RESEARCH

Patterns of social media use in Vietnamese youths: status and associations with psychological well-being

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Abstract

Background Vietnam ranked 18th globally in internet users and among the top 10 countries with the highest number of social media users, with 78.6% of the population using the internet and 73.7% active on social media. Despite the high prevalence of social media users, there remains a paucity of studies investigating social media usage and its impact. This study aims to examine social media usage patterns and their impact on the psychological well-being of Vietnamese youths.

Methods A cross-sectional study utilized a convenience sampling method to recruit 1,477 participants aged 14 to 24 from five provinces in Vietnam. The primary outcomes of interest were health-related quality of life and psychological well-being, assessed using the Kessler Psychological Distress Scale (K6) and a Visual Analogue Scale (VAS). Key predictors included socio-demographic characteristics, health behaviors, and patterns of social media usage, which were systematically examined to explore their associations with the primary outcomes.

Results 50% of participants who used social media met the criteria for the existence of underlying psychological distress. Communicating with friends and staying updated with news were the main purposes of using social media among the participants. The study also revealed the significant correlations between Vietnamese youths' psychological distress and social media usage patterns and sociodemographic traits.

Conclusions This study is perhaps the first study to have examined and explored the patterns of social media use amongst Vietnamese youths and to explore the psychological impact of their social media usage. The findings underscores the critical need for a multifaceted approach involving the participation of school and family to foster healthier social media habits and protect mental well-being among youth as well as prepare strategies to early coping with psychiatric consequences.

Keywords Social media, Psychological well-being, Adolescence, Psychological distress, Youth, Vietnam

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Introduction

As the digital landscape continues to evolve, social networking sites (SNS) has become an essential part of everyday life, enabling rapid communication, information exchange, entertainment, and even assistance in work and study [1]. According to a recent report by the Global Web Index, 63.8% of the global population used SNS in 2024, with an average time using online platforms such as Facebook, YouTube, WhatsApp, Instagram, and WeChatper amounting to 2 h and 19 min daily [2]. However, despite the undeniable advantages of SNS, the excessive usage has raised concerns about internet addiction. Indeed, a recent meta-analysis by Cheung C. et al. (2021) that included 34,798 internet users across 32 nations has indicated a relatively high prevalence of SNS addiction at 24% [3]. Notably, the prevalence in collectivist nations was found to be twice as high as in individualist nations, highlighting significant cultural differences in SNS usage behavior. These findings provide important insights into the global and cultural patterns of excessive social media usage [3].

Although social media addiction and excessive social internet usage have not been conceptualized and operationalized as a formal diagnosis in either the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) or the International Classification of Diseases (ICD-11), studies have demonstrated its negative associations with a range of psychological issues [4], especially in mental well-being. Particularly, a recent meta-analysis by Sameer Ansari (2024) has indicated a strong relationship between excessive social media use and lower self-esteem, life satisfaction, and increased levels of depression and anxiety symptoms [4]. Furthermore, a wealth of other evidence suggests higher levels of SNS usage are associated with symptoms of anxiety [5–7], symptoms of depression [8–10], decreased psychological well-being [11, 12], lower self-esteem [11, 13, 14], psychological distress [15–17], and loneliness [18, 19].

According to statistics from the Vietnam Ministry of Information and Communications, as of June 2023, the prevalence of internet and SNS usage reached 78.6% and 73.7% of the population, respectively [20]. Furthermore, Vietnam also ranked 18th globally in internet users and among the top 10 countries with the highest number of users on some platforms such as Facebook and YouTube, with a significant portion of users being young adults and teenagers [20]. Despite the high prevalence of SNS users, there remains a paucity of research investigating SNS usage patterns and its impact on young adults, especially on psychological well-being. For example, a study by Nguyen et al. (2022) has indicated that 19.6% of the participants experienced depressive symptoms, 14.5% presented anxiety symptoms, and 58.8% reported poor sleep quality as well as the detrimental impacts of internet addiction on mental well-being. Another study by Tran et al. (2017) has looked at Internet addiction and its impact on the overall quality of life among Vietnamese youths [21]. However, this study has not provided any information relating to SNS usage, given that the construct examined was that of Internet addiction. Another study by Truong & Kim (2023) investigated patterns of TikTok usage among 15-25-year-old Vietnamese and the upsides and downsides of using TikTok; however, the study has not analyzed the social media usage of any other platforms or its impact on psychological well-being [22]. Given this, this study aims to bridge the existing gap in the research literature by investigating the patterns of social media usage as well as its impacts on psychological well-being among Vietnamese youths. The findings will not only contribute to future research but also provide insights that could guide policy development and social media regulation strategies in Vietnam.

