

KNOWLEDGE, ATTITUDE AND BEHAVIOURAL PRACTICES TOWARDS DIGITAL DEPRESSION: A CROSS-SECTIONAL STUDY IN MALAYSIA

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Abstract. The widespread adoption of digital devices has fundamentally altered user behaviour. Specifically, in Malaysia, there's increased concern over the psychological risks faced by teenagers and young adults due to their heavy reliance on technology. This study aims to explore the knowledge, attitudes, and practices (KAP) toward digital depression, a form of depression associated with excessive or problematic digital media consumption, among youth in Malaysia. A cross-sectional survey was conducted with 389 respondents, comprising teenagers (aged 13-17) and young adults (aged 18-29), utilising the Patient Health Questionnaire (PHQ-9) to assess their knowledge, attitudes, and practices (KAP) towards digital depression. A quantitative analysis revealed high mean scores in all KAP dimensions, indicating strong awareness and understanding of digital depression among participants. However, despite this awareness, many participants reported experiencing significant depressive symptoms, such as low self-esteem, difficulty concentrating, and sleep disturbances, due to excessive social media use. The study also found that while respondents understood the need to reduce screen time and adopt healthier digital practices, there remained a gap between knowledge and action, with few actively engaging in behaviours that could mitigate the impact of digital depression.

Keywords: *digital depression, KAP survey, teenagers, young adults, Malaysia*

Introduction

The advancement of technology has led to the pervasive use of mobile and digital devices around the world. The convenience and accessibility offered by these digital gadgets have contributed to their growing popularity among people of all ages, especially among teenagers and young adults. In Malaysia, this trend has been particularly prominent, with significant increases in social media use among younger populations. With the excessive usage of mobile gadgets in recent years, several unintended risks have emerged, such as prolonged social media exposure and excessive screen time, which can negatively affect mental health by contributing to symptoms of digital depression (Twenge et al., 2018). Additionally, excessive exposure to social media content, particularly content promoting self-comparison has been linked to lower self-esteem, difficulties concentrating, and general mental distress (Appel et al., 2016). Malaysia's Internet infrastructure has improved significantly in recent years, allowing the country's internet users to be more active online. The increasing accessibility of smartphones, affordable Internet data, and the widespread availability of social media platforms have intensified this phenomenon, particularly among younger age groups. According to Hootsuite and We Are Social's Digital 2019 study, Malaysia was rated fifth globally and first in Southeast Asia for mobile social media adoption (Bernama, 2019). According to Ridzudin and Najieb (2023), Malaysians now spend an average of six hours per day, or 42 hours per week, on social media.

Among Malaysia's internet users, teenagers and young adults are identified as the heaviest consumers of the Internet (Marzilli et al., 2020). The Digital 2023 Overview Report stated that at least 53% of social media usage in Malaysia is attributed to young adults, while 6% comes from individuals aged 13 to 17 years. Social media platforms such as Instagram, TikTok, and YouTube are particularly prominent among these age groups. However, alongside these high levels of engagement, the adverse health-related outcomes associated with internet usage are becoming more evident (Van Deursen and Helsper, 2018). Poor sleep, physical discomfort, and psychological suffering are just a few examples of these negative effects. For instance, a study by Lee et al. (2023) showed that social media addiction was strongly correlated with higher tendencies toward depression, anxiety, and stress among 270 university students in Malaysia. Despite increasing awareness of the link between digital usage and mental health issues, there remains limited empirical research examining the specific mechanisms through which digital depression manifests among Malaysia's youth. As more individuals, particularly teenagers and young adults, experience symptoms of depression, anxiety, and other mental health disorders, it has become crucial to understand this issue better. This study aims to address this gap by exploring how knowledge, attitudes, and practices toward digital depression affect the well-being of teenagers and young adults in Malaysia. Understanding these dimensions is essential for developing targeted strategies to mitigate the mental health risks associated with excessive digital use.

