

Social Media Engagement, Perceived Stress And Mental Wellbeing Of Prospective Teachers: A Mediation Analysis

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Abstract

Social media usage is unavoidable in this era of innovations and technological explosion. It influences peoples' lives in both positive and negative ways. Present research explored the interrelationship of social media engagement with mental wellbeing through mediating role of perceived stress among prospective teachers. Present research employed quantitative research approach along with descriptive explanatory research method. Total sample of 227 prospective teachers was selected through convenience sampling technique. Results indicated that social media engagement is a predictor of mental wellbeing and perceived stress of prospective teachers; the mediator perceived stress also significantly predicts the mental wellbeing of prospective teachers. Moreover, social media engagement has negative association with mental wellbeing and positive association with perceived stress; the mental wellbeing also has negative relationship with perceived stress. Results also revealed that perceived stress fully mediates the relationship of social media engagement and mental wellbeing of prospective teachers. University counselling services may consider the perceived stress and social media while dealing with challenges and problems of students' mental wellbeing.

Keywords: Social media engagement, perceived stress, mental wellbeing, mediation analysis.

Introduction

Are we master or slaves of modern technology has been a long debate over the last many years? At the same time technological innovations facilitates human beings in making their lives more comfortable. Technology has brought advances in all fields including social media which becomes an integral part of everyday life but it brings various personal and social challenges in life. Connectivity issues, exposure to information and communication are main challenges in this context (Nguyen, 2021). Due to COVID-19 pandemic, people are more involved in various social media platforms as it becomes the important communication tool for disseminating information in organizations (Tsao et al., 2021). In fact, social media allows

people to connect with others through various virtual networks to share digital content (Ahmed et al., 2019). Research studies has also explored the relationship of social media with a variety of variables. Present study identified the relationship of social media engagement with mental health and perceived stress of prospective teachers.

Social media influences people in both positive and negative ways. There are contradictory findings regarding social media usage and wellbeing. Few studies come up with results that social media emasculate wellbeing while other rejects social media implications in peoples' lives (Kross et al., 2021). O'Reilly et al. (2018) conducted research study on adolescents and identified that social media is a

threat to mental wellbeing. It brings anxiety disorder and a source of cyberbullying and becomes addiction among school children. It was also suggested that more research should be done in this area to explore how social media promotes wellbeing (O'Reilly et al., 2018). Moreover, higher usage of social networking sites through smartphones decreases the subjective wellbeing (Koç & Turan, 2021). Another study found that WhatsApp usage has positive impact on wellbeing of students (Bano et al., 2019). Digital disconnection may also give benefit to people in enhancing sense of wellbeing (Nguyen, 2021).

It is also evident that social media provides opportunity to satisfy social needs. There are various motives of using social media which becomes the cause of diminishing or enhancing of wellbeing (Kross et al., 2021). Technology such as mental health could be used in treating the mental health (Skibins, Das & Schuler, 2022). Social media also contributes to promoting wellbeing as during pandemic students used social media tools which enhanced their motivation, personal interests and interpersonal connectivity (Tkáčová et al., 2021). An experimental study results revealed that those people who were taking break in usage of social media showed improvement in individuals' wellbeing (Graham et al., 2021). Results of these research studies helped current research in hypothesizing the interrelationship between social media engagement and mental wellbeing among prospective teachers.

Involvement in online activities through social networking sites may cause mental health issues (Donnelly & Kuss, 2016) which results in depression (Pantic et al., 2012). Limited use of Social media showed improved wellbeing and decreased depression (Hunt et al., 2018). Social factors and social networking environment also determines the social networking relationship with mental wellbeing and mental illness (Seabrook, Kern, & Rickard, 2016). Social media may cause stress related problems (Lim & Choi, 2017). Research work of Primack et al. (2017) also claimed that higher level of anxiety

was reported in various social media platform users. Malaeb et al. (2021) said that problematic use of social media was more associated with anxiety and depression. Anxiety symptoms associated with social media were found higher among adults and therefore clinicians may consider the extent of usage of social media while treating anxiety (Vannucci, Flannery & Ohannessian, 2017). This is also a fact that billions of users are using social networking sites, worldwide, for information sharing and facilitating communication. However, problematic use of these networking sites is causing health related issues such as stress, anxiety, depression and sleep quality (Hussain & Griffiths, 2021). Furthermore, they recommended that additional research studies are needed to explore the causal relationship between mental health factors, social media and mental health issues (Malaeb et al., 2021). Acculturation is another factor which is responsible for suffering due to usage of social media (Franco, & Carrier, 2020).

