

Demystifying The Influence Of Video Conferenceapps Time Used Towards Zoom Fatigue And The Symptoms Followed

Ainil Fitri

Diploma III Nursing Department
Faculty of Pharmacy and Health Sciences,
Abdurrah University
Jl. Riau Ujung No. 73, Pekanbaru, Riau, Indonesia

Saniya

Diploma III Nursing Department
Faculty of Pharmacy and Health Sciences,
Abdurrah University
Jl. Riau Ujung No. 73, Pekanbaru, Riau, Indonesia

Abstract:- Zoom fatigue is a feeling of tiredness, anxiety, or anxiety while participating in video conferencing activities. The aim of this study was to determine the effect of duration on zoom fatigue and its accompanying symptoms. This research is a quantitative research with a correlation research design. This research was conducted on health students in Pekanbaru City with a total sample of 220 people. The research instrument used was the ZEF Scale questionnaire pioneered by [1] and to find out symptoms of fatigue used the International Fatigue Research Conference (IFRC) or called the Subjective Self Rating Test (SSRT). The results showed that there was a close relationship between the duration of vodo conference use and the incidence of zoom fatigue with a p value of 0.046 (<0.05), which means that the more often a person attends a zoom meeting with a long duration of each session, the greater the possibility of zoom fatigue. Symptoms of fatigue that are often complained of are frequent yawning, drowsiness, wanting to lie down, not concentrating, difficulty concentrating, forgetfulness, frequent thirst, back pain and frequent dizziness. To minimize the occurrence of zoom fatigue, you can turn off the camera, choose which priority activities to participate in and reduce the number of online meetings.

Keywords:- Duration; Zoom Fatigue; Symptoms of Fatigue.

I. INTRODUCTION

The end of the Covid-19 pandemic has not ended online learning. There are still many learning activities that are carried out online or combined with offline learning, known as hybrid learning. In addition, several activities are still being carried out online such as seminars, workshops, expert lectures or public lectures. This online learning is carried out through a telecommunication platform that provides video conferencing features such as zoometing and Google meet [2]. Since 2020 the adoption rate for using video conferencing has increased very significantly, this is because video conferencing has a feature resembling face-to-face interactions [3].

Basically, the use of technology such as communicating via video conferencing media shows effectiveness and efficiency in utilizing technology as a solution to dealing

with obstacles that arise in communication. Video conferencing has become an important tool to continue various activities such as work, study and other social interaction activities [4]. However, the use of video conferencing for an excessive duration turns out to have an impact that is not good for one's physical and mental health. Fatigue, worry, and boredom using online learning media can actually cause fatigue, which is currently known as zoom fatigue syndrome. When a person experiences this condition, many symptoms may appear, such as standing unsteadily, wanting to lie down, difficulty thinking, tired of speaking, difficulty concentrating, pain in the back, easy feeling of dizziness.

II. LITERATURE REVIEW

Since 2021, many have started to define the term zoom fatigue. Zoom fatigue is a condition that describes the occurrence of fatigue associated with excessive use of virtual communication platforms [5]. Zoom fatigue is also a feeling of tiredness, anxiety or anxiety while participating in video conferencing activities which causes physical and mental symptoms due to too much use of virtual communication platforms to conduct long online meetings. These complaints were experienced by individuals not only when using zoom but also when using the WhatsApp video call application, Google Meets, Skype, Facetime and other online learning platforms [6]. Zoom fatigue is also computer-mediated fatigue which is often called Computer Mediated Communication (CMC).

One of the causes of this fatigue is because the duration of video conferencing is too long. There are four possibilities that cause fatigue due to the use of video conferencing, namely the excessive number of close-up stares, cognitive load, increased self-evaluation from looking at one's own video, and constraints on physical mobility [7]. According to [8] compulsive media use significantly triggers social media fatigue, which then results in increased anxiety and depression. Fear of missing out indirectly leads to social media burnout through mediating compulsive social media use. Based on the results of research conducted by [9] there are several factors that cause fatigue in students, such as feeling tired before work, acting slowly, and even feeling tired all over the body.

[10] classifies feelings of fatigue into 3 parts, namely first, weakening of activities consisting of feeling of heaviness in the head, tiredness of the whole body, heaviness in the legs, yawning, chaotic thoughts, drowsiness, feeling of burden on the eyes, awkward and stiff movements, unsteady standing, and always feel like lying down. Second, the weakening of motivation which consists of difficulty thinking, tired of speaking, nervous, not concentrating, difficulty concentrating, forgetfulness, reduced self-confidence, anxiety, difficulty controlling attitudes, not diligent at work. Third, physical exhaustion consisting of headaches, stiff shoulders, back pain, shortness of breath, thirst, hoarseness, feeling dizzy, spasms in the eyelids, tremors in the limbs, and feeling unwell.

