

Original Article

KNOWLEDGE, ATTITUDE AND PRACTICE OF SCREEN TIME AMONG UNDERGRADUATE UNIVERSITY STUDENTS IN MALAYSIA DURING PANDEMIC

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ABSTRACT

The usage of electronic devices is on the rise during the COVID-19 pandemic. This is very relevant especially to university students where e-learning has been introduced to substitute face-to-face learning. This study evaluated the knowledge, attitude and practice of screen time among undergraduate university students in Malaysia. A cross-sectional study was conducted. Undergraduate university students aged 18 or more were interviewed using a structured questionnaire regarding the socio-demographic information, knowledge, attitude and practice of screen time during the pandemic. A total of 388 participants were recruited from March to July 2021. More than 95% of participants had adequate knowledge and around 51% had a favourable attitude towards screen time. Despite high percentages of knowledge and attitude, only about 10% of the participants had good practice of screen time during this pandemic. There was a significant portion of female students who had better knowledge and attitude of screen time compared to male students ( $p < 0.05$ ). In conclusion, the knowledge and attitude of screen time were adequate among the undergraduate university students, but they were not able to put their knowledge into practice possibly due to lifestyle and learning changes that happened during the COVID-19 pandemic. It is crucial to observe their practice after the pandemic ends to investigate the relationship .

INTRODUCTION

Since the first outbreak of the coronavirus disease 2019 (COVID-19) in Wuhan, China, in early December 2019, the disease has rapidly spread across the world. Many sectors have been affected due to this pandemic including educational institutions. Various public health measures have been made to contain the spreading of the virus. Universities and schools were forced to close their campuses during the lockdown period, and affecting more than 1.3 billion learners in 186 countries according to the United Nations Educational, Scientific, and Cultural Organization [1]. As a result, education institutions modified their teaching and learning activities to online platforms to avoid interruptions [2].

Screen time refers to the amount of time someone spends looking at an electronic device with a screen, such as a computer, television, handphone or gaming device [3]. In the United States, children and teenagers spend an average of 7.5 to 9 hours per day engaging in sedentary screen-based activities [4]. This practice has become increasingly relevant during this pandemic where e-learning has been implemented. It is a major concern to everyone since we knew that excessive screen time can affect the developing brain. It has

consequences to the cognitive, motor development, learning, memory, emotional regulation and overall health of a person [5].

It has become inevitable for the community to shut the doors and stay inside during the pandemic. However, it is important for everyone especially children and teenagers to understand the right etiquette while using these screens. Global evidence suggests that increased screen time during the COVID-19 pandemic is associated with various impacts on health outcomes and academic performance of students in general. Multiple pieces of research also have shown adverse physical health especially ophthalmological impacts associated with screen time [6]. In another study, Bahkir FA et. Al (2020), found that the increase in digital screen time during the COVID-19 pandemic lockdown was associated with the slow deterioration of ocular health across all age groups [7]. The development and severity of digital eye strain may also differ among different groups such as in different courses taken by the students [8].

The American Optometric Association recommends the 20-20-20 rule to avoid digital eye strain; take a

break from the screen every 20 minutes and look at something at least 20 metres away for 20 seconds [9]. The objective of this study is to determine the level of knowledge, attitude and practice of screen time among the undergraduate students and later can be useful to improve the situation.

## MATERIALS AND METHODS

### Study design

This is a cross-sectional study involving 388 participants. Informed consent was taken from each participant. Participants were recruited from undergraduate university students from public and private universities in Malaysia. The study was carried out from the end of March 2021 to mid-July 2021.

### Inclusion and exclusion criteria

Undergraduate university students from public and private universities in Malaysia and agreed to participate in the study were included. No exclusion criteria in this study.

### Data collection

The sample size was calculated using the Cochran formula ( $n = Z^2 pq/e^2$ ). The sample of 384 was obtained with 5% of allowable error (e) at 95% of confident interval (CI) or Z in the Cochran formula.

