

Association between mental health and online learning student satisfaction among UTAR students

Swapneela Jacob¹, Tarun Amalnerkar², Jocelyn Chee Cheng Yee³

^{1,2}Lecturer, ³Year Three Bachelor of Physiotherapy Student
Faculty of Medicine and Health Sciences,
Department of Physiotherapy,
Universiti Tunku Abdul Rahman, Malaysia.

Background and Objective The outbreak of the novel coronavirus disease (COVID-19) and Movement Control Order had brought a big impact on mental health to the society than the risk of death due to infection. Although online distance learning is offered as an alternative way while physical face-to-face class is suspended but students appeared to be lack of self-discipline and not satisfy with online learning experience due to absence of hands-on activities (Zhang et al.,2020). The existing studies show variety causal which contribute to students' anxiety during COVID-19 pandemic, students' study experience through online learning would also increase the likelihood of having poorer mental health. Therefore, the objective of this study is to investigate the association between mental health and online learning student satisfaction among UTAR students.

Methods A total of 414 participants participated in this study which comprises of students from Universiti Tunku Abdul Rahman Sungai Long City Campus and Kampar Main Campus. There were three questionnaires used which Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7) and Online Learning Environment (OLES). The results obtained from these questionnaires were compared and analyzed.

Results Most of the respondents are female and average are 20 years old in this study. There is a significant association between mental health and student satisfaction online learning among UTAR students. The findings of the study shown that students' study satisfaction on online learning did contributes to students' mental health as it showed significant results in association.

Conclusion This study shown that there is association between mental health and student satisfaction online learning among UTAR students.

INTRODUCTION

Background

Many people see health as being physically stable and free of any ailments, so they tend to disregard the value of mental health. In 2013, wellbeing is "... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity," according to the World Health Organization (WHO). Mental health has become a subject of growing emphasis in higher education, with the number of university student suicides increasing over the last 10 years (Caul, 2018). Mental wellbeing is linked to depression, anxiety and stress, impacting the everyday life of individuals. Mental health concerns among college students are very common due to stress-related academic load, adult-like obligations and adult cognitive maturity (Manap, Abdul Hamid, & Abdul Ghani, 2019). According to Mohd Salleh (2018), in the current prevalence, every three in ten adults aged sixteen years and above will have some mental health issue, while women, younger adults and lower-income adults will be more active.

A displeasing result can be present after a full e-learning course; this may cause students becoming more not motivated to interact with the lecturers in the class as it could involve negative emotional states. Exasperation, worry, confusion, angry and other emotional condition could have an impact on motivation, social relationship, study and general wellbeing but not just restrict to online class interaction. All of these negativity will be included in to general anxiety disorder towards online learning environment. According to Saade, Kira and Nebebe in year 2013, anxieties may be seen as a response of a student's believe which they may be having it, other than treating it as a predictor to those who believes. For example, a student may assumed to have worries on having problems regarding either related to technical problem, absence of physical face-to-face classes or even self-direct learning and etc. He or she may start to get anxious about technology problems (such as computer problem) may happen while an online test is on-going, and not having sufficient time to go through the instructions on how to navigate successfully in this course and he or she again found themselves got isolation by others because there is nobody to get support from. All these believes and anxious affecting students not able to perform well in their own study (Saadé, Kira, & Nebebe, 2013).

In the late of 2019, the outbreak of the novel coronavirus disease (COVID-19) is spreading rapidly and internationally, causing a significant shift in lives worldwide. On March of 16 year 2020, the Prime Minister of Malaysia had made an declaration of having Movement Control Order as a step to suppress the outbreak, banned mass gathering which include physical class and training centre for skills (Restriction of Movement Order, 2020). Other than the risk of death from viral infection, the pandemic had an oppressive psychological effect on people. There were also reports about the mental health effect of pandemic on society. It is expected that the reopening of extended periods of movement control order (EMCO), social distancing measures and disruptions in classrooms, universities and colleges would affect students' mental health. Fear, anxiety and depression in the population which includes women,

young adults who can get social media information and elderly people who are at high risk of mortality because of various causal such as financial troubles and fear of disease transmission, could increase dramatically (Shanmugam, Juhari, Nair, Chow, & Ng, 2020). However, research on mental health of university students while confronting the pandemic has not been performed in depth to date.

The changing of process from secondary school to tertiary education may be stressful for a student, especially during university year, they are experiencing the challenges of transition to adult. Students who studying university, particularly those in freshman year will get various of exposure in stress, these would aggravate mental health problem. The stressors include adaptation when changing to new environment as well as academic stress. This shows that the occurrence of mental health problems often happen during young adult age which is early 20s. For example, some of them have to leave from their home, affectional isolation, economic difficulties, and also adjust from secondary school for the ways of instructions. Risk of mental health burden increase because of these stressors, it gives an impact for a lot of aspects of wellbeing. Nonetheless, there were few studies about prevalence of mental disorders examine on eating disorders even though it usually happens in younger age or teenager age period, and the results shown that about forty-four to fifty-six percent have eating disorders from the response rate. The causal which affects the occurrence of mental health burden were a lot and different as it is complicated. These factor can be linked indirectly or directly, but they were exhibit at various level (environment or personal), moreover they able to stay interrelate to each other. Particular reasons can even affect the susceptibility to get mental health burden, increase the risk of getting mental health disorder, furthermore changing one's reaction to certain hazard of environment. Hence, an understanding of psycho-social evolution as a complicated process which reacts to the influence of a multiplicity of factors closely linked to the environment or ecological context in which such development takes place (Claudia Torres, et al., 2017).

There are a lot of strict isolation measures to be execute due to the continuous spreading of epidemic, in order to practice the social distancing, learning institutions include government and private premises were closed, this triggers the suspension of campus class as a precautionary measure for COVID-19, so online distance learning was established to replace the conventional face-to-face physical class. Nowadays, the Internet has gradually penetrated into every corner of people's daily life. From the perspective of university or college students, the Internet is not only a helper for accessing learning materials, but also a universal player for understanding news events and the primary choice for after-school entertainment. Today, the Internet has become an indispensable part of students' study and life. The adaptation of having online distance learning environment from a physical face-to-face class often helps learners to long-standing habits while facing a new and unfamiliar learning space and to explore new ways of learning. Without specific instructions or guidance on how to proceed and what to do, students will be more likely to feel nervous (Abdous, 2019). Zhang et al. (2020) argued that when physical class learning is suspended during the outbreak of COVID-19, online distance learning would be a reasonable option for medical course students, but the lack of hands-on tasks and the inapplicability of certain students without self-discipline became one of the online class's primary concerns. Physical face-to-face class is more preferred to students than e-learning, and students' satisfaction with the online class has also decreased. During the outbreak of COVID-19, studies showed the barriers and effectiveness of online learning among college students, nevertheless the influence of satisfaction on online learning on university students' mental health has not been checked in studies.

There was a study examined on distance learning and usage of time on it, as well as the participants' mental health status during the epidemic. It was not shocked that majority of the students spend no time outside of their home. They faced not only the interference with classes due to the pandemic, but also felt socially isolated, which also one of the main concerns. Even though more than half of the study participants reported that they felt happy most of the time, but when comes to coping mechanism, there are still a number of people has major depression. This demonstrates the range of morale support to complement distance learning efforts. Another study reported that less than fifty percent of students spend zero time on study and below one-third of households had been contacted by their children's educational institution since the closure of institutions (Asanov, Flores, McKenzie, Mensmann, & Schulte, 2020).

This paper refers to influence of different variables on online learning experience, such as demographic factors, satisfaction with online class demographic details and their mental health on online learning experience.