III. METHOD

This research is a quantitative research, with a correlation research design. Hypothesis testing was carried out using two approaches, namely descriptive analysis and correlation. The sample in this study were 220 health students in the city of Pekanbaru consisting of various majors such as nursing, physiotherapy, medical laboratory engineering, and midwifery. The data collection technique was carried out by distributing questionnaires. The instruments used in this study were two questionnaire cakes. First, to find out the incidence of zoom fatigue, the ZEF Scale Questionnaire was used which was pioneered by [1]. This questionnaire consists of 15 questions aimed at finding out how severe the symptoms of fatigue due to zoom or video conferencing are experienced during learning. Furthermore, to find out the symptoms of fatigue, a scale issued by the International Fatigue Research Conference (IFRC) or called the Subjective Self Rating Test (SSRT) is used which contains a number of questions related to symptoms of fatigue. In this IFRC scale there are 30 symptoms of fatigue which are arranged in the form of a list of questions. 10 questions about the weakening of activities, 10 questions about the weakening of motivation and 10 questions about the description of physical fatigue [10]. After the data is processed, data analysis is carried out. Univariate analysis aims to describe each variable. And bivariate analysis is used to determine the relationship between the duration of zoom use and the incidence of zoom fatigue in respondents.

IV. ANALYSIS

The results of research that has been conducted regarding Demystifying the influence of video conference apps time used towards zoom fatigue and the symptoms followed which has been carried out on 220 respondents can be seen in the table below:

Table 1. Frequency Distribution of Respondents' Gender

No.	Gender	Frequency	Percentage (%)
1.	Man	52	23.6
2.	Woman	168	76.4
Total		220	100%

Based on table 1 above, we can see that of the 220 respondents, the average respondent in this study was female, namely 76.4%.

Table 2. Frequency Distribution of Respondents by Age

Variable	Mean	SD	Max – Min
Age	20.24	1.223	23 – 17

Based on table 2 above, we can see that of the 220 respondents, the average age is 20 years, with the youngest being 17 years and the oldest being 23 years.

Table 3. Frequency Distribution of Respondents' Use/ Participation in video conferenceapps

No.	Duration of Use video conferenceapps	Frequency	Percentage (%)
1.	Tidak Pernah	44	20.0
2.	1 time a month	74	33.6
3.	1 time a week	68	30.9
4.	1 time a day	18	8.2
5.	Several times a day	16	7.3
Total		220	100%

Based on table 3 above, we can see that of the 220 respondents, 30.9% use zoom once a week, 8.2% use zoom every day and there are even 7.3% who use video conferenceapps several times a day.

Table 4. Frequency Distribution Long duration of using video conferenceapps every time you join

No.	The long duration of participating in video conferencing	Frequency	Percentage (%)
1.	< 15 minute	4	1.8
2.	15 – 30 minute	28	12.7
3.	30 – 45 minute	56	25.5
4.	45 minute – 1 O'clock	94	42.7
5.	> 1 O'clock	38	17.3
Total		220	100%

Table 4 above shows that of the 220 respondents, 42.7% of the respondents took part in the zoom for 45 minutes to 1 hour for each session.

Table 5. Frequency Distribution of Zoom Fatigue Events to respondents using the ZEF Scale questionnaire

No.	Zoom In Fatigue Level	Frequency	Percentage (%)
1.	Low	71	32.2
2.	Currently	111	50.5
3.	High	38	17.3
Total		220	100%

Based on table 5 above, we can see that of the 220 respondents, 50.5% experienced moderate zoom fatigue. Meanwhile, 17.3% experienced fatigue due to following the zoom at a high level.

Table 6. Frequency Distribution of Fatigue Events Based on Symptoms of Fatigue using the International Fatigue Research Conference questionnaire

No.	Fatigue	Frequency	Percentage (%)
1.	Not Experiencing Fatigue	74	33.6
2.	Experiencing Fatigue	146	66.4
	Total	220	100%

Based on table 6 above, we can see that of the 220 respondents if we measure using the International Fatigue Research Conference questionnaire, 66.4% experience symptoms of fatigue while participating in the video conference.

