting users increased by 2900 percent (Iqbal, 2022).

It is stated that Microsoft Teams, which had 20 million users in November 2019, had 44 million users in March 2020. Microsoft Teams is used in 44 languages in 181 countries and more than 183 thousand educational institutions (Curry, 2022). In this context, it can be said that many countries use video conferencing programs in their simultaneous academic education and training programs.

Zoom fatigue is a concept that emerged with the COVID-19 pandemic. For this reason, it has been determined that the earliest studies date back to 2020 and show an increasing graphic in 2021. The concept, which was previously included in columns and blogs, took its place first time in literature in the study by Bailenson (2021). Zoom fatigue is an exhaustion caused by video conferencing programs. In the literature, there are various studies investigating the effect of videoconferencing in the COVID-19 period (Bennett et al. 2021; Rößler, Sun & Gloor, 2021; Sharma et al., 2021; Hannah et al. 2021; Okabe-Miyamoto et al., 2021; Kagan, Alpert & File, 2020; Sharma et al., 2020). Although there are many empirical studies examining behaviors during videoconferencing in psychology, human-computer interaction, and communication, it is stated that there are no studies examining the psychological consequences of spending hours a day in this special environment (Bailenson, 2021:1). Zoom fatigue is a fairly new concept in the literature. Therefore, Zoom fatigue has been investigated in a few studies (Tucker et al., 2022; Tobing et al., 2022; Peper et al., 2021; Shoshan & Wehrt, 2021). In this study, Zoom fatigue was examined to contribute to the organizational behavior literature.

Video conference programs as an emergency action plan during the pandemic period allow the continuation of educational activities. Today, the effective maintenance of education and training activities of educational organizations is largely based on technology-driven communication and coordination (Dilekçi & Limon, 2020: 235). From this point of view, research was designed on academic staff and teachers who use video conferencing programs.

The first section of this study presents the existing literature on zoom fatigue. The second section includes the methodology and the analysis of data which is obtained from interview forms.

Conceptual Framework

Zoom Fatigue

With the pandemic caused by the COVID-19 virus, the way of communication and the way of doing business began to change. With the applications put forward to reduce the risk of transmission,

people started to look for ways to interact together. Virtual dinners, family nights were held through video conferencing programs such as Skype, Zoom, Google Meet, Microsoft Teams, and applications such as Face Time and Whatsapp. Simultaneously, video calls became an important part of business life. Meetings, training, conferences, brainstorming sessions, and even corridor chats, which are like non-work coffee breaks, have also started to be held via video calls. Video conferencing programs have reached a very common usage rate today because they allow us to see and hear other people and they are closest to face-to-face interaction (Boathra, 2020). Some of the programs are free and easy to use and thus they are used effectively during the pandemic period. It is predicted that video conferencing programs will continue to be used in the post-pandemic period due to reasons such as that they reduce physical transportation and fossil fuel consumption, and people use less energy in video conferences than face-to-face meetings (Bailenson, 2021, p.1).

Zoom fatigue has started to take place in the literature as a common, intense, and new concept that points to fatigue, anxiety, and exhaustion associated with excessive use of video conferencing programs (Lee, 2020, p.1). Bailenson (2021) states that the concept of 'Zoom Fatigue', which is used for general evaluations of video conferencing, emerged because many people started to use the word Zoom instead of video conferencing, and the Zoom brand name was characterized as a label for video conferencing programs. The concept does not only include the Zoom application but also gathers all video conferencing programs under a single umbrella. Nadler (2020) stated that computer-mediated communication can cause exhaustion and expressed this exhaustion as Zoom Fatigue. Although it is in many areas, he stated that this is a new phenomenon concept and there is still little information regarding the underlying causes of it. The physical and mental exhaustion of people caused by video conferencing programs is defined as Zoom fatigue (Ebner & Greenberg, 2020, p.537). Zoom fatigue is expressed as the feeling of exhaustion caused by participating in video conference calls (Fauville, Luo, Queiroz, Bailenson, & Hancock, 2021a, p.2). Reidl (2021), on the other hand, defines Zoom fatigue as physical and cognitive exhaustion caused by intense and/or inappropriate use of video conferencing tools, often accompanied by physical symptoms such as fatigue, anxiety and exhaustion, stress symptoms as well as headaches. Zoom fatigue, which emerged with the pandemic, can be considered as an undesirable situation, needs to be prevented, and negatively affects the physical and mental well-being of people.

Causes, consequences, and solution suggestions of Zoom fatigue

Bailenson (2021), in his study examining the concept theoretically, endeavored to define the causes of Zoom fatigue with four possible titles: looking from an excessively close distance, cognitive load, increased self-evaluation due to watching one's own video, and restrictions on physical mobility. Mirror anxiety, which is stated to cause self-evaluation, is seen as one of the underlying factors of Zoom fatigue. Video conferencing users look at a mirror when they look at their screens, and this leads to an increase in self-awareness (Riedl, 2021, p.9). People constantly see and pay attention to themselves. It is stated that exposure to digital and psychological mirrors can increase people's attention to themselves and cause negative emotions such as anxiety and depression (Luo, Queiroz, Bailenson, & Hancock, 2021b, p.2). In addition to increasing self-awareness, this situation can be described as a distraction. It can be said that the effort to re-concentrate can also cause anxiety and stress.