Methods

Study design and setting

This cross-sectional study was conducted in five provinces in Vietnam: Tuyen Quang, Hanoi, Quang Tri, Dak Lak, and Ho Chi Minh City from January to December 2019. Participants were eligible if they met the following criteria: (1) aged 14–24 years; (2) active Internet users; (3) capable of providing informed consent (with parental consent required for those under 18); and (4) had no prior diagnosis of a mental disorder by physicians. These provinces were selected to ensure diverse geographical and cultural representation. Particularly Tuyen Quang, a rural and mountainous province in the northern region, Quang Tri, a central province with economic challenges, and Dak Lak, a province in the Central Highlands with a diversity of ethnicities. Furthermore, these provinces are featured in an underdeveloped and inconsistent infrastructure system, especially in remote communes. Meanwhile, Hanoi, as the capital city and administration center of the country, and Ho Chi Minh City, the largest economic center of the country, represent cities and provinces with advanced infrastructure and development. Hence, this selection contributed to enhancing the diversity of the sample.

In each province, a convenience sampling method was used to recruit participants. We utilized a formula for a mean to estimate the sample size for the current study. In which, the confidence level was set at 0.05, the expected mean score of the Kessler Psychological Distress Scale-6 among adolescents was 9.38 (according to a previous study [23]), standard deviation = 5.48 [23], and relative error level = 0.03. To compensate for the people who cannot completely answer the questionnaire or might refuse to be involved, an additional 10% of the sample size was added. Finally, after calculating, the need minimum

sample size for this study was 1600 participants (320 participants/province). After the exclusion of 123 participants who did not use social media, a total of 1477 participants was included in the analysis process. This accounted for 92.3% of those who were invited.

Measurement and instrument

In this study, we developed research instruments based on a standard procedure. Firstly, we conducted a literature review to find gaps as well as important aspects of the topic of interest from the previous evidence. Secondly, an instrument was built to cover all of the facets of the topics of interest. Then, experts in SNS usage, psychologists, health services providers, and policymakers were invited to deliberate jointly throughout the development of the research questionnaire from translating, rephrasing, piloting, as well as shortening the questionnaire. The final version questionnaire that was used in this study consisted of four main components, including (1) Sociodemographics characteristics; (2) Health-related quality of life and psychological well-being; (3) Health behaviors; and (4) Patterns of using SNS. The detailed research instrument was shown in the supplementary.

Before the data collection process, the questionnaire was piloted by 20 youth of different ages and genders from the community to test the language, logical order, and meaning of each question of the research instrument. After the research instrument had been revised, the piloted data would be removed. During the data collection process, participants were invited to a private room in their residence to conduct a face-to-face interview with a well-trained investigator to use the research instrument, which ensured the confidentiality of their responses.

Primary outcome

Health-related quality of life and psychological Well-being This study used the Kessler Psychological Distress Scale 6 items (K6) to explore the psychological distress of respondents. This tool comprises six items that asked about individuals' feelings over the last 30 days, and they include nervousness, hopelessness, restlessness/fidgety, depression, effort, and worthlessness. For each item, a Likert-5 scale was applied to record the response of participants, from 0 "none", 1 "a litter of the time", 2 "some of the time", 3 "most of the time", and 4 "all of the time" [24]. Then, the total score of 6 items was calculated, ranging from 0 to 24, with a higher score corresponding to a higher level of psychological distress. Moreover, a score of at least 6 points was applied as the cut-off point to identify people with psychological distress. Up until now, the Department of Health Policy, Harvard Medical School has translated the K6 into 21 languages, including Vietnam [25] and this Vietnamese version was applied in the

