Volume: 4 Issues: 31 [June, 2019] pp.394-408]
International Journal of Education, Psychology and Counseling
eISSN: 0128-164X
Journal website: www.ijepc.com

MOBILE USAGE, SHOPPING BEHAVIOR AND STUDY HABIT AS CONTRIBUTING FACTORS OF DEPRESSION, ANXIETY AND STRESS AMONG UNIVERSITY STUDENTS

Nadzirah Mawi[1]
Department of Psychology and Counselling,
Faculty of Human Development,
Universiti Pendidikan Sultan Idris (UPSI)
Asma Perveen[2]
Department of Psychology and Counselling,
Faculty of Human Development,
Universiti Pendidikan Sultan Idris (UPSI)
(Email: asmaperveen@fpm.upsi.edu.my)
Hazalizah Hamzah[3]
Department of Psychology and Counselling,
Faculty of Human Development,
Universiti Pendidikan Sultan Idris (UPSI)

***Accepted date**: 13-06-2019*
***Published date**: 09-07-2019*

To cite this document: Mawi, N, Perveen, A., Hamzah, H. (2019). Mobile Usage, Shopping Behavior and Study Habit as Contributing Factors of Depression, Anxiety and Stress among University Students. *International Journal of Education, Psychology and Counseling*, 4(31), 394-408.
DOI: 10.35631/IJEPC.4310034

***Abstract**: This study aims to investigate the effect of certain factors of behavioral aspects on negative emotional states among university students. The behavioral aspects that are selected as independent variables in this study are mobile usage, buying behaviour and study habits. On the other hand, the negative emotional states that are discussed in this study is depression, anxiety and stress. Students (N=377) from Universiti Pendidikan Sultan Idris were selected using stratified sampling and purposive sampling as respondents in this study. Correlation analysis were carried out to briefly inform the reader the relationship between independent variable and dependent variable, and also the interrelationship among them. There is a small effect indicated by correlation coefficient between mobile usage and depression, and between mobile usage and anxiety. On the other hand, there is a moderate relationship between mobile usage and stress. As for shopping behaviour variable, the results indicated it correlates more with anxiety, followed by stress lastly with depression. Last but not least, there is a significant negative relationship between study habit and all dependent variables. As for among independent variables themselves, the results indicated that there is a significant correlation between that mobile usage with shopping behaviour, but not with study habit. Same goes to between shopping behaviour and study habit. On the contrary, among dependent variables themselves, the results indicated that there is a*

significant high correlation between all of them. Multiple regression analysis is conducted by using SPSS software after testing the assumptions. The results of the regression indicated that the model was a significant predictor of depression, anxiety and stress. Study habit is a significant contributing factor to reduce depression among university students. Besides that, shopping behavior and study habit are significant contributing factor to anxiety among university students. On the contrary, mobile usage and study habit are significant contributing factor to stress among university students.

Keywords: *Mobile Usage, Shopping Behavior, Study Habit, Depression, Anxiety, Stress*

Introduction

University life is one of the best years that a student may experience. It is a phase where an individual leave home to pursue his or her study, meeting and interacting with all sorts of people, and it is said to be the years when one can truly behave with such immaturity and not worrying about losing job or health. However, transition from being a high school student to a university student is very challenging (Corley, 2013) as there is a need to adapt to various changes which includes managing academic and interpersonal matters (Uehara et al., 2010; Venezia & Jaeger, 2013). Some might be able to deal with the new routines, but some might not, causing them to fall into significant distress and leading to poor academic performance (Hassel & Ridout, 2018). A few might fall into the trap of mental illness. Not only freshmen, even sophomore, and students of third and last year of study also have the same tendency to experience mental health problems, but only upon to difference circumstances such as living style, financial factors, learning environment, academic workload and many more (Thuraiselvam & Thang, 2015).

New Straits Times online on 12 September (2016) by Bernama stated that Health Ministry statistics reveal a worsening state of mental health problems among Malaysian students, from one in 10 individuals in 2011 to one in five in 2016. Experts mention anxiety and depression as the leading causes of mental health problems among students although not ruling out the influence of drugs as a factor. As many researches have been conducted to update with the current statistics of mental health problems among students in Malaysia, not much were done in order to investigate the factor that might trigger the problem. Lack of identification or acknowledgement of mental health symptoms added with lack of or inadequate treatment are common problems among college students and may contribute to the persistence of mental health problems in this population (Pedrelli, Nyer, Yeung, Zulauf & Wilens, 2015). Depression, anxiety, and stress can present separately, but often occur together, greatly impairing an individual's quality of life (Collins, Westra, Dozois, & Burns, 2004).

Therefore, it is crucial to provide mental health awareness towards the students. Some excellent studies have been and still are being conducted in Malaysia which are focusing on prevalence of depression, anxiety and stress and few factors that might be associated to those problems. The relationship between mental health in university students and student behaviours however, remained largely unexplored. Besides that, to the authors' knowledge, to date, no studies have explored behavioural aspects specifically mobile usage, shopping behaviour and study habit simultaneously in a university student population. Thus, this study fills the gap of exploring the impact of certain behavioural aspects towards negative emotional states, specifically depression, anxiety and stress among university students.

Hence, this research is a quantitative study. The research objective aimed to be fulfilled in this study are:

a. To measure level of mobile usage, shopping behaviour and study habit among university students.
b. To measure level of depression, anxiety and stress among university students.
c. To evaluate mobile usage, shopping behaviour and study habit as contributing factors of depression, anxiety and stress among university students.