It is suggested that video conferencing programs may negatively affect cognitive performance and reduce mobility and that exposure of all participants to each other's gaze may cause anxiety. (Fauvilla, et al., 2021b, p.3). It is considered to be more psychologically challenging than face-to-face communication as its users feel the need to concentrate more. Because it is stated that the ability of individuals to interpret body language and clues decreases, they have difficulty in perceiving humor and irony, and in relaxing in a natural conversation environment. It is stated

that scheduling the meetings one after the other without having a break affects the well-being of the people and the dissatisfaction with the appearance of some people because their faces are close-up affects their self-esteem negatively. (Williams, 2021, p.164).

Another frequently observed phenomenon with video conferencing is to engage in other tasks and activities while participating in the video conferencing. It is claimed that this situation, which is called multitasking, reduces the productivity of people. However, among people who have a heavy workload, it is thought that they can reduce their work stress by completing different tasks during video conferences (Reidl, 2021, p.11-15). Amponsah & Wyk (2022, p.4) state that it will not be that easy to reduce the concern for multitasking for academicians and students who are busy with multiple tasks. Peper, Wilson, Martin, Rosegard & Harvey (2021), in their study on students, concluded that it is difficult for students to maintain their attention while executing multiple tasks at the same time. Doing more than one task at the same time, such as writing articles, sending e-mails, reading articles, newspapers, magazines, etc., by opening different windows during the meeting, can cause fatigue. Therefore, it can be said that focusing on a single task can reduce fatigue and exhaustion.

It is stated that technical problems such as screen freezing, weak internet connection, and bandwidth will contribute to Zoom fatigue. When users encounter these situations, they are exposed to stress, especially in synchronous sessions. In addition, the fact that users feel mistrust about the control of data and records is also seen as another cause of fatigue and exhaustion (Amponsah & Wyk, 2022, p.4).

Apart from making people's lives easier, it is possible to say that video conferencing programs have disadvantages such as causing more concentration, exhaustion, incompatibility, anxiety, and stress, leading people to multitask, turning individuals into introverts, requiring being in the same position all the time, causing body language to be unnatural, creating anxiety about appearance, causing physical negativities and discomforts (Boathra, 2020). However, it is foreseen that negative situations that may arise can be prevented in the wake of the correct and effective use of video conferencing programs. Wiederhold (2020) states that video conferencing programs can be used effectively and pleasantly. It is stated that the screen can be placed on a book or two in order to create a straight line on the speaker's face and to see the micro-expressions on the screen, the face can be illuminated from the front, and the head and shoulders should dominate the upper part of the window. In addition, it is recommended to look at the camera instead of the participants, and the background to be simple, clean, and professional. It is also stated that if not spoken during the interview, the microphone should be muted, and when speaking, one should speak a little louder than normal as if in a large conference room. Not being concerned with side tasks and activities during the interviews, taking breaks in which the screen is not visible from time to time, and having the cameras turned off when the participants are not talking are among the factors that prevent Zoom fatigue.

Fosslien & Duffy (2020) made several suggestions to fight against Zoom fatigue. These recommendations can be listed as follows:

- During interviews, multitasking should be avoided by closing all distracting windows and tabs.
- It is possible to take a break throughout long conversations, resting the eyes by resting for 30 minutes without looking at the screen. In addition, meeting durations should be planned as 25 or 50 minutes, if a one-hour meeting is held, the cameras should be turned off in some parts.
- Along with the faces of the participants, their backgrounds also draw attention. It is possible to see various items in more than one room at the same time. For this reason, plain backgrounds that do not tire users should be preferred to fight against mental fatigue.
- Assuming that a video conference is being held with a crowded group, starting with one person and determining who will speak

in turn, the group does not start talking at once, and the participants can understand what is expected of them.
- Video conferencing programs should not be used for calls that can be made by e-mail or phone.

Measurement of Zoom fatigue

In 2021, the "Zoom Exhaustion and Fatigue" scale, called the "ZEF Scale", was created with the study conducted by the Virtual Human Interaction Laboratory of Stanford University. The scale, which consists of 15 statements, has five dimensions: general fatigue, visual fatigue, social fatigue, motivational fatigue, and emotional fatigue (Fauvilla, et al., 2021a, p.7). Except for the studies by Akduman (2021) and Baygın et.al. (2022) on the Turkish validity and reliability of the ZEF scale, no study has been found in the national literature on the concept that has just begun to be studied in international literature. When the studies on the concept are examined, generally, it is seen that the causes and consequences of Zoom fatigue are tried to be revealed with the research questions created by the authors.

Purpose and Importance of the Study

The main purpose of the study is to question the effects of Zoom fatigue on teachers and academicians who use video conferencing programs. Considering that the education and training processes continue being face-to-face and synchronously, it is considered necessary to identify the causes of Zoom fatigue, principal for organizations to take precautions, and for individuals to determine their own methods of fighting against them. With this study, suggestions, oriented at reducing Zoom fatigue and raising awareness at the individual and organizational level, are shared. In addition, it is aimed to contribute to the organizational behavior literature. Zoom fatigue will take place in organizational literature as a new type of employee burnout.

Methodology

Research method

In this study, a qualitative research method was used. Qualitative research gained more areas in social sciences. It provides detailed information about people's behaviors, beliefs, feelings, emotions, and feelings. The purpose of qualitative methods is to describe and interpret issues or phenomena systematically from the point of wives of the individual or populations being studied and to new concepts and theories (Mohajan, 2018, p.2). Qualitative research has an exploratory feature. Exploratory research is very useful and beneficial in explaining less-studied topics (Karataş, 2015, p.64). Accordingly, the causes and consequences of Zoom fatigue, which is a new concept, were tried to be described through behaviors, attitudes, and feelings of video conferencing users. Qualitative data collection techniques such as observation, interview, document and discourse analysis are generally used in qualitative research (Yıldırım ve Şimşek, 2016). In this study, an interview technique was used.