Literature review

Understanding digital depression

Digital depression refers to a form of depression triggered by the excessive use of digital platforms, such as social media and video games. While digital media provides opportunities for communication and self-expression, overuse often results in negative psychological consequences, such as depression, anxiety, and stress (Nesi and Prinstein, 2015). Ginsburg (2021) identifies this condition as a new form of mental illness emerging from the digital age, exacerbated by experiences like cyberbullying, social comparison, and harassment. These negative interactions, occurring across platforms, significantly heighten mental health risks, especially among vulnerable groups like adolescents and young adults. Prolonged screen time has been linked to physical and psychological health issues, such as low self-esteem, sleep disturbances, and social isolation. Studies show that excessive exposure to digital content can amplify feelings of inadequacy, especially when individuals engage in frequent self-comparisons with online personas (Twenge et al., 2018). As noted in this study, a significant proportion of the sample population reported difficulties with sleep and concentration, indicative of the common symptoms of digital depression (Lee et al., 2023).

Digital depression shares symptoms with general depression, including persistent sadness, loss of interest in daily activities, and difficulty sleeping (Azem et al., 2023; Arshad et al., 2021). However, specific digital behaviours, such as Fear of Missing Out (FoMO), cyberbullying, and video game addiction, serve as major contributors to this condition (Çetinkaya et al., 2021). These online experiences can lead to social isolation, deteriorating academic performance, and in more severe cases, suicidal ideation (Kang et al., 2023; Henriques and Patnaik, 2020). Given the rapid growth of digital platforms and the widespread use of social media, the need for deeper investigation into digital depression is clear. Studies like this one emphasize that addressing digital depression

requires targeted interventions that raise awareness of its risks and promote healthier digital habits. As demonstrated by the findings from the KAP model in this study, effective strategies must focus on increasing knowledge and fostering positive behaviours among younger populations, who are most susceptible to digital-related mental health issues.

Digital depression among teenagers and youth

Teenagers, defined as individuals aged 13 to 19, represent the demographic with the highest internet use since the late 1990s. In today's digital landscape, they frequently share self-created content, express personal thoughts, and access a vast array of information online (Lenhart et al., 2010). However, as "digital natives" (Prensky, 2001), teenagers are at increased risk of digital depression, partly due to their inexperience, limited self-regulation, and vulnerability to peer pressure (O'Keeffe et al., 2011). These factors make them more prone to the negative mental health effects associated with digital consumption. Over the past two decades, the rates of depression and suicidal behaviour among teenagers have increased significantly (Vidal et al., 2020). Research conducted by Twenge et al. (2018) as well as McCrae et al. (2017) suggests that this trend is directly correlated with the rise of social media. Studies focusing on adolescents with clinical depression reveal that negative online experiences, including cyberbullying and self-demeaning comparisons, significantly worsen mental health outcomes (Radovic et al., 2017). Marengo et al. (2018) found that teenagers who engage heavily with visual-based platforms, such as Instagram, are particularly vulnerable to internalizing symptoms and body image concerns.

In Malaysia, the rapid adoption of social media among youth has introduced new mental health challenges. Cyberbullying has emerged as a critical factor linking social media usage to mental health issues (Viner et al., 2019). The Digital 2023 Overview Report revealed that 6% of all Malaysian social media users are between the ages of 13 to 17 (Kemp, 2023). Studies conducted in Malaysia have documented the detrimental effects of online victimization, including sexual harassment, cyberbullying, and over-dependence on the internet, which contribute to increased rates of anxiety, depression, and social isolation among teenagers (Taufik et al., 2021; Timothy et al., 2018; Marret and Choo, 2017). Given the growing prevalence of digital-related mental health issues among teenagers, further research and public health initiatives are needed to address these concerns. This study's findings align with the broader literature, highlighting the significant impact of excessive social media usage and digital content consumption on the mental health of young people. Educational campaigns improved mental health literacy, and digital literacy programs should be key components of efforts aimed at curbing the rise of digital depression in this population.

Knowledge, attitude and practice framework in mental health research

The KAP survey, also known as the knowledge, attitudes, and practices survey, was first utilised in family planning studies (Mukherjee, 1974) and were later adapted to a wide range of fields, such as public health (Nemr et al., 2023), education (Wang et al., 2020), agricultural (Liao et al., 2022) as well as including mental health studies (Turki et al., 2020). In general, it is used to understand how people perceive and behave towards specific issue. Knowledge, as the first component of KAP, aims to educate the target audience by providing information, or specifically strategies (Lunsford et al.,

2018). In the context of digital depression, individuals who acquire a deeper understanding of the phenomenon are more inclined to adopt positive attitudes towards the changes they encounter. Moreover, campaigns aimed at disseminating information about digital depression can significantly enhance people's comprehension of the issue. If individuals can grasp information about digital depression, they can use it to enhance their knowledge and prevent digital depression in their lives. However, a notable gap exists between respondents' knowledge and practices due to insufficient knowledge acquisition. Conversely, a notable disparity between respondents' knowledge and their actual practice exists, primarily stemming from inadequate knowledge acquisition.