Conceptual framework is designed to give an overview on the interaction between the manipulating variable and responding variable. Below is the conceptual framework of the study. It is expected that all the so-called independent variables which mobile usage are, shopping behaviour and study habit will be able to predict depression, anxiety and stress. For instance, individuals with higher mobile usage is expected to have higher depression, anxiety and stress. Figure 1 shows the conceptual framework of the study.

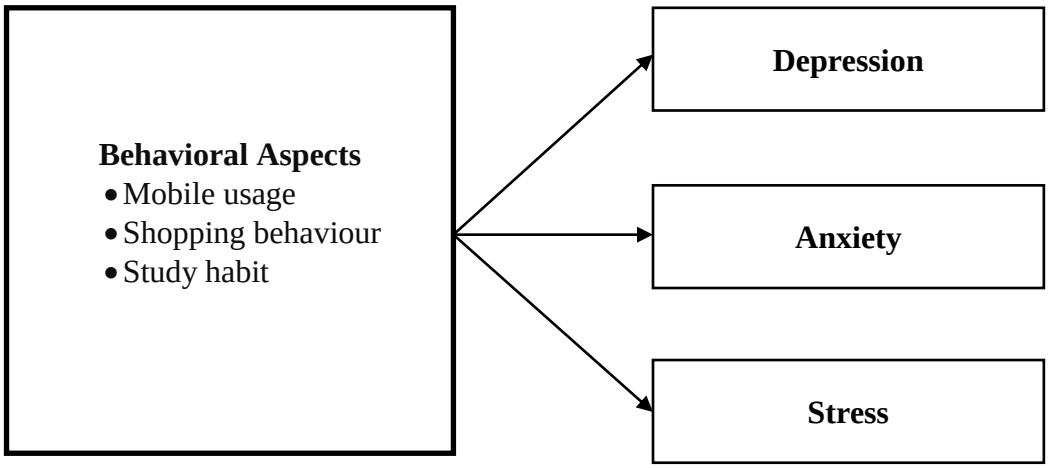

Figure 1: Conceptual Framework of the Study

Literature Review

A number of studies showed that sleep disturbance partially mediated the relationship between electronic media use at night and depressive and anxiety symptoms (Lemola, Perkinson-Gloor, Brand, Dewald, Kaufmann & Grob, 2015; Demirci, Akgönül & Akpinar, 2015; Boumosleh & Jaalouk, 2017; Alhassan, Alqadhib, Taha, Alahmari, Salam & Almutairi, 2018). The same finding was gained by a study conducted among Asian students where mobile phone overuse can be linked to unhealthy sleep habits and insomnia (Tamura, Nishida, Tsuji and Sakakibara, 2017), decline in study habits and difficulty in concentration (Gupta, Garg, Arora, 2016). Not only that, women are also more prone to symptoms of depression (Thomée, Härenstam & Hagberg, 2011) and have higher tendency to experience social stress compared to men (Andone et al., 2016). There is also indication of the role of depression, anxiety and stress as predictor of mobile phone addiction (Boumosleh & Jaalouk, 2017) which shows that the relationship between them also occurs vice versa.

In term of shopping behaviour, so far there are not many studies found relating how it affects depression, anxiety and stress. Those found were specifically on certain particular negative emotional states, and some on general mental health. Otero-López and

Villardefrancos (2014) stated that compulsive buyers have been reported as having more depressive symptoms. On the other hand, depression and materialism also are having a significant impact to compulsive buying behaviour (Nor Asiah Omar, Che Aniza Che Wel, Syed Shah Alam and Muhamad Azrin Nazri, 2015) implying that there is bidirectional relationship between these variables. Besides that, it was revealed that a certain amount of expenditure was needed for stress release, but a high one did not relieve stress (Hama, 2001). Most literatures indicated the propensity for females to be emerged in compulsive buying is much higher than males (Hu & Jasper, 2004; Ergin, 2010; Ramprabha, 2017). It is because compared to men which shop for motives and satisfaction, women are said to find happiness and pleasure during shopping (Sharma & Uniyal, 2017). On top of that, older female respondents are showed to more likely engaging in emotion-focused consumption-coping behaviours whereas older men would engage in problem-focused consumption-coping behaviours (Mathur, Moschis & Lee, 1999; Bani-Rshaid & Alghraibeh, 2017). The predominance of women has been confirmed but two general population surveys found no significant differences between genders (Koran et al., 2006; Mueller et al., 2010).

Similar to shopping behaviour, to author's knowledge, there is only a few researches that can be found on how study habits can affect depression, anxiety and stress. Bahrami, Rajaeepour, Rizi, Zahmatkesh and Nematolahi (2011) found a significant and negative relationship between studying and depression. In term of gender, Drozd, Robinson and Saarnio (1994) found that depressive symptoms lower academic performance in both males and females, but females are more likely to exhibit those symptoms. In contrast, Kumaravelan and Selvaraju (2015) found that there is no significant difference in mental health between male and female students. Some studies that were found were specifically on test anxiety and academic stress, rather than general depression, anxiety and stress. For instance, a study by Lawrence (2014) revealed that there was no significant relationship between study habits and test anxiety of higher secondary students. However, Kaur and Kaur (2016) found that there is a significant relationship between academic stress and study habits suggesting that academic stress might affect study habits and vice versa. An adequate amount of stress is beneficial as Sohail (2013) stated that an optimal level of stress enhances learning while excess of stress can cause health problems. To summarize, a systematic and good study habit is known to be beneficial to mental health. It can supress the symptoms of depression, anxiety and stress among individuals.