Table 7. Frequency Distribution of Fatigue Symptoms Experienced by Respondents While Participating in the Video Conference

No.	Variables	Never		Rarely		Often		Very Often	
		n	%	n	%	n	%	n	%
Activity Weakening									
1.	Feeling of heaviness in the head	38	17.3	94	42.7	68	30.9	20	9.1
2.	Tired whole body	44	20.0	100	45.5	52	23.6	24	10.9
3.	Heavy on the feet	68	30.9	116	52.7	30	13.6	6	2.7
4.	Yawn	6	2.7	44	20.0	106	48.2	64	29.1
5.	Distracted mind	44	20.0	94	42.7	70	31.8	12	5.5
6.	Sleepy	8	3.6	48	21.8	108	49.1	56	25.5
7.	There is a strain on the eyes	48	21.8	74	33.6	64	29.1	34	15.5
8.	Awkward and stiff movements	60	27.3	96	43.6	48	21.8	16	7.3
9.	Unstable standing	76	34.5	96	43.6	38	17.3	10	4.5
10.	Want to lie down	12	5.5	50	22.7	104	47.3	54	24.5
Pelemahan motivasi									
11.	It's hard to think	36	16.4	92	41.8	66	30.0	26	11.8
12.	Tired to talk	66	30.0	90	40.9	48	21.8	16	7.3
13.	Flustered	48	21.8	80	36.4	68	30.9	24	10.9
14.	Not concentrate	30	13.6	64	29.1	98	44.5	28	12.7
15.	Difficulty concentrating	40	18.2	74	33.6	80	36.4	26	11.8
16.	Easy to forget	20	9.1	88	40.0	82	33.7	30	13.6
17.	Reduced self-confidence	50	22.7	82	37.3	70	31.8	18	8.2
18.	Feeling anxious	48	21.8	90	40.9	62	28.2	20	9.1
19.	Hard to control attitude	70	31.8	88	40.0	56	25.5	6	2.7
20.	Not diligent at work	68	30.9	104	47.3	40	18.2	8	3.6
Physical exhaustion									
21.	Headache	42	19.1	86	39.1	54	24.5	38	17.3
22.	Stiff shoulders	70	31.8	84	38.2	46	20.9	20	9.1
23.	Pain in the back	44	20.0	72	32.7	70	31.8	34	15.5
24.	Out of breath	98	44.5	88	40.0	28	12.7	5	2.7
25.	Thirsty	20	9.1	62	28.2	104	43.7	34	15.5
26.	Hoarseness	76	34.5	90	40.9	42	19.1	12	5.5
27.	Feeling dizzy	40	18.2	86	39.1	64	29.1	30	13.6
28.	Spasms in the eyelids	90	40.9	86	39.1	64	29.1	30	13.6
29.	Tremors in the limbs	74	33.6	98	44.5	38	17.3	10	4.5
30.	Feeling unwell	64	29.1	94	42.7	46	20.9	16	7.3

Based on table 7 above, we can see an explanation of the symptoms of fatigue felt by respondents while participating in the video conference.

V. DISCUSSION

Based on research that was conducted in 2022 about Demystifying the influence of video conference apps time used towards zoom fatigue and the symptoms followed, the results obtained, of the 220 respondents, the average gender

was 168 women (76.4%). Of all respondents, the average age is 20 years. Based on research data, the average respondent uses video conferencing once a week, namely 68 people (30.9%). However, there are also respondents who use video conferencing several times a day, namely 16 people (7.3%). In line with research conducted by [11] participating in video conferencing too often makes a person feel lazy when doing online learning through video conferencing. This is due to feeling bored and tired of having to stare at the screen all day. Not only that, they also feel too tired to do other activities

and prefer to rest or sleep after doing online learning through video conferencing. Of the 220 respondents said that while they were participating in the video conference, the time they spent on one meeting session was an average of 45 minutes to 1 hour, namely 94 people (42.7%). However, there were also respondents who spent more than 1 hour each session during the zoom meeting, namely 38 people (17.3%).

Based on the results of this study of 220 health students in Pekanbaru, it was found that the duration of participating in a video conference has a close relationship with the incidence of zoom fatigue. This is indicated by the results of the correlation test, which obtained a P value of 0.046 (< 0.05), which means that the more often a person participates in video conferencing with a long duration of each session, the greater the possibility of zoom fatigue. The duration of learning conducted via video conferencing is in fact closely related to the fatigue felt by students. The duration of learning using video conferencing if done $>$ than 8 hours in one day can actually cause fatigue and is also associated with an increase in stress [12]. [3] in his article also reveals that prolonged and inappropriate use of video conferencing can also lead to potential enormous stress. Apart from causing fatigue and stress, the duration of interacting with the computer also results in headaches. In his research, [13] revealed that there was a significant relationship between the duration of computer use and the incidence of headaches in case studies of final semester medical students who used computer $>$ than 3 hours per day.