However, knowledge may not be the sole determinant of behaviour. Past studies (Liu et al., 2020) highlighted that the influence of knowledge on behaviour was not direct, with other moderating variables coming into play, and the influential variable was attitude. Attitude, as the second component of KAP, generally stems from social psychology. Ajzen (2020) defined attitude as “a function of readily accessible beliefs regarding the behaviour's likely consequences, termed behavioural beliefs”. In other words, it leads an individual to pursue an action after they have gained through their own direct experiences. As digital depression is intricately linked to an individual's emotional disposition, it is much related with the affective attitude, and it has its potential leading to negative emotional outcomes. Practice, as the third component of KAP, is closely related to the concept of behaviour, and they are often used interchangeably. It is assuming that an individual has adopted their real-world actions based on their knowledge and attitudes toward a specific issue or topic. In the context of addressing digital depression, it is evident that the practice is closely connected to the preventive behaviours. Faisal et al. (2021) emphasised that the results of the KAP survey are especially valuable for policymakers and healthcare authorities, aiming to spread knowledge, particularly among teenagers and young adults, and enhance their preventive practices simultaneously.

Materials and Methods

A quantitative method was employed to examine the existing KAP (knowledge, attitude and behaviour) towards digital depression. It involves two specific target audiences of the study, which are teenagers (aged 13 to 17 years old) and young adults (aged 18 to 29 years old). The questions are adopted through the Patient Health Questionnaire (PHQ-9) by Kroenke et al. (2001) to ensure the effectiveness of the study in achieving its key goals. These key messages include recognising the signs and symptoms of digital depression, promoting balanced usage of digital devices and social media, encouraging open conversations about mental health and digital habits, and providing resources and support for those affected by digital depression. A total of 389 respondents were recruited using purposive sampling. Purposive sampling, a non-probability sampling approach, seeks to obtain a wider perspective through which it is in line with the study's objectives. Purposive sampling is applied to align the representative samples with the research objectives, which will improve the research's quality and reliability of the data (Babbie, 2021). Age was one of the pre-requisite criteria to help identify the respondents and ensure they met the inclusion criteria. The representative statistical sample in empirical research (i.e., survey) has urged the need to follow Morgan (1970) guidelines to conduct a study on the digital depression research among Malaysian students. Following Morgan (1970) criteria, our study determines that

a sample size of 384 Malaysian students is required for the pre-survey phase. This statistic considers the large number of Malaysian students, which exceeds 1,000,000 populations. The chosen sample size is expected to produce statistically significant and relevant results, accurately representing the diversity of opinions observed among this massive population.

Results and Discussion

Table 1 displays the demographic profiles of the respondents. Given a total of 389 respondents, the number of females (n=266) outweighed the males (n=123), and majority of the respondents were from the age group between 18-29 years old (93.3%) while there were only 26 respondents who are below 18 years old (6.7%). Subsequently, this research study recruited respondents which consisted of Malay (39.1%), Chinese (34.4%), Indian (20.6%) and other races (5.9%). In querying respondents about their current occupation, the data revealed the highest proportion, constituting 295 respondents identified as university students (75.8%), followed by employed respondents (13.9%), high school students (7.2%) and unemployed (3.1%). *Table 2* shows the current level of awareness of digital depression. Of the 389 respondents, 53% (206 respondents) were aware of the issue, 1.3% (83 respondents) remained neutral, and 19.3% (75 respondents) strongly agreed with their awareness. The remaining 6.4% (25 respondents) were unaware of the digital depression. The survey also asked if respondents believed that digital content could lead to mental health problems. Of the participants, 58 (agree and strongly agree combined) thought that digital content could cause mental problems, while 21 (5.4%) were uncertain. Only 10 respondents, constituting 2.6%, didn't believe that digital content can lead to mental health problems.

Table 1. Demographic profiles of the respondents.

Demographic	Description	Frequency (N)	Percentage (%)
Gender	Male	123	31.6
	Female	266	68.4
Age	Below 18 years old	26	6.7
	18 -29 years old	363	93.3
Ethnicity	Malay	152	39.1
	Chinese	134	34.4
	Indian	80	20.6
	Others	23	5.9
Occupation	High school student	28	7.2
	University student	295	75.8
	Employed	54	13.9
	Unemployed	12	3.1

Table 2. Current knowledge level about digital depression.