The qualitative research processes were designed as follows: Identifying the research problem, conceptual framework, preparation of research questions, sampling, determination of data collection tool, data collection, analysis, and interpretations of data.

The main research questions of the study are as follows:
- What are the causes and ways of using video conferencing programs of academicians and teachers?
- What are the physical, mental, and emotional effects of Zoom fatigue on academicians and teachers?
- What are the strategies of academicians and teachers to deal with Zoom fatigue?
- What are the acclaimed/disfavored aspects of video conferencing programs?

Sample of the study

In the interview technique, it is examined whether they are directly related to the research topic in the

selection of participations (Karataş, 2015, p.71). Academic staff and teachers, who actively use video conferencing programs in educational processes, in activities such as meetings, seminars, and conferences, constitute the sample of the study. The sample of the study consists of 51 participants working at foundation and state universities, private and public schools in Istanbul and Edirne provinces, and volunteering to participate in the study. Qualitative research is conducted with small samples and small groups. A small number of samples provides the opportunity for in-depth analysis (Baltacı, 2019, p.371). In this direction, it can be said that the sample of the study is adequate.

To carry out the research, permission was obtained with the decision of Trakya University Social and Human Sciences Research Ethics Committee dated 24.02.2021 and numbered 2021.02.08.

According to socio-demographic characteristics of the 51 participants, it is seen that 27 of the participants were female, 24 were male, 60% were married, 52.9% were in the 35-44 age range. Approximately 70% of the participants are academicians and 56.9% of the academicians work in the field of social sciences. Approximately 30% of the participants are teachers and the majority of teachers teach at the primary and secondary levels. It has been determined that 66.7% of the participants have more than 11 years of working years, and 51% are currently working in their current institutions for 1-5 years.

Data collection

The interview technique was used in this study. There are different interview techniques such as structured, semi-structured, unstructured, and focus group interviews. Generally, semi or unstructured, open-ended, informal interviewing is preferred to allow for more flexibility and responsiveness (Jackson II et al, 2007, p.25). The data was obtained from semi-structured interview forms by prepared researchers. The interview form consists of two parts. In the first part of the interview form, personal information about the participants is included, and there are questions to determine the socio-demographic characteristics, institutions, fields of study, and working years of the participants. In the other parts of the form, there are questions formed in line with the basic research questions of the orientation

Interviews are carried out face-to-face, using phone or online. Online interviews are divided into synchronous (Zoom, Skype, etc.) and unsynchronous (e-mail). Especially in social sciences online and internet interviews are frequently used. These interview techniques provide to eliminate time and place problems (Barret & Twycross, 2018, p.63; Salman Yıkmış, 2020, p.185). Before expressing their views, the participants declared that they had read the voluntary consent form and agreed to participate in the study. The research was planned in the form of an online interview to be held face-to-face, in which questions were directed to the participants by using video conference programs in the digital environment. However, negative feedback was received on the video call request. Academic staff and teachers stated that they are tired and exhausted from already actively using these programs. For this reason, the interview form was shared with the participants online on Google Forms, which is also one of the digital tools, and they were asked to respond in the time given to them. The interview form consisting of categorized and open-ended questions was obtained from the participants in written form. In this way, it can be thought that the participants had the opportunity to express their views more comfortably without hesitation. The research was carried out between February 2021 and March 2021.

While preparing the research questions, the opinions of experts in management and organizations, and statistics. Research questions are shown below.

Research questions

1. Please indicate which programs you used and for what purposes before the COVID-19 pandemic and during the COVID-19 pandemic period.

2. Did you join any training or get education about the programs that you use?
3. How many days a week and how many hours a day do you devote to online lectures/meetings?
4. Indicate the ideal number of participants, the ideal duration of the lectures/meetings, the ideal break time, and the length of the lecture/meeting in your opinion.
5. What do you think of paused presentations (watching videos, searching for articles, etc.)?
6. Please, give information about the background usage, your camera usage, and your view preference (single speaker, gallery).
7. Please indicate the negative situations you encounter while using the programs.
8. Please indicate your thoughts about how you look on camera.
9. 9-Please indicate whether you have had any problems with your physical health due to the long-term use of these programs.
10. 10-Please indicate whether you have had any problems with your eye health due to the usage of these programs.
11. Provide information about the effects of a connection and technical problems (system freezing problems, late or absent sound, etc.) on you.
12. Indicate the effects of your rest periods between lecture/meeting hours on you.
13. Since we do not see ourselves in face-to-face communication, we use our body language more comfortably, researches indicate that being natural is hard because we see ourselves in video conferences. State your opinions about this decision.
14. Do you think online programs require more focus than face-to-face conversation? Please specify.
15. Are there any distractions around you while you are using these programs? Please indicate what they are.
16. Indicate how it makes you feel see your students and friends in a virtual environment instead of seeing them face to face.
17. Evaluate your adaptation to digital transformation.
18. Indicate what you have done to relieve the mental, physical or emotional fatigue caused by online programs.
19. Indicate your favorite and least favorite aspect(s) of online programs.
20. Do you wish we had used these programs before? For what situations did you say?
21. Describe your level of satisfaction with the usage of these programs. Evaluate your continued use of these programs when the COVID-19 pandemic is over.

