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Perceived Impact of Social Media on Students' Health Conditions in Pokhara Valley

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ABSTRACT

The pervasive use of social media (SM) technology has brought both negative and positive impacts on health conditions among college students. This study attempts to analyse the impacts of SM on the students' physical and mental health in Pokhara valley. Descriptive statistical tools as well as multiple regression models were applied to analyse the impacts. It showed that the majority of students used Facebook, YouTube and Instagram as SM platforms for various communication and entertainment purposes. On average, the SM usage time that includes all the media types was about eight hours per day, and there was a significant difference of mean usage time between male and female students. There was a significant difference among different student groups regarding the rating on eating habit disorder due to SM. The findings suggested that the severity of impacts on the physical and mental health were significantly positively related with the SM usage time, implying that the more the students engage on SM the worse the impacts on their health conditions. However, the study also pointed out that there were positive mental health benefits in terms of SM's role to make the social connectedness better and make them feel good about finding

the right information on SM. The overall finding of the study was that the SM usage time, especially for entertainment purpose, needs to be checked for reducing the negative health impacts. However, the usefulness of SM in terms of enhanced social connectedness and finding useful information on the SM sites cannot be underestimated.

KEYWORDS: Mental health impact, physical health, social media

INTRODUCTION

In the present era of information society, pervasive use of social media (SM) technology has brought about seemingly well-connected networks of people who can share almost all facets of their personal as well as community information over the worldwide web instantly. Social media can be defined as the applications that allow users to interact with each other through the creation and exchange of media, text, and calls within a network/internet (Duradoni et. al., 2020). Social media has been an important platform through which people all over the world can easily get the latest information, and they have easy access to online global knowledge banks. Such SM platforms as Facebook, WhatsApp, X (Twitter), Messenger, Viber, Imo, YouTube, Instagram, LinkedIn, various Web sites, TikTok, etc. are being heavily used by billions of people to share ideas, views, opinions, and events around the world (Khalid, 2017; Kolan & Dzandza, 2018). The use of SM, especially by young students, has caused both positive and negative impacts on their health conditions (Mahevish et al., 2023; Pater & Mynatt 2017; World Health Organization, 2017). On the positive side of SMs, self-expression in the form of sharing photos, thoughts, feelings, life events, educational materials, finding information relating to improvement in health conditions and other useful information, among others, can be considered as main contributions. The usefulness of SM in terms of enhanced social connectedness and finding useful information on the social media sites can't be underestimated. Further, advent of smartphones has intensified such behaviour that enhances purposes of SM usage for information search, self-expression, interpersonal connection, and social validation (Hawk et al., 2019). Nevertheless, pervasive use of SMs has beguiled all, especially the young population around the globe, resulting in adverse physical and mental health impacts (Hernandez et al., 2018; Lee et al., 2022; Pantic, 2014; World Health Organization, 2017).

The use of SM has increased exponentially, especially among students, who have made SM their companion for sharing different aspects of their daily lives (Clestine & Nanyelum, 2018). With the rapid growth of SM usage, more individuals are hiding behind a screen, sharing hurtful and offensive comments without consequences. Young students spend less social time in person with peers but substitutes that time by interacting with peers online. It has been found that if one uses SM for three or more hours per day then it causes decline in social skills, attention, focus, and mental health (George et al., 2018). The present-day SM sites offer nonstop services making it almost impossible to log out from those sites, causing various kinds of psychological problems (Scott, et. al., 2016). In this context, this study attempts to capture the construct, impact on health conditions, by including the items relating to physical health, e.g., vision issues, sleep quality, and eating habit as well as items relating to mental health, e.g., stress, anxiety, creativity, addiction, and social connectedness.

Students can utilize SM as an endless source of learning and information search in one hand, and on the other the excessive use of it can cause physical as well as psychological problems. The SM addiction and misuse can bring threats to college students' overall health conditions, thereby impacting adversely their health conditions, academic performance, and future career. This, in turn, negatively impacts productivity of human resources and consequently nation's future. We found a plethora of impacts studies on academic performance of college students both in developed and developing

countries (e.g., Acheaw & Larson, 2015; Al-Menayes, 2015; Kolan & Dzandza, 2018; Olowo, et. al., 2020). However, we did not find many studies that combine the impact analysis of SM on both physical and mental health of students in general and of Nepalese situation in particular. In this context, this study is an attempt to quantitatively assess the overall impact of SM on students' physical and mental health conditions, taking Pokhara valley as a case study.