Zoom Fatigue describes the fatigue, worry, and boredom that are felt due to the excessive use of virtual communication platforms. while 38 people (17.3%) experienced zoom fatigue at a high level. Similar to the research conducted using the International Fatigue Research Conference questionnaire, out of 220 respondents there were 146 people (66.4%) who showed symptoms of fatigue. This zoom in fatigue is felt not only in the form general fatigue, but also attacks the sense of sight and causes psychological fatigue in students. Many of the video conference users complain of several symptoms related to activity, motivation and visual fatigue after using the video platform [14]. Fatigue due to the use of this learning media consists of general burnout, visual burnout, social burnout, motivational burnout, and emotional burnout. Based on [15] of the five types of fatigue, the most frequently experienced by respondents was visual and emotional fatigue, followed by motivational, visual, and general fatigue.

During online learning, seminars, training, expert lectures, or public lectures, there are several symptoms of fatigue that may arise. In the International Fatigue Research Conference questionnaire there are 30 symptoms of fatigue which are grouped into 3 categories, namely weakening of activities, weakening of motivation and physical exhaustion [10]. Based on the results of this research on symptoms of fatigue during video conferencing in the activity attenuation category, 30.9% said they often felt heavy in their heads. 23.6% feel tired all over after taking zoom meetings for too long. 48.2% said they often yawn. 31.8% feel that their minds are often confused if they take too long in video conferencing. 49.1% often snore during zoom meetings.

29.1% often feel a burden on their eyes when participating in video conferencing for a long duration. 21.8% often feel movement becomes awkward and stiff after attending a zoom meeting. In fact, 47.3% of respondents tend to want to lie down while participating in a video conference. Symptoms of fatigue that are rarely felt in attenuated activities are feeling heavy in the legs and standing unsteadily after attending a zoom meeting.

The next symptom of fatigue is a weakening of motivation. 30% of respondents said yes, so it's hard to think if you follow a zoom for a long duration. 21.8% often feel tired talking. 30.9% often feel nervous. 44.5% often feel unconcentrated. 36.4% often find it difficult to concentrate, 33.7% often find it easy to forget. 31.8% often feel less confident. 28.2% often feel anxious, 25.5% often find it difficult to control attitudes and 18.3% often feel not diligent in their work.

The last symptom of fatigue is physical exhaustion. 24.5% often have headaches after participating in video conferencing. 20.9% often feel stiff in the shoulder. 31.8% often feel pain in the back. 43.7% often feel thirsty during video conferencing. 19.1% often experience hoarseness. 29.1% often feel dizzy. 29.1% often experienced eyelid spasms. 17.3% often experienced tremors in the limbs. And 20.9% often feel unwell after attending zoom meetings due to feeling too tired.

Apart from the duration of using video conferencing apps, there are many other factors that can cause zoom fatigue, such as sleep quality, health problems, psychological states, and unhealthy behavior [16]. The fatigue felt by students during this video conference can occur due to several factors such as virtual meetings that require high concentration. There is an expectation to look good in front of the camera and there are distractions from the surrounding environment during virtual meetings. Fatigue occurring during video conferencing provides an illustration of what is missing from face-to-face interaction when it is shifted to mediated communication and how nonverbal overload is the cause of the fatigue that arises. The solution to reducing fatigue due to video conferencing is to avoid multitasking, reduce stimulation from the screen by turning off the camera, limit social activities by choosing which ones need to be followed or which do not need to be followed, switch to discussions by telephone or e-mail as a means of communication, make video a last resort when receiving phone calls, especially for people you don't know, and reduce the number of online meetings [16].

VI. CONCLUSION

Based on the results of research on 220 medical students in Pekanbaru in 2022, it was found that the duration of participating in video conferencing has a close relationship with the incidence of zoom fatigue. This is indicated by the results of the correlation test, which obtained a P value of 0.046 (< 0.05), which means that the more often a person attends zoom meetings with a long duration of each session, the greater the possibility of zoom fatigue. The zoom fatigue incident experienced by the respondents was average at a

moderate level. Of the 3 categories of fatigue that can occur while participating in video conferencing, the most commonly felt symptoms of attenuation are frequent yawning, drowsiness, and a tendency to lie down while participating in VC. The most commonly felt symptoms of fatigue and weakening of motivation are in concentration, difficulty concentrating and forgetfulness during zoom meetings. Finally, the most common symptoms of physical fatigue are thirst, back pain, and feeling dizzy after finishing online meetings.

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