

Original Research

Social Media Use and its impact on mental health among adolescents: A cross sectional study of Kathmandu

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Abstract

Background: Numerous studies have highlighted the link between excessive social media use and negative mental health outcomes.

Purpose: to identify the impact of use of social media among adolescents' studying in secondary schools of Kathmandu.

Methods: Cross sectional study design was used to identify the impact of use of social media among adolescents' studying in three secondary schools of Kathmandu. Students of aged 13 to 17 studying in class 8, 9 and 10 who consented to participated and available during time of data collection were selected purposively with the sample size of 327. Self-administered questionnaire developed on extensive literature reviewed consisting of socio-demographic information and social media use information in part one, impact of social media usage on mental health outcome in part two and also part three consisted of standard tool of Generalized Anxiety Disorder-7 (GAD-7). Ethical clearance was obtained from Institutional Review Committee (IRC), YHSA (2079-080-281). Frequency, percentage, mean and standard deviation were calculated for descriptive statistics as well as the Chi-square test was used for inferential statistical analysis of data using SPSS version 26.0.

Findings: Among 327 respondents participated, more than half were between 13-15 years with almost same percentage of male and female. Participants (43.4%) favour Facebook and 49.5% begin using social media at ages 9-12 years. More than half of the respondents (52.3%) use social media for 1-3 hours, while 34.6% use it for more than 4-6 hours. This study resulted half of the respondents (50.8%) had minimal anxiety, while 30.6% were experiencing mild anxiety. There has a significant relationship between the duration of social media use and sleep alteration, disruption of morning activities, change in behaviour, distraction in work or study, portrayal in certain image and anxiety among secondary level students in Kathmandu at p-value <0.05.

Research Limitation/Practical Implication: These findings underscore the urgent need for targeted interventions aimed at mitigating the negative impacts of excessive social media usage on adolescent mental health.

Originality/Value: This study explore the association between social media use and its impact in mental health aspects which includes alteration in sleeping patterns, disruption in regular morning activities, distraction in work or study, change in



behavior, media portray of image, experience of cyber bullying and anxiety in Nepali secondary level students.

Keywords: Social Media Use, Impact, Mental Health

Background

Around 5.04 billion people spend time in social use worldwide with 75 million being teenagers [1]. In context of Nepal, 43.5% of total population that is 13.40 million people use social media as per data on January 2024[2]. Among them, the younger people between 16-24 aged are active social media users. As Meta and other social media only allows age above 15 for using social media, exact data of adolescents using social media could not be identified[2].

Typical active social media user spends more than 2 hours per day [1,2], which is excessive than the recommended daily screen time for adolescents as per Center for disease control and prevention guidelines [3]. Since 2022, there has been an increase in the excessive usage of social media among adolescents in Europe, Central Asia, and Canada [4]. A survey from USA on 2023 revealed that 37 % of teens spend 5 hours per day on using social media like youtube, TikTok and instagram [5,6], whereas in Nepal 43.6% of teens spent 4–8 hours per day on social media using youtube, facebook, instgram and TikTok [7].

Numerous studies have highlighted the link between excessive social media use and negative mental health outcomes [3, 6, 7, 8, 9]. A survey conducted in USA 2023 has showed that 41% of active social media

users teens feel that their **overall mental health** as being **poor or very poor** [10].

Studies in China, India and Nepal have linked detrimental effects like anxiety, despair, low mental health indicators [7, 9, 11, 12].

Problematic social media use has decreased available time for study, work and sleep. Teenagers in Nepal who use social media excessively have been linked to addictive behaviours and difficulties in their academic careers [13, 14] which raise serious concerns about how it may affect teens' general wellbeing and ability to strike a healthy balance between online and offline activities [15].

Likewise, Pre sleep using of social media might disrupted sleep pattern as they might feel something might be missing leading in frequent waking to check updates [16]. Notably, 36% of teenagers say they wake up at least once throughout the night to check their gadgets, and 40% say they use a mobile device within five minutes of going to bed [17]. Sleep quality and quantity could also be affected by levels of anxiety and worry resulting from experiences of online harassment [16, 17].

