Research Article

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Relationship between stress and lifestyle with internet addiction among Z generation

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Abstract

Although the internet has resulted in substantial benefits under the fourth industrial revolution (specifically regarding knowledge, interaction, and social communication), internet addiction is currently a public health conundrum following severe and uncontrolled internet utilisation. This research designed to identify the substantial factors connected to internet addiction. A cross-sectional analysis was performed among the Z generation in Malaysia. Summarily, 384 respondents were selected in this research with the convenience sampling technique. A set of self-reported questionnaires were also distributed for data gathering. Notably, Pearson correlation and multiple linear regression were utilised for univariate and multivariate analyses. The study assessments were performed with a 95% confidence interval (CI) and significance level at $p < 0.05$. Most respondents were Chinese (44.5%), males (56.8%), degree holders (59.4%), and students (41.4%). Under the multivariate analysis, stress ($p < 0.001$) and lifestyle ($p < 0.001$) denoted the significant factors related to internet addiction while depression and anxiety were statistically insignificant ($p > 0.05$). In conclusion, stress and lifestyle proved vital in forecasting internet addiction among the Z generation in Malaysia. Internet addiction intervention program for Z generation could be developed by managing stress and lifestyle.

Keywords:

Internet Addiction, Z Generation, Lifestyle, Depression, Anxiety, Stress

1   Introduction

The advent of internet addiction (extreme or uncontrolled internet utilisation) ranged between 0.8% and 26.7% (Kuss, et al., 2014). Reportedly, internet addiction was more prominent among Asians from 18 to 30 years old as opposed to Americans (Tang et al., 2018). The Z generation (born between 1995 and 2000) was also known as the internet generation (active internet users). Although the Z generation lifestyle was notably internet-reliant for enjoyment, interpersonal interactions, social networking, and knowledge gathering (Hoque, 2018), excessive internet usage potentially resulted in internet addiction. A survey indicated that seven out of 10 of Z generation members were addicted to the internet (Ahmed, 2019). In this vein, internet addiction among the aforementioned generation (future national development catalysts) reflected public health complexities (Pratikto & Kristanty, 2018).

A meta-analysis review of obtainable data signified that the intrapersonal variables (emotion and negative stress management) associated with internet addiction was substantially higher than interpersonal counterparts (Koo & Kwon, 2014). A notable relationship was also found between stress and internet addiction (Younes et al., 2016; Akin & Iskender, 2011). Meanwhile, past research indicated significant and positive connections between common emotional problems (depression and anxiety) and internet addiction (Younes et al., 2016; Akin & Iskender, 2011; Ni, et al., 2009). Research reviews on coexisting psychiatric disorders involving internet addiction depicted that depression and anxiety were emotional problems relevant to internet addiction (Ko, et al., 2012). The statement corresponded to past research on significant connections between internet addiction and social anxiety (Weinstein et al., 2015). Cross-sectional analyses of specific studies also proposed anxiety as a risk factor regarding internet addiction (Choi et al., 2015).

The aimed of this research is to identify the relationship between stress, depression, anxiety and lifestyle with internet addiction among Z generation. The dependent variable of this research was internet addiction, whereas the independent variables were stress, depression, anxiety and lifestyle. The research questions include: is there any relationship between stress and internet addiction, anxiety and internet addiction, depression and internet addiction, lifestyle and internet addiction and associated factors of internet addiction among Z generation.

Results from this study can contribute to the body of knowledge on the factors associated with internet addiction among Z generation and it could be used in developing internet addiction intervention program to minimize this problem among Z generation.

2 Methodology

2.1 Respondents

Analytical cross-sectional research was performed among the Z generation in Malaysia (born between 1995 and 2000). Following the study data, the age of respondents' age are ranged between 19 and 24 years old. From the research target population (9.06 million) encompassing the Z generation in Malaysia, the minimum study sample size was 384 under the Krejcie and Morgan table.

2.2 Measures

A three-part self-reported questionnaire was employed for data gathering. Specifically, Section A aimed to collect socio-demographic data (age, gender, ethnicity, educational level, and professional status).

2.2.1 Internet Addiction Test (IAT)

The IAT (a 20-item self-reported questionnaire) was employed with a five-point Likert scale (1= rarely to 5 = always) in Section B. Items 3, 4, 8, 10, 11, 12, 13, 14, 15, 18, 19, and 20 were utilised to assess internet addiction, whereas items 1, 2, 5, 6, 7, 9, 16, and 17 were employed to assess the lifestyle aspect. As a common assessment instrument, IAT was selected as a research tool to determine internet addition status. The Malay version of IAT was duly authenticated with high internal consistency (Cronbach's α = 0.91) (Ching el at., 2017). Regarding IAT study reliability, a pilot test implied that the Cronbach's alpha coefficient values for internet addiction and lifestyle were 0.94 and 0.86, respectively.

2.2.2 Depression Anxiety and Stress Scales 21(DASS 21)

In Section C, DASS-21 (21 items) was employed to assess respondents' mental health status. The first seven items (3, 5, 10, 13, 16, 17, and 21) assessed depression, the second seven items (2, 4, 7, 9, 15, 19, and 20) assessed anxiety, and the last seven items (1, 6, 8, 11, 12, 14, and 18) assessed stress levels. Notably, every item denoted a response scale between 0 and 3.