Research has also identified some problematic SM sites that are characterized by addictive tendencies in terms of usage, e.g., Facebook, YouTube, Instagram, etc. (Vally & D'Souza, 2019). The issue of impacts of SM on health conditions, thus, comprises of technological platforms, their characteristics and usage profiles. Based on our present literature review, we did not find a specific study focusing on impacts of SM on overall health issues, except a few studies conducted to measure psychological impacts. While one of the significant challenges for SM addiction is that it could adversely affect users' overall health conditions, the present literature on this topic is deficient, especially in developing countries. Most of the studies done so far are detailed psychometric analyses of the impacts of SM on mental health in developed countries, and we found no detailed studies that combine both physical and mental health impacts in developing countries.

The pervasive uses of SM and frequent visits to various web sites by students for different purposes have caused both positive and negative impacts on their health conditions (Lee et al., 2022; Pantic, 2014). Proper use of SM can help enhance students' productivity, creativity, and social bonding; and hence the balanced usage of SM is desirable both from personal and social point of views. Use of smartphones to visit SM sites helps in self-expression in the form of sharing photos, videos, thoughts, feelings, life events, and other informational sites, which, in turn, increase students' psychological health (Hawk et al., 2019). The SM usage engages young students in connecting their peers and family members, thus making social connectedness better. This, in turn, helps improve their psychological wellness (Germanmolz & Paris, 2015). Frequent communication among peers and relatives, and social association might have been encouraged by SM, showing the significant impacts of SM on socialization aspects of students (Zhang, et. al., 2015). The ideal situation would, therefore, be a judicious use of services provided by the latest innovation in SM platforms, which help enhance the productivity of students both in terms of academic performance and health conditions.

In reality, the literatures suggest the significant deviation from the ideal and therefore point to the further probing of the issue (Pantic, 2014). It has been estimated that mental health issues have affected about 280 million people worldwide (World Health Organization, 2022), and these numbers are likely to continue to rise due to various factors. One of the factors that have been identified as contributing to the increase in mental health challenges is the use of information technologies, including SM. The excessive SM exposures can have adverse effects, e.g., addiction to electronic gazettes, anxiety and poor memory (George et al., 2018). These effects, consequently, might cause students' health and academic performances to decline. Students could use SM in unproductive usages – too much time spent on chatting, gossiping, recreation, or entertainment purposes, which negatively impact students' health conditions (Peter, 2015). In the present century youths have been investing most of their energy in visiting various SM sites. They normally spend about 12-15 hours per day on different electronic media, including SM, telephones, personal computers, and television (Parmar, 2017).

Past studies have shown that SM usage and television viewing are linked to anxiety and/or depressive symptoms. Moreno, et al. (2011) in their psychological study have shown that depression and feelings of loneliness might have been caused by excessive use of SM like Facebook, Instagrams, YouTube, etc., among undergraduate students and other clients. Young students who use more SM increasingly fall into difficulty, and regularly are troubled and exhausted. Psychologists have conducted detailed studies on these effects using various psychometrics tools and have developed scales to measure impacts of SM addiction in the context of developed countries (Duradoni et. al., 2020). These studies show correlation between SM addiction and stress, depression, and falling social skills.

Research has also identified some problematic SM sites that are characterized by addictive tendencies in terms of usage, e.g., Facebook, YouTube, Instagram, etc. (Vally & D'Souza, 2019). The issues of impacts of SM on health conditions, thus, comprises of technological platforms, their characteristics and usage profiles. Based on our present literature review, we did not find a specific study focusing on impacts of SM on overall health issues, except a few studies conducted to measure psychological impacts. While one of the significant challenges for SM addiction is that it could adversely affect users' overall health conditions, the present literature on this topic is deficient, especially in developing countries. Most of the studies done so far are detailed psychometric analyses of the impacts of SM on mental health in developed countries' context (e.g. Andreassen et al, 2016), and we found no detailed studies that combine both the physical and mental health impacts in developing countries. In this context, this study is an attempt to quantitatively assess the overall impacts of SMs on students' physical and mental health conditions, taking Pokhara valley as a case study.

The general objective of the study is to analyse the impacts of present usage of SM on college level students' health conditions, both physical and mental. The specific objectives of the study are to determine the impacts of SM on physical and mental health among different student groups; to estimate the differences of time spent on and visit pattern to SM sites by student groups; and to examine the perception and challenges in the use of SM.