Digital technologies are source of stress among people due to information flowing through various social media platforms which creates social pressure. This challenging and distressing situation puts the physical as well as psychological health of people at risk (Hampton et al., 2015). Stress level due to social media usage, is dependent on duration of social media use and type of networks (Aydoğan & Buyukyilmaz, 2017). In contrast to these findings that social media enhances the stress, Cauberghe et al. (2021) concluded that during the COVID-19 pandemic, people used social media to cope with anxious feelings. Results of above research studies also helped in developing hypothesis that social media engagement is a cause of perceived stress.

Stress directly affects health (O'Connor, Thayer & Vedhara, 2021) and mental wellbeing (Baldock et al., 2021). Studies also concluded that stress negatively affect the mental wellbeing (Linden & Stuart, 2020; Xavier & Reeves, 2018). A study conducted on undergraduate students' analysed stress and

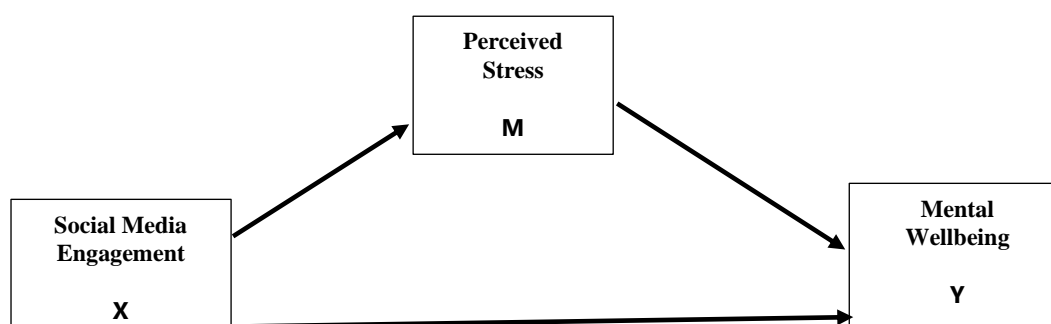
depression symptoms and its relationship with wellbeing and satisfaction with life. Stress and depression symptoms are negatively associated with psychological wellbeing and satisfaction (Lopes & Nihei, 2021). Stress also becomes cause of poor psychological wellbeing during Covid-19 pandemic (Labrague, 2021). Stress and wellbeing are negatively interrelated (He, et al., 2018) and are causes of negative changes in wellbeing (Xiang et al., 2019), behaviour, mood and health (Schneiderman et al., 2005) over a period of time. It is also evident from research studies that those having high level of wellbeing, experience less stress (Sugiura, Shinada & Kawaguchi, 2005) and people with high level of stress face lower mental health issues (Moeini et al., 2008). It was hypothesized from the findings of previous research studies that stress is interrelated with mental wellbeing. According to previous research studies results directions of relationships among social media engagement, perceived stress and mental wellbeing further helped in defining the stress as mediator among association between social media engagement and mental wellbeing.

Social media usage has been increased in Pakistan as Bashir, Malik, and Mahmood (2021) in their research study highlighted that students especially at university level use various platforms of social media such as WhatsApp, YouTube and Facebook many times a day. Moreover, social media engagement has been studied in previous research studies as positive or negative impact on mental wellbeing. Present research also included the perceived stress as mediator in relationship between social media engagement and mental wellbeing of prospective teachers.

Conceptual Framework Of Research And Hypotheses

Conceptual framework of present research is based on research studies conducted in the context of social media engagement, mental wellbeing and stress. Results of various research studies in present literature contradict in terms of social media relationship with wellbeing (Best, Manktelow & Taylor, 2014; Choi & Noh, 2020; Kim, 2017; Wang & Bashir, 2020; Woods & Scott, 2016). Research studies results come up with both positive influences (Choi & Noh, 2020; Ostic et al., 2021) and negative impact (O'Reilly et al., 2018) of social media on wellbeing. Therefore, present research study only hypothesized the relationship between these two constructs, instead of positive and negative influence which was further explored in current research.