Rationale of the Study

Educational organizations had moved to an online emergency learning model in response to COVID-19, which will further intensify the academic stressors of learners. It's fair to conclude learners faced declination study motivation, and also rising of independent study stress, the possible larger drop-out rates and abandonment of daily routine as the direct effects, based on studies on the effect of academic disorder on students. This pandemic had stress on unequalled mental health tension on learners through an increment in scholastic stressors in a higher pre-existing pressure levels society also potentially reduced capacity to rely on traditional coping mechanisms, for example family members who had experienced of increasing of anxiety. To date, one Wijayanengtiyas & Claretta (2020) research had investigated the influence of COVID-19 on students' welfare and academic. Around twenty-five percent of the respondents' sample displayed signs of anxiety that were positively related to increased fears about learning delays, economic pandemics and daily life. Moreover, eighty-three percent of young people surveyed worldwide claim the COVID-19 pandemic has affecting the pre-existing mental health concerns to become worse, mostly attributable to routine disruptions, the closures of schools and minimal communication interactions (Wei, 2020). Those various causal lead to the anxieties of learners during the COVID-19 pandemic from these preliminary results shown, but there is more to be studied about the psychological implications faced by learners and ways to reduce their negative effects that can be done. In due course, more studies on the effect of COVID-19 on mental health among students is suggested. The goals should include in particular, education issues, changes in traditional coping

mechanisms and initiatives by academic institutions to minimize negative psychosocial and academic implications. New research can continue to warn providers of student support and the detrimental long-term effects on mental health and learning. In this unprecedented time of chaos and uncertainty, while resolving the ongoing reality of the COVID-19 pandemic, measures to assist student population which at risk would lead to reducing the worldwide burden of mental health.

Research Questions

- a) Is there any association between mental health and online learning student satisfaction among UTAR students?

Objective

To investigate the association between mental health and online learning student satisfaction among UTAR students.

Operational Definition and Scope of Study

Operational Definition

- a) Mental Health

Cognitive, behavioral, and emotional well-being of people which measured by GAD-7 and PHQ-9.

- b) Online learning student satisfaction

Satisfaction of student towards online learning class which measured by Online Learning Environment Survey (OLES).

- c) UTAR student

Universiti Tunku Abdul Rahman students from both Sungai Long City Campus and Kampar Main Campus.

Scope of Study

This study focus on finding the association between mental health and online learning student satisfaction among UTAR students.

LITERATURE REVIEW

Education during the COVID- 19 epidemic

The outbreak of COVID-19 epidemic gave an impact to worldwide educational systems, which leads to the closing of almost all education organization such as universities, schools, and colleges. In order to prevent the widespread of COVID-19, many governments from all the countries had pay an effort by shutting down education organizations. There are around 1.725 billion students were influenced by school closures in response to the epidemic on year 2020, 27th of July. UNICEF estimates that more than 100 countries have national closures currently under-way and introducing local closures, which affect approximately 91% of the student population worldwide (Miks & McIlwaine, 2020). In 23 March 2020, a statement was announced about the Cambridge IGCSE, Cambridge O Level, Cambridge International AS&A Level, Cambridge AICE Diploma and Cambridge Pre-U examinations in May/ June 2020 series will be call of in all the countries (Update from Cambridge International on May/June 2020 exams, 2020). There is also a cancellation of International Baccalaureate exams. A part from that, ACT administrations, advanced placing exams, SAT administrations may be electronically transferred and cancelled. School closures have far-reaching social and economic implications as well as impacting students, teachers and communities. As observed by Abidah et al. (2020), the closure of the schools has shed light on several different concerns such as economic and social in response to the pandemic, including student debt, digital literacy, deprivation in homelessness and food and the links to education, healthcare, housing, the Internet and disability services. In reaction to school closures, UNESCO has called for the usage of the online distance learning facilities and open educational technologies and channels for schools and educators to reach students from a remote location and minimize educational disorder.

On-line learning

Rapid technical advancements have allowed distance learning. Most of the concepts such as M-learning, web-based learning, machine-media learning, open learning, online learning and mixed learning did share the capability to use a networked platform that offers the possibility of learning from anywhere, anywhere, anytime, by any means. As per say Brown (2014), online learning is described as 'digital interactions with internet access in synchronous or asynchronous environments utilizing various devices (e.g. cellular phones, laptops etc.); students may learn and interact with teachers and other students (independent ones) in those environments. The synchronous learning environment is designed in such a way that students attend a live lecture, real-time interactions occur and immediate feedback is possible, whereas asynchronous learning environments aren't properly structured (Brown, 2014). Meanwhile, Maiese (2013) pointed out that content in live lectures or workshops is not available in such a learning environment; it is accessible in different learning systems and forums. In such a situation, it is difficult to provide immediate input and response. Synchronous learning can provide a range of opportunities for social interaction as described by Manuel, Muñoz Merino, Alario-Hoyos and Delgado Kloos (2020). This online learning plans are required, as online meeting through video call is possible to contain at least forty to fifty students at a time in the midst of this fatal viruses; discussion with students to keep courses organic; internet access is good; lessons are also available via moving telephones and not just laptops; the possibility of viewing previously registered lessons and instant feedback are possible.

Problems associated with on-line learning

Online education provides a variety of opportunities, but it also raises a number of problems. According to Bernard and Rubalcava (2000), modern technology difficulties and problems range from misplaced updates, installation problems, authentication problems, audio and video issues, and so on. Students also find on-line teaching to be boring and un-engaging as online learning takes too much time and flexibility that students never have time to do so (Bernard & Rubalcava, 2000). Personal care is also a big issue for online learning. This was evident in a study by Darabi, Arrastia, Nelson, Cornille and Liang (2010) that revealed how students want bidirectional connections that are often difficult to introduce. The learning process cannot understand its full potential until the

learners had done through what they had read previously. Online learning was often being assumed as theoretical and not able to allow learners to study effectively and do the hands on. The consistency of the course is also a major problem. A study by Hu, Lo and Shih (2014) concluded that students agree that lack of culture, technical difficulties and difficulty understanding educational goals are the key barriers to online learning. In this study, students were not prepared enough to balance their education, families and social life in an online learning environment with their study lives (Hu, Lo, & Shih, 2014). Students have also been found to be undertrained in other fields of e-learning and academic skills whereby they also undergo low-level instruction on the use of learning management systems.

Mental health

The norm for mental health or psychological is mental health. Mental well-being could comprise a person's capability to enjoy life and strike an equal within daily activities and psychological resilience efforts. It is the state of a person that functions satisfactorily on an emotional and behavioral level. According to the World Health Organization (WHO), the mental well-being of the person includes, subjective well-being, perceived self-efficacy, autonomy, dignity, intergenerational dependence and the self-realization of the individual's intellectual and emotional capacity. The manner in which "mental health" is described under the UK is all affected by cultural difference, subjective views and conflicting ideologies. Bickman, (2012) pointed out that mental well-being is the positive performance of the mental function which leads to productive practices, satisfies connections with others and has an opportunity for reaction to change and adversity. The term mental illness generally applies to all psychiatric conditions that can be treated-health conditions characterized by changes in vision, behavior or the symptoms of depression or decreased function. Jorm (2011) on the other hand, reiterated how mental well-being and mental health are two constant concepts. People who are well mentally ill can also have mental illness and people who are not mentally ill may also have poor mental health (Jorm, 2011). Mental health issues are those that result from tension, loneliness, melancholy, worry, intimacy problems, the lover's loved one's death, suicide, sorrow, dependency, Attention Deficit Hyperactivity Disorder (ADHD), emotional damage, other psychological disorder or numerous mood disorders and disabilities in learning. The therapists, counselors, psychiatrist, social workers, psychologist, nurses or physicians could help in the treatment of mental illness, such as counselling, counseling or medication.

2.5 Mental health of students during the COVID- 19 pandemic

In response to the growing COVID-19 problems, many educational institutions decided to cancel individual classes and evacuate students. This could have adverse psychological effects for college students. Cao et al. (2020) concedes that students at universities, for example, frequently experience amplified negative emotions when attending 'close' school. Some students are accepting extremes such as frustration, anxiety and alienation on campus. Some people battle depression and isolation as friends and partners separate when sheltering. Another study by Venkatesh and Edirappuli (2020) revealed that for those seeking advice in educational institutions, they no longer have access to advice services which worsen their psychological symptoms and increase the risk of depression and substance abuse in some students. In addition to the anxiety caused by the closure of the school, students feel distress due to confusion and the abrupt end of the semester. As more schools switch into online learning after the pandemic, some students suffer from poor mental health due to academic routine disorders. As demonstrated by Elmer, Mephram and Stadtfeld (2020), several students had to abandon their research projects and internships as universities evacuated them from campus. In addition, threats to their study and internships disrupt their education, delay their graduation and challenge their competitiveness on the employment market, thereby fueling confusion among university students (Elmer, Mephram, & Stadtfeld, 2020). These students are unable to afford the expense of going home and maintaining property. The move caused many university students to lose their job on campus and the pending room and board issue would worsen their financial distress and the outcome of their psychiatric health. They have questions and concerns about COVID-19 and spread to families when they return home. Since young people may be asymptomatic carriers, students may be concerned about increasing the risk of severe COVID-19 complication on their older members in the family. The mental health condition in university from the effect of widespread of epidemic shows only the urgent need to tackle these problems and concerns in order to inform the development of courses and communications on public health that will support college students at this challenging time.