Indulgence on excessive online activities has been subjected to experience of threats, derogatory remarks, and harassment. Cyber bullying has been associated with low mental health outcomes [19, 20, 21].



Highlighting one positive side of life in social media has led to upward comparison and many find difficult to cope with idealized images of social media which has led to feeling of inadequacy and feeling of unfavourable opinions of their bodies [22]. Studies have shown that higher levels of online social comparison are associated with depressive symptoms in youth [21,22], and that appearance-specific comparisons on social media may heighten risk for comparison induced stress[23]and body image concerns [24]. School level Communication channel and education activities have been heavily influenced by social media use since COVID-19 in Nepal [25]. The increase integration of social media in education and in life of Nepali adolescents is alarming mental health concerns. Furthermore, researches conducted in Nepal revealed around half of secondary school students had severe anxiety [7]. Despite the lack of prior research in Nepal among adolescents, the impact of excessive usage of social media on mental health of adolescent should be understood. This study aimed to identify the impact of social media usage on mental health among adolescents.

Methodology

A cross sectional study was conducted to identify the impact of use of social media among adolescents' studying in secondary schools of Kathmandu. Three secondary schools were purposively selected and then all the students with aged 13 to 17

studying in class 8, 9 and 10 who consented to participated and available during time of data collection were included in the study. Sample size was calculated using formula $n = z^2pq/d^2$ using 95% Confidence level, 5% margin of error with prevalence of anxiety as 46.5% [7]. With 5% non-response rate, the final sample size was 393. [7] The data was collected among 327 secondary school students, 40 were not available during data collection as this was almost festival time of Nepal, remaining 20 didn't complete the tool completely, so the response rate was 83.20%.

Data were collected by using self-administered questionnaire developed based on extensive literature reviewed. The tool was divided on three parts. Part one consists of Socio-demographic information and social media use information. Part two measures Impact of social media usage on mental health outcome which includes alterations sleep patterns, distraction in study habits, and change in behavior, social comparison and experience of cyber-bullying. It consists of 4 point likert scale with following options 1-4 with never to nearly everyday. Pretesting of tool was done among 10% of School i.e among 40 participants, Ganesh Secondary School, Kathmandu.

Part three measures Anxiety by Generalized Anxiety Disorder-7 (GAD-7) scale which is reliable and valid in case of Nepal [26], 4-point Likert scale with the following options: 0-3 not at all to nearly every day.

Ethical clearance was obtained from



Institutional Review Committee (IRC), YHSA (2079-080-281). Administrative department of selected schools were contacted for the permission of data collection. After getting permission from principal of each school, class coordinator of each class were contacted. Informed verbal and written parental consent and adolescent assent was taken from the Participants after explaining the purpose, objectives and rational of the study.

Each participant had akenabout 20-25 minutes for answering questions.

Researcher has respected the data and information provided by the participants and treated every participant equally

without any discrimination, ethnicity, age and religion. Participants' right to refuse at any time during data collection were assured and accepted. The confidentiality was maintained by keeping information in

Only researcher could assess them and would not be disclosed to other than research purpose. Anonymity was ensured by writing code number instead of names in the questionnaire.

Frequency, percentage, mean and standard deviation were calculated for descriptive statistics as well as the Chi-square test was used for inferential statistical analysis of data using SPSS version 26.0.

