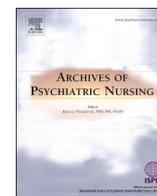




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# Social media disorder during community quarantine: A mixed methods study among rural young college students during the COVID-19 pandemic

Jerome Visperas Cleofas\*

Department of Sociology and Behavioral Sciences, De La Salle University, Manila, Philippines

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## ABSTRACT

**Purpose:** This study sought to identify determinants of social media disorder (SMD) and describe the social media engagement among rural young (18 to 24 years old) college students during long periods of community quarantine due to COVID-19.

**Methods:** This mixed methods study draws from a sample of 500 students from rural Luzon, Philippines. Quantitative and qualitative data collection were done via online survey.

**Results:** Findings reveal that 24.2 % of the respondents have SMD. Students who are from below middle-income households, and are active on Tiktok have greater odds for SMD. Qualitative analysis of narratives of students with SMD ( $n = 121$ ) reveal the beneficial and negative impacts of social media.

**Conclusions:** Results highlight how social position, and uses and gratifications of social media can facilitate development of SMD.

## Introduction

The coronavirus disease 2019 (COVID-19) pandemic has brought unprecedented challenges in the personal and social lives of the youth. The home confinement measures applied to curb transmissions during the major waves of infections have restricted their mobility and limited the activities they can perform. Moreover, students had to adapt with the abrupt transition of education to remote learning mode (Alibudbud, 2021; Tria, 2020). Their in-person social interactions with peers and significant others had been disrupted because of social distancing measures that were implemented. Furthermore, their ability to practice physical and mental health promotive behaviors have been decreased because of pandemic-induced stay-at-home policies (Cleofas, 2021). Evidence has demonstrated the mental health concerns among the youth that resulted from the detrimental societal impacts of COVID-19 (e.g. Tee et al., 2020). Mental illness has been regarded as a “silent pandemic” that transpires parallel with the global coronavirus crisis (Haddad et al., 2021). Since national and regional health systems have been overburdened in accommodating the health needs of those who were affected by the COVID-19 outbreak, community initiatives can help ease the load by addressing less-threatening mental conditions (Kopelovich et al., 2020; Cheng et al., 2020). Moreover, since students study at home during periods of pandemic-induced community quarantine (Tria,

2020), the bigger bulk of the burden of care for their physical and mental health is shifted from school/university health care system to the local communities of the homes where students are confined.

Due to the need to implement community level quarantines and social distancing policies, most aspects of life, such as school, work and commerce, transitioned online, resulting to the increased use of Internet during the COVID-19 era (Mouratidis & Papagiannakis, 2021). Likewise, social media use also increased, especially among the youth (Khoros, 2021). Social media has become an indispensable tool to cope with the challenges of the pandemic and for individuals to access basic human needs, such as social connection, information, productivity, education and entertainment (Daly et al., 2020). However, evidence has also noted that lifestyle changes and psychological distress symptoms related to the pandemic facilitated disordered social media use among college students (Catedrilla et al., 2020; Islam et al., 2021). I assert the need to address social media disorder because this has been linked to other mental health problems such as depression and anxiety before (Keles et al., 2020; Wartberg et al., 2020) and during the pandemic (Haddad et al., 2021). Assessing the status of social media disorder can help inform health workers, mental health advocates, families and communities at large in developing intervention strategies. This present study accomplishes this by employing a mixed methods approach to gain a deeper understanding on the what and why of social media disorder,

\* De La Salle University, 2401 Taft Ave, Malate, Manila, 1004, Metro Manila, Philippines.

E-mail address: [jerome.cleofas@dlsu.edu.ph](mailto:jerome.cleofas@dlsu.edu.ph).

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specifically among Filipino rural youth.

### *Social media disorder and its determinants*

The first objective of this study is to determine the prevalence and determinants of social media disorder among young college students dwelling in rural areas. Social media disorder (SMD), sometimes referred to as problematic or disordered social media use, is coined by Van den Eijnden et al. (2016), who proposed an instrument to measure social media addiction. Although SMD has yet to be included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) of the American Psychiatric Association (APA, 2013), the legitimacy of SMD as a serious mental illness is supported by meta-analytic evidence (Cheng et al., 2022; Huang, 2020). Van den Eijnden et al. (2016) suggests that SMD and Internet Gaming Disorder (IGD; APA, 2013) can be defined using the same diagnostic criteria, since both conditions are forms of addictions related to the use of Internet. Recent research has confirmed the similar nature of SMD and IGD (Wartberg et al., 2020). The DSM-5 criteria for IGD that can be used to determine SMD are preoccupation, tolerance, withdrawal, relapse, mood modification, external consequences, deception, displacement and conflict (Van den Eijnden et al., 2016). Cheng et al. (2021) suggests that prevalence estimates of SMD pre-pandemic studies is between 0 % to 82 %. Singh et al. (2020) argues that during the time of COVID-19 when the use of Internet and social media has become more ubiquitous, there is a need to differentiate individuals who use of social media as a mere form of coping mechanism from those with actual addictive behavior, who would need intervention.