Data analysis

Qualitative research has two data analysis processes: descriptive and content analysis (Karataş, 2015, p.73). Descriptive analysis was used in this study. Descriptive analysis aims to organize and interpret the data obtained from interviews and observations. The data can be presented by considering questions or dimensions used in the interview or observation processes (Yıldırım & Şimşek, 2016, p.39). The forms reflecting the views of the participants were evaluated and interpreted by the authors within the framework of the basic research questions.

First of all, participations were coded as P1,….P51. The data were analyzed in four stages. In the first stage, a framework was created for data analysis according to the research questions. Dimensions were determined by each researcher. In the second stage, the data were read by each researcher. Then, the researchers came together and the data were organized. The data were made easy to understand and read in the third stage. In the final stage, the findings were explained, interpreted, and correlated. In addition, findings were supported by direct quotations.

Validity and reliability

In qualitative research, validity is to the degree to which the researcher solves the problems as impartially as possible (Baltacı, 2019, p.380). In the study, expert examination and participation confirmation were made The collected data were

reported in detail. The researchers explained how they arrived at the conclusions. Direct quotations were included in the findings. Thus, internal, and external validity was ensured in this study.

For reliability, researchers were determined their positions, and participations were introduced. The conceptual framework, data collection, and data analysis were explained. To increase the reliability of data, misunderstandings and irrelevant data were removed before the analysis. The fact that the research was conducted by two researchers and experts' opinions were consulted strengthens the reliability.

Findings

Examination of the interviews

Program usage before the COVID-19 pandemic: It is seen that the purpose of using the programs before the pandemic was mostly friends and family meetings, secondly, meeting/seminar/congress participation, and thirdly, education. It can be stated that before the pandemic, participants preferred Facetime and Whatsapp for their friends and family meetings, Skype for meeting/seminar/congress participation, Zoom, Microsoft Teams, and Google Meet for education.

Program usage, purpose of usage and usage patterns with the COVID-19 pandemic: 42 participants were noted that they are using Zoom after the pandemic and by this answer, we may say that Zoom was the most used online program, especially after the pandemic. Participants stated that they use Zoom, Microsoft Teams, Google Meet for business-related meetings, and Zoom, Google Meet, Microsoft Teams for their congress/seminar participation, to a high degree, respectively. In education activities, it was determined that Zoom, their schools/universities' own distance education system, Microsoft Teams, and Google Meet were used respectively. It is seen that mostly Whatsapp and secondly Facetime applications are used for friend/family conversations. The majority of the participants (36 participants) stated that they do not use any online programs for their sports activities.

Views on the duration of use, and number of participants of online programs: 34 participants stated that they did not receive any training on the programs they used, 17 participants stated that they received training. Participants stated that they spend at least 3 days a week and at least 5 hours a day in online lessons/meetings. According to the statements of the participants, it is seen that this duration may be longer. Participants emphasized that the ideal lecture/meeting duration should be 1 hour at most and that at least 10-minute breaks should be given during extended lectures/meetings. The participants stated that there should be at least 20-30 people in an ideal lesson and the fact that this number is less negatively affects motivation and performance both from the point of view of students and the lecturers. They also expressed their unhappiness with the fact that it creates the feeling of talking to oneself, where there is a small number of participants. 8 participants said that they are not affected by the numbers.

'*When the number of participants is less, my motivation decreases and I regret the effort I spent*' (P47) *'If there are many participants, this indicates the interest in the lesson, and it motivates me.'*(P25)

The majority of the participants stated that they do not prefer paused presentations such as watching videos, having articles searched, and getting research done on the internet. A small number of participants stated that they watched videos and had article research done according to the content of the course. Regardless of this, the majority of the participants stated that they were eager to learn about the different features and opportunities of these programs.

45 participants prefer the gallery view, others prefer the single speaker view. In addition, when the background usage situations of the participants are questioned, the existence of different views draws attention. Those who think that the use of background distracts the participants generally prefer a natural image. While some of the participants stated that they use

a fixed background image, some of them mentioned that they are motivated by changing the background image.

'I use background and change it periodically'. (P47).

Views of participants about the use of camera: Participants stated that their cameras are generally turned on when using the programs and that they always have their cameras on especially during classes. 41 participants stated that they always use their camera on, 10 participants said that this depends on the situation. They stated that when they attend meetings if they were only taking part as listeners, in these cases, they sometimes turn off their cameras; they also stated that they could keep their cameras turned off due to internet connection problems that can be experienced over time to time.

'I use my camera on when I'm the speaker or the lecturer, but I use my camera off when I'm just only the participant of a webinar'. (P26)

Even though there is no obligation for the students to turn on their cameras, the majority of the participants stated that they prefer to have the cameras on. The participants said that they wanted the students to open their cameras, as they believed that it contributed to communication, particularly when asking questions, during mutual communication, when they took the floor, and when they make presentations.

'I prefer to be in contact with the students as long as their situation is appropriate.' (P17)

Only 7 of the participants stated that they do not need the students to turn on their cameras and they prefer to have their cameras turned off.

'I don't need students to turn on their cameras'. (P28)

Participants stated that sometimes they have experienced internet problems, technical problems caused by the camera and microphone. Three of the participants consider forgetting to record the course as a negative experience. In general, the participants stated that they experienced stress when they were faced with internet connection and technical problems.