Methodology

This study applies quantitative research design and involves a cross-sectional survey. The target population for this study is 377 undergraduates and postgraduates' students from Universiti Pendidikan Sultan Idris. Two-level stratified sampling and purposive sampling is used to recruit participants for the study. Students were asked to complete a questionnaire packet consisting four different questionnaires which are Mobile Phone Involvement Questionnaire (MPIQ), Buying Impulsiveness Scale, Study Habits Questionnaire and Depression Anxiety Stress Scales (DASS-21).

Mobile Phone Involvement Questionnaire consists of eight items and using 7-point Likert rating scale as response format. Buying Impulsiveness Scale consists of nine items, in which the participants will be asked to indicate the extent to which they agreed with the items using a 5-point scale ranging from strongly disagree to strongly agree. Study Habits Questionnaire comprises of three different aspect of study habit, making up a total of 10 closed-ended items, in which the items' responses varied from "never" to "very often". Depression Anxiety Stress Scales (DASS-21) on the other hand consists of 21 items, in

which each construct containing 7 items and uses 4-point Likert type rating scale.

The questionnaire packet contains a number of was translated to Malay using back-translation method and pilot test was conducted before original survey was carried out. To fulfil the research objectives, descriptive statistics and inferential statistics concerning multiple regression analysis was carried out. Correlation analysis is conducted to indicate the strength of relationship between two variables, merely to convey the reader the relationship between independent variable and dependent variable, and also the interrelationship among them. The data collected were recorded and then further analyzed using Statistical Package for the Social Sciences (SPSS) software.

Results

Table 1: Mean and Standard Deviation of Mobile Usage, Shopping Behavior and Study Habit

	M	***SD***
Mobile Usage	35.18	9.41
Shopping Behavior	25.21	6.90
Study Habit	30.44	4.41

Table 1 indicated the mean and standard deviation for mobile usage, shopping behavior and study habit. Since Rupani, Parikh, Trivedi Singh, Patel, Vadodariya et al. (2016) have categorized respondents who scored five or higher on the Mobile Phone Involvement Questionnaire as being highly involved with their mobile phone, a total score of 40 and higher will be interpreted as the tendency for incline to high involvement in mobile phone usage. Nevertheless, though the mean score of total respondents do not reach the stated value, the sample as a whole have scored more than half of total score in the questionnaire relating to mobile usage. Same goes to questionnaires relating to study habit where the mean barely passed the median of total score. On the other hand, shopping behaviour mean score of the sample does not reach the median score.

Table 2: Mean, Standard Deviation and Level of Depression, Anxiety and Stress among University Students

		F	**%**	***M***	***SD***
Depression	Normal	0	0.00	24.24	8.98
	Mild	0	0.00		
	Moderate	180	47.70		
	Severe	73	19.40		
	Extremely severe	124	32.90		
Anxiety	Normal	0	0.00	27.97	9.32
	Mild	0	0.00		
	Moderate	17	4.50		
	Severe	54	14.30		
	Extremely severe	306	81.20		

	Normal	11	2.90		
	Mild	26	6.90		
Stress	Moderate	65	17.20	30.58	8.66
	Severe	139	36.90		
	Extremely severe	136	36.10		

Level of depression, anxiety and stress among university students also measured. Table 4.3 displays the level of depression, anxiety and stress based on severity. Most of students have moderate level of depression (*n*= 180), extremely severe anxiety (*n*= 306) and severe stress (*n*= 139). The last two column of the table display the mean and standard deviation of each dependent variable. All the values indicate that most of the students score more than average in all variables.

Table 3: Correlation Analysis between Variables

Variables	Mobile Usage	Shopping Behavior	Study Habit	Depression	Anxiety	Stress
Mobile Usage	-					
Shopping Behavior	.34**	-				
Study Habit	-.04	-.13**	-			
Depression	.13*	.15**	-.24**	-		
Anxiety	.17**	.38**	-.22**	.67**	-	
Stress	.43**	.20**	-.18**	.63**	.60**	-

Table 3 portrays the correlation coefficient between all the variables. Based on the table, there is a small effect indicated by correlation coefficient between mobile usage and depression, and between mobile usage and anxiety. On the other hand, there is a moderate relationship between mobile usage and stress. As for shopping behavior variable, the results indicated that there is a significant correlation between that variable with all three dependent variables which are depression, anxiety and stress. However, the magnitude of the correlation differs where it correlates more with anxiety, followed by stress and lastly with depression. Lastly, there is a significant negative relationship between study habit and all dependent variables. There is a small effect between study habit and depression, between study habit and anxiety, and lastly between study habit and stress.

As for among independent variables themselves, the results indicated that there is a significant correlation between that mobile usage with shopping behaviour, but not with study habit. Same goes to between shopping behaviour and study habit, as the correlation is not significant. On the contrary, among dependent variables themselves, the results indicated that there is a significant high correlation between all of them.

Table 4: Model Summary of Depression, Anxiety and Stress

Model	*R*	R^2	*SE*	Change Statistics				
				R^2	*F*	*df1*	*df2*	*Sig.F*
Depression	.28	.08	8.66	.08	10.58	3	373	.00
Anxiety	.42	.17	8.51	.17	25.83	3	373	.00
Stress	.46	.21	7.71	.21	33.87	3	373	.00

R^2 in model summary indicates how much of the variance in the dependent variable is explained by the model. From Table 4, the R^2 for depression is .08. If the value is converted to percentage, then it shows that the model which contains shopping behavior and study habit explains 8% of the variance in depression.