Since mental health disparity among college students in the Philippines (Baticulon et al., 2021; Cleofas & Rocha, 2021) and elsewhere (Li, Wang, et al., 2021) has been accentuated during the pandemic, there is reason to suspect that the social and digital gaps in the prevalence of SMD in the population would be present as well. Previous evidence has noted the association of demographic characteristics of SMD; these variables include age (Kircaburun et al., 2020; Wartberg et al., 2020), gender (Kircaburun et al., 2019) and income status (Hruska & Maresova, 2020; Islam et al., 2021; Shensa et al., 2017; Tas & Öztosun, 2018). Moreover, evidence has demonstrated that the type of social media site used by the youth influences the tendency for disordered social media use (Kircaburun et al., 2020). For the present study, the following social media applications are included: Facebook, Twitter, Instagram, YouTube and Tiktok, which are the top five leading social media platforms in the Philippines (Statista, 2021).

### *Social media uses and gratifications*

The second objective of this study is to qualitatively examine how young college students with SMD engage with social media during the pandemic using the lens of Uses and Gratifications (U&G) theory. U&G Theory provides a paradigm to understand the motives and experiences of individuals in using media (Katz et al., 1973). U&G posits that use of media is motivated and goal-directed; users consume media based on gratifications sought and achieved, and; social-psychological factors influence media use (Haridakis, 2013). In relation to SMD, Kircaburun et al. (2020) suggests that individuals who use social media to pass time, socialize and express oneself exhibit more problematic social media use. Qualitative evidence indicates the self-reported pandemic-induced changes in the uses and gratifications of youth in relation to social media (Bilgili & Tuzcu, 2021). Hence, there is reason to suspect that these changes can influence the development of SMD. Moreover, the qualitative exploration of the motives, attitudes and socio-behavioral contexts related to social media use among students with SMD can help inform community nursing initiatives in addressing this mental health issue.

### *COVID-19, mental health and SMD in the context of the Philippines and rurality*

The Philippines, an archipelagic country in South East Asia, is one of the nations that have been worst hit by COVID-19. Since March 2020 when the pandemic had been declared, majority of the country remained in community quarantine status in varying levels, with restrictions being tightened during major waves of infection. Due to lapses in governmental response on the public health crisis and the implementation of a widespread lockdown that was hailed as the longest in the world (Hapal, 2021), the Philippines placed fourth to the last in the ranking of countries based on COVID-resilience at the end of 2021 (Chang et al., 2021). This longstanding confinement has impacted the activities of daily living, schooling and health promotive practices of the Filipino youth (Cleofas, 2021). Moreover, the pandemic-induced online education has placed increased mental strain among students (Alibudbud, 2021). The disruptive societal impacts of COVID-19 has increased psychopathological conditions among Filipinos, especially among students (Tee et al., 2020). Furthermore, COVID-19 research among Filipino college students demonstrated mental health disparities based on social and digital inequalities (Baticulon et al., 2021; Cleofas & Rocha, 2021).

The current Mental Health Strategic Plan of the Philippine Council for Mental Health (PCMH) has aims to achieve necessary improvements to address the mental health needs of the population in accordance to the Mental Health Act that was passed in 2018 (Philippine Council for Mental Health, 2019), and includes various mental illness conditions as focal points of concern. However, while the strategic plan recognized the Internet as a possible object for addiction, it did not present the current status of Internet addiction in the country nor a comprehensive plan to address it, signifying that there is an underrepresentation of Internet addiction—and by extension, social media disorder—in the mental health landscape of the country. Moreover, electronic records show that only one study in the Philippines attempted to examine disordered social media use (Marcial, 2013). However, this particular research only measured Facebook addiction.

Mental health disparities are also influenced by urban-rural differences. The recent body of evidence has linked urbanization as a risk factor for various mental illnesses (Hoare et al., 2019; Ventriglio et al., 2021). The Department of Health of the Philippines (DOH) has categorized mental health conditions as a disease due to globalization and rapid urbanization (Department of Health, 2017). However, recent evidence suggests that during the second year of COVID-19 in the Philippines, emerging adults living in rural areas may be of higher risk for mental health problems, such as depression (Cleofas, 2022). Moreover, mental health services and human resources are limited and concentrated in urban cities in the country (Lally et al., 2019; Philippine Council for Mental Health, 2019) despite the fact that more than half of the population (52.59 %) are dwelling in rural areas (World Bank, 2020). There is reason to suspect that mental health conditions among rural dwellers are underreported, and consequently, under-addressed. Fortunately, the Philippine Council for Mental Health (2019) recognizes the need to empower local government units and community-based organizations to improve mental health access in rural locations of the country.

Cognizant of the underrepresentation of social media disorder and rurality in mental health research in the Philippines, this mixed methods study aims to determine the prevalence and determinants of SMD among young Filipino rural college students, and describe how students with SMD engage with social media.

