**TAM Model**

**Understanding the effects of social media on mental health**

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**Introduction:**

Over the past decade, online social networking has revolutionized communication and interaction patterns. However, it remains uncertain whether these changes in behavior have the potential to impact mental health and contribute to psychiatric disorders. Several studies suggest a correlation between prolonged use of social networking sites (SNS), like Facebook, and symptoms of depression.(Pantic, 2014) The alarming phenomenon of addiction to social media applications is associated with various psychological problems. The study suggest that excessive smartphone use for social media purposes may be associated with negative psychological traits and potentially contribute to suicidal ideation (Verduyn et al., 2021).

Numerous studies have investigated the effects of social media on mental health, highlighting both positive and negative outcomes. On the positive side, social media platforms can provide a sense of belonging, social support, and facilitate the exchange of ideas and information (Seabrook et al., 2016). These positive aspects can contribute to improved mental well-being, especially for individuals who may feel isolated or have limited social connections. However, research has also uncovered several potential negative effects of social media on mental health. One prominent concern is the impact of social media on self-esteem and body image. Studies have found that exposure to idealized images and curated representations of others' lives on social media can lead to feelings of inadequacy, comparison, and body dissatisfaction (Fardouly et al., 2015). This can have a detrimental effect on individuals' self-esteem and contribute to the development of mental health issues such as depression and anxiety.

**Literature Review:**

Emerging research indicates a growing trend of individuals with mental disorders acquiring and utilizing mobile devices, particularly smartphones (Firth et al., 2016) (Glick et al., 2016) (Torous et al., 2014). The impact of social relationships on mental health is widely recognized, although there is ongoing debate among researchers regarding the specific aspects of social relationships that influence mental well-being. One study (Maulik et al., 2010) highlighted the significance of increased social support from family and friends in reducing the psychological distress experienced by individuals following a traumatic life event. This finding suggests that the presence of a strong social support system can play a crucial role in mitigating mental health problems by helping individuals cope with stress.

Davis's TAM, which evolved from the theory of reasoned action, is the most important and commonly utilized theory in explaining personal adoption of information technology (TRA). In one study by (Khan et al., 2021) explores the drivers of social media usage among healthcare professionals using the technology acceptance model. The findings highlight the factors influencing perceived usefulness and actual adoption, providing insights for developing effective social media guidelines in healthcare. Other study examines the relationship between social media usage and mental health during the COVID-19 outbreak in Wuhan (Zhong et al., 2021). Findings suggest that while social media provided support and information, excessive use was associated with mental health issues, emphasizing the importance of taking breaks to mitigate pandemic-related mental health harm.

**Theoretical Framework:**

Social media has become an integral part of daily life, revolutionizing how people connect, share information, and seek support. This literature review aims to examine the effects of social media on mental health, focusing on the variables of peer support, information support, emotional support, peer risk, peer credibility, social media usage, and health behavior change.

**Peer Support:** Peer support refers to the provision of emotional, informational, and instrumental assistance within a social network. Several studies have highlighted the positive effects of social media on peer support. For instance, a study by (Lei et al., 2018) found that individuals who received peer support through social media experienced reduced levels of depression and increased psychological well-being. Similarly, a study by (Li et al., 2014) demonstrated that engaging in online peer support groups led to improved psychological well-being among individuals experiencing mental health challenges.

**Information Support:** People are motivated to search for health information on social media platforms because of the valuable social support they receive in the form of information, which aids in making health-related decisions (Uchino et al., 2012). Social media platforms provide access to a wealth of information, influencing individuals' health-related beliefs and behaviors. (Walker et al., 2021) found that information support obtained through social media positively influenced health behavior change, such as adopting healthier lifestyles and seeking preventive measures. Additionally, this informational support can reduce perceived threats and improve coping strategies, which play a protective role in mental health (Htay et al., 2021). However, excessive exposure to misinformation on social media can lead to adverse mental health outcomes (Pennycook et al., 2020).