RESEARCH METHODS

Description of Study Area

The primary data for this study was drawn from the student population from Prithvi Narayan Campus (PNC) and Pashchimanchal Campus (PC) located in Pokhara valley. The sample drawn from these two major campuses would sufficiently represent the total student's population of Pokhara valley, we believe. PNC is a public Co-education institution located in the northern part of the Pokhara Metropolitan City and is one of the largest campuses affiliated to the Tribhuvan University. The institution offered undergraduate and postgraduate (masters) Programs. There are altogether 29 departments in the campus. Current students in the campus are from the Pokhara city as well as from surrounding areas of Kaski district, Baglung, Mustang, Myagdi, Manang, Tanahun, Palpa Syangja, Lamjung, Gorkha and mostly from western region of the country. Five different faculties are identified Science, Law, Humanities, Education and Management. In total 34 programs are run and about 500 courses are on offer under these broad areas of study. To date, 642 faculty members and 102 administrative staff have involved in

providing higher education to more than 12800 students in various academic programs in the campus. PC has about 1500 students distributed among five different engineering branches.

Study Design and Period

The study followed a descriptive and analytical research technique with cross sectional descriptive research design. With quantitative design, we can analyse the survey data following both descriptive and prescriptive/inferential methods, which would enrich the analysis to a greater extent.

The population for the study was the students in different faculties and programmes (undergraduate and graduate) from PNC and PC in Pokhara valley.

The sample size was calculated using the following formula:

$$n = PQ \left(\frac{Z\alpha}{d} \right)^2, \text{ then adding 5\% for anticipated subjects who would refuse to}$$

participate in the study after being randomly selected and for the null and void questionnaires.

Here,

n = required sample size

P = share of population impacted by SM

Q = 1 - P

d = Margin of error

P = 0.5

Q = 0.5

d = ±0.08

Therefore,

$$n = 0.5 \times 0.5 \left(\frac{1.96}{0.08} \right)^2$$

$$n = 150.03. \cong 150 \pm 10\%$$

In this study, purposive and convenient sampling techniques were employed for sample selection for the field survey. In the first stage, we purposively selected PNC and PC, the two biggest campuses in Pokhara. The sample drawn from these two major campuses would sufficiently represent the total student's population of Pokhara valley, we believe. In the second stage, students were divided the students sample into three student groups based on similarities of study programs. We have grouped the entire population into three student groups based on study programs, namely, Management, Science and Technology and Humanities. In the third stage, the samples were selected proportionately based on the total number of students in each group (see Table 1). The actual student sample was selected based on convenience.

Data was collected by using structured questionnaire, which was developed by adopting the methodologies described in previous similar studies. We prepared a questionnaire and undertook a pilot test of the same. After testing the questionnaire, a field survey was undertaken for two weeks to collect all the relevant data from student-participants of both campuses. Total of 165 questionnaires were filled in, out of which two respondents did not respond to many of the items in the questionnaire. So, we just used 163 samples for this study, ignoring those two samples. Regarding data collection

process, there were five data collectors/enumerators and one supervisor. Graduate students were recruited and trained for this purpose. The training focused on informing the study objectives and importance of keeping confidentiality and privacy while conducting field survey.

Data were checked for its completeness, coded, and entered into a computer, and data analyses were done using SPSS version 26. First, descriptive statistics were presented for an exploratory analysis. Finally, multiple regression analyses were conducted to draw some inferences on the impact relationships. The results of the study have been presented in text, tables, figures, and charts. P-value <0.05, ANOVA and t-test were considered for statistical significance. With ANOVA and t-test, we strived to confirm the statistical significance of relations for independent sample means for more than two groups and two groups, respectively.

RESULTS AND DISCUSSION

Social Media Usage and Impacts

Table 1 shows the sample distribution of the respondents by gender and student groups - the students groups studying in the respective study programs, broadly categorized into three groups.

Table 1

Distributions of Sample Size by Gender and Study Programs

		Student groups			Total
		Management	Science & Technology	Humanities	
Gender	Male	25	38	10	73
	Female	45	22	23	90
Total		70	60	33	163

The number of respondents is highest in the management student group as the total number of students in this faculty is the highest and lowest sample is from humanities faculty, which is in proportion to the total number of students there. The grouping of the students in gender is to analyse whether the impacts and SM usage patterns are statistically different between the genders, which have policy implication. This type of grouping is common in the previous studies as well (e.g. Mahevish et al., 2023; Mensah and Nizam, 2016). We added another grouping of the students in this study, i.e., dividing the sample in terms of study program, which is unique to our study. The purpose of doing is basically to assess whether the impacts and usage patterns vary among the students group so that better policy can be designed to address the respective groups of students.