## **Methods**

### *Study design, participants and locale*

This study made use of the explanatory mixed methods and is

compliant with the guidelines of *Good Reporting of a Mixed Methods Study* (GRAMMS) by O’Cathain et al. (2008). In explanatory mixed methods design, quantitative data analysis is accomplished first. Findings of the quantitative strand will then guide the subsequent qualitative analysis. Afterwards, integration of the findings from both strands is to be performed (Plano Clark et al., 2008). For this present study, the quantitative strand (QUAN) used a cross-sectional approach and will address the first research objective (prevalence and determinants of SMD), whilst the qualitative strand (QUAL) used a descriptive approach and will answer the second objective (social media engagement among students with SMD). The justification of the use for a mixed methods design for this study is the advantage of providing qualitative socio-behavioral context on the significant factors of SMD that will emerge from the quantitative results. The deeper insights gained from this design is hoped to better inform interventions for SMD. The summary of the mixed methods procedure employed in this study is visualized in Fig. 1.

This mixed methods study draws from an online survey sample of 500 undergraduate students from a larger research project that examines social media behavior and health. The eligibility criteria for selection are as follows: (1) must be of legal age within the United Nations’ youth age bracket (18 to 24 years old); (2) living in a rural area in Luzon island region, Philippines, and; (3) currently enrolled in an undergraduate program in a Philippine higher education institution. From an initial collection of 511 data points, the dataset was rid of repeated and unqualified entries, trimming it down to a final sample size of 500.

Luzon is the largest island of the Philippines, located in the north of the country. The regions within Luzon has a 19.2 to 66.4 % level of urbanization (excluding the National Capital Region) in 2015 (Perez, 2019).

**Instruments**

A single online survey was used to collect both quantitative and qualitative data. The first group of explanatory variables of interest are *demographic characteristics*, which included age, sex assigned at birth and estimated monthly household income (poor = PhP10,956 or less, low income but not poor = PhP10,957 to 43,827, middle to high income = PhP43,826 and above; [1USD = 50PhP]). The second group of explanatory variables are *social media-related factors*. First, respondents were asked if their social media use increased during the pandemic. Then, they were instructed to answer a checklist that inquired about the social media applications where they were active on. The list included Facebook, Twitter, Instagram, YouTube and Tiktok.

**The social media disorder scale (SMD-scale)**

The SMD-scale is a 9-item tool by Van den Eijnden et al. (2016) that uses the DSM-5 criteria of Internet Gaming Disorder (IGD) to measure social media addiction. Each item measures the nine criteria related to IGD: preoccupation, tolerance, withdrawal, persistence, displacement, problems, deception, escape, and conflict. Each item is answerable by “yes” or “no.” The SMD-scale demonstrates acceptable structure, convergent and construct validity, test-retest reliability, sensitivity, specificity and cross-cultural validity (Boer et al., 2021; Van den Eijnden et al., 2016). Based on the scale specifications (Van den Eijnden et al., 2016), those who answered “yes” in five items or more (out of nine), will be categorized as having SMD. A sample item is, “during the past year, have you often felt bad when you could not use social media?”

**Question for qualitative analysis**

In the final section of the survey, the respondents were asked an open ended question, “what is the role of social media in your life as a young, emerging adult college student in the midst of the pandemic?” They were encouraged to answer as liberally as possible. Response to this question, however, was optional. For this study, only the narratives from students with SMD were included in the analysis.

**Data collection procedure and ethical considerations**

Recruitment relied on snowball and convenient sampling. The link to the online survey was shared publicly and through social networks on social media sites such as Facebook and Twitter. Advertisement boosting was also employed on Facebook, targeting accounts geolocated in the Philippines and within the age range of interest. Information on the research project title, objectives and eligibility criteria were included in the post. The protocol of the study adhered with the ethical principles enshrined in the Declaration of Helsinki and has been ethically approved by the University Ethics Review Committee of Wesleyan University of the Philippines (OI-2021-03-1S21–22). Informed consent was secured digitally, through the first page of the online form where information regarding the objectives, procedure and respondents rights related to the research project are indicated. They will be brought to the main survey questions once they respond “yes” to voluntary participation. All the data collected were kept private and confidential, and stored in an encrypted cloud. Codes (e.g. SMD-01, SMD-99) were assigned to respondents whose quotes were featured in the presentation of qualitative results.