As for anxiety, the model which contains mobile usage, shopping behavior and study habit explains 17% of the variance in anxiety. R^2 for model on stress is .21, indicating that all significant independent variables explain 21% of the variance in stress.

Table 5: Coefficient Value for Depression, Anxiety and Stress

		Standardized Coefficients Beta	*T*	Sig.
Depression	Mobile Usage	.09	1.73	.08
	Shopping Behavior	.09	1.76	.08
	Study Habit	-.22	-4.39	.00
Anxiety	Mobile Usage	.05	.97	.33
	Shopping Behavior	.34	6.70	.00
	Study Habit	-.17	-3.57	.00
Stress	Mobile Usage	.41	8.44	.00
	Shopping Behavior	.04	.81	.42
	Study Habit	-.16	-3.42	.00

To indicate which of the variables included in the model contributed to the prediction of the dependent variable, the Beta value for each independent variable are examined. From Table 5 for depression, the largest beta coefficient is .22, which represents study habit. It means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. Only study habit variable makes a statistically significant, unique contribution to the prediction of depression. In short, the prediction model for depression signifying that study habit statistically significantly predicted depression, $F(3, 373) = 10.58$, $p < .001$, $R^2 = .08$.

For anxiety, the largest beta coefficient is .34, which represents shopping behavior making the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. Compared to depression, only mobile usage did not make a statistically significant, unique contribution to the prediction of

anxiety. In conclusion, the prediction model for anxiety signifying that shopping behavior and study habit statistically significantly predicted anxiety, F (3, 373) = 25.83, $p < .001$, $R^2 = .17$.

For stress, the largest beta coefficient is .41, which represents mobile usage. It means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. Compared to anxiety which highlights mobile usage as one what did not make a statistically significant, unique contribution to the prediction, stress points out shopping behavior as the one that did not make statistically significant contribution to the prediction. To summarize, the prediction model for stress signifying that mobile usage and study habit statistically significantly predicted stress, F (3, 373) = 33.87, $p < .001$, $R^2 = .21$.

Therefore, based on the hypothesis being constructed before, four hypotheses are rejected which are H_11_a, H_11_b, H_12_a and H_13_b, while the rest which are H_11_c, H_12_b, H_12_c, H_13_a and H_13_c are accepted. Study habit is a significant contributing factor to depression among university students. Besides that, shopping behavior and study habit are significant contributing factor to anxiety among university students. On the contrary, mobile usage and study habit are significant contributing factor to stress among university students.

Discussion

Research Objective 1: To Measure Level of Mobile Usage, Shopping Behaviour and Study Habit Among University Students

It is found that there is no apparent significant difference in the mean between mobile usage and study habit as compared to shopping behavior which is significantly lower. In term of mobile usage, even though the mean score of total respondents do not reach the stated value, the sample as a whole have scored more than half of total score in the questionnaire relating to mobile usage. Mobile phones are used to overcome the feeling of loneliness and students particularly have high desire to get connected which was reflected in preference for social networking sights (Vaidya, Pathak & Vaidya, 2016). A study conducted within a sample of Malaysian population also reveals that along with mobile phone, availability of Wi-Fi facility in residence place and work premises also increases mobile phone dependence (Parasuraman, Sam, Yee, Chuon & Ren, 2017). Since in most university campus and colleges provides free internet connection, this may increase the use of electronic devices especially mobile phones among students. The implementation of blended learning in Universiti Pendidikan Sultan Idris also might influence the use of mobile usage. The implementation of this service indirectly ensures the Wi-Fi service in the campus to be in good condition in order for such learning to flow smoothly, and at the same time enables students to make full of the availability of internet.

Questionnaires relating to study habit shows that the mean barely passed the median of total score. Though the scores questionnaire does not reflect high or low in term of study habit as it does not fit so, high scores indicate the tendency to better study habit. What a student is if he or she does not study? And the goal of a student is to gain as much knowledge as possible and obtain favorable results in the end. Therefore, study habit really affects the academic performance of a student. Study habits can be ‘good’ which reflects that they work and assist us in achieving good grades, or “bad” which just mean vice versa. Good study habits include being organized, attentive in class, read books and complete assignments given whereas bad study habits include skipping class, procrastinating, watching too much

television or playing video games instead of studying (Illahi & Khandai, 2015). Similar to the questionnaire being distributed to the respondents in this study, the aspects being assessed are access to notes, scheduling and ability to concentrate. These aspects are significant in becoming the elements of good study habit.

Since shopping behaviour mean score of the sample does not reach the median score, we can assume that the students do not show tendency to high shopping behaviour. Shopping behavior also is not an unfamiliar issue among university students. University students which can be considered as youth are among active consumers that highly being focused as target of global business environment. This is due to the instinct and mentality of youth that constantly evolving due to the intention of following the trends. They regularly will keep update on the latest fashion that gone viral and become the center of attention in order to keep up. However, we cannot really say that the shopping pattern of university students are the same due to personality, geographical factor, resources and also accessibility to the products. Though there is advancement in shopping, there are also many others factor that should be taken into consideration. Since Universiti Pendidikan Sultan Idris is not located in the city, that may be the reason why they do not shop as much as students in other universities which located in urban area.