**Emotional Support:** Emotional support through social media encompasses expressions of empathy, understanding, and care. The availability of emotional support on social media has been associated with improved mental health outcomes. A study by (Naslund et al., 2020) revealed that receiving emotional support through social media platforms was linked to reduced symptoms of depression and anxiety. Conversely, lack of emotional support and negative social interactions on social media can contribute to mental health problems (Hawdon et al., 2020).

**Peer Risk:** Peer risk on social media refers to exposure to negative influences or harmful behaviors displayed by peers. Research suggests that exposure to peer risk on social media platforms can have detrimental effects on mental health. A study by (Moreno & Whitehill, 2014) found that increased exposure to peer risk on social media was associated with higher levels of depressive symptoms and risk-taking behaviors among adolescents. Therefore, it is crucial to address and mitigate the negative influences that can arise from social media interactions.

**Peer Credibility:** Peer credibility pertains to the trustworthiness and reliability of information shared by peers on social media. Studies have shown that perceived peer credibility can impact mental health outcomes. For example, a study by (Chu et al., 2017) revealed that higher perceived credibility of mental health information shared by peers on social media was associated with increased help-seeking behaviors among college students. However, the presence of misinformation and lack of expert validation can undermine the credibility of information shared on social media platforms (Chen et al., 2018).

**Social Media Usage:** The extent and patterns of social media usage have implications for mental health. Excessive social media use has been linked to negative mental health outcomes, including increased symptoms of anxiety and depression (Kross et al., 2013). On the other hand, moderate and purposeful social media use can facilitate positive connections and support, leading to improved mental well-being (Best et al., 2014).

**Health Behavior Change**: social media has the potential to influence health behavior change by providing information, support, and motivation. A systematic review by (Maher et al., 2014) found that social media interventions targeting health behavior change, such as smoking cessation or physical activity, demonstrated positive effects on individuals' behavioral outcomes. However, the effectiveness of such interventions can vary based on individual characteristics, social network dynamics, and the design of the interventions themselves.

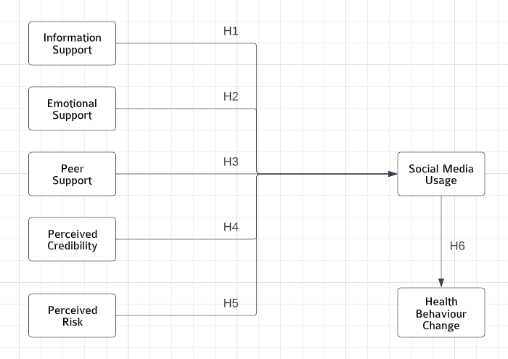


Fig.1 – Research Model

Dependent Variable: Health Behavior Change

Independent Variable: Information support, Emotional Support, Peer Support, Perceived Credibility, Perceived Risk

Moderate Variable: Social Media Usage

H1: Information support has a significant effect on usage of social media.

H2: Emotional support has a significant effect on usage of social media.

H3: Peer support has a significant effect on usage of social media.

H4: Perceived Credibility has a positive effect on usage of social media.

H5: Perceived Risk has a significant effect on usage of social media.

H6: Social Media usage has a significant effect on health behavior change

**Methods**

A survey was used to examine research effects of social media on mental health, the questionnaire is made based on a linear model ranging from strongly disagree to strongly agree, the idea behind using a linear model in most of the questions is lack of time for participants in filling the data but when there are options to tick the participants shows higher interest.

The testing technique and survey were carried out on google forms. To improve external validity, participants were drawn from the public. The data in this study was analyzed using reliability analysis and structural equation modeling. Cronbach's alpha was used to assess dependability, with a threshold value of 0.7. To demonstrate measuring item validity, the composite reliability (rho\_A and rho\_C) of 0.7, statistics of average variance extracted (AVE) of 0.5, and loading of 0.5 were used as the thresholds. The validity of the measurements was further investigated using structural equation modeling in this study. The total impact of a confirmatory factor was investigated (DeVellis, 1991) (Fornell & Larcker, 1981) (Anderson & Gerbing, 1988).