The questionnaire consisted of 4 parts: socio-demographic information, knowledge, attitude and practice (KAP) of screen time. The first part is the socio-demographic questionnaire included 5 questions about socio-demographic characteristics of the participants; age, gender, courses, university and electronic devices that they have. This section provided the baseline data of the participants.

The second part included 7 questions about knowledge on screen time and its effect. The third part was related to attitude toward screen time and the last part was related to the question about screen time practice among the participants.

### Validity and reliability

The questionnaire was delivered in Malay and English language to avoid language barrier. A pilot study was performed involving 30 participants. Any errors have been rectified and later distributed among undergraduate students in Malaysia via social media such as WhatsApp, Facebook and Instagram.

### Statistical analysis

Data analysis was performed using SPSS version 26. The following statistical methods were used in this study; descriptive statistics to describe the socio-demographic of participants and KAP scores, chi-square test to see an association between age, gender and courses with knowledge, attitude and practice of screen time and one-way ANOVA to see the difference of mean between two or more groups.

## RESULTS

A total of 388 participants was recruited for this study. The majority (78.9%) of participants were from the age group of 18-20 years. Male participants were 41.2 % and females were 58.8%. Most of the participants (40.9%) studied medicine and allied health sciences (Table 1). Almost all of the participants own a handphone (98.9%) and a laptop (95.3%).

Table 1: Socio-demographic characteristics of the participants (n =388)

Characteristics	Values (%)
Age	
18-20	306 (78.9)
21-23	63 (16.2)
24-26	8 (2.1)
27-29	5 (1.3)
30 and above	6 (1.5)
Gender	
Male	160 (41.2)
Female	228 (58.8)
Courses	
Medicine & Allied Health Sciences	159 (40.9)
Engineering	38 (9.8)
Economic & Business	35 (9.0)
Education	22 (5.7)
Art & Social Science	25 (6.4)
Science	21 (5.4)
Islamic Studies	10 (2.6)
Others	78 (20.1)
Electronic devices	
Handphone	384 (98.9)
Tablet / Ipad	165 (42.5)
Laptop / Desktop computer	370 (95.3)
Television	187 (48.2)
Game console	32 (8.2)

Table 2 shows the scores of the knowledge, attitude and practice of screen time among the participants. More than 95% of participants had an adequate level of knowledge on screen time but a majority of them had poor practice during the COVID-19 pandemic (89.7%). The participants' attitude scores were ambiguous with approximately 50% participants had favourable attitude while another 50% of them had unfavourable attitude.

Table 3 demonstrates the association between knowledge, attitude and practice with different socio-demographic characteristics of the participants such as age, gender and courses. Age  $\leq 20$  and  $\geq 21$  and courses were not significantly associated with knowledge, attitude and practice. Gender, male vs female participants was significantly associated with knowledge ( $p=0.003$ ) and attitude ( $p=0.000$ ).

## DISCUSSION

This study was conducted within the population of undergraduate students in Malaysia within the age of 18 and above. During the COVID-19 pandemic, specifically during Movement Control Order (MCO), everyone was instructed to stay at home except for emergency purposes that were allowed by the government. This order was one of the mechanisms used to decrease the number of COVID-19 cases by reducing human interactions thus avoiding the spread of the virus from a person to another person. All activities outside of their home were prohibited. The government directed everyone to continue work and study from home except front-liners such as doctors, police and security forces. As a result,

Table 2: Knowledge, attitude and practice score of the participants.

Items	Values (percents)
Knowledge score (n=388)	
Adequate	369 (95.1)
Inadequate	19 (4.9)
Attitude score (n=388)	
Favourable	200 (51.5)
Unfavourable	188 (48.5)
Practice score (n=388)	
Good practice	40 (10.3)
Poor practice	348 (89.7)

Table 3: Association of different variables with knowledge, attitude and practice.