Research Objective 2: To Measure Level of Depression, Anxiety and Stress Among University Students

According to the mean and standard deviation value, the respondents scored higher in stress compared to in depression and anxiety. Similar to dependent variables, all the values indicate that most of the respondents, which are the students score more than average in all dependent variables. The high standard deviation value in all variables reveals that the data points are also spread out over a large range of scores.

Students can be entangled by a variety of tasks either personal or non-personal. Multitasking may not be the area of expertise of everyone. Thus, unable to cope with the demands and needs of everything may cause a student to be stress out. In Malaysia, the major sources of stress among students are mostly difficulty in concentrating due to the presence of excessive information, the pressure of heavy workload, and examinations that cause harmful effects on their health and performance (Poon & Lee, 2012), and besides that female undergraduate student and the first-year undergraduate student are more likely to be stressed than the others (Jia & Loo, 2018). Though this study does not compare the level of stress between gender and year of study, in this case, the high mean score of stress among university students might be due to the time of distribution of questionnaire, in which in week 10 where the students are busy completing and submitting their assignments before the due date.

Research Objective 3: To Evaluate Mobile Usage, Shopping Behaviour and Study Habit as Contributing Factors of Depression, Anxiety and Stress Among University Students

Model of Depression

The first one is study habit contributed significantly to the model of depression whereas mobile usage and shopping behavior did not. This result is in accordance with a study by Bahrami, Rajaeepour, Rizi, Zahmatkesh and Nematolahi (2011) which stated that student's amount of depression decreased with increasing amount of studying. Though in current study, the time of studying was not evaluated, higher scores indicated better study habit, and to relate, increased amount of studying is also linked to better study habit. Besides that, the

result also in line with a study that focus on study skills where poor study skills were found to correlate with higher depressive symptoms (AlFaris, Irfan, AlSayyari, AlDahlawi, Almuhaideb, Almehaidib, et al., 2018). Eventhough Lejoyeux and Weinstein (2010) have reviewed the literature and found that one of the most commonly associated comorbidities of compulsive buying which is related to shopping behaviour, is depression, this study found the contradict result where shopping behaviour is not a contributing factor to depression. Findings indicated that compulsive buyers have been reported as having more depressive symptoms (Otero-López & Villardefrancos, 2014; Bani-Rshaid & Alghraibeh; 2017), and vice versa too where depression and materialism are having a significant impact to compulsive buying behaviour (Nor Asiah Omar, Che Aniza Che Wel, Syed Shah Alam & Muhamad Azrin Nazri, 2015). Depression is one of crucial psychological symptoms commonly present among compulsive buyers (Black, Shaw, McCormick, Bayless, & Allen, 2012; Christensen, et al., 1994), and evidence also stated that compulsive buying among some individuals may result in a decrease in their feelings of negative emotions (Zhang, Brook, Leukefeld & Brook, 2016). However, this study does not support those past researches. This may be because of other factors that might influence depressive symptoms among students. Though a lot of study have revealed significant relationship between mobile usage and depression (Alhassan, Alqadhib, Taha, Alahmari, Salam & Almutairi, 2018; Elhai, Dvorak, Levine & Hall, 2017; Thomée, 2018), this study found out that mobile usage is not a significant predictor of depression. This study revealed that mobile usage is more prominent as contributing factors of stress rather than depression.

Model of Anxiety

Second finding indicated shopping behavior and study habit contributed significantly to the model of anxiety, but mobile usage did not. To the author's knowledge, there is not much studies carried out relating to how shopping behaviour affect anxiety. On the contrary, most studies revealed the reverse relationship between the variables, in which individuals shop to get rid of anxiety feelings (Kalhour & Ng, 2015). As anxiety is strongly related to compulsive shopping behaviour where shopping provides an outlet for psychological compensation, it helps to reduce the anxiety (Ergin, 2010). Furthermore, anxiety and low effortful control were found to be predictors of compulsive buying among females (Mueller et al., 2010). This study supports existing evidence for an association between compulsive buying and anxiety (Weinstein, Mezig, Mizrachi & Lejoyeux, 2015). The findings by Farah, Ahmad, Muqarrab, Turi and Bashir (2018) indicated that about 99.0% students are involved in online purchasing and most computer/electronic/ mobile are the common products purchased online. Study habit is found to be a significant predictor to anxiety. Prior studies also shown the reverse relationship between these variables, where anxiety can have a debilitating effect on academic performance which is related to study habit as well (Macher, Paechter, Papousek, & Ruggeri, 2012). Some studies also discover the relationship between academic anxiety with study habits, reflecting in a study by Desiderato and Koskinen (1969), where the authors stated that differences in level of academic anxiety were also related to differences in study habits, and these were, in turn, related to GPA. To author's knowledge there are not much studies carried out on how study habits affect anxiety. Most found were either on stress or depression. Eventhough depression, anxiety and sleep quality may be associated with smartphone overuse (Demirci, Akgönül &Akpinar, 2015; Lemola, Perkinson-Gloor, Brand, Dewald, Kaufmann & Grob, 2015; Tamura, Nishida, Tsuji & Sakakibara; 2017), this study found no relationship between these variables. Mobile usage is found not to be a contributing factor to anxiety. Even this population used university students as sample of study, the result also is in contrast with a study by Lepp, Barkley, and Karpinski (2013) who revealed through survey research that cell phone use was positively

related to anxiety among college students. On top of that, even anxiety had a positive relationship with mobile phone addiction among Taiwanese college students (Hong, Chiu, & Huang, 2012).