Social media engagement is also interrelated with anxiety, loneliness and depression (Banjanin et al., 2015; Barry, et al., 2017; De Choudhury, et al, 2013; Guntuku et al., 2017; Keles et al., 2020; Reer et al., 2019; Woods & Scott, 2016). Thus, present study also hypothesized the relationship between social media and stress. Additionally, various research studies also explored the association between stress and wellbeing (Milfont et al., 2008; Smalbrugge et al, 2006; Telles et al., 2018) which supported in formulating hypothesis of effect of stress on mental wellbeing. Keeping in view the relationship and directions of variables, present research further explored the relationship between social media engagement and mental wellbeing in the presence of perceived stress as mediator. Following figure describes the directions of framework of current research study.

Figure 1 Conceptual Framework of Present Research

Conceptual framework of research study guided in the development of hypotheses. Following hypotheses were developed keeping in view the causal sequence explained by Baron and Kenny (1986) for conducting mediation analysis:

H1: Social media engagement is a significant predictor of mental wellbeing of prospective teachers.

H2: Social media engagement is a significant predictor of perceived stress among prospective teachers.

H3: Perceived stress is a significant predictor of mental wellbeing of prospective teachers.

H4: Perceived stress mediates the relationship between social media engagement and mental wellbeing of prospective teachers.

Methods

The current research study aimed to explore the mediating role of perceived stress in relationship to social media engagement and mental wellbeing of prospective teachers. Subsequently, social media engagement worked as independent variable, mental wellbeing as dependent variable and perceived stress as mediator. Positivist paradigm was selected keeping in view the nature of research to test hypotheses of research. Present research adhered the quantitative research approach with deductive reasoning which begin with development of conceptual framework, formulation of hypotheses and collection

of data to test hypotheses to confirm or refute the paths. In this context, descriptive explanatory research design was chosen to continue research. Literature review helped in development of conceptual framework. Research was carried out through cross-sectional survey. Baron and Kenny (1986) guidelines for mediation analysis were used to set the baseline.

Participants

National University of Modern Languages, Islamabad, Pakistan was chosen for selecting the sample of present research study. A total of 232 prospective teachers contributed in the survey. Out of these 232 prospective teachers, 227 respondents were finally added after data screening process. Data was collected through convenience sampling technique as it was most appropriate technique for collecting data during CVOD-19 pandemic. Out of 227 participants, 152 (67%) participants were female and 75 (33%) participants were male. In this regard, 197 (86.8%) participants fall under the age group category of 20-25 years, 22 (9.7%) participants fall in category of 26-30 years and 8 (3.5%) participants were under the category of 31-35 years.

Research Instruments

Three instruments were used in accordance with the variables of the present research study. Structured questionnaires were employed to assess the constructs of present study.

Cronbach's Alpha was calculated to find out the internal consistency of present research scales. Confirmatory Factor Analysis (CFA) was also conducted to confirm the factor structures of scales used in present study.

Social media engagement (SME) was determined with scale developed by Ni et al. (2020). SME included eleven items with five-point scale: ranged from Strongly Agree to Strongly Disagree. SME scale assess the social media in context of behavioural, cognitive and affective engagement. Cronbach's Alpha value of Social Media Engagement Scale was 0.777. Confirmatory factor analysis of Social Media Engagement Scale showed good model fit: $\chi^2 = 61.913$, $df = 41$, $p < .05$, $CFI = .957$, $TLI = .943$, $SRMR = .050$, $RMSEA = .047$: 90% CI [0.020, 0.070]. Items factor loadings were satisfactory. McDonald's ω reliability of SME Scale was 0.783. Composite Reliability (CR) of scale was 0.916 and Average Variance Extracted (AVE) was 0.502.

WARWICK-EDINBURGH Mental Wellbeing Scale developed by Stewart-Brown et al. (2009) was used for assessing mental wellbeing of prospective teachers. Present scale has been used in research studies conducted in Pakistan for assessing the mental wellbeing of Prospective Teachers (Aqeel, et al., 2022; Khan & Shamama, 2020). It is a uni-dimensional scale consisting of 14 items with five-point likert scale ranging from 'None of the Time' to 'All of the Time'. Cronbach's Alpha value of Mental Wellbeing Scale was 0.941. Confirmatory factor analysis of mental wellbeing scale showed good model fit: $\chi^2 = 103.418$, $df = 77$, $p < .05$, $CFI = .995$, $TLI = .994$, $SRMR = .073$, $RMSEA = .039$: 90% CI [0.015, 0.057]. Items factor loadings were satisfactory and ranging from 0.635 to 0.864. McDonald's ω reliability of Mental Wellbeing Scale was 0.942. CR of scale was 0.948 and AVE was 0.570.