SM usage time is pivotal explanatory variable for this study. Although the usage times were asked in an interval of hours, we assume the respective interval values as continuous without loss of generality. That means, if the respondent ticks on the interval 1 and 2hr, we considered this as 1.5 hours of usage time. Table 2 shows the summary of usage time by different types of SM.

Table 2
Summary of Usage Time (in hr.) by Social Media Types

SM Types	Mean	Std. Deviation
Facebook	2.04	1.17
Youtube	2.44	1.06
Instagram	1.58	1.21
What Sapp	1.00	0.88
Imo/Viber	0.47	0.67
LinkedIn	0.30	0.58
X (Twitter)	0.29	0.54
Average SM time	8.14	2.92

This reveals that students are engaged in SM too much time, an average of about 8 hours per day, which is significantly higher than the findings from the previous studies (Lee et al., 2022; Rithika & Selvaraj, 2013). Further, we suspect that students were over-estimating the usage time by media types as they assumed the usage time for various media being used with the overlap of their use (having being ON on several media at the same time). This phenomenon needs further investigation.

Figure 1
Boxplot of SM Usage Time by Gender

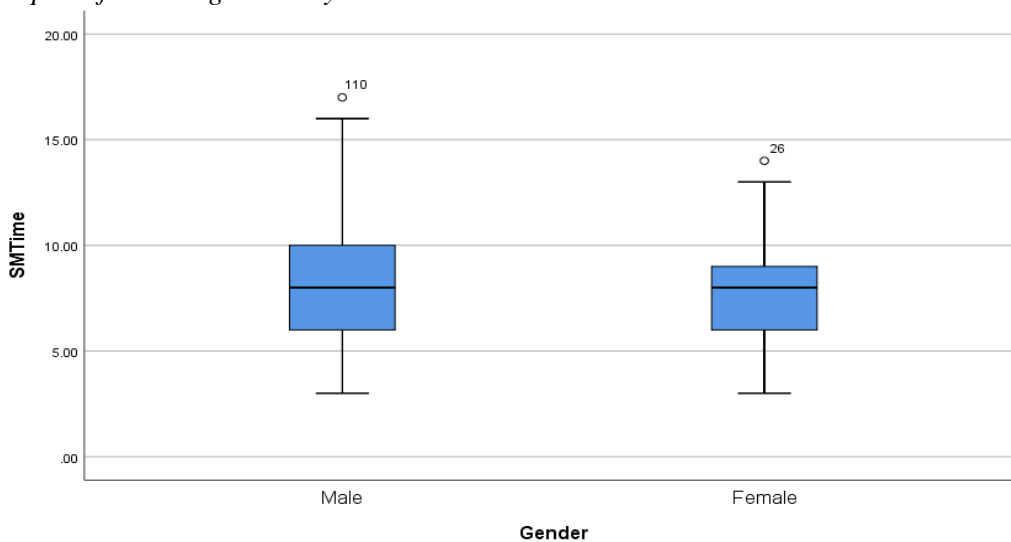


Figure 1 shows the boxplot of SM usage time by contrasting it with respect to gender. We can see that female students used slightly lesser time for SM compared to male. This also suggests that female students are being more conscious in using the SM on average. This finding corroborates with the past studies by Mahevish et al. (2023) and Mensah and Nizam (2016), although our average estimates of usage time is significantly higher than theirs.