Student satisfaction

A short-term approach arising from the appraisal of an individual's education experiences termed as the satisfaction of students. It has a long history of student commitment, which is the product of a curriculum. Elliot and Shin (2002) again defines satisfaction of the students as student attitude by personal assessment in experiential and education assessments. Therefrom, the satisfaction of student can also be described in relation to the experience in relative level and also the education's service performance that had perceived while learning period. The satisfaction of student had described as the short-term approach focused on evaluation of the educational experience, students' services and supplies. The multidimensional phenomenon that was altered by several reasons is termed as satisfaction of students. Stukalina (2014) identified 2 classes of impacts on satisfaction of students in tertiary study as organization and private personal reasons. Personal factors include style of learning which preferred, sex, age, study performance such as GPA of students and organization aspects include standard of teaching, timely education input, continuity of intent, education style. As key determinants of student satisfaction, Dey and Cruzvergara (2014) identified teacher quality, hardware facilities quality and effectiveness of the technical usage. In addition, the quality of schooling, quality of input, relationships between lecturer and student, communication between the students, curriculum materials, accessible study tools, facilities in the library facilities and study content are greatly influenced by university student satisfaction. In addition, the main factors of tertiary study of students' satisfaction were teaching capacity, multi-disciplinary curricula, university status and reputation, versatility, faculty care, development of students and their growth as well, student centering, environment of the campus, social status and institutional effectiveness. The academic performance also got affected positively by their decision-making skills, emotional and social. When learners always have the feeling of inner stress for example worry, grief, depression indicate lower academic performance and those who are disappointment, anger and scared of displaying difficulties in school which is externalized distress (Cleofas, 2019).

METHODOLOGY

3.1 Study Design

Cross-sectional study

3.2 Study setting

Universiti Tunku Abdul Rahman (UTAR) Kampar Main Campus and Sungai Long Campus.

3.3 Sample size

There was a sum of 414 participants were recruited in this study

3.4 Sampling Method

Convenient sampling method.

3.5 Study Population

Students from Universiti Tunku Abdul Rahman (UTAR) Sungai Long campus and Kampar campus students.

Selection Criteria

Inclusion Criteria

- Male and female.
- Aged between 18 to 25 years old.
- Universiti Tunku Abdul Rahman (Sungai Long Campus and Kampar Campus) students
- Students attending online classes

Exclusion Criteria

- Students attending face to face classes
- Students with pre-existing mental health issues which is not due to online classes

Instruments

The instruments that used in this study were Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7) and Online Learning Environment Survey. Both Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7 questionnaires are used frequently in primary and secondary care mental health services to measure the signs or symptoms of depression and anxiety symptoms. Two of the outcome measures are public domain measures and commonly conducted on patients for diagnosis of different field of physical health status. PHQ-9 is a questionnaire which containing nine items which measure the symptoms of depression such as negative self-evaluation, feeling hopeless and etc. The total score of nine items is 27, it has four categories which are mild, moderate, moderately severe and severe in depression. Respondent who score five to nine will be under mild depression, while moderate depression is people who score ten to forth teen points. Total score which between fifteen to nineteen is categorized under moderately severe depression and severe depression scoring is twenty to twenty-seven. GAD-7 is a questionnaire which containing seven items which measure the symptoms of anxiety such as becoming easily annoyed or irritable and feeling nervous. The total score of seven items is 21, it has three categories which are mild, moderate and severe. People who scored five to nine will be categorized as mild anxiety, while respondent who scored a total of ten to forth teen points from the seven item are under moderate anxiety and those who scored a total of fifteen and above are severe anxiety. Richardson and Yeebo conducted a study on validity and reliability of both PHQ-9 and GAD-7 in 2017, results shown that PHQ-9 has acceptable reliability and GAD-7 has excellent reliability on primary care patients. The study suggest that PHQ-9 is a useful as a measure of outcome measure and severity of symptoms, however may not be reliable on diagnostic or screening purposes. Additionally, GAD-7 is a good measurement in screening for anxiety disorders.

The third questionnaire which used in this study is Online Learning Environment Survey (OLES) instrument was developed to understand perception of the students on online learning environment. A total of fifty-fours items measuring nine components on computer usage, teacher support, student interaction and collaboration, personal relevance, authentic learning, student autonomy, equity, enjoyment and asynchronicity in this instrument. The study concluded that OLES is a good reliability surveys on students (Trinidad & Pearson, 2004).

Procedure

3.8.1 Recruitment

UTAR students were recruited to participate in the study after getting the ethical approval. A written explanation on objective of the study and brief procedure of the study had given to the participants. Those participants who wish or interested to participate in the research study or had already signed for the consent form voluntarily were asked to finish the questionnaires through Google form. The 1st part of surveys consists of simple demographic questions such as faculty, ethnicity, age, gender, year of study and any pre-existing mental health problem which is not due to online classes from the participants. All of the questionnaires and data were collected and kept confidential and anonymous.

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a longer version of Patient Health Questionnaire, consists of nine questions; it is self-administered for assessing depression purpose. In a brief self-report method are widely used for diagnosis and screening purpose, also choosing and tracking treatment.

Generalized Anxiety Disorder-7 (GAD-7)

The 7-item Generalized Anxiety Disorder Scale (GAD-7) is a self-reported questionnaire for anxiety that proved valid in primary care. Respondent will rate their symptoms on nearly every day, more than half the days, several days and not at all, which are 3, 2, 1 and 0 points for the choices.

Online Learning Environment Survey (OLES)

The online learning environment survey (OLES) is a questionnaire where respondents will be rating by a 5 points scale (almost always, often, sometimes, seldom and almost never) on their learning experience, a total of 54-items of questionnaire.

Data Collection

The participants had finish completing all of the four combined questionnaires, all data were collected after distributing those questionnaires through online platform. The final scorings of these four surveys were entered into excel sheet and had been computed into SPSS software by equational function and analyzed at the same time.

Data Analysis

Those data which obtained from the participants were transform into IBM SPSS software version 26. We will first have undergone a descriptive analysis to present the demographic data of the participants just to analyze all the collected data. A nonparametric test was used to explore the significant associations between characteristics of the sample group, mental health and the online learning satisfaction score sample characteristics and the anxiety level. The estimates of the strengths of associations were demonstrated by the odds ratio (OR) with a 95% confidence interval.

RESULTS

We examined the impact of participants' demographic data, study satisfaction towards online learning, depression level and anxiety level, as the feelings of worries would reflect on students' motivation and further leads to dissatisfaction of online learning experience. This study included age, gender, ethnicity, faculty, campus where they study and year of study in the demographic variables. A sum of 414 Universiti Tunku Abdul Rahman (UTAR) students had agreed to participate in the research voluntarily who had met the inclusion criteria. There is a total of 414 students with a mean age of 20.45 years old (± 0.75) volunteered and agreed to participate in this study who met the inclusion criteria. These 414 participants were UTAR students from both Sungai Long City Campus and Kampar Main Campus where 147 (35.5%) are of male and 267 (64.5%) are female. A sum of 224 (54.1%) out of 414 participants are students from Sungai Long City Campus and 190 (45.9%) of them are from Kampar Main Campus. A number of 153 (37%) are from freshman year which is Year 1 meanwhile there are Year 2 students consist of 130 out of 414 them, followed by Year 3 category contains 86 of students, 38 (9.2%) students are from 4th year of study and 5th year students only collected 7 respondents. The table below presents the results obtained from the distribution of the participants in this study.