Results

Table 1: Distribution of respondents according to socio-demographic characteristics

Variables	Frequency	Percentage (%)
n= 327		
Age Group		
13-15	172	52.6
15-17	155	47.4
Gender		
Male	165	50.5
Female	162	49.5
Ethnicity		
Brahmin/Chhetri	122	37.3
Janajati	90	27.5
Newar	54	16.5
Dalit	33	10.1
Others*	28	8.6
Religion		
Hinduism	225	68.8
Buddhism	57	17.4
Christian	23	7.0
Islam	22	6.7
Educational level		
Class eight	91	27.8
Class nine	110	33.6



Class ten	126	38.5
Father's education level		
Illiterate	25	7.6
Primary level (1-8class)	45	13.8
Secondary level (9-12class)	131	40.1
University Level and above	126	38.5
Occupation of Father		
Business	113	34.6
Private job	102	31.2
Government job	53	16.2
Labour	40	12.2
Agriculture	19	5.8

*others includes muslim, madhesi

Table 1 represents among 327 participants, more than half were between 13-15 years with almost same percentage of male and female. Most of the participants (68.6%) followed Hindu religion and being more than one third (37.3%) as Brahmin/Chhetri

And from class ten (38.5%). On asking The fathers' education level, the highest percentages (44.3%) were secondary level graduates. The most common occupation of participants' fathers was business (34.6%).

Table 2: Social media related variables

Variables	Frequency	Percentage
n=327		
Most used social media Platforms		
Facebook	141	43.4
Instagram	73	22.3
YouTube	34	10.4
Snapchat	4	1.2
Tik Tok	8	2.4
Two social media per day	33	10.1
Three	25	7.6
More than three	9	2.8
Starting age of social media		
Less than 5 years	5	1.5
5-8 years	38	11.6
9-12 years	162	49.5
12-17 years	122	37.3
Social media usage Duration		
Less than an hour per day	26	8
1-3 hrs	171	52.3
4-6hours	113	34.6
More than 6 hours per day	17	5.2



Table 2 represents the information of social media use (SMU). The data provided relates to three aspects of social media usage: platform popularity, starting age of social media use, and usage duration. The data shows that 43.4% of participants favour Facebook as a social media use. Furthermore, near to half of participants

(49.5%) begin using social media between the ages of 9 and 12 years. Additionally, the above data shows the duration of use of social media where more than half of the participants (52.3%) use social media for 1-3 hours, while 34.6% use it for more than 4-6 hours.

Table 3: Influence of social media usage on mental health

n= 327

Statement	Never	Rarely	Sometimes	Often
	f(%)	f(%)	f(%)	f(%)
Do you feel that excessive social media use has negatively affected your sleep patterns?	96(29.4%)	80(24.5%)	107(32.7%)	44(13.5%)
Do you check your social media account before you sleep?	56(17.1%)	77(23.5%)	190(58.1%)	4(1.2)
Do you feel like using your social media account in between your work or study?	101(30.9%)	75(22.9%)	124(37.9%)	27(8.3%)
Do you think your behavior toward others has changed after using social media?	208(63.60%)	34(10.4%)	72(22%)	13(3.97%)
Do you check your social media account just after waking up?	142(43.4%)	82(25.1%)	85(26%)	18(5.5%)
Do you feel pressure to portray a certain image or lifestyle on social media?	250(76.5%)	9(2.8%)	65(19.9%)	3(0.9%)
Have you ever been a victim of cyber-bullying (harassments) on social media?	275(84.1%)	5(1.5%)	47(14.4%)	0

Table 3 shows various aspects of social media's impact on users' lives, particularly regarding sleep patterns, behavior, checking social media just after waking up, social media pressure and experience of cyber bullying. Most of the participants feel that excessive social media use has

negatively affected their sleep patterns, whereas one third of the respondents (32.7%) think it has sometimes alternate the sleeping pattern. Regarding pre-sleep social media check-up, More than half (58.1%) check their social media accounts before bedtime.



Most of the participants (37.9%) sometimes feel the urge to use social media during work or study. Majority of them don't agree that social media usage has not pressurized them to portray a certain image or lifestyle

on social media(76.5%), nor being victim of cyber bullying (84.1%) and also they (43.4%) don't check their social media accounts immediately after waking up.

Table 4: Anxiety Level of respondents: Anxiety Level of respondents

n=327

Categories of Anxiety	Frequency	Percentage
Minimal Anxiety (0-4)	166	50.8
Mild Anxiety (5-9)	100	30.6
Moderate Anxiety (10-14)	51	15.6
Severe Anxiety(15-21)	10	3.1

Table 4 indicates the anxiety levels among the participants. Out of 327 participants, half of the them (50.8%) had minimal

anxiety, while 30.6% were experiencing mild anxiety.