'Disconnection of the internet is stressing me out, I'm distracted, time runs out'. (P47)

Views of participants about their images: The majority of the participants said that they only pay attention to their clothes that are visible on the camera and that they prefer comfortable clothes in the part that is not seen on the camera. Male participants stated that they mostly did not wear a tie in online classes or meetings. Female participants, on the other hand, stated that they pay attention to doing make-up. *'Psychologically, I sometimes spray perfume and join the online class, just like in daily life'.* (P50)

30 participants stated that they had social appearance anxiety and this anxiety increases even more especially in cases where their cameras are on, other participants stated that they had no such anxiety.

It is seen that female participants look at themselves on the screen during the lesson/meeting and state that they fix their clothes and mostly their hair, while male participants do not feel such a need.

'My hand is usually in my hair.' (P29, woman)

*'When I see myself on the screen, my hand goes to my hair or my face, but when I realize this I immediately tidy up myself.' (*P50, woman)

Physical fatigue of participations: The vast majority of the participants (43 participants) stated that they had problems with their physical health due to these programs, especially head, neck, and low back pain. 8 participants stated that they did not experience any physical health problems. 11 participants stated that they did not experience any problems with eye health due to these programs, on the other hand, the rest of the participants stated that they had complaints such as eye burning, watering, and pain that adversely affected their eye health.

'I experienced hand pain and arm numbness from using a mouse.' (P1)

'I put on weight.' (P25 & P27)

In general, it was stated that the duration between the course hours is 10-15 minutes, and these durations are considered sufficient by the participants. However, some participants said that there is a shorter resting time, which is insufficient and causes fatigue. For example, P6 said, *'10-15 minutes between online classes, (between the sessions)*

but when you study more than 8 hours in a day, this break time isn't enough, at least 1-hour break is required.'

The mental fatigue of participations: Another aspect that is expressed is the frequency of encounters with the tone of voice, emphasizing, situations where the voice is transmitted late or not at all, the frozen images were higher when distance learning first began. It has been observed that such situations create a cognitive load on the participants and can cause mental fatigue and cause stress. However, it has been stated that over time, it has become manageable.

'Constantly asking questions to see if my voice can be heard or not, this makes me very tired and reduces my interest in the lesson.' (P49)

Programs are sometimes seen as a mentally wracking situation. Half of the participants did not evaluate these programs in a mind-wracking structure, while the other half stated that sometimes it can be wracking and that this is not because of the programs, but because of people who do not know or do not want to learn about the programs. In addition, it was stated that the meetings planned regardless of the time due, can cause more fatigue.

Participants stated that they also use body language, facial expressions, etc. in video conferences, and that distance education and meetings are not different from face-to-face communication. Based on the responses received, it seems that this process has become accustomed in the course of time.

At the point where you can't see the person before you in online meetings and classes, the idea that it requires a little more concentration than conventional face-to-face communication has emerged. It is seen that the need to concentrate more has arisen due to reasons such as not being able to see the reaction of the other party, not being able to make eye contact, not being able to provide a suitable environment (such as external stimuli), the need to find solutions to many problems immediately, and the distracting movements of the people before us.

As for distracting elements in online interviews, external environmental factors are most often given as examples. While reasons such as having children at home, pets, the doorbell being ringed, sharing the same room with other individuals at home can distract the speaker, in addition to similar situations for students, it can also be distracting for other family members such as parents and siblings entering the room during the course. Participants state that especially for students at the primary school level, distraction can be experienced more frequently due to their age.

'My kids and pet are a distraction.' (P30)

'The voice of the students' parents and brothers/sisters are distracting.' (P10) *Emotional fatigue of participations*

When participants were asked how they feel emotionally, in a virtual environment, it is seen that seeing their students and friends virtually is different from seeing them face to face, this situation causes distress from time to time, but again, with time, they are adapted to this situation and they do not feel distressed as much as they did at the beginning. The limited individual interaction and the inability to transfer the power of face-to-face communication to the virtual environment emerge as the main issues that individuals feel distressed about this process.

'I still feel sad to be in the virtual environment only in applied courses.' (P50)

'I'm glad to see people virtually not being able to see them at all. I think the main problem is the lack of individual interaction.' (P37)

Participations' methods of combating Zoom fatigue: Most of the participants stated that they listen to music, read books and spend time with their families, do sports and spend time in the kitchen to relieve the mental and physical fatigue caused by online programs. In general, all the participants said that they stay away from digital tools to relieve their mental and physical fatigue.

'I listen to music, I read books, I spend time with my family.' (P32)

'I stay away from tablets, computers, and phones.' (P12 & P24)

When the participants were asked to evaluate their adaptation to digital transformation in general, it was seen that three of the participants did not adapt at all, and all the other participants said that they did, even if they had some mental difficulties.

'I adapted new changes but it made me tired. I want my old life.' (P26)

Acclaimed aspects of online programs: The most useful and favorite aspect of video conferencing programs for the participants is that these programs eliminate the time and space limitations. They stated that they found the use of such programs which are obstacles to experiencing health problems during the pandemic period useful and that they felt safe, they experienced the freedom of doing their work from home, these programs made distances close, increased information sharing, and especially eliminated the fatigue experienced in traffic.

Participants stated that they wished they had used these programs before the pandemic, especially for meetings and short training, events in different cities, private courses, and theoretical courses. The majority of the participants stated that they would continue to use these programs even if everything returned to normal. It is among the predictions of the participants that hybrid education models will become widespread in the coming years, video conference programs will continue to be used in events in different cities, and online courses will increase. It is thought that the programs will continue to be used in training, meetings, and seminars, and exchanging digital files, homework, and projects with students can be done on these platforms. However, a small number of participants (7 participants) stated that they did not want to use the programs again due to digital fatigue when everything returned to normal.