Table 1: Age distribution of participants.

Age				
Age	Frequency	Percent	Valid Percent	Cumulative Percent
18	22	5.3	5.3	5.3
19	103	24.9	24.9	30.2
20	114	27.5	27.5	57.7
21	87	21	21.0	78.7
22	39	9.4	9.4	88.2
23	31	7.5	7.5	95.7
24	13	3.1	3.1	98.8
25	5	1.2	1.2	100.0
Total	414	100.0	100.0	

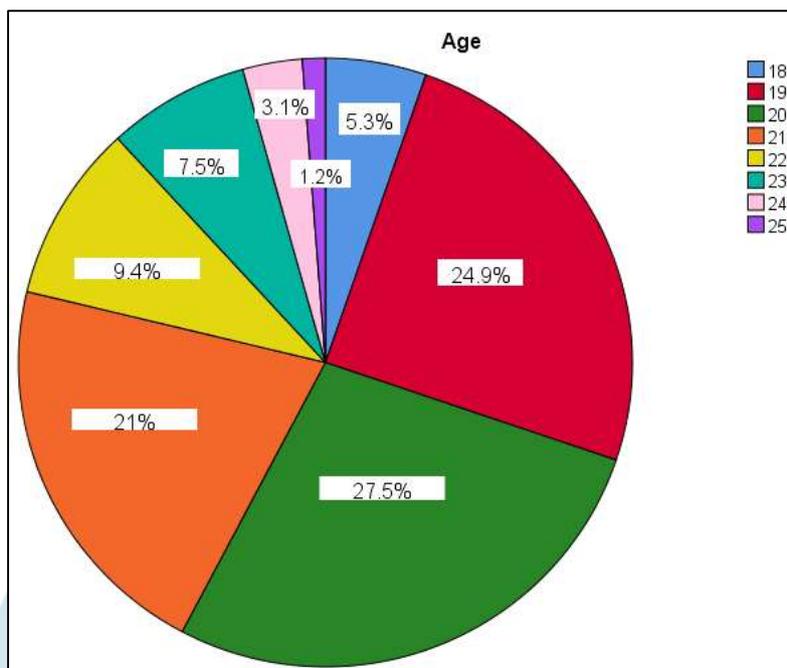


Figure 1: The Age distribution of participants

The table and figure (Table 1 and Figure 1) above provide the range of ages from all 414 respondents. Their age is ranging from 18 years old to 25 years old. Age 20 is mode where it has the highest frequency consisting 27.5% of the total participants followed by 24.9% of 19 years old. 87 (21%) of 21 years old participants, 39 out of 414 participants (9.4%) are 22 years old participants, 5.3% and 3.1% of 18 and 24 years old group and 1.2% which have 5 from 25 years old group.

Table 2: Gender distribution of participants

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	267	64.5	64.5	64.5
Male	147	35.5	35.5	100.0
Total	414	100.0	100.0	

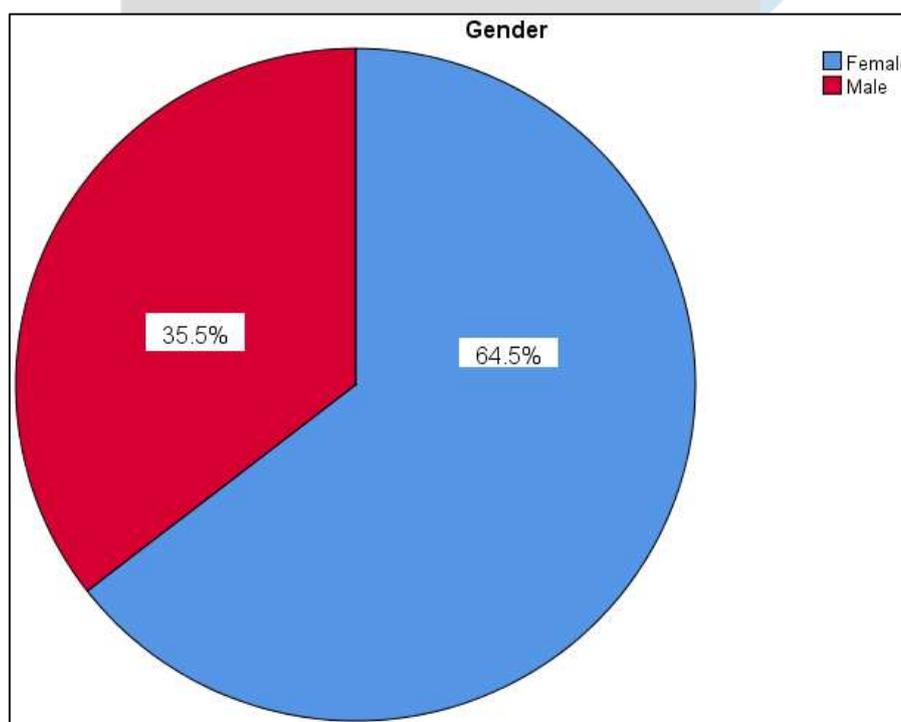


Figure 2: Gender distribution of participants

The sum of participants from both Sungai Long City Campus and Kampar Main Campus in this study are shown in the table and figure above. It can be seen from the data in Table 2 and Figure 2 that 64.5% of the participants are female and 147 of male participants joined in this study. Female contains the most of the responds in this study.

Table 3: Distribution of Ethnicity of Participants

Ethnicity	Frequency	Percent	Valid Percent	Cumulative Percent
Chinese	393	94.9	94.9	94.9
Malay	7	1.7	1.7	96.6
Indian	13	3.1	3.1	99.8
Other	1	0.2	0.2	100.0
Total	414	100.0	100.0	

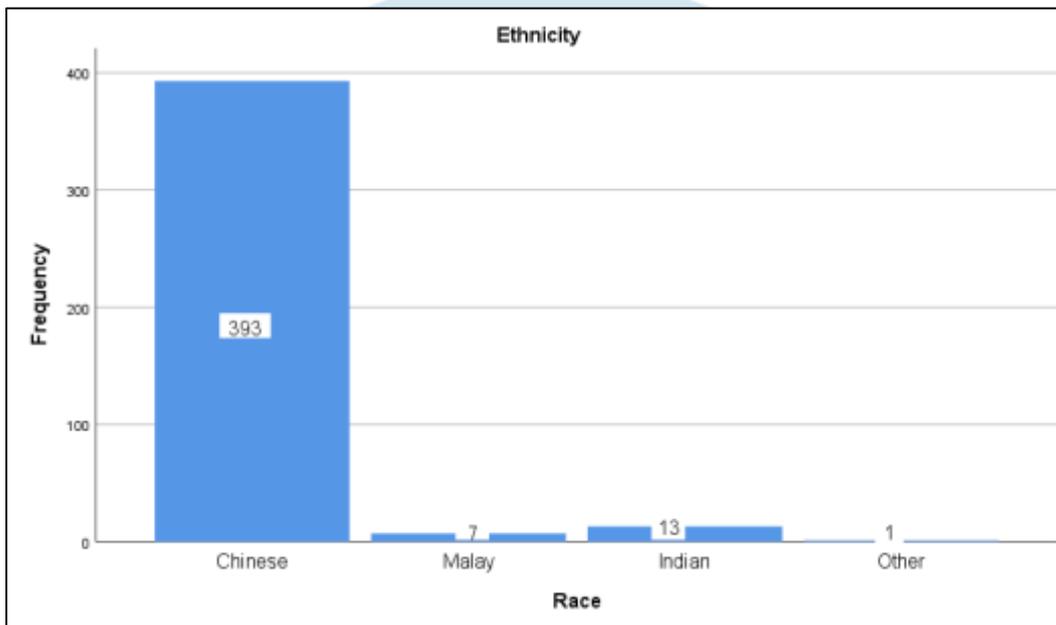


Figure 3: Ethnicity of Participants

The table and bar chart above illustrate the distribution of ethnicity of participants. From this data we can see that majority of the participants are Chinese, which consists of 393 participants (94.9%). In addition, there are 13 Indian students and 7 Malay students participate in this study, followed by only one participants is from other ethnicity group.