Figure 2
Boxplot of SM Usage Time by Study Program

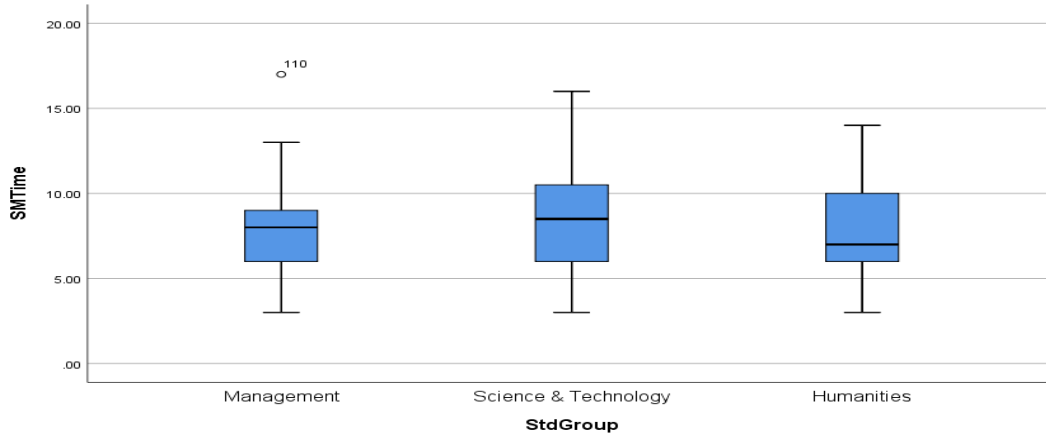


Figure 2 reveals the comparisons of SM usage time among the student groups in our sample. We can observe that science and technology students used slightly more time for SM compared to other groups. We have identified one outlier in the management group, whose total SM usage time came out to be 17 hours, so we ignored this sample for statistical tests and regression model. This type of differentiation of usage times by student groups is not available in the past studies, and hence the findings of this study shed more lights on this topic.

Table 3 shows the count of students who used different media for respective purposes. We found that most of the students used Facebook for communication purpose followed by information sharing, whereas YouTube was mostly used for watching movies and listening to music. LinkedIn and X (twitter) were the least used media by students.

Table 3
Number of Respondents by Purpose of SM Use and SM Types

Purposes	Facebook	YouTube	X	Instagram	WhatsApp	Viber/Imo	LinkedIn
Communication	142	NA	NA	95	83	41	NA
Information Search	NA	112	32	NA	NA	NA	25
Information Sharing	88	8	12	63	40	13	13
Listening Music	5	136	NA	NA	NA	NA	NA
Watching Movies	7	138	NA	NA	NA	NA	NA
Playing Games	NA	NA	NA	NA	NA	NA	NA

NA=Not applicable

Table 4 provides the summary of parents' characteristics and the age of the sample (control variables), where one can observe a family income going up to 700 thousand per month (this was the case for one student only and we considered this as an outlier). On education front, we asked for the number of years in school, and found that only a few parents were illiterate. The range of age of the sampled students was 17 to 42 years. These variables are used for controlling the impacts' determinants in the regression models below.

Table 4
Characteristics of Parents and Age of the Respondents

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Family Income ('000)	163	1	700	73.95	60.17
Father's Education	163	0	23	11.74	4.49
Mother's Education	163	0	18	9.79	4.14
Age	163	17	42	21.52	3.64

Table 5 shows the summary of Lickert scale response regarding perception of SM among the sampled students. We had six related items to respond to and found that about 28% of respondents agree on negative physical and mental health caused by SM. Regarding, family reaction and contribution of SM in social connectedness, most of them were found positive.

Table 5
Summary of Perception Scores Regarding SM Use

Items/Variables	Fully Agree	Agree	Neutral	Disagree	Fully disagree	Mean	SD
SM helps in sharing and collaborating with peers and teachers.	36.81	54.60	8.60	0.00	0.00	4.28	0.61
SM helps in increasing self-esteem and well-being.	9.20	35.60	42.30	9.80	3.00	3.45	0.94
SM helps increasing social connectedness.	29.40	49.10	20.20	0.60	0.60	4.06	0.76
There is negative family reaction toward SM use.	7.36	19.63	44.79	23.31	4.90	3.00	0.99
SM usage impacts mental health negatively.	12.90	28.20	36.20	17.80	4.90	3.26	1.07
SM usage impacts physical health negatively.	14.10	28.80	36.80	14.70	5.50	3.31	1.08

Based on the mean value comparisons, we found that the highest mean score was for SMs' role on information sharing (4.28) followed by increasing social connectedness (4.06), which suggest the users' positive perception towards SM use. The least mean score on perception items is about negative family reaction while using SM (3.0). Table 6 summarizes the responses on physical health items/variables. Here, the scale 1 means least severity and 5 means the most severity in terms of physical health impact. Regarding impact on eye-sights, majority of them responded a little impact (scale value 2 by 52% of respondents). The mean score for this item was 2.04, suggesting not a severe issue in terms of negative eye-sight impact due to SM use. We can presume that pervasive SM use in Nepalese context is just beginning and its full impact on eye-sight issue might come in the future; the detailed explanation for this needs further investigation. About 47% responded with neutral impact on other physical issues followed by 22% with significant physical impacts (cf. item 2 response). About 27% responded with having sleep disorder issue and 7% having severe one (cf. item 3 response). Regarding eating habit change, only 8% had serious issues with it and about 28% with rating of 3 out of 5 (cf. item 4 response). To summarize the health impacts based on responses on four different types of physical health impacts, we found the means below 3, suggesting not a serious negative physical health impact on average. However, the negative impact on sleep disorder and eating habit look more prevalent than the other two issues, which can have significant policy implications.