2.3 Statistical analysis

The Statistical Package for Social Sciences software (SPSS 21; SPSS IBM, New York, United States) was employed towards statistical assessment. Regarding descriptive analysis, mean and standard deviation (SD) were utilized to analysed the continuous data (age) while frequency and proportion (percentage) were employed to demonstrate categorical data (gender, ethnicity, educational level, and professional status). Concerning univariate analysis, Pearson correlation was utilized to identify independent-dependent variable connections. In multivariate analysis, multiple linear regression was utilized to identify relevant internet addiction factors. Summarily, all analyses were performed with 95% CI and significance level at $p < 0.05$.

3   Findings

Essentially, 384 respondents participated in the assessment. Table 1 presents respondents' percentage following socio-demographic attributes. Specifically, most respondents were males (56.8%), Chinese (44.5%), degree holders (59.4%), and students (41.4%).

Table 1: Socio-demographic characteristic of respondents (n=384)

Socio-demographic characteristic	Frequency	Percentage (%)/ Mean (SD)
Age		21.97±1.588
Gender		
Male	218	56.8
Female	166	43.2
Race		
Malay	154	40.1
Chinese	171	44.5
Indian	57	14.8
Others	2	0.6
Educational level		
STPM/Diploma	117	30.5
Degree	228	59.4
Master	32	8.3
PhD	5	1.3
Others	2	0.5
Occupational status		
Government Sector	30	7.8
Private Sector	113	29.4
Self-Employment	66	17.2
Student	159	41.4
Unemployment	16	4.2

Source: Research Question

Meanwhile, Table 2 presents the connection between independent variables, (depression, anxiety, stress, and lifestyle) and internet addiction. Resultantly, a significant correlation was identified between depression ($p < 0.01$), anxiety ($p < 0.01$), stress ($p < 0.01$), and lifestyle ($p < 0.01$) involving internet addiction.

Table 2: Correlation between depression, anxiety, stress and lifestyle with internet addiction using univariate analysis

Independent variables	Pearson Correlation Coefficient	p-value
Depression	0.896	0.01*
Anxiety	0.747	0.01*
Stress	0.764	0.01*
Lifestyle	0.763	0.01*

Note : *p<0.01

Table 3 presents internet addiction indicators. A multiple linear regression assessment outcome demonstrated that stress (p < 0.001) and lifestyle (p < 0.001) were significant with internet addiction factors. Contrarily, other aspects (depression and anxiety) were statistically insignificant (p > 0.05). Consequently, stress and lifestyle were essential factors in forecasting internet addiction.

Table 3: Determinants of internet addiction on multiple linear regression

Independent variables	Beta	95% Confidence interval		p-value
		Lower	Upper	
Depression	0.129	-0.043	0.300	0.141
Anxiety	0.053	-0.131	0.237	0.570
Stress	0.328	0.128	0.528	0.001*
Lifestyle	1.137	1.041	1.233	0.001*

Note: *p<0.05

4   Discussion

This research was conducted to identify relevant internet addiction aspects among the Z generation in Malaysia. Resultantly, stress was one of the significant and relevant internet addiction factors. The finding corresponded to past research where significant stress-internet addiction correlations were identified (Younes et al., 2016; Akin & Iskender, 2011) following poor coping mechanisms. Additionally, poor coping mechanisms elevated internet addiction risks (Brand, Laier, & Young, 2014; Chou et al., 2015). For example, respondents might experience adverse emotions (upset, angry, and bored) in the absence of internet access (Kurniasih, 2017). Past research that aimed to identify how happiness and stress influenced internet addiction with life satisfaction revealed that life satisfaction significantly impacted internet addiction. Notably, individuals with internet addiction might reflect deep-rooted life complexities that minimised their life satisfaction levels and elevated internet addiction (Longstreet & Brooks, 2017).

As most of the respondents were students, highly stressful student life potentially induced internet addiction. The situation corresponded to past research on university

students where stress denoted a substantial internet addiction risk factor (Radeef & Faisal, 2018). Likewise, previous studies indicated that students with extreme internet addiction reflected highly stressful life events (Yan, et al., 2014). Reportedly, academic stress was substantially related to negative emotions and internet addiction as students experiencing academic stress potentially reflected from internet addiction (specifically in the presence of negative emotions) (Jun & Choi, 2015).

Another notable internet addiction factor was lifestyle due to gadget reliance (i.e: smartphone) was positively associated with internet addiction (Ezoe & Toda, 2013). Resultantly, one to eight hours were spent on daily internet access (Kurniasih, 2017) (associated with negative lifestyle). Limited sleeping hours and physical activities were substantially related to internet addiction (Bener & Bhugra, 2013). Furthermore, different social lifestyles might also be connected to extreme internet utilisation. Despite increased virtual social contacts through internet usage, face-to-face counterparts have palpably declined (Bergmark, et al., 2011).

4.1 Strength and limitations

As the research tools (IAT and DASS-21) were pre-assessed, authenticated, and reliable, the study outcome was equally reliable and valid. A suitable statistical test analysis (multiple linear regression) was employed to identify the correlation between continuous independent variables (depression, anxiety, stress, and lifestyle) and dependent variable (internet addiction). Notwithstanding, the nature of cross-sectional research restricted the study finding to only indicate the causal relationship between relevant aspects and internet addiction. Additionally, the non-probability sampling method (convenience sampling) employed in this research restricted the research outcomes from being generalised to the population.

5   Conclusion

Overall, the two substantial internet addiction aspects among the Z generation in this research were stress and lifestyle. Consequently, the Z generation could enhance stress management techniques and healthy lifestyles to reduce or limit internet addiction. In this vein, internet addiction-related intervention programmes were deemed necessary, specifically for the aforementioned generation. For future research, findings of this study are crucial in developing internet addiction program module to reduce this problem among Z generation.

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