**RESULTS**

Demographic Information of Survey Participants

The data in Table 1 provides demographic information on the effective samples. The gender distribution shows that 48.08% of the respondents were female, while 51.92% were male. In terms of age, the majority of participants fell within the 25-34 age range, accounting for 84.62% of the sample. The marital status of the respondents indicates that 40.38% were married, while 59.62% were single. Regarding educational qualifications, 57.69% held a master's degree, 40.38% had a bachelor's degree, and 1.92% had a high school diploma. The occupation distribution reveals that 36.54% of participants were professionals, 30.77% were full-time employees, 19.23% were students, 7.69% were in other occupations, and 5.77% were self-employed.

Table 1. Demographic characteristic (n = 52).

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Frequency | Frequency (%) |
| Gender | Female | 25 | 48.08% |
| Male | 27 | 51.92% |
| Age | 18-24 | 2 | 3.85% |
| 25-34 | 44 | 84.62% |
| 35-44 | 6 | 11.54% |
| Marital Status | Married | 21 | 40.38% |
| Single | 31 | 59.62% |
| Qualification | Master’s degree | 30 | 57.69% |
| Bachelor's degree | 21 | 40.38% |
| High school diploma | 1 | 1.92% |
| Occupation | Professional | 19 | 36.54% |
| Full-time Employee | 16 | 30.77% |
| Student | 10 | 19.23% |
| Other | 4 | 7.69% |
| Self-Employed | 3 | 5.77% |

**Data Validity and Reliability**

We first analyzed the data for convergent and discriminant validity to examine the reliability of the scale as proposed by (Vitari & Ravarini, 2007). Convergent validity is shown when each measurement item correlates strongly with its assumed theoretical construct, discriminant validity requires an appropriate Average Variance Extracted (AVE) analysis. We tested to see if the square root of every AVE is much larger than any correlation among any pair of latent constructs. The square root of each construct should be much larger than the correlation of the specific construct with any of the other constructs in the model (Chin, 1998) and should be at least 0.5 (Fornell & Larcker, 1981).

The items in the table correlate to the questionnaire items used in this research; Information support (IS) had five question items, Emotional support (ES) had five question items, Peer Support (PS) had five question items, Perceived Credibility (PC) had five question items, Perceived risk (PR) had five question items, social media usage had five question items, Health Behavioral Changes had seven question items. Cronbach's alpha measures the internal consistency of items within each construct. The values range from 0 to 1, with higher values indicating better reliability. In this case, Perceived Credibility and Health Behavior has Cronbach's alpha above 0.90, indicating a high level of internal consistency. Other items like Information support, Perceived risk, Peer support and social media usage has Cronbach's alpha between 0.85 to 0.90 indicates a satisfactory level of internal consistency. Emotional support with 0.76 Cronbach’s alpha also satisfies the threshold of 0.7. Average Variance Extracted (AVE) measures the amount of variance captured by the construct relative to the measurement errors. Values above 0.5 are considered satisfactory. In this case, all the values are above 0.5, indicating satisfactory convergent validity. The HTMT values assess the discriminant validity between different constructs. Values below 0.9 indicate good discriminant validity. In this case, all HTMT values are below 0.9, indicating acceptable discriminant validity between the constructs. These results indicate that the constructs in the TAM model exhibit satisfactory levels of reliability, validity, and discriminant validity, supporting the robustness and credibility of the research findings.