**Data analysis procedure**

For the quantitative strand of the study, the variables were described using frequency and percentage. To identify potential associated factors,

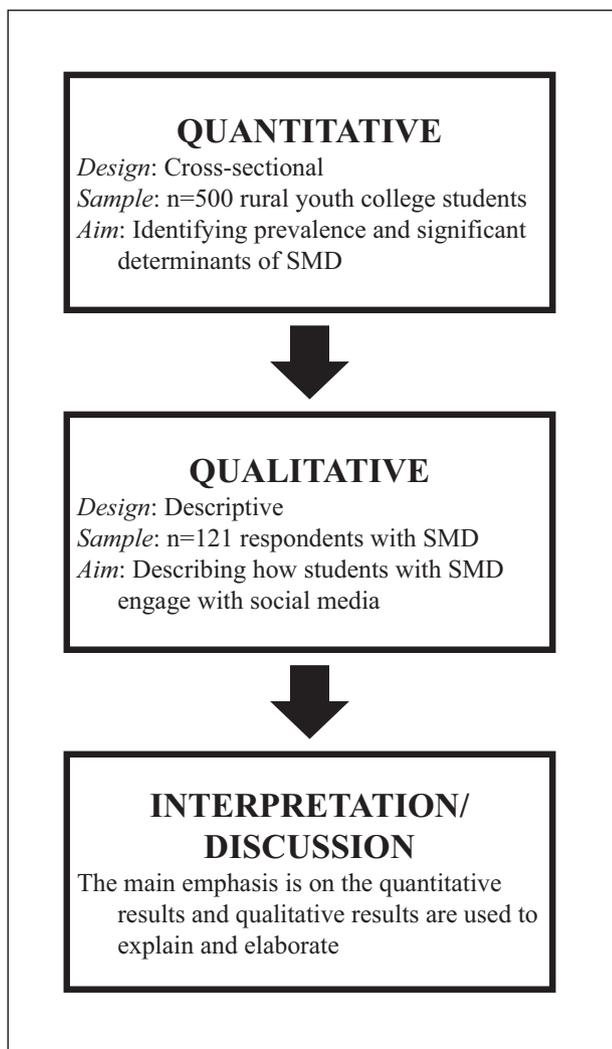


Fig. 1. Explanatory mixed methods design as applied in the current study.

bivariate logistic regressions were performed for each explanatory variable. Variables that yielded significant values were then included in a multivariate logistic regression model to determine adjusted odds ratios. The statistical tests were performed in JAMOVI version 1.6.23.0. Significance level was set at 0.05.

For the qualitative strand, the open-ended narrative responses of the respondents who were categorized as having SMD were extracted and used for analysis. Inductive qualitative content analysis was used to draw insights from the narratives, following the process of [Elo and Kyngäs \(2008\)](#). The responses were read and reread to make sense of the whole. The text were open coded and clustered, until a set of emergent categories or themes are identified from the data.

**Results**

*QUAN: determinants of social media disorder*

Majority of the young rural Luzon college students who responded to the survey were 18 to 19 years old (78.2 %), females (59.8 %), coming from poor households (40.8 %). In addition, the most of the respondents noted increased social media use during the pandemic (60.4 %) and had active social media accounts on Facebook (89 %), Twitter (56.8 %), Instagram (28.4 %) and YouTube (81.4 %). In terms of Tiktok, the distribution of users and non-users appear to be more equal (yes = 49.6 %).

*Prevalence of SMD*

Around one in every four respondents ( $n = 121$ , 24.2 %) demonstrated scores that indicate SMD. [Table 1](#) shows the distribution of the respondents based on demographic and social-media related characteristics, and prevalence of SMD per category. Higher proportion of SMD cases were seen among students who were 18–19 year old (25.6 %), female (26.1 %) and poor (27.9 %). Furthermore, relatively more SMD cases were observed among those who reported increased social media use during the pandemic (25.8 %), have active accounts on Facebook (25.2 %), Twitter (25.4 %), Instagram (25.4 %) and Tiktok (28.6 %). A larger percentage of SMD cases were seen among those who did not have a YouTube account (24.7 %).

*Bivariate logistic regression analysis results*

[Table 1](#) suggests that in terms of demographic factors, living in a household that is poor (unadjusted OR = 2.876, 95%CI = 0.380–1.73,  $p = 0.002$ ) and low income but not poor (unadjusted OR = 2.697, 95%CI = 0.311–1.67,  $p = 0.004$ ) were significantly associated to having SMD. As for social media related factors, having an active account on Tiktok was significantly associated with SMD (unadjusted OR = 1.621, 95 % CI = 0.0685–0.897,  $p = 0.022$ ).

*Multivariate logistic regression analysis results*

To address potential confounding bias and adjust the odd ratios, the significant independent variables were included in a multiple logistic regression model ([Table 2](#)). Findings suggest that in terms of income bracket, young college students who come from poor households have 2.920 greater odds (95%CI = 0.3929–1.751,  $p = 0.002$ ), while those from low income but not poor have 2.812 greater odds (95%CI = 0.3489–1.719,  $p = 0.003$ ) of having SMD compared to their middle to high income counterparts. As for Tiktok use, those were active in using the application have 1.669 greater odds of having SMD compared to those who were not (95 % = 0.0924–0.932,  $p = 0.017$ ).