Table 6
Summary of Physical Health Impact Scores Due to SM Use

Items/Variables	Likert Scales					Mean	SD
	1	2	3	4	5		
How do you feel about the condition of your eyesight after being involved in SM?	24.50	52.10	19.00	3.70	0.60	2.04	0.80
Have you ever experienced physical health issues (e.g. eye-itching, eye-burning, neck pain, and headache) due to SM use?	16.00	22.70	47.20	8.60	5.50	2.65	1.03
Have you experienced sleep disorder (e.g. not able to sleep properly, late bedtime and excessive video watching in the night) due to SM use?	20.20	27.60	30.10	14.70	7.40	2.61	1.18
Have you experienced change in eating habit (e.g. over snacking and overeating) due to SM use?	35.60	26.40	27.60	8.00	2.50	2.15	1.08

Table 7 displays the summary of mental health impacts by related items. Here also, response 1 indicates least and 5 means the highest respective impacts. The last two items revealed the positive side of impact on mental health due to SM usage, where the

mean scores were more than 3. We found a significant number of respondents agreeing on positive sides of SM usage in terms of make feel connected with peers and family member (47%) and make creative while finding the right information (48%) on SM platform. This finding is also in line with the perception summary presented in Table 6 above. Regarding the negative mental impacts of SM usage (as shown by the summary of the first four items), majority of the impacts range from 3 to 5, suggesting a significant mental health impacts of SM usage. However, the mean score falls below 3, suggesting the mixed results. We found anxiety and stressed when not using SM were more prevalent compared to other two negative impacts.

Table 7

Summary of Mental Health Impact Scores Due to SM Use

Items/Variables	Likert Scales					Mean	SD
	1	2	3	4	5		
You spend a lot of time thinking about SM or planning how to use it.	31.30	26.40	33.70	5.50	3.10	2.23	1.05
You feel anxious and disturbed when you cannot access SM for some time.	21.50	29.40	28.80	14.10	6.10	2.53	1.17
SM usage increases anxiety.	10.14	16.60	42.90	25.20	4.90	2.97	1.03
How would you rate your overall stress level caused by SM usage?	12.90	30.10	43.60	11.70	1.80	2.59	0.93
SM use makes you creative and feel good about finding right information.	3.10	6.10	20.90	48.50	21.50	3.79	0.95
SM use makes you feel connected with your peers and family members.	1.80	1.80	14.70	47.20	34.40	4.10	0.85

Impacts Analysis

After presenting the descriptive statistics of the findings, we present some of findings of the inferential statistical tests here. Table 8 presents the means comparison of various variables with respect to gender. We considered the gender wise comparison relevant because it can have policy implications based of differences in terms of gender. This can of comparisons are also common in the exiting literature (e.g. Mahevish et al., 2023; Mensah & Nizam, 2016). We observed that the mean SM usage time is significantly different for male and female students at 10% level of significance, suggesting that male students engaged more on SM than female counterpart on average. Similarly, female students rated higher severity in terms of other physical health issues (2.81) than male students (2.45), which is significantly different at 5% level. This finding is in line the findings by Mahevish et al. (2023), where they also found higher negative impact of SM on female students. These average ratings between male and female students, however, fall below 3, suggesting not serious physical health impacts on average. We found no significant differences for other variables, except the positive

mental health impacts, where female rated significantly higher at 5% level than male counterpart, with both average ratings more than 3. This suggests, the composite rating of positive SM impacts is high on both the groups.