Table 4: Year of Study of participants

Year of Study	Frequency	Percent	Cumulative Percent
Year 1	153	37.0	37.0
Year 2	130	31.4	68.4
Year 3	86	20.8	89.1
Year 4	38	9.2	98.3
Year 5	7	1.7	100.0
Total	414	100.0	

Table 4 shows a majority number of 153 students (37%) are from year 1 and 130 of year 2 students participate in the study, followed by 86 participants (20.8%) from year 3, 38 participants (9.2%) from year 4 and only 7 participants (1.7%) from year 5 of study.

Table 5: Faculty of Study of participants

Course	Frequency	Percent (%)
Faculty of Medicine and Health Science	64	15.5
Lee Kong Chian Faculty of Engineering and Science	73	17.6
Faculty of Creative Industries	20	4.8
Faculty of Accountancy and Management	60	14.5
Faculty of Arts and Social Science	25	6.0
Faculty of Business and Finance	56	13.5
Faculty of Engineering and Green Technology	9	2.2
Faculty of Information and Communication Technology	33	8.0
Faculty of Science	42	10.1
Foundation	27	6.5
Other	5	1.2
Total	414	100.0

The table above presents the sum of respondents from eleven various faculties. The faculty category which having the most responses is from Lee Kong Chian Faculty of Engineering and Science (LKC FES) which consists 17.6 percent of the total 414 participants. The faculty category which having the 2nd highest frequency was Faculty of Medicine and Health Science (FMHS) contains 15.5 percent of the respondents which is sixty-four respondents. Next, Faculty of Accountancy and Management (FAM) has 60 participants joined in this study which 14.5 percent of the total participants. Meanwhile, 13.5% and 10.1% of participants are from Faculty of Business and Green Technology and Faculty of Science. There are 33 students (8%) from Faculty of Information and Communication Technology and 27 students (6.5%) from Foundation participated in this study. We also collected 20 (4.8%) participants' data from Faculty of Creative Industries in this study. Lastly, among all the participants there are 9 students (2.2%) from Faculty of Engineering and Green Technology and 1.2% are from other courses.

Table 6.1: Total categorical Patient Health Questionnaire-9 of participants

Severity	Frequency	Percent (%)
None	89	21.5
Mild	139	33.6
Moderate	120	29.0
Moderately severe	50	12.1
Severe	16	3.9
Total	414	100.0

Table 6 shows the total categorical of Patient Health Questionnaire -9 (PHQ-9) of participants in this study. PHQ-9 categorized into none, mild, moderate, moderately severe and severe depression. As can be seen from the table above (Table 6), it is clear that mild depression in which participants scored five to nine point in the questionnaire has the highest frequency of 139 (33.6%) among Universiti Tunku Abdul Rahman students followed by moderate depression where participants scored ten to fourteen points gives of a total of 120 (29%) participants and 89 (21.5%) no depression where participants have zero to four points. Meanwhile, a total of 50 (12.1%) participants who scored fifteen to nineteen points fall in moderately severe depression category and severe depression where participants scored twenty points and above gives a total of 16 out of 414 (3.9%) participants. This indicates that majority number of Universiti Tunku Abdul Rahman students are having mild depression.

Table 6.2: Average of Patient Health Questionnaire-9(PHQ-9) of participants

	N	Mean	Std. Deviation
PHQ-9	414	9.17	5.361

The results obtained from the preliminary analysis of average of Patient Health Questionnaire-9 (PHQ-9) is shown in Table 6.2. On average, the mean Patient Health Questionnaire-9 (PHQ-9) were shown to have mild depression that is between 5 to 9 points as the mean is 9.17 points.

Table 7.1 Total categorical General Anxiety Disorder-7 (GAD-7) of participants

Severity	Frequency	Percent (%)
None	134	32.4
Mild	156	37.7
Moderate	92	22.2
Severe	32	7.7
Total	414	100.0

The table above (Table 7.1) illustrates the breakdown of the total categorical of General Anxiety Disorder-7 (GAD-7) of participants in this study. GAD-7 categorized into none, mild, moderate and severe anxiety. From this data we can see that mild anxiety in which participants scored six to ten point in the questionnaire has the highest frequency of 156 (37.7%) among Universiti Tunku Abdul Rahman students. In addition, the “no anxiety” category where participants scored zero to five points gives of a total of 134 (32.4%) participants and 92 (22.2%) moderate depression where participants have eleven to fifteen points. Meanwhile, a total of 32 (7.7%) participants who scored sixteen to twenty-one points fall in severe depression category. This indicates that majority number of Universiti Tunku Abdul Rahman students are having mild anxiety.

Table 7.2: Average of General Anxiety Disorder-7 (GAD-7) of participants

	N	Mean	Std. Deviation
GAD-7	414	7.13	4.836

Table 7.2 shows the mean Patient Health Questionnaire-9 (PHQ-9) is 7.13 which is between 6 to 10 points under “mild anxiety” category. From the data in Table 7.2, it is apparent that this sample group are having mild anxiety on average.

Table 8.1: Total Online Learning Environment Survey (OLES) score of participants

Total OLES score	Frequency	Percent
≤ 199	212	51.2
>199	202	48.8
Total	414	100.0

A simple statistical analysis was used to describe the sum of Online Learning Environment Survey score which had done by the participants in the table above. Table 8.1 results shows that a total of 212 participants scores equal or less than 199 point in Online Learning Environment Survey (OLES) which is indicating of not satisfy with online learning experience and there are 202 participants (48.8%) scored more than 199 points in OLES, indicates of having more satisfaction on online learning experience. This is account that majority of the respondents were not satisfy on their online learning experience.

Table 8.2 Average total OLES scores among participants

	N	Mean	Std. Deviation
OLES	414	200.30	27.084

Table 8.2 shows that the mean for total Online Learning Environment Survey on average for this sample group is 200.3 in scoring, which indicates that this sample group is more satisfy in online learning experience in general.

Association between mental health and demographic data of participants

Table 9.1 A Summary of Association between demographic data and PHQ-9

	PHQ-9
Age	0.408
Gender	0.918
Ethnicity	0.083
Campus	0.138
Faculty	0.064
Year of Study	0.232

*Chi-square test was performed, level of significant at $p < 0.05$

Table 9.1 shows the result of p value for Patient Health Questionnaire-9 (PHQ-9) to Age, Gender, Ethnicity, Campus, Faculty and Year of Study. Chi-square test were used to analyze the association between the demographic and Patient Health Questionnaire -9. In table 9.1 there is a clear result that there is no significant between PHQ-9 and the participants’ demographic data. Hence, it shows no association between demographic data in this sample group and PHQ-9.

Table 9.2 A Summary of Association between demographic data and Generalized Anxiety Disorder-7 (GAD-7)

	GAD-7
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Age	0.991
Gender	0.661
Ethnicity	0.373
Campus	0.02
Faculty	0.181
Year of Study	0.897

*Chi-square test was performed, level of significant at $p < 0.05$

Table 9.2 shows the result of p value for Generalized Anxiety Disorder-7 (GAD-7) to Age, Gender, Ethnicity, Campus, Faculty and Year of Study. Hence, it shows no association between demographic data in this sample group and PHQ-9 except for the Campus that they went to.

Table 9.3 A Summary of Association between demographic data and Online Learning Environment Survey (OLES)

	OLES
Age	0.437
Gender	0.837
Ethnicity	0.556
Campus	0.375
Faculty	0.742
Year of Study	0.558

*Chi-square test was performed, level of significant at $p < 0.05$

Table 9.3 shows the result of p value for Online Learning Environment Survey (OLES) to Age, Gender, Ethnicity, Campus, Faculty and Year of Study. The results show the significant values were more than 0.05. Hence, it shows no association between demographic data in this sample group and OLES.

Table 10.1 Association between PHQ-9 and OLES

PHQ-9	OLES		χ^2	OR	df	P value
	≤ 199 n	> 199 n				
None/Mild	105	123	*5.398	0.63	1	0.023
Moderate/Severe	107	79				

*Chi-square test was performed, level of significant at $p < 0.05$

df=degree of freedom

Table 10.1 shows the association between participants' depression level from Patient Health Questionnaire-9 and the Online Learning Satisfaction Survey. From the result, p value is 0.023 (less than level of significant at $p < 0.05$), thus null hypothesis is rejected. Therefore, there is an association between depression level and online learning student satisfaction. The odds ratio is 0.63, indicating students who scored less than 199 in OLES, less likely to have depression.