Question(s)	Response	Frequency (N)	Percentage (%)
I am aware of digital depression.	Strongly disagree	9	2.3
	Disagree	16	4.1
	Neutral	83	21.3
	Agree	206	53.0
	Strongly agree	75	19.3
I understand digital content can cause	Strongly disagree	5	1.3
	Disagree	5	1.3

mental problems.	Neutral	21	5.4
	Agree	241	62.0
	Strongly agree	117	30.1

Table 3 showcases the respondents of the study and their predisposition towards digital depression. The overall mean of the study exceeded 3. The highest mean score was for the 8th statement ("I often find it hard to concentrate on daily activities due to excessive exposure to social media content") with a mean score of M=3.73. Following closely were the 1st ("I have little interest or pleasure in doing things when I am exposed to digital content") and the 5th ("I always feel tired or lack energy after being exposed to digital content for a long period of time") statements, both achieving the second highest mean scores of M=3.72. The 2nd statement ("I experienced any depressive situations while using social media") and the 7th statement ("I often feel low esteem about myself whenever I compare myself with the individual that I see on digital content") attained mean scores of 3.65 and 3.64, respectively. This suggests a similar level of attitude towards digital depression. A significant number of respondents reported often having trouble falling or staying asleep or sleeping too much due to overthinking about their appearance or performance on digital content (M=3.38) and frequently feeling down, depressed, or hopeless when exposed to certain digital content (M=3.34). Finally, respondents also admitted to struggling with poor appetite or overeating after being influenced by social media content (M= 3.33). From these indicators, it is clear to see that most of the respondents are currently dealing with digital depression issues without acknowledging that it is part of the digital depression symptoms.

Table 3. Current attitude level towards digital depression.

Question(s)	Response	Frequency (N)	Mean
I have little interest or pleasure in doing things when I am exposed to digital content.	Strongly disagree	8	3.72
	Disagree	51	
	Neutral	72	
	Agree	168	
	Strongly agree	90	
I experienced any depressive situations while using social media.	Strongly disagree	12	3.65
	Disagree	65	
	Neutral	62	
	Agree	160	
	Strongly agree	90	
I always feel down, depressed, or hopeless when seeing certain digital content.	Strongly disagree	19	3.34
	Disagree	77	
	Neutral	46	
	Agree	161	
	Strongly agree	86	
I always have trouble falling or staying asleep or sleeping too much because I always overthink about my appearance or performance on digital content.	Strongly disagree	50	3.38
	Disagree	67	
	Neutral	42	
	Agree	145	
	Strongly agree	85	
I always feel tired or lack energy after being exposed to digital content for a long period of time.	Strongly disagree	15	3.72
	Disagree	58	
	Neutral	45	
	Agree	175	
	Strongly agree	96	
I always have a poor appetite or overeating after being influenced by social media content	Strongly disagree	33	3.33
	Disagree	98	
	Neutral	44	
	Agree	135	
	Strongly agree	79	
I often feel low esteem about myself whenever I compare myself with the individual that I see on digital content	Strongly disagree	25	3.64
	Disagree	63	

	Neutral	40	
	Agree	161	
	Strongly agree	100	
I often find it hard to concentrate on daily activities due to excessive exposure to social media content	Strongly disagree	17	3.73
	Disagree	51	
	Neutral	50	
	Agree	173	
	Strongly agree	98	

Table 4 shows the current level of practice aimed at addressing digital depression among the respondents. The average score for all the questions was above 4, indicating that the respondents recognise the necessity of taking action to address digital depression. The second statement received the highest mean score of 4.31, indicating that respondents believe they should reduce their use of digital devices to prioritize their mental health. This was followed by the third statement ("In my opinion, I must participate in physical sports during my free time") and the fifth statement ("In my opinion, I will take actions such as learning more about depression, helping them to find support and giving positive reinforcement to help those who are facing digital depression"), which achieved mean scores of 4.29 and 4.28, respectively. A significant number of respondents also believed that the digital depression can be cured (M=4.26). Lastly, the respondents also felt that they need to create a "digital-free" zone at my home such as a dining table, garden etc. (M=4.25).

Table 4. Current practice level of curbing digital depression.