Table 2: The outcomes of the reliability and validity analyses

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Outer Loadings | Cronbach's alpha | Composite reliability (rho \_A) | Composite reliability (rho \_C) | Average variance extracted (AVE) |
| ES\_1 <- ES\_ | 0.718 | 0.76 | 0.784 | 0.843 | 0.532 |
| ES\_2 <- ES\_ | 0.826 |
| ES\_3 <- ES\_ | 0.81 |
| ES\_4 <- ES\_ | 0.818 |
| ES\_5 <- ES\_ | 0.372 |
| HB\_1 <- HB\_ | 0.867 | 0.935 | 0.942 | 0.948 | 0.721 |
| HB\_2 <- HB\_ | 0.795 |
| HB\_3 <- HB\_ | 0.819 |
| HB\_4 <- HB\_ | 0.858 |
| HB\_5 <- HB\_ | 0.864 |
| HB\_6 <- HB\_ | 0.921 |
| HB\_7 <- HB\_ | 0.815 | 0.867 | 0.639 | 0.859 | 0.563 |
| IS\_1 <- IS\_ | 0.408 |
| IS\_2 <- IS\_ | 0.804 |
| IS\_3 <- IS\_ | 0.749 |
| IS\_4 <- IS\_ | 0.884 |
| IS\_5 <- IS\_ | 0.813 |
| PC\_1 <- PC\_ | 0.823 | 0.906 | 0.942 | 0.929 | 0.724 |
| PC\_2 <- PC\_ | 0.824 |
| PC\_3 <- PC\_ | 0.913 |
| PC\_4 <- PC\_ | 0.853 |
| PC\_5 <- PC\_ | 0.838 |
| PR\_1 <- PR\_ | 0.753 | 0.897 | 0.904 | 0.924 | 0.71 |
| PR\_2 <- PR\_ | 0.841 |
| PR\_3 <- PR\_ | 0.884 |
| PR\_4 <- PR\_ | 0.857 |
| PR\_5 <- PR\_ | 0.874 |
| PS\_1 <- PS\_ | 0.837 | 0.881 | 0.888 | 0.914 | 0.68 |
| PS\_2 <- PS\_ | 0.724 |
| PS\_3 <- PS\_ | 0.854 |
| PS\_4 <- PS\_ | 0.855 |
| PS\_5 <- PS\_ | 0.846 |
| SM\_1 <- SM\_ | 0.834 | 0.862 | 0.869 | 0.9 | 0.644 |
| SM\_2 <- SM\_ | 0.807 |
| SM\_3 <- SM\_ | 0.782 |
| SM\_4 <- SM\_ | 0.785 |
| SM\_5 <- SM\_ | 0.802 |

**Emotional Support (ES)** ES\_1: Do you rely on emotional support from social media compared to other sources, such as therapy or support groups. ES\_2: How frequently do you receive negative or triggering messages on social media that worsen your mental health issues. ES\_3: How often do you share your emotions and feelings related to mental health on social media. ES\_4: How often do you use social media to receive emotional support for your mental health issues. ES\_5: How often does emotional support from social media play a role in managing your mental health. **Health Behavior Changes (HB)** HB\_1: Does seeing other people's perfect image on social media make you feel pressure to be perfect as well. HB\_2: Does social media contribute to overthinking and increased stress levels. HB\_3: Have you noticed a decrease in your physical activity levels since increasing your social media use. HB\_4: How do you perceive your self-esteem level while using social media. HB\_5: To what extent do you believe that social media has influenced your health behavior. HB\_6: To what extent do you compare yourself with others on social media. HB\_7: To what extent do you think social media affects your feelings of inadequacy. **Information Support (IS)** IS\_1: Information support [Do you trust the mental health information that you find on social media platforms. IS\_2: How frequently do you find accurate and reliable mental health information on social media platforms. IS\_3: How likely are you to seek mental health information and support on social media platforms in the future. IS\_4: To what extent do you feel that social media platforms have increased your awareness and understanding of mental health issues. IS\_5: To what extent do you feel that the mental health information you find on social media platforms is helpful. **Peer Support (PS)** PS\_1: Do you feel more comfortable sharing your mental health struggles with peers on social media compared to face-to-face interactions. PS\_2: Have you received helpful advice or emotional support from peers on social media regarding your mental health concerns. PS\_3: How often do you communicate with others about your mental health concerns on social media. PS\_4: To what do you trust the mental health advice and support provided by peers on social media. PS\_5: To what extent do you think receiving peer support on social media has positively impacted your mental health. **Peer Credibility (PC)** PC\_1: How credible do you find the mental health information shared on social media. PC\_2: How likely are you to trust mental health information or advice that is shared on social media. PC\_3: How much do you believe that social media platforms take steps to ensure the accuracy and reliability of mental health information shared on their platforms. PC\_4: To what extent do you believe that mental health information shared on social media is unbiased and free from commercial interests. PC\_5: To what extent do you believe that the mental health advice shared on social media is based on scientific evidence. **Peer Risk (PR)** PR\_1: Have you ever experienced negative emotional effects, such as anxiety or depression, as a result of your social media use. PR\_2: How often do you feel stressed or overwhelmed as a result of your social media use. PR\_3: To what extent do you believe that social media use can contribute to feelings of social isolation or loneliness. PR\_4: To what extent do you believe that social media use can lead to addiction or dependency. PR\_5: To what extent do you perceive social media use as a risk to your mental health. **Social Media Usage (SM)** SM\_1: How much do you think your mental health is impacted by your use of social media. SM\_2: How often do you use social media platforms on daily basis. SM\_3: To what extent do you feel that social media promotes unhealthy body image standards or unrealistic expectations for physical health. SM\_4: To what extent do you read and/or share news articles on social media. SM\_5: To what extent do you use social media to connect with new people or make new friends.