current study. Also due to the brevity, the scale has been applied widely in mental health epidemiology to assess psychological distress. This scale has been validated for Arabic [26], English [27, 28], Chinese [29], French [30], Japanese [31, 32], Korean [33], and Vietnamese [34]. Particularly, a study by Norito et al. that was conducted among the Vietnamese population has proved the acceptable level of internal consistency reliability, and confirmatory factor analysis indicated a good fit for the one-factor structure, with acceptable levels of most goodness of fit indicators. In this study, the Cronbach's alpha of the K6 scale was reported at 0.820. Furthermore, participants self-administered their health by using a Visual analogue scale (VAS) with a ranging score from 0 "The worst health state that you can imagine" to 100 "The best health state that you can imagine" [35].

Predictor variables

Socio-demographic characteristics information about gender (male, female), age (14–17 years old, 18–20 years old, 21–24 years old), education (high school, college or higher), marital status (single, having partner, being married), living arrangement (family, friends, alone), and living location (urban, rural mountainous) were collected.

Health behaviors Two questions, including "Have you consumed alcohol during the last 30 days" (Yes/No) and "Have you smoked tobacco during the last 30 days" (Yes/No) were utilized to collect information about the behavior of the participants during the last month.

Patterns of *SNS usage*: We asked participants to report time spent using SNS per day (hours), purposes of using SNS (talking with friends/updating news/seeking advice/playing games), and topics of interest when using SNS, including (1) Topics about Romance, Entertainment, and Sport theme (7 specific topics); (2) Topics about Occupation, Economy and Environment theme (8 specific topics); and (3) Topics about Social and Criminal Information theme (4 specific topics). We also asked for their reports regarding how concerned they were with regard to the number of comments and likes for their posts on SNSand if they were concerned about the privacy and security of social media. The specific topics of each theme and questions asked relating to privacy and security are described in Tables 2 and 3, and Supplementary 1.

Data analysis and statistical analyses

Data collected through face-to-face interviews was archived and secured by using the SurveyMonkey platform (Surveymonkey.com). The data were then cleaned and analyzed by STATA 15.0 software. We used the Listwise Deletion method to clean data before analyzing it. Listwise deletion means that any individual in a

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data set was deleted from an analysis if they were missing data on any variable in the analysis [36]. Continuous variables were presented as mean and standard deviation (SD), while categorical variables were presented as frequencies and percentages. In this study, Chi-squared and Wilcoxon Rank Sum Tests were used to examine differences in SNS use patterns between males and females. Multivariate Tobit and Logistic regression models were performed to identify the associations between potential variables and Kessler score and psychological distress, respectively. Furthermore, along with identifying association factors, multivariate regression models are also well-known as a strategy to address confounding variables [37]. Moreover, based on the Variance Inflation Factor (VIF), we identified multicollinearity variables and then removed relevant variables with VIF higher than 10 from the regression models [38]. Finally, we also applied backward stepwise strategies that were used to develop reduced regression models by using a p-value of 0.2 as

Table 1 Socio-demographic characteristics of respondents

Characteristics	n	%
Province		
Tuyen Quang	292	19.8
Ha Noi	272	18.4
Quang Tri	320	21.7
Dak Lak	320	21.7
Ho Chi Minh city	273	18.5
Location		
Urban	922	62.4
Rural mountainous	555	37.6
Age group		
14–17 years old	362	24.5
18–20 years old	851	57.6
21–24 years old	264	17.9
Sex		
Male	553	37.4
Female	924	62.6
Education		
High school	550	34.4
College or higher	1050	65.6
Marital status		
Single	1,208	81.8
Having partner	246	16.7
Being married	23	1.6
Living arrangement		
Family	1,196	81.0
Friends	163	11.0
Alone	118	8.0
Alcohol use	281	19.0
Tobacco smoking during the last 30 days	34	2.3
Psychological distress during the last 30 days	738	50.0
	Mean	**SD**
Kessler score (0–24)	5.8	4.6
Self-reported health status (0-100)	84.6	15.3

a threshold to include variables in the model. Statistical significance was detected when a p-value was less than 0.05.