Table 8

Mean Difference of SM Time, Physical and Mental Impacts by Gender

Items/Variables	Gender	N	Std.		p-value
			Mean	Deviation	
Social Media usage time	Male	73	8.56	3.22	0.09
	Female	90	7.79	2.61	
How do you feel about the condition of your eyesight after being involved in SM?	Male	73	2.04	0.90	0.95
	Female	90	2.03	0.71	
Have you ever experienced physical health issues (e.g. eye-itching, eye-burning, neck pain, and headache) due to SM use?	Male	73	2.45	1.03	0.03
	Female	90	2.81	1.00	
Have you experienced sleep dis-order (e.g. not able to sleep properly, late bedtime and excessive video watching in the night) due to SM use?	Male	73	2.68	1.26	0.49
	Female	90	2.56	1.11	
Have you experienced change in eating habit (e.g. over snacking and overeating) due to SM use?	Male	73	2.21	1.12	0.58
	Female	90	2.11	1.04	
Mental Negative Impact	Male	73	2.59	0.81	0.98
	Female	90	2.59	0.61	
Mental Positive Impact	Male	73	3.81	0.89	0.04
	Female	90	4.06	0.69	

Table 9 reveals the results of ANOVA tests, where we tested for whether the mean values of various variables were significantly different among the student groups. We wanted to analyse whether there existed differences in terms of SM usage and related variables among the students in different study programs, which could give us an important insight, thereby help better SM use in future. These comparisons are unique to this study, where no other past studies have compared the means of different variables among the student groups.

Table 9

Mean Difference of SM usage Time, Physical and Mental Impacts by Student Groups

Items/Variables	Student Groups	N	Std.		p-value
			Mean	Deviation	
Social Media usage Time	Management	70	7.91	2.67	0.54
	Science & Technology	60	8.47	3.22	
	Humanities	33	8.00	2.88	
How do you feel about the condition of your eyesight after being involved in SM?	Management	70	2.14	.77	0.32
	Science & Technology	60	1.93	.88	
	Humanities	33	2.00	.71	
Have you ever experienced	Management	70	2.80	.81	

physical health issues (e.g. eye-itching, eye-burning, neck pain, and headache) due to SM use?	Science & Technology	60	2.63	1.22	0.13
	Humanities	33	2.36	1.03	
Have you experienced sleep disorder (e.g. not able to sleep properly, late bedtime and excessive video watching in the night) due to SM use?	Management	70	2.60	1.09	0.01
	Science & Technology	60	2.92	1.27	
	Humanities	33	2.09	1.01	
Have you experienced change in eating habit (e.g. over snacking and overeating) due to SM use?	Management	70	2.09	0.99	0.74
	Science & Technology	60	2.23	1.23	
	Humanities	33	2.15	0.97	
Mental Negative Impact	Management	70	2.58	0.66	0.82
	Science & Technology	60	2.63	0.80	
	Humanities	33	2.55	0.61	
Mental Positive Impact	Management	70	4.01	0.77	0.06
	Science & Technology	60	3.77	0.84	
	Humanities	33	4.16	0.71	

The results suggested that most of the variables had no significant differences among the student groups, except the two variables, namely, issue with sleep disorder and positive mental health impact. We found that among the students group the average severity in terms of sleep disorder due to SM usage is significantly different at 5% level. Also, the average rating on positive mental health impact is significantly different at 10% level.

Our results conclude with two regression models that analyse the factors affecting the physical and mental health impacts among the sampled students. The first model reveals the relationship between the perceived physical health impact with other explanatory variables. The F-test ($p=0.01$) of the regression model suggests the model is significant with the adjusted $R^2=0.112$. We also ran the diagnostic tests for linearity, normality and homoscedasticity for both the models and found the issue with homoscedasticity only. To correct that issue, we ran the regression with heteroskedasticity error correction (HEC) model. Table 10 summarizes the regression results.

Table 10

Perceived Physical Health Impact as Dependent Variable

Variables	Coefficients	p-value	Lower Bound	Upper Bound
(Constant)	-0.18	0.75	-1.29	0.94
SM Usage Time	0.04	0.02	0.01	0.08
Gender	0.15	0.19	-0.08	0.37
Age	0.03	0.03	0.01	0.06
Father's Education	-0.01	0.65	-0.03	0.02
Mother's Education	0.08	0.24	-0.01	0.05
Family Income	0.01	0.03	0.00	0.01

Perception Score	0.25	0.02	0.03	0.47
STGD1*	0.37	0.01	0.09	0.65
STGD2**	0.32	0.04	0.02	0.62

*Dummy variable for management program as 1 vs rest =0.