Perceived Stress Scale (PSS) of Cohen et al. (1983) was used to measure the stress among

prospective teachers. PSS has been used in various research studies in Pakistan among students (Raja, et al., 2020; Shah, et al., 2010). It is also uni-dimensional scale and consisted of 10 items. Cronbach's Alpha value of Perceived Stress Scale was 0.924. Bifactor confirmatory factor analysis (CFA) was run. CFA of Perceived Stress Scale showed good model fit: $\chi^2 = 81.883$, $df = 35$, $p < .001$, $CFI = .980$, $TLI = .974$, $SRMR = .09$, $RMSEA = .077$: 90% CI [0.055, 0.099]. Items factor loadings were satisfactory and ranging from 0.601 to 0.845. McDonald's ω reliability of Perceived Stress Scale was 0.926. CR of PSS was 0.927 and AVE was 0.560.

Data Collection and Analysis

Data was collected through Google Forms as it was convenient mode of data collection especially in COVID-19 pandemic. All three questionnaires were shifted in Google Forms and link of the questionnaire was shared in various groups of prospective teachers. Informed consent was taken in the start of questionnaires. Confidentiality and anonymity of the respondents as well as usage of data for only research purposes were ensured and the same was assured to the respondents prior to data collection.

Descriptive and inferential statistics were applied for data analysis considering aim, framework and hypotheses of the current research. In descriptive statistics, mean, SD, Skewness, Kurtosis and Correlation were applied to provide the essential information regarding research variables and for underlining potential relationship among variables in data set. Whereas, for accomplishment of hypothesis 1, 2 and 3, regression analysis was employed which fulfilled the conditions set by Baron and Kenny (1986) for running the mediation analysis. Mediation analysis was run for accomplishment of hypothesis 4.

Results

Table 1 Descriptive Statistics of Social Media Engagement, Mental Wellbeing and Perceived Stress among Prospective teachers

	Mean	SD	Skewness		Kurtosis	
	Value		Statistic	Std. Error	Statistic	Std. Error
Social Media Engagement (SME)	3.56	.528	-.476	.162	.759	.322
Mental Wellbeing (MW)	3.13	.780	.066	.162	-.459	.322
Perceived Stress (PSS)	3.37	.827	-.813	.162	.250	.322

Note. SD= Standard Deviation

Table 1 is about descriptive statistics of social media engagement, mental wellbeing and perceived stress among prospective teachers. Social media engagement of Prospective Teachers was assessed through five-point scale ranging from strongly agree to strongly disagree. Mean value (M= 3.56) regarding social media engagement scale showed that prospective teachers' engagement with social media was of high level. Mental wellbeing scale

was five-point ranged from 'None of the Time' to 'All of the Time'. Results showed that prospective teachers' mental wellbeing level was moderate as M=3.13. Further, perceived stress scale was five points ranged from Never to Very Often. Results revealed that prospective teachers were having moderate level of stress. Skewness and Kurtosis values were calculated to check the normality of data. Results indicated that all values are within the normal range.

Table 2 Relationship between Social Media Engagement, Mental Wellbeing and Perceived Stress among prospective teachers

	1	2	3
1 Social Media Engagement	1		
2 Mental Wellbeing	-.415**	1	
3 Perceived Stress	.531**	-.719**	1

p < .01

Results of table 2 showed that social media engagement has significant relationship with mental wellbeing of Prospective Teachers and it is also negative (r = -.415**). Likewise mental wellbeing has significant and negative

relationship with perceived stress (r = -.719**). Social media engagement has significant relationship with perceived stress and is positive (r = .531**).

Table 3 Significant analysis of social media engagement, mental wellbeing and perceived stress of prospective teachers

Variable	B	SE B	B	t	p	R ²	95% CI
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SME-> MW	-.612	.090	-.415	-6.835	.000	.172	[-.789, -.436]
SME ->PSS	.831	.089	.531	9.390	.000	.282	[.657,1.006]
PSS-> MW	-.678	.044	-.719	-15.506	.000	.517	[-.764, -.591]

Note. SME= Social Media Engagement, MW=Mental Wellbeing, PSS= Perceived Stress Scale

Results of table 3 showed that there is significant but negative effect of social media engagement on mental wellbeing of prospective teachers. Social media engagement decreases the mental wellbeing of prospective teachers. Additionally, social media engagement brings 17.2 % variation in mental wellbeing of prospective teachers. One unit increase in social media engagement bring .612 unit decrease in mental wellbeing.