Results

Table 1 shows that most of the participants resided in urban areas (62.4%), were female (62.6%), were single (81.8%), lived with family (81.0%), and were existing students (65.6%). The result of the K6 scale also shows that 50% of respondents encountered psychological distress during the last 30 days. The mean Kessler score and self-rate health score were 5.8 (SD = 4.6) and 84.6 (SD = 15.3), respectively.

Most of the respondents spent between 1 and 4 h on social network sites per day (72.0%). The main purposes of SNS usage were keeping themselves updated with news (69.8%) and talking with friends (69.4%). Female youths were found to have higher number of interested topics in all three themes compared to male youths ($p < 0.05$). Table 2 also presents an overview of their SNS use pattern.

Table 3 summaries concerns relating to their SNS posts and privacy and security issues. Females are more interested in public comments, likes, and posts on social networks than males ($p < 0.05$). The percentage of men who sent pictures of themselves at someone's request via social networks and sent passwords for new online acquaintances was significantly higher than that of females ($p < 0.05$).

Table 4 highlights the strong relationship between psychological distress and patterns of SNS usage (e.g., the amount of time spent using SNS, purposes of using SNS, topics of interest when using SNS, and private security issues), and some socio-demographic characteristics (education levels and living location). The findings show that individuals with lower education levels (OR = 2.13; 95%CI = 1.52; 2.99; and Coef. = 1.14; 95%CI = 0.46; 1.83) and those who lived in rural/mountainous areas (OR = 1.55; 95%CI = 1.17; 2.04; and Coef. = 1.51; 95%CI = 0.94; 2.08) were related to higher odds of suffering from psychological distress and higher scores of K6.

Furthermore, a higher amount of time using SNS was related to a higher risk of suffering from psychological distress (OR = 1.55; 95%CI = 1.17; 2.04) and a higher score of K6 (Coef. = 1.51; 95%CI = 0.94; 2.08). Regarding the purposes of using SNS, individuals using SNS for playing games were more likely to have a higher risk of psychological distress (OR = 1.41; 95%CI = 1.09; 1.81) and a score of K6 (Coef. = 0.53, 95%CI = 0.02; 1.04). In addition, young adults with a higher interest in some themes, such as romance, entertainment, and sports; social and criminal information; and private security problems on

Table 2 Patterns of SNS usage among participants

Characteristics	Male		Female		Total		*p*-value
	n	%	*n*	%	*n*	%	
Time using SNS per day							
1–4 h/day	401	72.5	663	71.8	1,064	72.0	0.84
5–8 h/day	100	18.1	178	19.3	278	18.8	
>8 h/day	52	9.4	83	9.0	135	9.2	
Purpose of using SNS							
Talking with friends	368	66.6	657	71.1	1,025	69.4	0.07
Updating news	399	72.2	632	68.4	1,031	69.8	0.13
Seeking advice	117	21.2	223	24.1	340	23.0	0.19
Playing game	238	43.0	320	34.6	558	37.8	**<0.01**
Interested in any of the following information when using SNS							
Topics about Romance, Entertainment and Sport theme							
News about husband and wife, divorce	326	59.0	652	70.6	978	66.2	<0.01
News about jealousy in marriage	322	58.2	612	66.2	934	63.2	<0.01
News on the issue of love, adultery	389	70.3	743	80.4	1,132	76.6	<0.01
News about new movies	494	89.3	863	93.4	1,357	91.9	0.01
News about famous actors/stars of adultery	415	75.1	748	81.0	1,163	78.7	0.01
News about sports	481	87.0	769	83.2	1,250	84.6	0.05
News about tourism	471	85.2	792	85.7	1,263	85.5	0.77
Topics about occupation, economy and environment theme							
News about labor recruitment	440	79.6	823	89.1	1,263	85.5	<0.01
News about attractive professions	465	84.1	830	89.8	1,295	87.7	<0.01
News about agriculture models	453	81.9	741	80.2	1,194	80.8	0.42
News about economic development model	473	85.5	792	85.7	1,265	85.7	0.92
News about technology application to economic development	487	88.1	785	85.0	1,272	86.1	0.09
News about the economic situation of the country	477	86.3	817	88.4	1,294	87.6	0.22
News about Food safety and hygiene	484	87.5	833	90.2	1,317	89.2	0.12
News about Environmental pollution, climate change	490	88.6	843	91.2	1,333	90.3	0.10
Topics about social and criminal information theme							
News about different sexual populations	319	57.7	602	65.2	921	62.4	<0.01
News of murder and robbery	459	83.0	818	88.5	1,277	86.5	<0.01
News on handling cases of corruption and embezzlement	487	88.1	831	89.9	1,318	89.2	0.26
News about violence, sexual abuse	438	79.2	820	88.7	1,258	85.2	<0.01
Characteristics	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**p-value**
Number of concerned topics regarding Romance, Entertainment and Sport theme (0–7)	4.6	2.4	5.3	1.9	5.0	2.1	<0.01
Number of concerned topics regarding Occupation, Economy and Environment theme (0–8)	6.0	2.7	6.6	2.2	6.4	2.4	<0.01
Number of concerned topics regarding Social and Criminal Information theme (0–4)	2.7	1.4	3.2	1.2	3.0	1.3	<0.01
Time using SNS per day (hours)	4.1	2.9	4.2	3.1	4.1	3.0	0.47