Table 3: Evidence of Discriminant Validity

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ES\_ | HB\_ | IS\_ | PC\_ | PR\_ | PS\_ | SM\_ |
| ES |  |  |  |  |  |  |  |
| HB\_ | 0.438 |  |  |  |  |  |  |
| IS\_ | 0.534 | 0.195 |  |  |  |  |  |
| PC\_ | 0.757 | 0.141 | 0.823 |  |  |  |  |
| PR | 0.317 | 0.548 | 0.231 | 0.203 |  |  |  |
| PS\_ | 0.866 | 0.27 | 0.591 | 0.877 | 0.23 |  |  |
| SM\_ | 0.361 | 0.709 | 0.243 | 0.243 | 0.685 | 0.442 |  |

Hypothesis Testing:

Table 4. Results of Hypotheses Testing

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Hypothesis Testing | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics (¡O/STDEVI) | P values |
| Emotional Support -> Social Media Usage | -0.044 | 0.002 | 0.192 | 0.229 | 0.819 |
| Information Support -> Social Media Usage | 0.111 | 0.066 | 0.16 | 0.695 | 0.487 |
| Perceived Credibility -> Social Media Usage | -0.389 | -0.272 | 0.235 | 1.66 | 0.097 |
| Perceived Risk -> Social Media Usage | 0.552 | 0.559 | 0.135 | 4.087 | 0 |
| Peer Support -> Social Media Usage | 0.559 | 0.47 | 0.218 | 2.559 | 0.011 |
| Social Media Usage -> Health Behavior Change | 0.648 | 0.663 | 0.074 | 8.721 | 0 |

From the above table, the relationship between Perceived Risk and Social Media Usage is statistically significant (p < 0.001). This suggests that individuals' perception of risk associated with social media has a significant influence on their usage patterns in the context of mental health. The relationship between Peer Support and Social Media Usage is statistically significant (p < 0.05). This indicates that the support individuals receive from their peers through social media platforms has a notable impact on their usage behavior related to mental health. The relationship between Social Media Usage and Health Behavior Change is highly significant (p < 0.001). This suggests that the extent to which individuals use social media in the context of mental health significantly affects their changes in health-related behaviors. The relationship between Emotional Support and Social Media Usage is not statistically significant (p > 0.05). This implies that the level of emotional support individuals receive through social media platforms does not significantly impact their usage behavior concerning mental health. The relationship between Information Support and Social Media Usage is not statistically significant (p > 0.05). This suggests that the amount of informational support individuals receive through social media platforms does not have a significant influence on their usage behavior related to mental health. The relationship between Perceived Credibility and Social Media Usage is marginally significant (p < 0.1). This indicates that individuals' perception of credibility regarding information on social media platforms may have a moderate impact on their usage behavior concerning mental health.

The above findings provide insights into the relationships between different constructs within the TAM model in the specific context of the effects of social media on mental health. They highlight the significant influences of perceived risk, peer support, and social media usage on mental health-related behaviors, while also indicating the limited impact of emotional support and informational support on social media usage.