Disfavored aspects of online programs: As the most disfavored aspects of video conferencing programs, difficulties in adapting individuals to such programs, immobility due to the need for constant sitting, not being as effective as face-to-face communication, more frequent and unplanned meetings, connection problems, and technical glitches have been shown.

Discussion

Considering that the concept emerged as a result of the use of video conferencing programs with the pandemic, it can be said that the research is at an early stage. Studies on Zoom Fatigue are increasing in international literature.

Amponsah & Wyk (2022) conducted a study on academicians in higher education institutions in Africa and Ghana. According to the findings of the study, academicians stated that video conferences require concentration and attention, increasing cognitive load and concentration level. In addition, they stated that warnings about the use of hardware tools during the interviews affected their concentration negatively. It can be said that the results obtained are in line with the findings of this study. Peper & Yang (2021) stated that it makes communication difficult when students do not respond and seem uninterested when attending simultaneous Zoom courses, and instructors are stressed because they do not receive social feedback from the students. In this study, it was observed internet problems and technical problems caused stress. Oducado, et al. (2021), in their study conducted on nursing students using the ZEF scale, found that negative attitudes towards videoconferencing programs, inconsistent internet connections, and long-term and frequent meetings cause Zoom fatigue. According to Rump & Brandt (2020), lack of non-verbal cues, weak internet connections, and low image quality was evaluated as stress factors. The results of the studies show similarities with each other.

In a study conducted by Rump & Brandt (2020) on 422 employees working in positions such as managers, personnel managers, and human resources specialists, it was found that Zoom fatigue caused headache, back, leg, and abdominal pain, and visual disorders. Academicians and teachers had similar health problems. Fauvilla, et al. (2021b) was found that women experience more mirror anxiety and concentrate more on themselves than men. Likewise, it was concluded that women academicians and teachers

experienced mirror anxiety. The result of the studies consistent with each other.

In a study conducted by Özen et al., (2021) on 25 people who are members of 20 non-governmental organizations operating on rights-based activities in Turkey, it is stated that the Zoom program allows meetings to be held without the time and place restrictions, but the participants hold meetings for shorter periods due to Zoom fatigue. However, it is also stated that the participants do not know how to connect to the Zoom meeting link creates problems with making use of the time well. In this study, participants believe that videoconferencing eliminates the time and place constraint.

Conclusions and Recommendations

In the education sector, which is one of the most important sectors of a country, programs such as Zoom, Microsoft Teams, and Google Meet have been included in the education processes so that primary, secondary, high school, and higher education levels are not interrupted due to the pandemic. It is even thought that it will become a part of business life with increasing digitalization. However, it is thought that their intensive use brings along various problems.

As a result of the research, it was determined that the majority of the participants used Zoom, Microsoft Teams, and Google Meet programs with the pandemic. The most important ground that the participants unite on is that these programs will also be used in the post-pandemic period. It has been stated that it is an effective way to attend meetings, seminars, and courses. The most disliked aspect of the programs is the frequent and unplanned meetings with the disappearance of the concept of time. In addition, staying still while using the programs was also stated as another disliked aspect.

It has been observed that the frequent and long-term use of video conferencing programs has negative effects on the physical, mental, and emotional well-being of individuals. It has been found that mirror anxiety and self-evaluation increase, especially in women. It was also found that half of the participants had social appearance anxiety. It has been determined that technical malfunctions and constant connection control cause stress, external environmental factors, untimely meetings, and video conferencing programs that require more concentration cause mental fatigue in the participants. It has been concluded that lecturing in virtual classrooms and being away from students lead the participants to have negative emotions. In this respect, it can be said that apart from being user-friendly, the programs cause health problems, physical fatigue, cognitive load, exhaustion, and stress for users. However, with the evolution of the working order to a hybrid structure, the negativities can be reduced to a minimum with various methods.

In line with the data obtained from the research, suggestions were made to organizations and employees in order to prevent Zoom fatigue.

Suggestions for organizations:

- The right hybrid structures can be identified and implemented.
- Internet infrastructure can be improved.
- Digital tool usage skills can be developed by giving digital literacy training.
- Online support lines can be provided by creating guides for problems to be encountered during use.
- Psychological and social support can be given to help people cope with fatigue and exhaustion.
- Course hours and breaks between courses can be planned according to needs.
- Meetings can be held for short periods inappropriate time periods by setting the agenda.
- Suggestions for academicians and teachers:
- The devices on which the programs are used should be used at eye level, and if necessary, the screens should be raised with supports such as books.
- If one is constantly looking at the screen, eye checks can be made and filtered glasses can be used.
- While speaking, the person on the screen should look at the camera, not at herself/himself.

- It is recommended not to be concerned with other tasks while listening to the meetings.
- In order to reduce their fatigue, presentations with pauses can be made, videos can be watched, and article research can be done.
- It may be appropriate to take a break, move away from time to time.
- One can take a walk in the open air by turning off their phone and computer, and if they cannot go outside after long meetings, fresh air can be gotten from the window.
- Doing physical activities (running, walking, etc.) can help relieve physical fatigue, activities such as yoga, pilates, meditation, and breathing exercises can help increase mental well-being.