**Dummy variable for science and technology program as 1 vs rest =0.

We found that SM usage time is positively related to physical health impact, significant at 5% level; meaning that the more the SM usage hour spent higher the likelihood of increasing the negative physical health impact. This finding is in line with the findings from a recent study by Mahevish et al. (2023). Also, family income and composite perception score are positively related to physical health impact, significant at 5% level. This suggest that student from higher income family is likely to have more negative physical health impacts on average. Further, management and science and technology student groups on average has higher level of physical impacts at 5% level of significance. This is an insight gained due to grouping the students according to their study programs.

The second model reveals the relationship between perceived mental health impacts with other explanatory variables. The F-test ($p= 0.006$) of the regression model suggests the model is significant with the adjusted $R^2=0.086$. Table 11 summarizes the regression results. We found that SM usage time is positively related to mental health impact, significant at 5% level; meaning that the more the SM usage hour spent higher the likelihood of increasing the negative mental health impact. This finding is in line with the findings from a recent study by Mahevish et al. (2023). Also, composite perception score is positively related to physical health impact, significant at 5% level. This indicates that higher the perception or background information regarding SM use, the severe the physical impact. To understand this complex relation, further study is required.

Table 11
Perceived Mental Health Impact as Dependent Variable

Variables	Coefficients	p-value	Lower Bound	Upper Bound
(Constant)	0.61	0.30	-0.56	1.78
SM Usage Time	0.06	0.002	0.02	0.01
Gender	0.04	0.70	-0.19	0.28
Age	-0.01	0.73	-0.04	0.03
Father's Education	-0.01	0.43	-0.04	0.02
Mother's Education	0.01	0.55	-0.02	0.04
Family Income	0.001	0.25	-0.001	0.003
Perception Score	0.41	0.001	0.18	0.64
STGD1*	0.11	0.45	-0.18	0.40
STGD2**	0.06	0.69	-0.25	0.38

*Dummy variable for management program as 1 vs rest =0.

**Dummy variable for science and technology program as 1 vs rest =0.

CONCLUSION

Pervasive use of social media (SM) technology has brought both negative and positive impacts on health conditions among students. We analysed the health impacts of SM on campus students of Pokhara valley along with the factors affecting the impact scores in this study. We applied descriptive statistical tools as well as multiple regression models to analyse the impacts. A sample survey of 165 student respondents was undertaken to collect the relevant demographic, perceptions of SM, physical and mental health impacts. We found that majority of students used Facebook, You tube and Instagram SM platforms for various communication and entertainment purposes.

On average SM usage time that includes all the media types was about eight hours per day, and there was a significant difference of mean usage time between male and female students. This reveals that students were engaged in SM too much time, which is significantly higher than the findings from the previous studies. Further, we suspect that students were over-estimating the usage time by media types as they assumed the usage time for various media being used with the overlap of their use (being engaged on several media at the same time). This phenomenon needs further investigation. Also, the composite perception score is positively related to physical health impact, significant at 5% level. This indicates that higher the perception or background information regarding SM use, the severe the physical impact. To understand this complex relation, a further study is required.

There was a significant difference among different student groups regarding the rating on eating habit disorder due to SM. The means comparisons by students' groups are unique to this study as the existing studies have not tried to analyse the case by student groups. The findings from regression models suggested that the severity of impacts on physical and mental health were significant, at 5% level, positively related with SM usage time, implying that more the students engage on SM worse the impacts on their health condition. However, the study also pointed out that there were positive mental health benefits in terms of SM's role to make the social connectedness better and make feel good about finding the right information on SM. The overall findings of the study were that SM usage time, especially for entertainment purpose, needs to be checked for reducing the negative health impacts. However, the usefulness of SM in terms of enhanced social connectedness and finding useful information on the social media sites can't be underestimated.

The findings of this study have several policy implications in regard to judiciously use the SM platforms, thereby maximizing the potential utility of these platforms in the days to come. The results of the study highlight several challenges and suggest for the possible remedies of those issues, albeit SM usage has some positive effects. First, the excessive SM usage time needs to be checked for reducing the negative health impacts. More severity of physical health impacts of female students suggest for more care needs to be taken for this group. These findings underscore the importance of promoting healthy social media habits and raising awareness about the potential negative effects on well-being. To promote awareness for pros and cons of SM usage, concerned stakeholders (e.g., schools, campuses, NGOs, government agencies) need to spread informational materials on SM itself or arranging awareness campaigns. These efforts, we believe, would maximize the potential utility of SM platforms in the long run.

CONFLICT OF INTERESTS

The authors have no conflicts of interest to disclose.

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