SNS were more likely to have higher odds of psychological distress and higher scores of K6.

Discussion

The current study's findings contribute to understanding SNS usage patterns and their psychological effects among Vietnamese youths. This research provides a unique focus on the Vietnamese context, exploring how cultural and societal factors shape these patterns and their impact on psychological well-being. To the best of our knowledge, this study is among one of the first thorough examinations of the relationship between these patterns and psychological well-being within the Vietnamese youth population. According to our research, 50% of the participants who used SNS had gone through psychological distress. The study also underscores the significant correlations between Vietnamese youths' psychological distress and SNS usage patterns and sociodemographic traits. These findings highlight the need for culturally tailored interventions to address psychological distress related to SNS use in Vietnam.

Table 3 Concerning SNS post and private information security on SNS

Characteristics	Male		Female		Total		*p*-value
	n	%	*n*	%	*n*	%	
Concern about the number of comments or the number of likes and shares of those posts	241	43.6	498	53.9	739	50.0	< 0.01
Share personal information on social networks							
Publishing personal information publicly on social networks	394	71.3	712	77.1	1,106	74.9	0.01
Sending private pictures at someone's request via social networks	284	51.4	417	45.1	701	47.5	0.02
Disclosing real names to new online acquaintances	402	72.7	634	68.6	1,036	70.1	0.10
Disclosing home addresses to new online acquaintances	227	41.1	356	38.5	583	39.5	0.34
Revealing phone numbers to new online acquaintances	219	39.6	358	38.7	577	39.1	0.74
Saying passwords for new online acquaintances	98	17.7	126	13.6	224	15.2	0.03
Characteristics	Mean	SD	Mean	SD	Mean	SD	p-value
Number of private security problems on SNS (0–6)	2.6	2.0	2.7	1.8	2.6	1.8	0.29