Model of Stress

Third and last finding revealed mobile usage and study habit contributed significantly to the model of stress, as compared to shopping behavior. Many studies have pinpointed the effect of mobile phone use, and their correlation toward mental health, particularly depression, anxiety and stress. But in this study, mobile usage has more affect toward student's stress rather than student's depression or anxiety. A few studies suggested that there is positive correlation exists between smartphone use and stress (Vahedi & Saiphoo, 2018; Vasanthakumaran, 2018). The effect could be direct and also non-direct. This is because there is an association of mobile phone usage with sleep quality and academic performance (Sowmiya, Vidya, Lakshmi & William, 2017; Thomée, 2018). This indicates that the use of mobile usage may disrupt sleep quality of an individual. Without good sleep quality, academic performance will decline and lastly causing one to have stress. Though the usage of mobile phone is also proven in association with reduced stress (Toda, Ezoe & Takeshita, 2014), this may be due to how one's perceived the role of mobile usage in one's life. Study habit is found to be a significant predictor to stress. Similar to depression and anxiety, when one does not practice good study habit, it might cause he or she to experience stress. Unable to keep focus during class and lectures, unable to submit assignments in allocated time and lastly unable to answer questions being asked in exams are forms of bad study habit which can later on affect the emotion of a student. The result of this study is in line with a study by Kumaravelan and Selvaraju (2015), where the authors revealed that the study habits and mental health were significantly correlated. There is bi-directional relationship between these variables too, in which Kaur & Kaur (2016) stated that there is a significant relationship between academic stress and study habit implying that academic stress might affect study habits and vice versa. As for buying or shopping, inclusion of impulsive and compulsive buying discussion will be able to generate wider scope of literature. This study indicated that shopping behaviour is not a significant predictor to stress. This is in line with a study by Hama (2001) who suggested that a certain amount of expenditure was needed for stress release, but a high one did not relieve stress, and the finding was later supported by Durante and Laran (2016). It might also result in increased in spending depending on how an individual perceive the stress. Even that so, Albrecht, Hattula & Lehmann (2017) suggesting that shopping is sometimes a source of stress, leading to avoidance coping behavior by consumers. In short, though many literatures have indicated the relationship between shopping behaviour, this study is unable to find such association.

Limitation, Implication and Future Recommendation

Limitations

Few limitations have been observed in this study. Depression, anxiety and stress are sensitive outcome that cannot be linked exclusively to mobile usage, shopping behavior and study habit. Other internal or external factors might also result in the high level of depression, anxiety and stress among university students. Besides that, since this study only employed survey method, the respondents might find that the response choice are inflexible since they are provided before-hand in the questionnaire. There could probably be issue with the depth of information received too. Since the questionnaires allows the respondents to provide their self-reported responses, the possibility of bias and problems with accuracy of responses should be noted. This is because some questions may need respondents to recall

back events back in time which may not be accurate, and some responses may be exaggerated. Other than that, this may occur due to social desirability. Limitation due to time constraint also could be one that affects the findings of this study. If more time is provided, more responses can be gained by researcher thus affecting the generalizability of the study as well.

Implications

A few practical implications are highlighted here as they may be worthy to readers or researchers. The first implication of this study is that it would be very beneficial if parents play their role in order to support their children whenever they are in difficulties during university life. Even though in university, students might be away from families and more attached to their friends, family is still on top of the hierarchy to those who have one. Thus, even an individual has entered such phase in their life, their connection with their family members are still much intact and strong relationship will really help them physically and emotionally. Furthermore, it is found that university authorities should step in and assist students in multiple issues that might be beneficial to them. As that is perhaps the first time they are away from home, the students should be explained how such changes will really affect their life. Lastly, counsellors also should be appointed, conducting sessions with students in need. Some students might choose to attend face-to-face sessions and others may prefer online sessions. Nevertheless, both types of sessions are very important because it allows counsellors to be productive and attentive towards student's problem. Thus here, offering help to students in need is substantial in order for them not to feel being neglected and there are individuals exist to help them.

Future Recommendations

The researcher may add in qualitative approach in the study which include observation or in-depth interview which will enable the researcher to gain more information regarding the study. Since the study of how certain behavioural aspects can affect depression, anxiety and stress are still lacking in Malaysia, this study is hoped that this study can act as a guidance and become a useful information source for future research.

References

Albrecht, C. M., Hattula, S., & Lehmann, D. R. (2017). The relationship between consumer shopping stress and purchase abandonment in task-oriented and recreation-oriented consumers. *Journal of the Academy of Marketing Science*, *45*(5), 720-740.

AlFaris, E., Irfan, F., AlSayyari, S., AlDahlawi, W., Almuhaideb, S., Almehaidib, A. et al. (2018). Validation of a new study skills scale to provide an explanation for depressive symptoms among medical students. *PloS one*, *13*(6), e0199037.

Alhassan, A. A., Alqadhib, E. M., Taha, N. W., Alahmari, R. A., Salam, M., & Almutairi, A. F. (2018). The relationship between addiction to smartphone usage and depression among adults: a cross sectional study. *BMC Psychiatry*, *18*(1), 1-8.

Andone, I., Błaszkiewicz, K., Eibes, M., Trendafilov, B., Montag, C., & Markowetz, A. (2016, September). *How age and gender affect smartphone usage*. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct (pp. 9-12). Heidelberg, Germany: ACM.

Bahrami, S., Rajaeepour, S., Rizi, H. A., Zahmatkesh, M., & Nematolahi, Z. (2011). The relationship between students' study habits, happiness and depression. *Iranian Journal of Nursing and Midwifery Research*, *16*(3), 217-221.