*QUAL: engagement in social media among rural young college students with SMD*

From the qualitative analysis of the written narratives of the students with SMD (SWSMD [ $n = 121$ ]), five themes emerged. [Table 3](#) shows the list of themes, the frequency and percentage of occurrence of each and sample extracts from the narratives of the SWSMDs demonstrating each

**Table 1**

Bivariate logistic regression of the factors of social media disorder (SMD) ( $N = 500$ ).

Variable	Total, N	SMD, n (%)	Unadjusted OR (95 % CI)	p-value
<b>Demographic Factors</b>				
Age (Years)				
18–19	391	100 (25.6)	1 (ref) <sup>a</sup>	0.175
20–24	109	21 (19.3)	0.694 (–0.892–0.163)	
Sex assigned at birth				
Male	201	43 (21.4)	1 (ref) <sup>a</sup>	0.230
Female	299	78 (26.1)	1.297 (–0.165–0.685)	
Income bracket				
Middle to high income	101	12 (11.9)	1 (ref) <sup>a</sup>	0.004
Low Income but not poor	195	52 (26.7)	2.697 (0.311–1.67)*	
Poor	204	57 (27.9)	2.876 (0.380–1.73)*	
<b>Social Media-related Factors</b>				
Increased social media use during pandemic				
No	198	43 (21.7)	1 (ref) <sup>a</sup>	0.294
Yes	302	78 (25.8)	1.255 (–0.198–0.652)	
Facebook use				
No	55	9 (16.4)	1 (ref) <sup>a</sup>	0.154
Yes	445	112 (25.2)	1.719 (–0.204–1.288)	
Twitter use				
No	216	49 (22.7)	1 (ref) <sup>a</sup>	0.491
Yes	284	72 (25.4)	1.157 (–0.270–0.562)	
Instagram use				
No	158	34 (21.5)	1 (ref) <sup>a</sup>	0.342
Yes	342	87 (25.4)	1.244 (–0.232–0.669)	
YouTube use				
No	93	23 (24.7)	1 (ref) <sup>a</sup>	0.895
Yes	407	98 (24.1)	0.965 (–0.558–0.488)	
Tiktok use				
No	252	50 (19.8)	1 (ref) <sup>a</sup>	0.022
Yes	248	71 (28.6)	1.621 (0.0685–0.897)*	

Note: Total number of respondents with SMD = 121 (24.2 %).

\*  $p < 0.05$ .

<sup>a</sup> ref = reference value.

**Table 2**

Multivariate logistic regression of associated factors of social media disorder (SMD) ( $N = 500$ ).

Variable	Adjusted OR (95 % CI)	p-value
<b>Demographic Factors</b>		
Income bracket		
Middle to high income	1 (ref) <sup>a</sup>	0.003
Low Income but not poor	2.812 (0.3489–1.719)*	
Poor	2.920 (0.3929–1.751)*	
<b>Social Media-related Factors</b>		
Tiktok use		
No	1 (ref) <sup>a</sup>	0.017
Yes	1.669 (0.0924–0.932)*	

\*  $p < 0.05$ .

<sup>a</sup> ref = reference value.

**Table 3**  
Emergent themes of engagement in social media during the pandemic among students with SMD (N = 121).

Themes	n (%)	Sample Responses
Maintenance of social ties	29 (30.85)	<p>“...social media has helped me to be able to communicate with my friends and other relatives who are far away from me.” [SMD-50]</p> <p>“It is my mode of communication to my friends and connecting myself to social world.” [SMD-47]</p>
Escape and stress relief	26 (27.66)	<p>“Since I’m just always at home. My phone or socmed became my hobbies since I am the youngest and I have no one to talk to. I used socmed a lot, to talk, to read, and watch different content. My socmed became my way to escape whatever stresses me.” [SMD-96]</p> <p>“It helps me to release and forget my problems about my school works and some family matters.” [SMD-112]</p>
Source of information	22 (23.40)	<p>“Social Media became my platform for important news about the pandemic. It made me more aware about the things happening in my surroundings without even going outside.” [SMD-39]</p> <p>“The social media improves my perspective when it comes to social and political issues. It helps me to become more relevant, aware and [have] integrity.” [SMD-45]</p>
Support for educational needs	13 (13.83)	<p>“The role of social media to students is the means of communicating with one another for important matters concerning academic practices as it is used as the fundamental way to study (e.g. online class)...” [SMD-58]</p> <p>“I use it to teach myself the lessons that were not tackled by my teacher, and also, other teachers use it to teach their students, so even if we have this type of education, they can still teach us.” [SMD-72]</p>
Awareness of potential ill-effects to wellbeing	24 (25.53)	<p>“I’ve been very wary when it comes to social media usage and it is really affecting how I deal with what I must prioritize. I already don’t know how to stop and be productive, that’s why I hope I could find some help dealing with this...” [SMD-61]</p> <p>“The roles of social [media] in my life is it makes my life messy, that is how I feel. Every time I open my mobile phone I saw a lot of things that makes my positiveness in life get ruined.” [SMD-54]</p>
(no answers)	7 (5.7 %)	N/A

theme.