Table 4 Associations between SNS use and psychological distress

Characteristics	Kessler score		Psychological distress (1-Yes; 0-No)	
	Coef.	95%CI (p-value)	OR	95%CI (p-value)
Individual characteristics				
Age group (14–17 years old - ref)				
18–20 years old	-0.55	-1.28; 0.18 (0.142)	0.58***	0.41; 0.83 (0.003)
21–24 years old	-0.07	-1.13; 0.98 (0.890)	0.59**	0.35; 1.00 (0.048)
Living arrangement (Family - ref)				
Friends	-0.11	-0.92; 0.69 (0.780)	0.73	0.50; 1.08 (0.12)
Alone	-1.08**	-2.00; -0.15 (0.023)	0.70	0.45; 1.09 (0.114)
Education (College or higher vs. High school - ref)	1.14***	0.46; 1.83 (0.001)	2.13***	1.52; 2.99 (<0.001)
Alcohol use (No vs. Yes - ref)	0.56*	-0.08; 1.19 (0.085)	1.24	0.92; 1.67 (0.126)
Self-reported health status (0-100)	-0.08***	-0.10; -0.06 (<0.001)	0.97***	0.96; 0.98 (<0.001)
Community characteristics				
Province (Tuyen Quang - ref)				
Ha Noi	-0.92*	-1.91; 0.07 (0.068)	0.35***	0.22; 0.58 (<0.001)
Quang Tri	-1.46***	-2.35; -0.58 (0.001)	0.27***	0.17; 0.42 (<0.001)
Dak Lak	-0.17	-1.03; 0.68 (0.690)	0.43***	0.28; 0.67 (<0.001)
Ho Chi Minh city	-1.94***	-2.81; -1.07 (<0.001)	0.25***	0.16; 0.38 (<0.001)
Location (Rural/mountainous vs. Urban -ref)	1.51***	0.94; 2.08 (<0.001)	1.55***	1.17; 2.04 (0.002)
Social Media Use				
Time using social network sites per day (per hour)	0.17***	0.09; 0.25 (<0.001)	1.07***	1.03; 1.11 (0.001)
Purpose of using social network (No vs. Yes - ref)				
Talking with friends			0.81	0.62; 1.07 (0.140)
Information advice	-0.73**	-1.30; -0.16 (0.012)	0.78*	0.60; 1.03 (0.080)
Play game	0.53**	0.02; 1.04 (0.042)	1.41***	1.09; 1.81 (0.008)
Care about the number of comments or the number of likes and shares of those posts (No vs. Yes - ref)	-0.78***	-1.29; -0.28 (0.002)	0.77**	0.60; 0.97 (0.029)
Number of concerned topics regarding Romance, Entertainment and Sport theme (per topic)	0.22**	0.02; 0.41 (0.027)	1.11**	1.02; 1.22 (0.018)
Number of concerned topics regarding Occupation, Economy and Environment theme (per topic)	-0.18**	-0.36; -0.00 (0.047)		
Number of concerned topics regarding Social and Criminal Information theme (per topic)	0.51***	0.20; 0.82 (0.001)	1.20**	1.04; 1.38 (0.013)
Number of private security problems on SNS (per problem)	0.47***	0.33; 0.62 (<0.001)	1.22***	1.14; 1.31 (<0.001)

***p < 0.01, **p < 0.05, *p < 0.1

The current study revealed the patterns of SNS usage among Vietnamese youths, emphasizing gender-specific differences in behavior and topics of interest. Particularly, female participants not only spend more time using social networks but also have more concerns about online interactions and a range of issues on these platforms. These findings are consistent with earlier research showing that women use social media more frequently and are more sensitive to online social feedback, which may be a reflection of their desire for connection and social attention, which is a common phenomenon among female adolescents [39]. Additionally, our findings showed that communicating with friends and keeping up to date on news were the main purposes of using SNS in both genders. This is consistent with previous findings in other cultural contexts, where the main drivers of SNS participation were shown to be information-seeking and social interaction [40]. However, when it came to other purposes, such as playing games, the results indicated that men were far more likely than women to use SNS for online gaming. Similar results have been noted in other nations, even among adults [39, 41].

Generally, the current study raises significant concerns due to a relatively high prevalence of SNS users reported experiencing psychological distress along with the considerable amount of time spent using SNS. Specifically, the findings revealed that 50% of the SNS users reported encountering psychological distress, which is consistent with prior research. For example, Liu et al. (2017) found that 55.5% of U.S. young adults experienced depression by using the Patient-Reported Outcomes Measurement Information System (PROMIS) [42]. This is also relatively consistent with another study by Christakis et al., which reported that nearly 50% of college-aged adults suffered from depression according to PHQ-9 [43]. Another notable finding of the current study is that participants spent an average of 4.1 h per day using SNS, significantly higher than not only the average figure of the Vietnamese population but also globally, which was 2 h and 25 min [44] and 2 h and 21 min [2], respectively. This could be explained by the fact that the current study only included young adult individuals, the major group of SNS users [20]. Vietnam has undergone rapid digitalization in recent years, facilitating increased accessibility to smartphones and internet services, especially for young individuals who are adaptable to technological advancements [45]. Furthermore, in Vietnam, SNSs not only serve personal purposes such as communication and exchanging information but also play a significant role in education [46]. These factors contribute to SNS have gradually becoming an integral part of young people's lives, which partly explains the current findings on the huge amount of time spent using SNS daily among young adults.