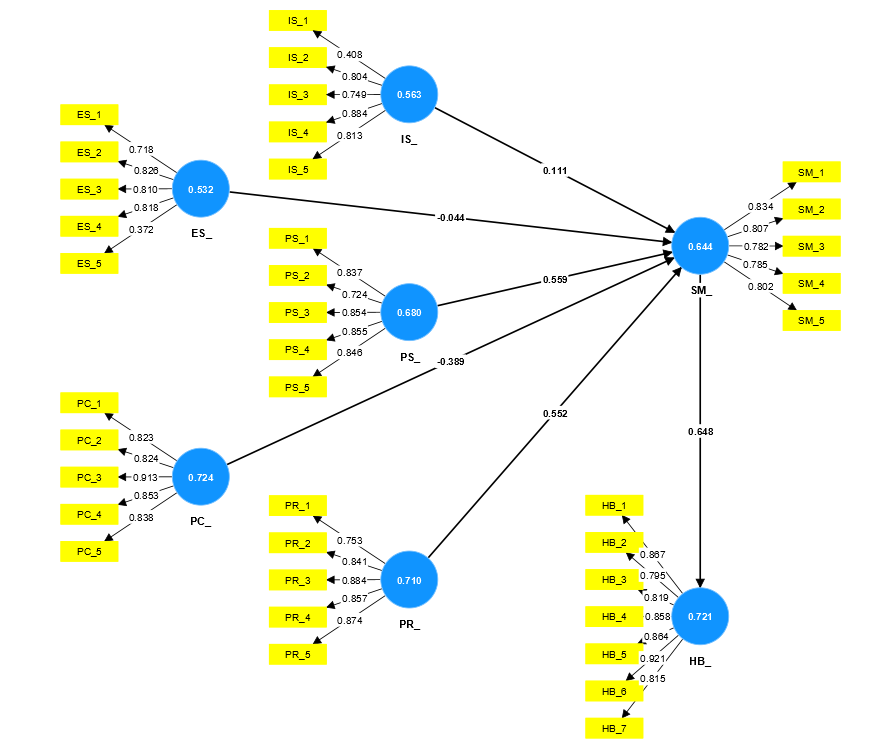


Figure 2: Summary of structural equation model results.

**Conclusions:**

For individuals living with mental disorders, social media has evolved into a significant aspect of their lives. It serves as a platform for sharing personal experiences related to mental illness, seeking support from peers, and obtaining information on treatment options, accessing mental health services, and managing symptoms (Bucci et al., 2019) (Naslund et al., 2020).

The results from this hypothesis highlight that perceived risk and peer support significantly influence individuals' usage of social media in the context of mental health.(Zhong et al., 2021) (Khan et al., 2021). This suggests that individuals perceive social media platforms as a valuable resource for accessing information and receiving support during times of uncertainty and crisis. Additionally, the study reveals a strong association between social media usage and health behavior change, indicating that individuals' engagement with social media can have a significant impact on their adoption of healthier behaviors.

However, the study also indicates that factors such as emotional support and information support do not significantly influence social media usage concerning mental health. This suggests that individuals may rely on other sources or mechanisms for emotional and informational support, potentially indicating a limitation in the effectiveness of social media platforms in these aspects. The findings imply that an excessive use of social may have both positive and negative implications for mental health. While social media can provide individuals with informational, emotional, and peer support, excessive usage may also lead to potential negative effects on mental well-being.

Based on these findings, this study contributes to the limited research on social media in the healthcare context, building on previous research (Zhong et al., 2021) (Khan et al., 2021) It enriches the traditional technology acceptance model (TAM) by operationalizing additional constructs such as content quality, perceived credibility, perceived risk, peer influence, supporting conditions, confirmation of expectations, and perceived cost affecting the social media usage decisions of Australian healthcare professionals. These constructs were formulated, operationalized, and tested exclusively, drawing on the social media use behaviors of healthcare professionals (Khan et al., 2021). The findings point towards the need for more strategic initiatives concerning security-related issues associated with health professionals (Johnson & Brown, 2018). Healthcare authorities need to undertake practical initiatives to attract health professionals in this interactive sphere by firstly, promoting the benefits, and secondly, ensuring the availability of support structures to improve community health. The findings also highlight the importance of awareness, training, and support for practitioners to maintain and enhance social media adoption (Adams et al., 2021).

Overall, this study contributes to the existing body of research on social media's impact on mental health and provides valuable insights for healthcare providers, policymakers, and individuals seeking to navigate the complex relationship between social media and mental well-being.

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