Table 5: Association between duration of social media with various impact of social media usage

n=327

Variables	Duration of social media		χ ² test	p-value
	Less than 3 hours	More than 3 hours		
Alteration of Sleeping pattern				
Yes	69(71.9%)	27(28.1%)	7.67	0.006
No	128(55.4%)	103(44.6%)		
Disruption regular Morning Activities				
Yes	97(68.3%)	45(31.7%)	6.81	0.009
No	100(54.1%)	85(45.9%)		

Distraction in work or study due to feeling the urge to use social media during productive hours causing distraction in work and study Yes No	72(71.3%) 125(55.3%)	29(28.7%) 101(44.7%)	7.44	0.006
Change in Behaviour Yes No	148(71.2%) 49(41.2%)	60(29.8%) 70(58.8%)	28.40	0.000
Media portray of Image Yes No	158(63.2%) 39(50.6%)	92(36.8%) 38(49.4%)	3.87	0.04
Experience of Cyber bullying Yes No	168(61.1%) 29(55.8%)	107(38.9%) 23(44.2%)	0.517	0.47
Anxiety Yes No	177(66.5%) 20(32.8%)	89(33.5%) 41(67.2%)	23.60	0.000

The table 6 indicates a significant association between the duration of social media use (SMU) and sleep alteration, disruption of morning activities, change in

behaviour, distraction in work or study, portrayal in certain image and anxiety among secondary level students in Kathmandu at p-value <0.05.

Discussion

The aim of this study is to identify the impact of social media use on the mental health status of the adolescents' students. In this study, more than half of the participants (52.3%) used social media for more than 1 hour and less than 3 hours whereas more than one third of the them (39.8%) had used social media excessive that is more than 3 hours. This finding

Was less than with the study done in Nepal among adolescents which stated that around half of the adolescents used social media for more than 4 hours per day [7]. In context of Nepal, though school communication and assignments are circulated through social media, but the online education activities has not been started so using more than 3 hours per day



for education purposes is more than recommended social media usage.

Near to one third of the participants (32.7%) think that their sleep pattern has been alternate by the use of social media, which may be influence by the checking the updates on social media before sleep (58.1%). Such finding was consistent with research by Woods and Scott, [18] and cohort study conducted among UK adolescents [19]. Also, prolonged engagement on social media and getting trap in scrolling might take away from time allocated for studying or doing any work [28] whereas in case of present study more than one third of respondents (37.9%) feel that their study or work has been disturbed by the use of social media in this study.

disrupts their daily morning routine was revealed in this study. Presenting one's image in positive outlook has been act of the most of the social media users; it is most common on users of facebook and instagram. In present study, 43.4% of the respondents used facebook and 22.3% use instagram, which is contrast with the findings of research by Pew Research Center which stated that youtube as the most common social media platform used among 13-17 years old adolescents [10]. Also, presenting oneself in positive outlook has not been observed in present study, most (76.5%) of them don't think they need to address in certain image to look good on social media whereas, 19.9% sometimes think they need to do so. Online harassment, cybervictimization, cyberbullying has been observed in those

who stay online more than 3 hours per day [30].

Only 14.4% stated that sometimes they had been victim of cyberbullying whereas the majority (84.1%) of them stated that they never involved in cyberbuying or cybervictimization or online harassment. The rational might be the duration of social media usage among adolescent($p>0.05$).

Being expose to the news of online has impacted the emotional response and the change in behaviour [31] which is contrast to the present study, majority (63.60%) feel that they have-not observed change in behaviour due to social media influence. Rational behind might be the duration of social media use($p<0.05$).