Table 10.2 Association between GAD-7 and OLES

GAD-7	OLES		χ^2	OR	df	P value
	≤ 199 n	> 199 n				
None/Mild	140	150	*3.331	0.674	1	0.043
Moderate/Severe	72	52				

*Chi-square test was performed, level of significant at $p < 0.05$

df=degree of freedom

Table 10.2 shows the association between participants' anxiety level from General Anxiety Disorder-7 and the Online Learning Satisfaction Survey. From the result, this result is significant at the $p = 0.05$ level as the p value is 0.043 (less than level of significant at $p < 0.05$), thus null hypothesis is rejected. Therefore, there is an association between anxiety level and online learning student satisfaction. The odds ratio is 0.674, indicating students who scored less than 199 in OLES, less likely to have anxiety.

Table 10.3 Association between GAD-7 and PHQ-9

GAD-7	PHQ-9		χ^2	df	P value
	None/Mild n	Moderate/Severe n			
None/Mild	215	75	*142.241	1	< 0.001
Moderate/Severe	13	111			

*Chi-square test was performed, level of significant at $p < 0.05$

df=degree of freedom

Table 10.3 shows the association of Patient Health Questionnaire-9 (PHQ-9) and General Anxiety Disorder-7 (GAD-7). It is apparent from this table that it is statistically significant between Patient Health Questionnaire-9 and General Anxiety Disorder-7 as the p value from the table above is less than 0.001 at the significant level of 0.05, indicates that the result is significant.

DISCUSSION

The aim of this study is to investigate the association between mental health and online learning student satisfaction among Universiti Tunku Abdul Rahman (UTAR) students. The results from the study shown that the average Patient Health Questionnaire-9 for this study sample group is at 9.17 which indicates that the mean depression level for UTAR students are mild. On the other hand, the participants also scored 7.13 point in the mean General Anxiety Disorder-7 which is in between six to ten points, showing that UTAR students were having mild anxiety in general. Meanwhile, the study population are mostly satisfying with online learning experience from the results. As a summary from the information obtained from the result, UTAR students population are generally having mild depression and anxiety and at the same time satisfy with the online learning experience. The outcome also shows there is association between mental health and online learning student satisfaction among UTAR students.

The university students from worldwide have been experiencing the lock down for the past few months due to the phenomenon of COVID-19. The development of virtual learning spaces in these institutions has been facilitated without interfere with the study due to this shut-down. The epidemic of coronavirus put a question on the ability of education systems from worldwide for coping with remote and electronic disasters (Fawaz & Samaha, 2020). In contrast, online distance learning would be able allow students to specify their study trend also with the capabilities and difficulties themselves. This online learning enables students to adjust the learning trend by students which also one of the main factors on effectiveness of online learning, this would also affect the students' satisfaction on online learning.

Studies shown that there is a notable effect on college students' mental health from public health crises. after the COVID-19 outbreak, there were an elevated risk expectation and increasing of anxiety levels among university students. Additionally, the concerns of well-being of members from university community and students had raised due to the pandemic. Although previous study has concluded this pandemic can cause a wide-ranging effect on students' study, however the results of this study show that university students who face multiple academic and daily challenges at COVID-19 also experience higher levels of mental health stress (Aleksandar Kecojevic, H. Basch, Sullivan, & K. Davi, 2020). This is of potential interest, as the pandemic arises among university students in the light of growing mental health concerns. The additional stress will have a greater adverse impact on the undergraduates' mental health and learning.

The majority of the respondents were women, and the bulk of participants were students or in their first year in university. The racial diversity of the sample was also reflective of the university's diverse undergraduate students. The students except those from freshman year were prone to experience higher levels of anxiety in this multivariate simulations. One of the possible reasons may because of top-class students were much concerned on the economy condition and their post-graduate plans from the impact of pandemic. Besides, it is less likely for male students to experience high levels of tension. Analogous to previous studies, the perceived levels of tension of female students are greater than those of their male peers. Traditional male and female conceptions can help to convey perceptions and feelings differently towards life experiences. Female students are more expected to encounter more internalized problems such as stress in situations around the COVID-19 pandemic.

The finding from the results provides evidence that sudden transition from physical classes to online teaching learning methods has left the students disappointed. Martin (2020) found that the importance of students' tests and aspirations is related to satisfaction, which is in good agreement with the results of the present study. This clearly shows that more and more students appreciate training, believed its important, were more familiar with online distance classes, and finally believed that the course has achieved its objectives and is satisfied. One of the main reasons for the results of dissatisfaction with online distance learning can be technological difficulties where the telecommunications infrastructure in Sungai Long is below par and connections could break down during classes, causing students have to leave the meeting and relocate into the meeting sessions again, losing the data connections and not to mention the sudden loss of power electricity for students. This finding is in agreement with Sahu's (2020) findings which showed the significant of structural shortcomings, namely absence of internet access, insufficient technical capabilities and behavioral concerns which have reduced the complete execution of online learning in Malaysian higher education organizations. the key factors that made it possible for professors to focus on uploading instructional material to e-learning sites which is in contrast with the online teaching were inappropriate preparation and intense workloads. The finding is consistent with findings of past studies, which the internet and digital exposure are one of the problems facing IT and the online learning system. Minutillo, Cleary and Visentin (2020) found that the cost of World Wide Web and internet prevented student navigation of the e-learning program. A so-called digital divide was also described as the difference among students based on their capability to access essential online technology. In addition to the material access to telecommunications and computers, the digital divide is often determined by the access to supplemental resources that gives contribution to increased capital access (Son, Hegde, Smith, Wang, & Sasangohar, 2020).

In this study, most of the student were found to not having psychological signs, but the condition started to lead to mild and moderate and depressing symptoms among students when a substantial correlation between the prevalence of symptoms of stress, anxiety and depression wherever they had it and students' online learning satisfaction. Students were receiving lots of requirements, assignments and abundant of emails every day requirements, student said this making them juggling a heavy workload very

challenging every day. Moreover, a recent study also published in the course of COVID-19, highlighted the drastic shift in academic atmosphere and opportunities in future employment of students of Generation Z giving an impact of increased need for student psychological counselling. The pressure of access by high volume students on campus platforms and found that e-learning was challenged, which contributed to confusion on time because of the e-learning platform system crashed and therefore causing more stress. Study also shown that students' satisfaction in the learning process is closely linked with academic performance, which can influence the academic achievement and study progress of students through the e-learning (Fawaz & Samaha, 2020).

When learning goals in a course is set appropriately, online learning would be a good place to let all students get an A for academic performance for those studied in this environment (Saadé, Kira, & Nebebe, 2013). In their study, they found that higher anxiety level would reduce the motivation of study which also a type of enjoyment in study, in their results students are having a best learning experience during online activity. A study from Tempelaar, Niculescu, Rientie, Gijsselaers and Giesbers (2012), they concluded that to enable students become a motivated online learner in the mixed learning space, enjoyment over boredom would give contribution in learning emotion. It seems that student will show preferences of learning emotions over willingness to be motivated in study and become active students during online classes.

The results of this study did not show any significant increase in anxiety level among the freshman year students which is in contrast with the study done by Abdous (2019), the students who were in their freshman year (first year) are prone to have higher level of anxiety compare to other students which in their senior years. Those students who were in first year of study facing challenges because they having frustration in the changes from traditional face-to-face classes to new socio-cultural learning spaces. This gives an impact on them with the feelings of anxiety. The finding of the study would be much more reasonable if various factors such as social activities, academic performance and non-academic activities had taken into account to analyze the reasons which affecting those first year students' learning experiences in e-learning. First year students often found to be difficult to go through the freshman year smoothly, while facing with the loads of expectations and demands at the same time. Henceforth, freshman students would able to navigate their first year into the new learning environment if they got enough assistance, furthermore, it would make them to figure out a better study way (Abdous, 2019).