Results also showed that there is significant effect of social media engagement on perceived stress of prospective teachers. Social media engagement increases the perceived stress of

prospective teachers. Additionally, social media engagement brings 28.2 % variation in perceived stress of prospective teachers. One unit increase in social media engagement bring .831 unit increase in perceived stress.

Furthermore, perceived stress significantly predict the mental wellbeing of Prospective Teachers ($t = -15.50, p < .01$). The unstandardized coefficient $B = -.678$ is statistically significant. There was a negative relationship which showed that increase in stress decreases the mental wellbeing of prospective teachers.

Table 4 Mediating role of Perceived Stress in Relationship of Social Media Engagement and Mental Wellbeing of Prospective teachers

	Effect	se	t	p	LLCI	ULCI
Total effect of X on Y	-.612	.089	-6.835	.000	-.7889	-.4358
Direct effect of X on Y	-.068	.0808	-.8468	.3980	-.2277	.0908
	Effect			BootSE	BootLLCI	BootULCI
Indirect effect(s) of X on Y (Perceived Stress)	-.544			.0727	-.6890	-.4025
Sobel test	Effect	SE	Z	p		
Normal Theory test for indirect effect	-.544	.0705	-7.985	.001		

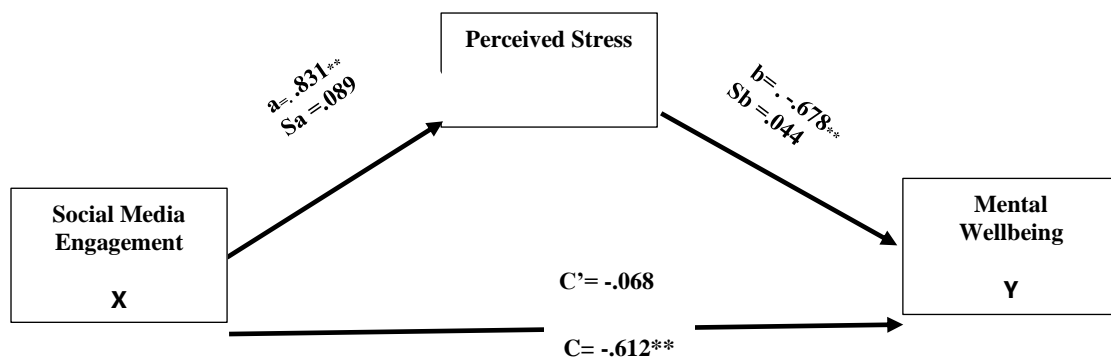
In table 4, Macro Process Procedure was used for analysing total effect, direct effect and indirect effect of social media engagement on mental wellbeing through perceived stress among prospective teachers. Results of total effect indicate that social media engagement negatively affects mental wellbeing $b = -.612, p$

$< .01, 95\% \text{ CI } [-.7889, -.4358]$. Direct effect of social media engagement on mental wellbeing of Prospective Teachers was not significant $b = -.068, p > .05, \text{ Bootstrap } 95\% \text{ CI } [-.2277, .0908]$. Whereas indirect effect of social media engagement on mental wellbeing through perceived stress is significant and negative $a*b$

= -.544, $p > .01$, 95% CI [-.6890, -.4025]. Perceived stress accounted 89 % negative mediation effect between social media engagement and mental wellbeing of Prospective Teachers [$P_M = (-.544) / (-.612)$]. Further Sobel test was also calculated which

conforms that mediation exists ($Z = -7.308$, $p < .01$). Results showed that perceived stress fully mediates the relationship between social media engagement and mental wellbeing of prospective teachers.

Figure 2 Relationship of Social Media Engagement and Mental Wellbeing Mediated Through Perceived Stress



Results of figure 2 showed full mediation as social media engagement was no longer significantly affect the mental wellbeing after controlling perceived stress because after that correlation between social media engagement and mental wellbeing is reduced. Moreover, stress as a mediator reduces the mental wellbeing of students.

Discussion

Present research was conducted to identify the mediating role of perceived stress in relationship of social media engagement and mental wellbeing. The current research methodology anchored in positivism philosophical paradigm with quantitative research approach following deductive method. Mediation analysis through Process Macro was conducted. Baron and Kenny (1986) described four step method for investigating mediation analysis. There are other approaches often used as a replacement but it is a cornerstone approach. In addition to this, Sobel test was also

applied for mediation analysis in present research.