**Theme 1. Maintenance of social ties**

Majority of SWSMDs report that they use social media to maintain social ties. Since the beginning of the pandemic, the SWSMDs lament that they have restrictions in having in-person interactions with their significant others. They mention that social media provides them a platform where they can socially interact with their family, relatives and peers, as participant SMD-06 verbalized, “...It is important also to communicate with other people since face-to-face interaction is limited...” Social media helps them meet their social wellbeing needs and establish human connections. Related to this, participant SMD-57 wrote, “...it is fulfilling to feel the sense of belonging through the use of social media.”

**Theme 2. Escape and stress relief**

SWSMDs share that they often use social media to forget about their problems. Social media can be a source of diversion for them, as participant SMD-29 wrote, “...[it serves as] my escape whenever I am devastated.” This is corroborated by participant SMD-87 who

mentioned, “Social Media for me is entertainment. I can scroll and forget about my problems even for a while.” Moreover, using social media can also be a coping strategy for them. Participant SMD-81 claimed, “It also relieved my stress and helped me cope up with the current issues around the world.” For SWSMDs, social media is a salient tool for stress management during the pandemic.

**Theme 3. Source of information**

SWSMDs report that social media helps them by being a rich and diverse source of information. Participant SMD-17 claimed that the role of social media is, “to inform us about the different situations that is happening right now... to communicate and share different responses.” For them, social media keeps them abreast with the situations happening outside the confines of their homes. Particularly, social media provides them with updates regarding the status of the pandemic. Related to this, participant SMD-103 mentioned, “...social media has a lot of benefits ... especially today wherein we are experiencing a pandemic, we can get a lot of information about what happening in our surroundings and also be aware in the news about COVID-19...”

**Theme 4. Support for educational needs**

Since the target population of this present research are students, SWSMDs mention the salience of social media to enhance their engagement in school. Participant SMD-65 regarded social media as, “something that would help me as a student to explore new things and to build up my knowledge on a range of topics.” In the era of online learning, student participation has become a challenge, but SMSWDs are able to cope with these unprecedented changes with the affordances provided by social media. Participant SMD-106 shared, “I can discuss topics in our courses with my classmates, and it makes me feel better to realize that online learning may be interesting if you have people with whom to share your struggles.” Also, social media can be a platform where students can interact with faculty, as participant SMD-02 wrote, “it helps in communicating with my teachers.”

**Theme 5. Awareness of potential ill-effects to wellbeing**

Despite the benefits that SWSMDs receive from using social media, some of them also recognize that it can have negative effects. Like other SWSMDs, participant SMD-16 noted the double edged nature of social media use, writing, “Social media keeps us in connected to the world in a disconnected way. And I think it both has advantages and disadvantages on our social, physical and mental health.” One common disadvantage they cite regarding the informational availability in social media, is the possible exposure to misinformation. Participant SMD-109 advised, “Social media is very important nowadays because of the information we can collect but be mindful that sometimes there are fake or unreliable information...” Some SWSMDs are aware of the detriments of social media misuse to mental health. Participant SMD-121 admitted that while social media relieves their stress and helps in studies, “it’s also become an addiction like it’s a necessity, or something you can’t live without it or do something without browsing first.”

**Discussion**

The goal of this study is to determine the significant determinants of SMD among Filipino rural youth and explore the social media engagement of SWSMDs. Based on my knowledge, this is the first study in the Philippines that examined the condition of SMD using mixed methodology. This discussion section presents the integration of the results from the quantitative and qualitative strands. Quantitative findings indicate that around a quarter of the rural youth respondents of the study exhibit SMD, which is higher than the 5 % prevalence noted by a multi-country metanalytic evidence consisting of pre-pandemic studies utilizing a similar monothetic measure (Cheng et al., 2021). Likewise, the prevalence noted in the current study (24.2 %) is higher than the estimates of a previous study among students in a Philippine university (4.2 %;

Marcial, 2013). This higher prevalence signifies that despite its benefits during this time of crisis, social media can form addictive behaviors during the COVID-19 pandemic, instead of being merely a coping mechanism (Singh et al., 2020). In terms of the results of the qualitative strand, the emergent themes of uses and gratification of social media are similar those described in pre-pandemic U&G research on social media use (Whiting & Williams, 2013). Moreover, these uses and gratifications have been linked to the disordered use of at least one type of social media application (Kircaburun et al., 2020).