This study observed that 49.3% has mild-severe form of anxiety; whereas one third of them had mild form of anxiety. The significant associations between social media and experience of anxiety are highlighted in studies of Dutch, Japan, Iran and Nepal. A longitudinal study among adolescents of Dutch identified that the increase in social media usage has been linked with higher levels of anxiety ($M1a: \beta_{T1,T2} = 0.176, p = 0.006$ and $\beta_{T2,T3} = 0.086, p = 0.046$) [19]. Similar results were revealed in the study of Japan which shows correlations between problematic social networking site use and anxiety symptoms [20]. Consistent with the study, Nepalese secondary students (38.65%) had minimal anxiety and 11.6% had severe anxiety [32]. The study found that people who used social media sites for longer than 3 hours reported higher levels of anxiety [18].



In 2021, a cross-sectional study was conducted in Iran revealed that increase GAD7 score were linked with the past social media usage among 781 secondary school students [33].

Contrast to the above, findings underscored the significant association between frequent social media exposure and heightened risk of anxiety among Chinese

Chinese teens [34].

Similarly, inconsistent findings were observed in study of Nepal and Canada, which shows 35.4% had severe anxiety and 43.7% had moderate to severe form of psychological distress [7,35]. The rationale might be the duration and use of social media which is less in this study ($p < 0.05$).

Conclusion

The study concluded that there is an association between social media use (more than 3 hours per day) with mental health aspects as disturbance in sleep pattern, change in behavior, disruption in regular morning activities, distraction in work and study, media portrayal of image and anxiety levels among secondary level students in Kathmandu. High usage patterns, such as staying up late, checking social media before bed and immediately after waking up, and feeling the urge to use social media during productive hours, are linked mental health issues. Although the majority of students reported minimal anxiety, a notable portion experienced mild to

moderate anxiety, underscoring the mental health implications of social media use. Interventions aimed at promoting healthier social media habits could be beneficial in mitigating mental health issues among these students. Interventions should focus on raising awareness about the psychological impacts of excessive social media use and promoting healthier digital habits. By fostering a balanced approach to social media consumption and incorporating digital wellness strategies, educators and parents can help alleviate the negative effects on students' mental health, thereby promoting overall well-being and academic success.

Recommendation

Based on the findings of the study respondents experienced minimal to moderate anxiety, so it is recommended that policymakers, educators, and researchers integrate comprehensive life skills and mental health education into school curricula.

- Conducting routine awareness campaigns on responsible social media use and ensuring accessible counseling services are essential steps.
- Engaging parents through workshops to foster a supportive home environment and facilitating referrals for students diagnosed with anxiety are also crucial.



- Additionally, utilizing features like the Digital Wellbeing Dashboard on smartphones to monitor screen time, set

app limits, and promote mindful usage can help reduce anxiety levels associated with excessive digital engagement.

Limitations

- It can include potential self-reporting bias and the cross-sectional designs inability to establish causality definitively.
- The study includes respondents from only three secondary level schools which might not be a representative sample. Therefore, the findings may not be applicable to all, for those from different geographic regions or socio-economic Backgrounds.

- Most respondents were young population, so the study findings may not accurately reflect experiences and outcomes in other age groups, potentially introducing bias.

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There is no any conflict of interest.

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ალიშა რიჯალი¹, პრამილა ტაპა¹, აპეკშია საპკოტა¹, სიტა რიჯალი²

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აბსტრაქტი

საფუძველი: მრავალრიცხოვანმა კვლევამ ხაზი გაუსვა სოციალური მედიის გადაჭარბებულ გამოყენებასა და ფსიქიკური ჯანმრთელობის უარყოფით შედეგებს შორის კავშირს.

მიზანი: სოციალური მედიის გამოყენების გავლენის იდენტიფიცირება მოზარდებში, რომლებიც სწავლობენ კატმანდუს საშუალო სკოლებში.