Question(s)	Response	Frequency (N)	Mean
In my opinion, I believe that digital depression can be cured.	Strongly disagree	2	4.26
	Disagree	5	
	Neutral	32	
	Agree	199	
	Strongly agree	151	
In my opinion, I need to reduce the usage of digital devices to take care of my mental health.	Strongly disagree	3	4.31
	Disagree	8	
	Neutral	26	
	Agree	180	
	Strongly agree	172	
In my opinion, I must participate in physical sports during my free time.	Strongly disagree	5	4.29
	Disagree	8	
	Neutral	24	
	Agree	183	
	Strongly agree	169	
In my opinion, I need to create a "digital-free" zone at my home such as a dining table, garden etc.	Strongly disagree	8	4.25
	Disagree	6	
	Neutral	29	
	Agree	182	
	Strongly agree	164	
In my opinion, I will take actions such as learning more about depression, helping them to find support and giving positive reinforcement to help those who are facing digital depression.	Strongly disagree	1	4.28
	Disagree	7	
	Neutral	38	
	Agree	180	
	Strongly agree	163	

The findings from this study provide valuable insights into the knowledge, attitudes, and practices (KAP) surrounding digital depression among Malaysian teenagers and young adults. This research revealed a moderate to high level of awareness about digital depression among the respondents, with more than 50% expressing recognition of the issue. However, awareness alone does not necessarily translate into positive mental health outcomes. As seen in the results, many respondents still reported experiencing significant depressive symptoms such as low self-esteem, difficulty concentrating, and sleep disturbances. These findings align with studies by Twenge et al. (2018), which

highlight the strong link between excessive social media use and poor mental health outcomes in young populations. The attitudes toward digital depression, as demonstrated in the results, reflect a broad acknowledgement of the negative effects of prolonged social media exposure. Respondents frequently reported feelings of fatigue, depression, and hopelessness tied to their digital consumption. This suggests that while young people are aware of the risks associated with digital depression, they may still be struggling with effective coping strategies. Consistent with findings from other scholars, the difficulty in moderating digital usage among youth could be driven by social comparison (Nesi and Prinstein, 2015), the pressure to maintain an online presence due to fear of missing out (Hassim et al., 2020), and the addictive nature of social media platforms (Montag et al., 2019).

In terms of practices, the data suggests that while there is an understanding of the need to mitigate digital depression, many respondents do not actively engage in behaviours that promote mental well-being. The high mean score for the statement, "I often find it hard to concentrate on daily activities due to excessive exposure to social media content," underscores the difficulty in balancing digital consumption with real-world responsibilities. Moreover, the lack of widespread adoption of digital detoxes or reduction in screen time suggests a gap between knowledge and actionable behaviours, which could be addressed through more structured interventions. This is supported by Faisal et al. (2021), who emphasised that bridging the gap between awareness and practice is crucial for meaningful behavioural change. The results also underscore the importance of integrating mental health education and digital literacy programs into the lives of teenagers and young adults. Given the correlation between digital exposure and mental health risks, future campaigns and educational programs should focus on equipping young people with the tools to manage their digital habits more effectively. Promoting digital boundaries, such as setting limits on screen time, creating digital-free zones, and engaging in physical activities, could serve as a key preventive measure against digital depression.

Conclusion

This study has highlighted the significant role that digital consumption plays in influencing the mental health of Malaysian teenagers and young adults. The findings indicate a relatively high level of awareness of digital depression, yet there remains a substantial gap between knowledge and the adoption of practices that can mitigate its effects. Social media addiction, self-comparison, and excessive screen time continue to pose serious risks to mental well-being, aligning with previous research that has linked these factors to increased depression, anxiety, and stress (Twenge et al., 2018). To address this issue, it is crucial for policymakers, educators, and mental health professionals to develop targeted interventions aimed at fostering healthier digital habits among youth. Educational campaigns focusing on mental health literacy and digital well-being should be widely implemented in schools and universities. Additionally, parents and educators should be encouraged to engage in open conversations about the risks of prolonged digital exposure and the importance of balancing online and offline activities. In conclusion, while the awareness of digital depression is growing, there is still a need for more comprehensive strategies to turn this awareness into proactive behaviour. Addressing the digital habits of Malaysia's youth will be essential in curbing

the rising trends of digital depression and ensuring a healthier, more balanced future for the next generation.

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Conflict of interest

The author(s) have declared that no competing interests exist.

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