Characteristics	Knowledge		Attitude		Practice	
	Adequate	Inadequate	Favourable	Unfavourable	Good	Poor
Age						
$\leq 20$	291	15 (3.9)	158 (40.7)	148 (38.1)	27 (7.0)	279 (71.9)
$\geq 21$	(75.0)	4 (1.0)	42 (10.8)	40 (10.3)	13 (3.4)	69 (17.8)
p-value	78 (20.1)		0.947		0.063	
	0.993					
Gender						
Male	146	14 (3.6)	58 (14.9)	102 (26.3)	19 (4.9)	141 (36.3)
Female	(37.6)	5 (1.3)	142 (36.6)	86 (22.2)	21 (5.4)	207 (53.4)
p-value	223		0.000		0.396	
	(57.5)					
	0.003					
Courses						
Medicine & Allied Health	151	8 (2.8)	83 (21.4)	76 (19.6)	13 (3.4)	146 (37.6)
Others	(38.9)	11 (2.8)	117 (30.2)	112 (28.9)	27 (7.0)	202 (52.1)
p-value	218		0.830		0.250	
	(56.2)					
	0.918					

this MCO led people to increase their screen time. An example, students had their online classes from morning till evening on weekdays. They have to finish their assignments or projects through online at nights and weekends. At the same time, they also had more time to spend on screen as they played games, scrolled their social media, watched movies and others. All these activities caused an increment in their screen time.

Electronic devices are good and beneficial as they can help us in many ways, however, they can lead to excessive screen time. Thus, screen time needs to be controlled wisely. Therefore, a study was conducted regarding the knowledge, attitude and practices regarding screen time amongst university students in Malaysia during COVID-19 pandemic as this may help them to have good control of screen time daily. From this study, the result found that majority of the participants (95.1%) had adequate knowledge. However, only half of them (51.5%) had a favourable attitude and only a little (10.3%) had a good practice regarding screen time. In contrast to the earlier hypothesis, it was found that different courses had no effects on knowledge, attitude, and practices regarding screen time ( $p>0.05$ ).

On the other hand, there was a difference in the knowledge and attitude between male and female participants, which was statistically significant ( $p<0.05$ ). Female participants had both higher adequate knowledge (60.4%) than male participants (39.6%) and higher favourable attitude (71.0%) than male participants (29.0%). However, there was no significant relationship between gender and practices ( $p>0.05$ ). Both genders had high percentages of poor practices with female students contributed to 53.4% while male students were 36.3%. Knowledge, attitude and practices are not related to each other as there was no significant relationship between them ( $p>0.05$ ).

Ideally, students should not only have a good knowledge and attitude, but it must be reflected in their practices regarding screen time. Each participant should know their limits and realize that poor practices might lead to harm themselves physically and mentally. It is imperative to address the factors, which are playing as obstacles for university students in applying a good practice regarding screen time.

As we know, this COVID-19 pandemic urged everybody to stay at home and reduce movement outside. Therefore, all activities need to be done online, including studying. University students need to spend a lot of time in front of the screen to have the learning sessions, as well as to do their assignments. This cannot be prevented as online learning is the only way to continue studying during the Covid-19 pandemic especially during Movement Control Order (MCO). Moreover, students spent their leisure time playing games, watching movies, interacting with their friends via social media, surfing the internet and many more.

The limitation of this study was there might be some dishonest answers or limitation among the participants as they might refer to any sources when answering the questionnaire specifically regarding the knowledge. Moreover, participants might have different interpretations of the questions since there was no one to explain the questions to ensure each of them had the same understanding. There was no way to know if the participants had understood the questions.

## CONCLUSION

In conclusion, the good practices regarding screen time were meagre among university students during the COVID-19 pandemic, but most of them had adequate knowledge and half had a favourable attitude towards screen time. This study gives an insight into the formulation of strategies to educate students on good practice of screen time, together with the short-term and long-term consequences of screen time. Future research is recommended to investigate changes in students' screen time after the pandemic ends.

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## DECLARATION OF CONFLICT OF INTEREST

The authors report no conflicts of interest.

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