The consequences of spending massive amounts of time on SNS on psychological distress have been widely investigated, especially for teenagers and young adults. Indeed, earlier research has revealed that excessive internet use, especially among teenagers, can result in internet addiction, poorer sleep and quality of life, and heightened vulnerability to negative emotions like distress, anxiety, and depression [15–17], especially when they are continuously exposed to a vast amount of information on a wide range of issues online [47]. Consistent with this, our study indicated that along with exploring a wide range of online topics on SNS, prolonged SNS usage is also related to a higher risk of experiencing psychological distress among young adults. Regarding topics of interest on the SNS, concering on topics related to romance, entertainment, and sports can lead to socially comparative, unrealistic expectations, and a heightened sense of competition, contributing to strain or inadequacy on the individual [48]. In the same way, job, economic, and environmental issues cause stress in users, especially for young people with high expectations of career paths and financial security. Similarly, topics related to occupation, economy, and the environment can provoke anxiety due to the uncertainty and pressure these issues evoke in users, particularly regarding job stability and financial security. Additionally, repeated exposure to social and criminal information, often characterized by negative or alarming content, can result in heightened stress levels due to feelings of fear or helplessness. Furthermore, concerns about privacy and security on SNS, such as data breaches or cyberbullying, can amplify these stressors by making users feel unsafe in online environments. In addition, sociological as well as crime-related exposures especially the negative content make individuals experience stress due to a sense of fear, and lack of control. In addition, concerns about personal privacy and security on SNS are able to lead to psychological distress by making users feel unsafe in online environments. Consequently, managing age-appropriate content, and maintaining healthy SNS usage habits are important in protecting the psychological well-being of young individuals.

Another notable finding of this study is that youths with higher age and higher levels of education were associated with lower levels of psychological distress. This may be because as individuals age and have higher education levels, they are generally more aware of the potential negative impacts of social networks on themselves such as cyberbullying and misinformation due to the increase in life experience and more maturity compared to younger ones [49]. Hence, they are able to develop more effective coping strategies to recognize, address, and prevent mental disorder symptoms early, contributing to better mental well-being outcomes [49, 50]. Along with education levels, participants' geographic location,

particularly residing in rural and remote areas, was negatively associated with the risk of psychological distress. This is partly explained by the fact that rural areas often have limited access to digital literacy education compared to urban areas [51], contributing to a lower understanding of the harmful effects of excessive SNS usage. This gap in knowledge is identified as a major barrier to fostering balanced and healthy online habits. Moreover, besides the undeniable benefits of SNS, such as supporting people in communication and entertainment, using these online platforms may drive unrealistic comparisons, which hides the risk of psychological distress [52]. For example, youths in rural areas are particularly vulnerable to comparing themselves with individuals in more developed regions, leading to a sense of frustration or inadequacy [52]. Hence, expanding and ensuring the accessibility to health promotion and education programs for rural and remote residents is crucial to mitigate the harmful effects of SNS on their lives.

This study suggests several important implications. First and foremost, SNS users should be aware of the possible negative impacts on psychological that can be caused by their online activity. Thus, it is necessary to underscore the significance of educational initiatives where schools and other community organizations should be encouraged to develop programs that equip the youth on the dangers of over-reliance on SNS, the effects of social comparison and its unrealistic expectations, and enhance the capacity to identify misinformation, facilitating SNS engagement in a healthy and balanced way. Secondly, considering the impacts of educational levels and living location on the risk of encountering psychological distress, this study suggests that it is important to develop targeted educational programs for vulnerable individuals, especially in remote mountainous areas, where health promotion and education strategies usually encounter barriers to approach and implementation. A successful example of such an initiative is the strategy led by the Authority of Information Security under the Ministry of Information and Communications [53]. This strategy has involved organizing numerous seminars and competitions aimed at enhancing online safety awareness and digital literacy for both children and parents across the country. To date, this initiative has successfully reached 6,500 children and students across all 63 provinces in Vietnam, resulting in raising awareness and promoting safer online practices for individuals even in remote and rural areas [53]. Thirdly, it is encouraged that parents and caregivers act as companions with their children like discussing their SNS experiences and behaviors together. This assistance can facilitate the youth in developing a healthy environment and prevent or reduce the negative effects of using social networks. Finally, screening programs for young people at risk of psychological distress should be developed and then prepare early coping strategies to prevent any adverse psychiatric consequences. Most recently, Decision No. 1442/QĐ-BGDĐT of the Ministry of Education and Training has introduced mental health education programs for students in the training plan since 2022 [54]. According to this strategy, 100% of schools and institutes across the country are required to implement prevention programs for mental disorders among students, and at least 50% of these facilities are expected to conduct screening to early detect mental disorders. Overall, these implications underscore the importance of a multifaceted approach involving education, fostering healthier SNS habits and improving mental well-being among youth as well as early coping with psychiatric consequences.