Considering that synchronous courses are integrated into education life, and online meetings and training are integrated into business life, it can be mentioned that it is necessary to determine and understand the causes of Zoom fatigue. It is recommended that necessary arrangements be made by considering the effects of Zoom fatigue on physical and mental health while preparing strategic training programs, planning teaching processes, and performing quality applications.

Zoom fatigue is a newly studied concept, there are gaps in the related literature. From this point of view, data can be collected, and inter-sectoral comparisons can be made by applying the ZEF scale to people who use the programs intensively. It is important to examine the effects of Zoom fatigue on individuals, as well as the effects at the organizational level. By empirically examining the relationship between Zoom fatigue and variables such as well-being, mental well-being, work-related well-being, work stress, cyberloafing behaviors, self-esteem, social anxiety, and social attractiveness, the theory can be supported, and a contribution can be made to the field.

References

Akduman, G. (2021). Adaptation of the zoom exhaustion & fatigue questionnaire into Turkish: A validity and reliability study. *Journal of Behavior At Work*, *6*(1), 16-28. DOI: https://doi.org/10.25203/idd

Amponsah, S. & Wyk, M. M. (2022). Academic experiences of "Zoom-Fatigue" as a virtual streaming phenomenon during the COVID-19 pandemic. *International Journal of Web-Based Learning and Teaching Technologies*, *17*(6), 1-16. DOI: 10.4018/IJWLTT.287555

Bailenson, J. N. (2021). Nonverbal overload: A theoretical argument for the causes of Zoom Fatigue. *Technology, Mind and Behavior*, *2*(1). https://doi.org/10.1037/tmb0000030

Baltacı, A. (2019). Nitel araştırma süreci: Nitel bir araştırma nasıl yapılır? *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *5*(2), 368-388.

Barret, D. & Twycross, A. (2018). Data collection in qualitative research. Evidence-Based Nursing, *21*(3), 63-64. http://dx.doi.org/10.1136/eb-2018-102939

Baygın, E., Yalap, O. & Polatçı, S. (2022). Yenilikten yorgunluğa: Zoom yorgunluğu ölçeğinin geçerlilik ve güvenilirlik çalışması. 8. *Örgütsel Davranış Kongresi Bildiriler Kitabı*, 390-400.

Bennett, A. A., Campion, E. D., Keeler, K. R. & Keener, S. K. (2021). Videoconference fatigue? Exploring changes in fatigue after videoconference meetings during COVID-19. Journal of Applied Psychology, *106*(3), 330-344. http://dx.doi.org/10.1037/apl0000906

Boathra, S. (2020). (20.12.2021). *https://thriveglobal.com/stories/how-to-avoid-zoom-fatigue-while-working-from-home/?utm_source=Newsletter_General&utm_medium=Thrive.*

Curry, D. (2022). (22.02.2022). *https://www.businessofapps.com/data/microsoft-teams-statistics/*

Dilekçi, Ü. & Limon, İ. (2020). COVID-19 salgını bağlamında öğretmenlerin algıladıkları aşırı işletişim yükü düzeylerinin incelenmesi. *Milli Eğitim*, *49*(1), 231-252. DOI: 10.37669/milliegitim.776450

Ebner, N. & Greenberg, E. E. (2020). Designing binge-worthy courses: pandemic pleasures and COVID-19 consequences. *Negotiation Journal*, *36*(4), 535-560. https://doi.org/10.1111/nejo.12339

Fauvilla, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N. & Hancock, J. (2021a). Zoom exhaustion &

fatigue scale. *Computers in Human Behaviors Report, 4*, 1-10. DOI: 10.2139/ssrn.3786329

Fauvilla, G., Luo, M., Queiroz, A. C. M., Bailenson, J. N. & Hancock, J. (2021b). Nonverbal mechanisms predict Zoom fatigue and explain why women experience higher levels than men. *SSRN Electronic Journal, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3820035*. DOI: 10.2139/ssrn.3820035

Fosslien, L. & Duffy, M. W. (2020). (01.05.2021). How to combat Zoom fatigue. *Harward Business Review*, *https://hbr.org/2020/04/how-to-combat-zoom-fatigue*

Hannah, J., Burrows, E. L., Rethnam, V., Kramer, S. & Bernhardt, J. (2021). "Can you hear me?" Video conference coping strategies and experience during COVID-19 and beyond. *Work*, *70*(3), 723-732. DOI:10.3233/WOR-210279

Iqbal, M. (2022). (22.02.22). Zoom revenue and usage statistics 2022, *https://www.businessofapps.com/data/zoom-statistics/*

Jackson II, R. L., Drummond, D. K. & Camara, S. (2007) What is qualitative research? *Qualitative Research Reports in Communication*, *8*(1), 21-28. DOI: 10.1080/17459430701617879

Kagan, D., Alpert, G. F. & Fire, M. (2020). (10.03.2022). Zooming into video conferencing privacy and security threats. *https://arxiv.org/abs/2007.01059.*

Karataş, Z. (2015). Sosyal bilimlerde nitel araştırma yöntemleri. *Manevi Temelli Sosyal Hizmet Araştırmaları Dergisi*, *1*(1), 62-80.

Lee, J. (2020). (01.03.2021). A neuropsychological exploration of Zoom fatigue. Psychiatric Times, *https://www.psychiatrictimes.com/view/psychological-exploration-zoom-fatigue*

Mohajan, H. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment, and People*, 7(1), 23-48.

Nadler, R. (2020). Understanding "Zoom fatigue": Theorizing spatial dynamics as third skins in computer-mediated communication. *Computers and Composition*, *58*, 102613.