Bani-Rshaid, A. M., & Alghraibeh, A. M. (2017). Relationship between compulsive buying and depressive symptoms among males and females. *Journal of Obsessive*

Compulsive and Related Disorders, 14, 47-50.
Black, D. W., Shaw, M., McCormick, B., Bayless, J. D., & Allen, J. (2012). Neuropsychological performance, impulsivity, ADHD symptoms, and novelty seeking in compulsive buying disorder. *Psychiatry Research, 200*(2-3), 581-587.
Boumosleh, J. M., & Jaalouk, D. (2017). Depression, anxiety, and smartphone addiction in university students-A cross sectional study. *PLoS one, 12*(8), e0182239.
Christenson, G. A., Faber, R. J., De Zwaan, M., Raymond, N. C., Specker, S. M., Ekern, M. D. et al. (1994). Compulsive buying: Descriptive characteristics and psychiatric comorbidity. *Journal of Clinical Psychiatry, 55*(1), 5-11.
Collins, K. A., Westra, H. A., Dozois, D. J., & Burns, D. D. (2004). Gaps in accessing treatment for anxiety and depression: Challenges for the delivery of care. *Clinical Psychology Review, 24*(5), 583-616.
Corley, L. (2013). Prevalence of mental health issues among college students: How do advisers equip themselves? *The Mentor an Academic Advising Journal.*
Demirci, K., Akgönül, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioural Addictions, 4*(2), 85-92.
Desiderato, O., & Koskinen, P. (1969). Anxiety, study habits, and academic achievement. *Journal of Counseling Psychology, 16*(2, Pt.1), 162-165.
Drozd, G. P., Robinson, A. E. & Saarnio, D. A. (1994). *Is Depression Related to Study Habits?*. Paper presented at the Annual Meeting of the Mid-South Research Association, Nashville, TN. Retrieved from https://files.eric.ed.gov/fulltext/ED389995.pdf
Durante, K. M., & Laran, J. (2016). The effect of stress on consumer saving and spending. *Journal of Marketing Research, 53*(5), 814-828.
Ergin, E. A. (2010). Compulsive buying behavior tendencies: The case of Turkish consumers. *African Journal of Business Management*, *4*(3), 333-338.
Farah, G. A., Ahmad, M., Muqarrab, H., Turi, J. A. & Bashir, S. (2018). *Online shopping behaviour among university students: Case study of Must University. Advances in Social Sciences Research Journal*, 5(4), 228-242.
Gupta, N., Garg, S., & Arora, K. (2016). Pattern of mobile phone usage and its effects on psychological health, sleep, and academic performance in students of a medical university. *National Journal of Physiology, Pharmacy and Pharmacology*, *6*(2), 132-139.
Hama, Y. (2001). Shopping as a coping behaviour for stress. *Japanese Psychological Research, 43*(4), 218-224.
Hassel, S., & Ridout, N. (2018). An investigation of first-year students' and lecturers' expectations of university education. *Frontiers in Psychology, 8*, 1-13
Hong, F., Chiu, S., & Huang, D. (2012). A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior, 28*, 2152–2159.
Hu, H., & Jasper, C. R. (2004). Men and women: A comparison of shopping mall behavior. *Journal of Shopping Center Research*, *11*(1), 113-131.
Illahi, B. Y., & Khandai, H. (2015). Academic achievements and study habits of college students of District Pulwama. *Journal of Education and Practice*, *6*(31), 1-6.
Jia, Y. F., & Loo, Y. T. (2018). Prevalence and determinants of perceived stress among undergraduate students in a Malaysian University. *Journal of Health and Translational Medicine*, *21*(1), 1-5.
Kalhour, M. & Ng, J. C. Y. (2015). Compulsive buying behavior as a way to cope. *Journal of International Management Studies, 15*(2),7-14.

Kaur, J., & Kaur, N. (2016). Academic stress of adolescents in relation to study habits. *International Multidisciplinary E-Journal, 5*(2), 306-313.

Koran, L. M., Faber, R. J., Aboujaoude, M. A., Large, M. D., & Serpe, R. T. (2006). Estimated prevalence of compulsive buying behavior in the United States. *American Journal of Psychiatry*, *163*, 1806–1812.

Kumaravelan, M. E., & Selvaraju, R. (2015). Study habits and mental health in relation to their examination stress of Vellore higher secondary students: A gender wise analysis. *International Journal of Advanced Research, 3*(8), 721-726.

Lawrence, A. A. (2014). Relationship between study habits and test anxiety of higher secondary students. *International Journal of Teacher Educational Research, 3*(6), 1-9.

Lejoyeux, M. & Weinstein, A. (2010). Compulsive buying. *The American Journal of Drug Alcohol Abuse, 36*(5), 248–253.

Lemola, S., Perkinson-Gloor, N., Brand, S., Dewald-Kaufmann, J. F., & Grob, A. (2015). Adolescents' electronic media use at night, sleep disturbance, and depressive symptoms in the smartphone age. *Journal of Youth and Adolescence*, *44*(2), 405-418.

Lepp, A., Barkley, J. E., & Karpinski, A. C. (2013). The relationship between cell phone use, academic performance, anxiety and satisfaction with life in college students. *Computers in Human Behavior*, *31*, 343–350.