There are several strengths in this current study. Firstly, this study is perhaps the first study to examine the patterns of SNS use as well as explore the psychological impact of SNS usage among youths in Vietnam, which has been an area that has not been explored and needs further exploration. Secondly, this study managed to recruit a sizable sample of youths. We were able to record and analyze a total of 1,477 youth with different backgrounds. Thirdly, beyond merely describing SNS usage patterns, this study also explored and determined the association between SNS usage patterns and psychological distress among youths. Despite these strengths, there are several limitations. Firstly, although this study provides important evidence on the association between psychological distress experienced among young people and their SNS usage habits, this assessment was cross-sectional in nature. Therefore, future research should incorporate longitudinal study designs to explore the long-term effects of SNS use on psychological well-being. Secondly, the current study exclusively recruited participants who had never been diagnosed with any mental disorder. Hence, it is possible that participants who had undiagnosed mental health conditions which can lead to biased findings. Thirdly, most of the questionnaires that we have utilised are based on self-reported information and thus subjected to recall biases. Furthermore, the use of a convenience sampling method may have introduced selection bias, as participants were likely from groups that were more easily accessible. This could limit the generalizability of the findings to other populations, particularly those with different socio-economic or cultural contexts. Finally, despite the study being conducted among a sizable sample of youths, however, given that we recruited only youths who lived in only five provinces in Vietnam this might have affected to some extent the representativeness of the overall sample as well as the results and external validity of this study.

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Conclusion

This study is among the first to examine and explore the patterns of SNS use amongst Vietnamese youths, and investigate the psychological impact of their SNS usage. It also suggests that enhancing awareness of the negative impacts of SNS, along with the involvement of schools and families in fostering healthier SNS habits for young people is crucial. These efforts are able to contribute to protecting youth mental well-being from the negative impacts of SNS as well as prepare early strategies for coping with its psychiatric consequences. Furthermore, the study suggests that future research should incorporate longitudinal study designs and randomized sampling methods to explore the long-term effects of SNS use on psychological well-being and improve the representativeness of the sample.

Abbreviations
K6   Kessler Psychological Distress Scale 6 items
VAS   Visual analogue scale
SD   Standard deviation
ICD   International Classification of Diseases classification
DSM   Diagnostic and Statistical Manual

Supplementary Information
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Supplementary Material 1

Author contributions
Conceptualization: TTN, TTMV, TN, LB, GF, PA, and CAL; Data curation: TTN, DCN, CTN, TQT, LPH, HD; Formal analysis: TTN, RCMH, CSHH, and MWBZ; Methodology: TTN, TMTV, TN, CAL, RCMH, CSHH, and MWBZ; Software: TTN, CTN, DCN, TQT, LPH, and HD; Supervision: TTN, TTMV, TN, LB, GF, PA, CAL, RCMH, CSHH, and MWBZ. Writing—original draft: TTN, DCN, TQT, MWBZ; Writing—review and editing: All authors. All authors have read and agreed to the published version of the manuscript.

Data availability
Datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
The study procedures were carried out in accordance with the Declaration of Helsinki. The Institutional Review Board of the Young Research Institute approved the study (Code: KXVTN.19 – 02). Before the data collection process, participants were clearly informed of the purposes, advantages, and drawbacks of the study and signed written consents. With participants under 16, informed consent was obtained from their legal guardians. Collected data were saved in a secured system and only served the study purposes.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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