მეთოდები: ჯვარედინი კვლევის დიზაინი გამოყენებული იყო სოციალური მედიის გამოყენების გავლენის დასადგენად მოზარდებში, რომლებიც სწავლობდნენ



კატმანდუს 3 საშუალო სკოლაში. 13-დან 17 წლამდე ასაკის მოსწავლეებიდან, რომლებიც სწავლობდნენ მე-8, მე-9 და მე-10 კლასებში, თანხმდებოდნენ მონაწილეობაზე და ხელმისაწვდომნი იყვნენ მონაცემთა შეგროვების დროს, მიზანმიმართულად შერჩეულ იქნა 327 მონაწილე. თვითადმინისტრირებადი შემუშავებული კითხვარი შედგებოდა სამი ნაწილისაგან ვრცელი სოციალურ-დემოგრაფიული ინფორმაციით. პირველ ნაწილში მოცემული იყო სოციალური მედიის გამოყენების ინფორმაცია; მეორე ნაწილში - სოციალური მედიის გამოყენების გავლენა ფსიქიკური ჯანმრთელობის შედეგზე და მესამე ნაწილი შედგებოდა გენერალიზებული შფოთვითი აშლილობის-7 (GAD-7) სტანდარტული ინსტრუმენტისგან. ეთიკური მოწმობა მიღებულ იქნა ინსტიტუციური განხილვის კომიტეტისგან (IRC), YHSA (2079-080-281). სიხშირე, პროცენტი, საშუალო და სტანდარტული გადახრა გამოითვალა აღწერილობითი სტატისტიკისთვის, ასევე, გამოიყენებოდა Chi-square ტესტი მონაცემების დასკვნის სტატისტიკური ანალიზისთვის SPSS ვერსიის 26.0 გამოყენებით.

დასკვნები

327 რესპონდენტს შორის, ნახევარზე მეტი იყო 13-15 წლის, მამაკაცებისა და ქალების თითქმის თანაბარი პროცენტით. მონაწილეების დიდი ნაწილი (43.4%) ემხრობა Facebook-ს, ხოლო 49.5%-მა დაიწყო სოციალური მედიის გამოყენებას 9-12 წლის ასაკიდან. გამოკითხულთა ნახევარზე მეტი (52,3%) სოციალურ მედიას იყენებს 1-3 საათის განმავლობაში, ხოლო 34,6% 4-6 საათზე მეტხანს. ამ კვლევის შედეგად გამოკითხულთა ნახევარს (50.8%) ჰქონდა მინიმალური შფოთვა, ხოლო 30.6% განიცდიდა მსუბუქ შფოთვას. არსებობს მნიშვნელოვანი კავშირი სოციალური მედიის გამოყენების ხანგრძლივობასა და ძილის ცვლილებას, ძილის აქტივობების შეფერხებას, ქცევის ცვლილებას, სამსახურში ან სწავლაში ყურადღების გაფანტვას, შფოთვასთან გარკვეულ კავშირს p -მნიშვნელობით $<0,05$ კატმანდუს სწავლების საშუალო საფეხურის მოსწავლეებში.

კვლევის შეზღუდვა/პრაქტიკული გავლენა: ეს დასკვნები ხაზს უსვამს მიზნობრივი ინტერვენციების გადაუდებელ აუცილებლობას, რომელიც მიზნად ისახავს სოციალური მედიის გადაჭარბებული გამოყენების ნეგატიური ზემოქმედების შერბილებას მოზარდების ფსიქიკურ ჯანმრთელობაზე.

ორიგინალობა/ღირებულება: ეს კვლევა იკვლევს კავშირს სოციალური მედიის გამოყენებასა და მის გავლენას შორის ფსიქიკური ჯანმრთელობის ასპექტებზე, რომელიც მოიცავს ძილის რეჟიმის შეცვლას, ძილის რეგულარული აქტივობების დარღვევას, სამსახურში ან სწავლაში ყურადღების გაფანტვას, ქცევის ცვლილებას, მედიის გამოსახულებით ასახვას, კიბერ ბულინგისა და შფოთვის გამოცდილებას ნეპალში სწავლების საშუალო საფეხურის მოსწავლეებისთვის.

საკვანძო სიტყვები: სოციალური მედიის გამოყენება, გავლენა, ფსიქიკური ჯანმრთელობა.



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