Macher, D., Paechter, M., Papousek, I., & Ruggeri, K. (2012). Statistics anxiety, trait anxiety, learning behavior, and academic performance. *European Journal of Psychological Education, 27*, 483–498.

Mathur, A., Moschis, G. P., & Lee, E. (1999). Stress and consumer behavior: Coping strategies of older adults. *Journal of Marketing Practice: Applied Marketing Science, 5*(6/7/8), 233-247.

Mueller, A., Mitchell, J. E., Crosby, R. D., Gefeller, O., Faber, R. J., Martin, A., et al. (2010). Estimated prevalence of compulsive buying in Germany and its association with sociodemographic characteristics and depressive symptoms. *Psychiatry Research*, *180*(2–3), 137–142.

Nor Asiah Omar, Che Aniza Che Wel, Syed Shah Alam & Muhamad Azrin Nazri (2015). Understanding students compulsive buying of apparel: An empirical study. *Jurnal Personalia Pelajar, 18*(2), 107-113.

Otero-López, J. M., & Villardefrancos, E. (2014). Prevalence, sociodemographic factors, psychological distress, and coping strategies related to compulsive buying: a cross sectional study in Galicia, Spain. BMC Psychiatry, 14(1), 1-12.

Parasuraman, S., Sam, A. T., Yee, S. W. K., Chuon, B. L. C., & Ren, L. Y. (2017). Smartphone usage and increased risk of mobile phone addiction: A concurrent study. *International Journal of Pharmaceutical Investigation, 7*(3), 125-131.

Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: mental health problems and treatment considerations. *Academic Psychiatry, 39*(5), 503-511.

Poon, W. C., & Lee, C. (2012). Undergraduates' perception on causes, coping and outcomes of academic stress: Its foresight implications to university administration. *International Journal of Foresight and Innovation Policy, 8*(4), 379-403.

Ramprabha, K. (2017). Predominant Factors that Influence the Consumer Shopping behaviour-A Scale Development Approach. *Journal of Advanced Research in Dynamical and control Systems, 15*, 374-382.

Rupani, M. P., Parikh, K. D., Trivedi, A. V., Singh, M. P., Patel, A., Vadodariya, B., et al. (2016). Cross-sectional study on mobile phone involvement among medical students of a tertiary care teaching hospital of western India. *National Journal of Community Medicine, 7*(7), 609-613.

Sharma, P. K., & Uniyal, S. (2017). Comparative analysis of shopping habit–men vs. women. *National Journal of Multidisciplinary Research and Development*, *2*(1), 5-6.

Sohail, N. (2013). Stress and academic performance among medical students. *Journal of the College of Physicians and Surgeons Pakistan*, *23*(1), 67-71.

Sowmiya, K., Vidya, D. C., Lakshmi, A., & William, R. F. (2017). A study of mobile phone usage on sleep disturbance, stress and academic performance among medical students in Tamil Nadu. *International Journal of Community Medicine and Public Health*, *5*(1), 365-368.

Tamura, H., Nishida, T., Tsuji, A. & Sakakibara, H. (2017) Association between excessive use of mobile phone and insomnia and depression among Japanese adolescents. *International Journal of Environmental Research and Public Health*, *14*(7), 701.

Thomée, S. (2018). Mobile phone use and mental health. A review of the research that takes a psychological perspective on exposure. *International Journal of Environmental Research and Public Health*, *15*(12), 2692.

Thomée, S., Härenstam, A., & Hagberg, M. (2011). Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults-a prospective cohort study. *BMC public health*, *11*(1), 66.

Thuraiselvam, S., & Thang, R. B. (2015). Factors *that affect students' mental health: A study at Taylor's University School of Hospitality, Tourism And Culinary Arts final year st*udents. In Taylor's 7th Teaching and Learning Conference 2014 Proceedings (pp. 109-125). Springer, Singapore.

Toda, M., Ezoe, S., & Takeshita, T. (2014). Mobile phone use and stress-coping strategies of medical students. *International Journal of Cyber Behavior, Psychology and Learning (IJCBPL)*, *4*(4), 41-46.

Uehara, T., Takeuchi, K., Kubota, F., Oshima, K. & Ishikawa, O. (2010). Annual transition of major depressive episode in university students using a structured self-rating questionnaire. *Asia-Pacific Psychiatry*, *2*(2), 99-104.

Vahedi, Z., & Saiphoo, A. (2018). The association between smartphone use, stress, and anxiety: A meta-analytic review. *Stress and Health*, *34*(3), 347-358.

Vaidya, A., Pathak, V. & Vaidya, A. (2016). Mobile phone usage among youth. *International Journal of Applied Research and Studies*, *5*(3), 1-16.

Vasanthakumaran, T. (2018). Mobile use, stress, sleep disturbances, and symptoms of depression in the medical profession: a cross-sectional study. *International Journal of Community Medicine and Public Health*, *5*(8), 3345-3349.

Venezia, A., & Jaeger, L. (2013). Transitions from high school to college. *The Future of Children*, *23*(1), 117-136.

Weinstein, A., Mezig, H., Mizrachi, S., & Lejoyeux, M. (2015). A study investigating the association between compulsive buying with measures of anxiety and obsessive–compulsive behavior among internet shoppers. *Comprehensive Psychiatry*, *57*, 46-50.

Zhang, C., Brook, J. S., Leukefeld, C. G., & Brook, D. W. (2016). Associations between compulsive buying and substance dependence/abuse, major depressive episodes, and generalized anxiety disorder among men and women. *Journal of Addictive Diseases*, *35*(4), 298-304.