Contrary to previous evidence that note the association of high socioeconomic status with Internet and social media addiction (Hruska & Maresova, 2020; Shensa et al., 2017; Tas & Öztosun, 2018), quantitative findings of the present study suggest that young college students from rural Luzon from less than middle income households demonstrate greater odds of developing SMD. Qualitative insights provide possible explanations for this uncanny finding. Recent evidence has noted that students coming from poor households are more likely to exhibit higher anxiety related to COVID-19 (Cleofas & Rocha, 2021); hence, these poorer students may turn to social media to seek for social support [theme 1] and escape from their worries to relieve themselves of stress [theme 2]. Since rural poor individuals have difficulty accessing reliable and affordable Internet (Araneta et al., 2021), they might rely on free-mobile-data-enabled social media applications to seek their informational needs [theme 3]. However, since the free social media content only show headlines and restrict the access to full websites, the sensationalist and fearmongering nature of some COVID-19-related posts, and the reliance to comment threads for further information that may induce participation in unregulated online echo chambers, may lead to disordered engagement in social media (Palatino, 2017). Furthermore, due to limited Internet connectivity, students may use more of the free affordances of social media sites (e.g. messaging functions) to engage in class [theme 4], instead of the formal online learning management systems that would require higher bandwidths (Cho et al., 2021). Furthermore, evidence has noted lower levels of daily health promotive activities among students from lower socioeconomic status, due to their lack of alternatives while in confinement during community quarantine, while their economically privileged counterparts had more resources to meet their psychological and health promotive needs (Cleofas, 2021). These disparities may explain the increased use and dependence on social media which is a relatively cheaper for poorer respondents.

Furthermore, quantitative results of the present study reveal that students who use Tiktok have greater odds of developing SMD, replicating the findings of previous research (Marengo et al., 2022). Moreover, the study of Kircaburun et al. (2020) suggested that problematic use of short video-based social media sites similar to Tiktok (i.e. Snapchat, Instagram Stories) is predicted by selected U&G dimensions similar to those emerging from the analysis of the present research. Qualitative findings can help explain why Tiktok can be addictive for young students. First, Tiktok helps fulfill social needs [theme 1], as seen in previous evidence linking interactivity, navigability and sociability features of the application with greater use (Meng & Leung, 2021). Also, social interaction anxiety and social isolation had been noted to positively predict attachment to short-form video applications like Tiktok (Zhang et al., 2019). Second, Tiktok can be a form of escape and stress relief [theme 2], because of the diverse entertainment content that can be found in the said application (Meng & Leung, 2021; Yang et al., 2021; Zhang et al., 2019). Third, Tiktok can be a source of various types of information [theme 3], such as those that are related to COVID-19 (Li, Guan, et al., 2021) and general news (Vázquez-Herrero et al., 2020). Lastly, Tiktok can be a tool to aid in education [theme 4], as seen in the study of Azman et al. (2021) which indicated increased acceptance of the said application for educational development among youth. The multifaceted and engaging nature of Tiktok, which can be gleaned from the thematic findings and previous research, may contribute to the social media application's addictiveness.

Among the five thematic findings in the qualitative findings, the fifth

theme deviated from the rest, which mainly expressed the benefits of social media. Consistent with previous qualitative evidence among youth (Yang et al., 2021), the SWSMDs in the current study recognize the potential ill effects of social media for their wellbeing. Yang et al. (2021) noted that young users are aware of the modalities and functions possessed by these social media platforms that can make them hooked on the applications. Young social media users can also determine if they or their peers exhibit behaviors of addiction to the application (Yang et al., 2021). Another negative impact of social media that had been identified by the SMSWDs in the present research is the exposure to harmful misinformation. During the time of COVID-19, social media applications, such as Tiktok, served as platforms for different forms of misinformation and disinformation regarding the virus, the pandemic and government responses (Li, Guan, et al., 2021), which can facilitate disordered use (Yang et al., 2021).

#### *Strengths and limitations of the study*

The main strength of the present study is its mixed methodology, which help identify determinants of SMD, while also unearthing deeper insights of the experiences of SWSMDs through a qualitative approach to facilitate a more nuanced explanation on the prevalence and predictors that were yielded from the quantitative phase. However, I also acknowledge some limitations that can help temper the interpretation of the findings. First, this study is cross-sectional, and the causality among the relationships established cannot be ascertained. Second, the sample of the study is conveniently selected online, and is not representative of all regions of rural Luzon, hence the generalizability of results are also limited. Third, the study could have benefitted from including other socio-psychological and digital explanatory variables to be able to make analysis more robust. Fourth, it must be noted that the qualitative data analyzed in the study were gathered via open ended survey questions. Unlike interviews or focus group discussions, this method is restricted from probing the narratives further; thus, I acknowledge a possible limitation in achieving full trustworthiness. Future researchers are enjoined to replicate the study on a larger representative sample, include other major islands of the Philippines other than Luzon (i.e. Visayas and Mindanao) and test for other possible relevant determinants.

#### **Conclusion**

The present study provides the first empirical evidence on the prevalence of social media disorder during the time of pandemic-induced community quarantine in rural settings in the Philippines, indicating that one out of four young college students from rural Luzon may have SMD. Living below middle income and Tiktok use can increase the odds of developing SMD. Moreover, findings highlight that while students with SMD report that they receive social, psychological and educational benefits from using social media during the time of COVID-19, they are aware of its potential harmful effects on mental health and overall wellbeing.