Okabe-Miyamoto, K., Durnell, E., Howell, R. T. & Zizi, M. (2021). Did zoom bomb? Negative video conferencing meetings during COVID-19 undermined worker subjective productivity. *Human Behavior and Emerging Technology, 3,* 1067-1083. DOI: 10.1002/hbe2.

Oducado, R. M. F., Fajardo, M. T., Parreno-Lachica, G. M., Maniago, J. D., Villanueva, P. M. B., Dequilla, A.C., Montana, H. C., & Robite, E. E. (2021). Predictors of videoconference fatigue: Results from undergraduate nursing students in the Philippines. *Asian Journal for Public Opinion Research*, *9*(4), 310-330 http://dx.doi.org/10.15206/ajpor.2021.9.4.310

Özen, Z., Körükmez, L. & Akbaş Demirel, C. (2021). Dijital çağda sivil toplum: İmkanlar ve kısıtlılıklar. *https://insanhaklariokulu.org/wp-content/uploads/2021/05/Dijital-Cagda-Sivil-Toplum.pdf*

Peper, E., & Yang, A. (2021). Beyond Zoom fatigue: Re-energize yourself and improve learning. *Academia Letters*, 257, 1-7. https://doi.org/10.20935/AL257.

Peper, E., Wilson, M., Rosegard, E., & Harvey, R. (2021). Avoid Zoom fatigue, be present and learn. *Neuro Regulation*, *8*(1), https://doi.org/10.15540/nr.8.1.47

Reidl, R. (2021). (02.02.2022). On the stress potential of videoconferencing: definition and root causes of Zoom fatigue. *Electronic M*arkets, https://link.springer.com/article/10.1007/s12525-021-00501-3. https://doi.org/10.1007/s12525-021-00501-3

Reisinger, T. (2020). (01.01. 2022). Zoom security: I've researched problems with video conferencing for years – here's what you need to know. *https://theconversation.com/zoom-security-ive-researched-problems-with-video-conferencing-for-years-heres-what-you-need-to-know-136330*.

Rößler J, Sun J, & Gloor P. (2021). Reducing videoconferencing fatigue through facial emotion recognition. *Future Internet*. *13*(5), 126. https://doi.org/10.3390/fi13050126

Rump, J. & Brandt, M. (2020). (01.02.2021). Zoom fatigue. *Report of Institute for Employment and Employability*. IBE. *https://www.ibe-ludwigshafen.de/wp-content/uploads/2020/09/EN_IBE-Studie-Zoom-Fatigue.pdf*

Salman Yıkmış, M (2020). Nitel araştırmalarda e-görüşme tekniği. *Trakya Üniversitesi Sosyal*

Bilimler Dergisi, *22*(1), 183-197. DOI: 10.26468/trakyasobed.556296

Shangguan, Z., Wang, M.Y. & Sun, W. (2020). What caused the outbreak of COVID-19 in China: From the perspective of crisis management. *International Journal of Environmental Research and Public Health*. *17*(9), 3279. https://doi.org/10.3390/ijerph17093279

Sharma, M.K, Sunil, S., Anand, N., Amudhan, S. & Ganjekar, S. (2021). Webinar fatigue: Fall out of COVID-19. *Journal of Egyptian Public Health Association*, *96*(9), 1-2. https://doi.org/10.1186/s42506-021-00069-y

Sharma, M.K., Anand, N., Ahuja S., Thakur P.C., Mondal, I. & Singh, P. (2020). Digital burnout: COVID-19 lockdown mediates excessive technology use stress. *World Social Psychiatry*, 2(2), 171-172. DOI: 10.4103/WSP.WSP_21_20

Tobing, A. V. M., Irawan, V., Salim, Y. & Sulistyavati, S. W. (2022). Participants' Levels of understanding before and after attending the zoom fatigue during COVID-19 Pandemic Webinar. *World Journal of Advanced Research and Reviews, 13*(01), 338–342. https://doi.org/10.30574/wjarr.2022.13.1.0017

Shoshen, H. N. & Whert, W. (2021). Understanding Zoom fatigue: A mixed-method approach. *Applied Psychology*, *Special Issues*, 1-26. DOI10.1111/apps.12360

Tucker, S., Layson-Wolf, C., Coop, A., Lebovitz, L. & Anagnostou, G. (2021). Combating 'Zoom-fatigue': A comprehensive approach to academic program adaptation and supporting digital wellness during COVID-19. In T. Bastiaens (Ed.), *Proceedings of EdMedia + Innovate Learning* (p.727-731). United States: Association for the Advancement of Computing in Education (AACE).

Wiederhold, B. K. (2020). Connecting through technology during the Coronavirus Disease 2019 pandemic: Avoiding "Zoom Fatigue''. *Cyberpsychology*, *Behavior, and Social Networking*, *23*(7), DOI: 10.1089/cyber.2020.29188.bkw

William, N. (2021). Working through COVID-19: 'Zoom' gloom and 'Zoom' fatigue. *Occupational Medicine*, *71*(3), 164. https://doi.org/10.1093/occmed/kqab041

World Economic Forum (2020). (31.01.2022). *https://www.weforum.org/agenda/2020/03/infographic-apps-pandemic-technology-data-coronavirus-covid19-tech/*

Yıldırım, A. & Şimşek, H. (2016). *Sosyal bilimlerde nitel araştırma yöntemleri.* Ankara: Seçkin Yayıncılık.