In many scenarios, behavioral shifts were widespread in response to the pandemic. Most students almost unanimously increased hand washing, decreased social outings and began wearing masks in line with recent guidelines. This is contrary to the findings of a recent study of chronic diseases in adults in the United States but equivalent to behaviour changes in the Hong Kong and China population studies (Aleksandar Kecojevic, H. Basch, Sullivan, & K. Davi, 2020). Although some changes in behaviour can result from requirements i.e. lock-downs, compulsory mask wear), students who take their private health course may also be more mindful of how the virus spreads and more likely to respond to behaviours that prevent the virus from spreading. While we have found no significant association between information levels and mental health variables, the overview of the study indicates that undergraduate students had ample knowledge of COVID-19 at the time the survey was administered. Almost everybody knows how the virus spreads, the clinical symptoms of infection, or the most contagious populations. COVID-19 pandemic information, especially in social media, was presented as a "infodemic" which contains enormous data and misinformation. However, in comparison to "informal" or news media, the study participants were likely to affirm the use of "formal" outlets, which resulted in a stronger understanding of COVID-19. Students studying in universities will also be more likely to be told about the correction of details concerning COVID-19. The common misunderstanding is that people with COVID-19 would not transmit the virus to others when a fever is not present. Another error demonstrated by a smaller number is that young people do not have to take any precautions to prevent infection with COVID-19. Students should be given an education on the role asymptomatic and pre-symptomatic individuals play in COVID-19 transmission, since a return to campus may involve restrictions on the selection of students from adjoining settings or mask facing institutions to reduce the spread of the virus.

In certain cases, students often feel relaxed with online learning within the first two weeks of online learning. Students are pleased with the zoom implementation even after the first online lecture conference, they able to accept each other. The enthusiasm of online learning begins to slip away in the coming second week. Students have to start wonder whether online learning is possible. Students began distributing memoranda during the second week in the form of complaints against online learning. They updated the status in several comments, including several roles, a cap and the state of the internet network (Lathabhavan & Griffiths, 2020). Such anxiety contributes to boredom in online learning. The test findings often show the appearance of irritability in study participants in individuals around them (Dhawan, 2020). Most of the respondents said that the participants were angry when the Internet network was disrupted and the situation was seriously affected by the climate. The psychological complexities explain the context of the phenomena of boredom in students, motivated by multiple social influences that occur in their environment. Not only have the growing number of victims and confirmed cases, and also the rising number of countries afflicted by the disease, created fears that this highly nervous outbreak is infecting the population. In the other hand, as a result of the physical distance policy and the ban on leaving home, the increasing distance between people often causes forbearance. Then fear happens and becomes greater, since there is no interpersonal contact. Contact between one person and another lacks a sense of non-verbal contact through online learning, which enables students to interact via intermediary devices. The absence of these encounters, along with the constraints of physical touch, makes students bored. Initially, according to a survey, people feel pleased with a long holiday, so they can rest and do nothing. Over time, people can feel bored because according to Dhawan (2020), they do not leave the house and do nothing. One study indicates that it can cause boredom, which is done statically. This situation is valid during a COVID-19 epidemic. Other study suggests that boredom shows poor self-control. There is also no self-control in someone who is quickly bored while learning

at home. This shows that people who want to be drilled cannot plan, push, monitor and lead the kinds of steps that will lead them in a positive direction.

In a separate study, as opposed to financially unable families, research issues from economically capable families have less concerns. The results of the research had showed that people from economically vulnerable families tend to be worry about their career in the future after the outbreak of COVID-19 pandemic (Dhawan, 2020). The participants complain about the quota of internet transactions which needed for e-learning purpose. The students are concerned about parents' earnings, because it was lessening by the current physical separation scheme, which needs parents to stay at home to increase the profits. Ultimately, students whose parents are economically able are controlled by online learning access. On the other hand students from economically under-average families are worried that could not afford to pay for the internet quota, which affects in the final score results. Both students depend on their parents' income. When parents' incomes decline, they are worried because they must purchase a quota to fulfil the course process to get the highest value. Some families will lose their income due to the plague and students are worried that their school fees will be charged. There is study shows that stability in families' income is one of the major factors in psychological and economic burden faced during the COVID-19 crisis by students (Korkmaz & Toraman, 2020). Students have opted to move back hometowns in order to decrease the costs burden on their family. Some studies say staying with parent during the outbreak of COVID-19 would alleviate psychological problems such as anxiety. They may also aid parents, both in terms of family finances and by keeping with their parents, according to their students. Supporting parents can be done in the middle to the bottom by gardening, making money, or helping mothers to cook for women at home. Research in Japan showed that living in urban areas during the COVID-19 outbreak was less stressful for students than in rural areas (Adedoyin & Soykan, 2020). According to the study, the cause is the unequal between study resources, cultural and economic in rural and urban areas. The urban economy is more stable and provides more material security for the public. The study shows that in rural communities, suffering during the COVID-19 outbreak was higher than in urban communities (Adedoyin & Soykan, 2020). They live in areas where Internet connectivity is restricted, income difficulties are obtained and necessities are high because of limited road access. In order to buy the internet cap, students are faced with the economic condition of the family. When additional work can be done in order to supplement their earnings while they live in the city, such as an online motorcycle taxi or part-time working. When in the village, they are confused because they do not generate income which satisfies all requirements. This condition triggers anxiety in students.

Owing to too many events, students are influenced by mental disorders and consider the pattern not to be satisfactory. Students worldwide have up-taken too many tasks since the implementation of home learning policies. Some students often conclude that teachers are not wise in assessing valuable learning habits (Toquero, 2020). Students argue that their colleagues do not have social support in the online learning process. The lack of physical interaction is one reason. Students are busy with themselves to complete their projects. According to research findings showing that social reinforcement during epidemics can reduce psychological distress (Toquero, 2020). This indicates that functional and robust social support is required during public health crises. Additional research also suggests that social strengthening is negatively correlated with student anxiety, in line with previous findings (Rajab, Gazal, & Alkattan, 2020). Online learning, which limits physical interaction, does not cause a social contact such that verbal and non-verbal communication is not properly used. Students complain about circumstances which stress learning in the conditions of teaching. Lack of social help leads students to develop mental illness. Lastly, it was thought that learning was less successful mainly when it was completed two weeks after school. Some students attempt to interact with lecturers in order to embrace assignments they consider to be too heavy to reduce emotional disturbances.

CONCLUSION

About 51.2% of Universiti Tunku Abdul Rahman (UTAR) students does not satisfy with online learning experience. Mental health status and various demographic, prior online learning was explored to find out the effective ways to ease students' feelings of anxiety and depression. From the results, the current study concluded that there is association between mental health and online learning student satisfaction among Universiti Tunku Abdul Rahman (UTAR) students. The more satisfaction towards online learning experience, the less likely to have poorer mental health status.

Finally, a number of important limitations need to be considered. First, the number of UTAR students from varies faculty are not balance, it is suggested that an equal number of respondents from different faculty could be made in the future research. In addition to that, the given time frame to undergo this study is limited, the feasibility in gathering the data from students in this pandemic is also one of the challenges in this study. Due to movement control order, students are not allowed to go for physical class, so recruitment of the study participants and data collection become harder for the researcher to conduct this study. The third limitation of this study was the structure of students' satisfaction on online learning survey. Online Learning Environment Survey does not have a specific category to differentiate whether participants are very satisfying, moderately satisfy or not satisfy at all with the courses which is increase the difficulty in analyzing data. A recommendation for future research is for modification of the survey instrument to have a clear cut-off point to categorize the satisfaction level.