#### **Recommendations**

##### *Empowering rural communities to identify and address SMD*

Results of the present study signify that SMD exists in rural communities. With mental health facilities and human resources limited in rural locations in the Philippines (Lally et al., 2019; Philippine Council for Mental Health, 2019), local community efforts in these underserved areas can help address challenges associated with SMD among the youth. Community health nurses, other community-based helping professions (usually referred to as Barangay Health Workers or BHWs in the Philippines), and other mental health advocates can implement psychoeducational campaigns to capacitate parents and other heads of

households to identify signs of SMD among their younger members. They can also be informed about ways to meet the psychosocial and informational needs of the students that have been identified in the uses and gratification themes in this present study. Previous research on Internet addiction intervention promotes the establishment of daily routines with diverse activities to decrease dependence on the Internet (Chun, 2018) and the involvement of family members in interventions (Kim & Noh, 2019). Parents and household heads can be advised to set specific times during the day for personal social interactions, and engagement in low-cost alternatives for entertainment and stress management activities, so the tendencies to seek these needs on social media can be lessened. BHWs and advocates can also survey the informational needs of the community regarding health and other related topics and prepare Information Education and Communication (IEC) materials that can be distributed to homes (i.e. brochures) while maintaining social distancing and practicing COVID-19 protocols. This ensures that they rely less on social media for vital health information, and also decreases exposure to misinformation that can contribute to disordered use. BHWs can inform school administrators and health care practitioners regarding the SMD and other mental health situation of students who are studying online from home, and coordinate in crafting initiatives to routinize educational requirements and provide rest periods, so that students can lessen their time on social media and the Internet in general.

#### Addressing challenges of students from poor rural households

Evidence has demonstrated the effectiveness of improving wellbeing and general life conditions to alleviate Internet-related addictions (Longstreet & Brooks, 2017). The current study highlights poorer economic status as a potential risk factor for SMD in young rural college students because of the lack of resources they have to cope with pandemic-induced challenges. BHWs and mental health advocates can propose and plan reopening of large open spaces in rural communities, where poorer students can socialize with one another and perform physical activities while practicing social distancing during periods of lower infection rates and less restrictive quarantine levels. BHWs and local officials can initiate entertaining offline activities (e.g. socially distanced Zumba classes, community gardening) that can serve as alternatives for the youth to escape from their current stresses. The development efforts to reduce the socioeconomic impacts of the pandemic in rural areas of the Philippines, such as social amelioration programs and community pantries (Gozum et al., 2021), must be sustained as needed. When the families of poorer students have lesser worries in accessing their basic needs, the less stressful they can become; hence, decreasing their use and dependence on social media for gratification.

#### Using Tiktok as a tool for participatory mental health advocacy

Evidence has demonstrated the ability of Tiktok to invoke participatory culture among its members during the pandemic (Feng, 2020), promote public health messages (Basch et al., 2020) and educate about positive mental health (Situmorang, 2021). The present study notes Tiktok use as a determinant of SMD, hence it is recommended that BHWs and advocates increase their online presence on the platform psychoeducation regarding social media disorder and other mental illnesses, so that at-risk students who are already using the platform may learn if they are experiencing SMD and decide whether they would need to seek professional help. Contact details of mental health helplines can be disseminated on Tiktok as well. There are prominent and credible Tiktok influencers in the Philippines who engage in mental health communication that can be tapped (e.g. @mentalhealthph, @yourmillennialpsych). In addition, present study findings suggest that SMSWDs are aware of the potentially negative effects of social media misuse. Advocates can initiate Tiktok-based conversations and challenges that allow young netizens to send ideas and questions regarding SMD or other

mental health problems to Tiktok mental health advocates, who in turn can use the same platform to respond to netizens' queries, fostering a participatory and dialogic form of psychoeducation.

However, interactions on Tiktok must be approached with caution, as the platform can also be a source of health misinformation (Li, Guan, et al., 2021). BHWs, advocates and public health officials can critically foster participation from netizens, by asking the latter to screenshot and send questionable Tiktok posts for fact-checking. The debunking of mental health misinformation can be done as a main post, or as a response to the original post. Dialogic posts with higher emotional type of content and lower video length were found to foster more Tiktok engagement (Chen et al., 2021). Lastly, messages and challenges that promote going offline, and offering alternative coping and self-care practices outside social media can also be disseminated on Tiktok and in other applications.

#### Ethics approval

Wesleyan University-Philippines University Ethics Review Committee (OI-2021-03-1S21–22).

#### Declaration of competing interest

There are no conflicts of interest to disclose. No funding was received for this study.

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**Jerome Visperas Cleofas, PhD, RN**, is a registered nurse with a PhD in Sociology. He is an Associate Professor at the Department of Sociology and Behavioral Sciences, De La Salle University, Manila, Philippines. He is currently a board member of the Philippine Sociological Society and member of the Capacity Building Committee of the Metro Manila Health Research and Development Consortium. His research interests include health social sciences, preventive mental health, family and youth studies, health and social media studies, and SOGIE.