To conclude, academic issues, including the capability to concentrate on study, are significantly related to high levels of stress, anxiety and depression. It should be remembered all 3 kinds of bivariate burden of mental health are significantly associated with online distance learning problems. Nonetheless, the difficulty in online analysis is no longer an important measure for mental health problem once the effects of other covariates are considered. High levels of depression are significantly linked with work losses, decreased salary or hours of service, meanwhile issues with access to medicines and hygiene products were significantly linked to

elevated stress rates. Students who depend on works to financially backup and their family may be at risk to have worries and depression because of financial difficulty. As future uncertainty persists, mental health can deteriorate, especially between young people. This pandemic has altered students' interests. Most of them are concerned about their own and families' wellbeing or are financially struggling, maybe causing them to pay less attention on study and rising academic problems. Sudden conversion of conventional physical classes into e-learning may affect the students who used to physical face-to-face courses and students who are not appropriate for online learning from academically marginal student groups and courses. Academic confrontations with e-learning classes will additionally aggravate the problems of mental health among students. Both of these may have an impact on student and for the mission of university administrators and instructors to find innovative responses to the pandemic's unforeseen danger. University plays an important role in giving support services to help students counter the pandemic daily challenges and improve their mental health.

REFERENCES

- Abdous, M. (2019, April). Influence of satisfaction and preparedness on online students' feelings of anxiety. *The Internet and Higher Education*, 41, 34-44. doi:10.1016/j.iheduc.2019.01.001
- Adedoyin, O. B., & Soykan, E. (2020, September 2). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive Learning Environments*, 1-13. doi:10.1080/10494820.2020.1813180
- Aleksandar Kecojevic, A., H. Basch, C., Sullivan, M., & K. Davi, N. (2020, September 30). The impact of the COVID-19 epidemic on mental health of undergraduate students in New Jersey, cross-sectional study. *PLOS ONE*, 15(9). doi:10.1371/journal.pone.0239696
- Asanov, I., Flores, F., McKenzie, D., Mensmann, M., & Schulte, M. (2020, October 22). Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine. *World Development*, 138, 1-9. doi:10.1016/j.worlddev.2020.105225
- Bernard, R. M., & Rubalcava, B. R. (2000). Collaborative online distance learning: Issues for future practice and research. *Distance Education*, 21(2), 260-277. doi:10.1080/0158791000210205
- Brown, L. (2014). Constructivist Learning Environments and Defining the Online Learning Community. *i-manager's Journal on School Educational Technology*, 9(4), 1-6. Retrieved August 28, 2020, from <https://files.eric.ed.gov/fulltext/EJ1097626.pdf>
- Caul, S. (2018, June 25). *Estimating suicide among higher education students, England and Wales: Experimental Statistics*. Retrieved August 4, 2020, from Office for National Statistics: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/estimating-suicide-among-higher-education-students-england-and-wales-experimental-statistics/2018-06-25>
- Claudia Torres, C., Otero, P., Bustamante, B., Blanco, V., Díaz, O., & Vázquez, F. L. (2017, May 15). Mental Health Problems and Related Factors in Ecuadorian College Students. *International Journal of Environment Research Public Health*, 14(5), 530. doi:10.3390/ijerph14050530
- Cleofas, J. V. (2019, September 26). Student involvement, mental health and quality of life of college students in a selected university in Manila, Philippines. *International Journal of Adolescence and Youth*, 25(1), 435-447. doi:10.1080/02673843.2019.1670683
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 1-18. doi:10.1177/0047239520934018
- Elmer, T., Mepham, K., & Stadtfeld, C. (2020, July 23). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLoS One*, 15(7). doi:10.1371/journal.pone.0236337
- Fawaz, M. F., & Samaha, A. (2020, October 30). E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. *Nursing Forum*. doi:10.1111/nuf.12521
- Hu, Y.-H., Lo, C.-L., & Shih, S.-P. (2014, July). Developing early warning systems to predict students' online learning performance. *Computer in Human Behavior*, 36, 469-478. doi:10.1016/j.chb.2014.04.002
- Jorm, A. (2011, October 31). Mental health literacy: empowering the community to take action for better mental health. *The American Psychologist*, 67(3), 231-243. doi:10.1037/a0025957
- Korkmaz, G., & Toraman, C. (2020, August). Are We Ready for the Post-COVID-19 Educational Practice? An Investigation into What Educators Think as to Online Learning. *International Journal of Technology in Education and Science*, 4(4), 293-309. doi:10.46328/ijtes.v4i4.110
- Lathabhavan, R., & Griffiths, M. (2020, October). First case of student suicide in India due to the COVID-19 education crisis: A brief report and preventive measures. *Asian journal of psychiatry*, 53, 102202. doi:10.1016/j.ajp.2020.102202
- Manap, R., Abdul Hamid, S., & Abdul Ghani, M. (2019). Depression, Anxiety and Stress Among Undergraduate Students. *Journal of Social Sciences and Humanities*, 16(2), 1-7. Retrieved August 4, 2020, from <https://pdfs.semanticscholar.org/9fa1/6b9212fd0baa85c64e440a344bceb93235e5.pdf>
- Martin, A. J. (2020, March). *How to Optimize Online Learning in the Age of Coronavirus (COVID-19): A 5-Point Guide for Educators*. Retrieved December 17, 2020, from https://www.researchgate.net/publication/339944395_How_to_Optimize_Online_Learning_in_the_Age_of_Coronavirus_COVID-19_A_5-Point_Guide_for_Educators
- Miks, J., & McIlwaine, J. (2020, April 20). *Keeping the world's children learning through COVID-19*. Retrieved September 6, 2020, from UNICEF: <https://www.unicef.org/coronavirus/keeping-worlds-children-learning-through-covid-19>

- Minutillo, S., Cleary, M., & Visentin, D. (2020, October). The Mental Health of Online Learners within the Educational Sector. *Issues Ment Health Nurs*, 41(10), 963-965. doi:10.1080/01612840.2020.1776552
- Rajab, M. H., Gazal, A. M., & Alkattan, K. (2020, July 2). Challenges to Online Medical Education During the COVID-19 Pandemic. *Cureus*, 12(7), e8966. doi:10.7759/cureus.8966
- Restriction of Movement Order*. (2020, March 16). Retrieved July 25, 2020, from Prime Minister's Office of Malaysia: <https://www.pmo.gov.my/2020/03/movement-control-order/>
- Richardson, T., & Yeebo, M. (2017, December). Reliability and Score Ranges of the PHQ-9 and GAD-7 in a Primary and Secondary Care Mental Health Service. *Journal of Psychosocial Rehabilitation and Mental Health*, 4(2), 237-240. doi:10.1007/s40737-017-0090-0
- Saadé, R. G., Kira, D., & Nebebe, F. (2013). The Challenge of Motivation in e-Learning: Roles of Anixety. *Proceedings of Informing Science & IT Education Conference*, (pp. 301-308). Retrieved December 19, 2020, from <https://pdfs.semanticscholar.org/484c/d3353cf9e5b2d5926a06fb3bb45b3a61a396.pdf>
- Sahu, P. (2020, April 4). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. *Cureus*, 12(4), e7541. doi:10.7759/cureus.7541
- Shanmugam, H. S., Juhari, J. A., Nair, P., Chow, S. K., & Ng, C. G. (2020, May 1). Impacts of COVID-19 Pandemic on Mental Health in Malaysia: *Malaysian Journal of Psychiatry Ejournal*, 29. Retrieved July 29, 2020, from <https://www.mjpsychiatry.org/index.php/mjp/article/view/536>
- Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020, September 3). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *Journal of medical Internet research*, 22(9), e21279. doi:10.2196/21279
- Tempelaar, D. T., Niculescu, A., Rientie, B., Gijsselaers, W. H., & Giesbers, B. (2012, June). How achievement emotions impact students' decisions for online learning, and what precedes those emotions. *15(3)*, 161-169. doi:10.1016/j.iheduc.2011.10.003
- Toquero, C. M. (2020). Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine. *Pedagogical Research*, 5(4). doi:10.29333/pr/7947
- Trinidad, S., & Pearson, J. (2004). Implementing and evaluating e-learning environments. *Proceedings of the 21st ASCILITE Conference*, (pp. 895-903). Retrieved December 18, 2020, from <https://ascilite.org/conferences/perth04/procs/pdf/trinidad.pdf>
- Update from Cambridge International on May/June 2020 exams*. (2020, March 23). Retrieved September 6, 2020, from Cambridge Assessment International Education: <https://www.cambridgeinternational.org/news/news-details/view/update-from-cambridge-international-on-may-june-2020-exams-20200323/>
- Wei, B. (2020, April 7). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technology*, 2(2), 113-115. doi:10.1002/hbe2.191