Results of present research indicates that social media engagement is a significant predictor of mental wellbeing and negatively affect mental wellbeing of prospective teachers. Results of research study conducted by Wang & Bashir (2020) are consistent with present research study results which claimed that social media influenced the mental wellbeing and cause of depression. Woods & Scott (2016) reported that this is more common in adolescents. Moreover, research study conducted by Best, Manktelow & Taylor (2014) added that online networks used for social purposes may be both harmful as well as beneficial for the mental wellbeing. Kim (2017) further said that wellbeing is now first priority because of mental health problems in the context of social media usage.

The present study results highlighted that social media engagement is a significant and positive predictor of perceived stress of prospective teachers. Results of Keles, McCrae and

Grealish (2020); Vannucci, Flannery and Ohannessian, (2017) are consistent with present study that social media is cause of anxiety, distress and depression. They further explored that all social media domains such as addiction, time spent, investment and activity are associated with stress. Banjanin et al. (2015) further added that internet addiction is a main cause of depression. Findings of research study conducted by Woods and Scott (2016) are consistent with present research that adolescents experienced greater level of stress and anxiety due to more social media usage.

Incongruent with the findings of present research, Coyne et al. (2020) revealed in their longitudinal study that more time spent on social media is not linked with mental health problem such as anxiety and depression at individual level. Controversy in results may be due the research design as present research was cross-sectional and data was collected during COVID-19. As Xiong et al. (2020) explored in their research that COVID-19 pandemic caused exceptional threats to mental health of people globally which results in high rates of stress, depression, anxiety and psychological distress.

Another key finding is that mediator perceived stress significantly predicts the mental wellbeing of Prospective Teachers while controlling the social media engagement. Moreover, negative relationship indicated that increase in stress level decreases the mental wellbeing of prospective teachers. Taken together, results of current research also revealed that perceived stress fully mediates the relationship of social media engagement and mental wellbeing of prospective teachers. Results of research study conducted by Telles et al. (2018) are consistent with present research that there is a negative relationship between mental wellbeing and anxiety. Moreover, reducing stress level at work enhances mental health. A stressful workplace negatively influences health and mental well-being (Smalbrugge et al., 2006).

Limitations

Limitations of current research include cross sectional design for collection of data. In this approach, researcher collected data at a single point as well as at a single time. In future, researchers may conduct longitudinal research studies in this area. Moreover, data was collected during COVID-19 pandemic, which may become a cause of bringing change in the behavioural patterns of respondents.

Conclusion

Social media engagement has been increased in recent years which effects many aspects of life in both positive and negative ways. It has also impacted the academia in the context of stress, anxiety and mental wellbeing. Current research concluded that perceived stress acts as mediator in relationship between social media engagement and mental wellbeing of prospective teachers. Inverse relationship between social media engagement and mental wellbeing increases in the presence of perceived stress among prospective teachers. Results of present research are of great interest and significance for all stakeholders in academia. While dealing with low mental wellbeing, policy makers at university level may pay attention to strategies of reducing stress and engaging positive use of social media in academic and non-academic settings among prospective teachers. Mental wellbeing and stress management interventions may be practiced in addition to promotion of productive use of social media engagement among prospective teachers. University counsellors and psychologists can also play a significant role in this regard.

Theoretical and Practical Implications

Research studies have paradoxical perspectives about social media usage and its influence on mental wellbeing in both positive and negative way. Now social media engagement is unavoidable due to extensive internet usage especially during COVID-19 pandemic in general population as well as students. Present study would contribute to literature by adding the mediating variable in the relationship of

social media engagement and mental wellbeing which is a source of enhancing the negative relationship between social media engagement and mental wellbeing.

Findings of present research have practical significance for university practitioners as results of present research study confirmed inverse relationship of social media engagement with mental wellbeing. These findings will be particularly beneficial for policy-makers, at university level, especially those involved in dealing with psychological well-being of students. Social media engagement and mental well-being were linked inversely but these negative impacts increased with perceived stress. University counselling services may consider the perceived stress and social media engagement while dealing with challenges and problems of students' mental wellbeing. Ardi and Sukmawati (2017) also recommended that counsellors' knowledge about relationship of wellbeing with social media activities is important as it will help in overcoming problems and improving mental wellbeing.

There are studies which explain the positive impact of social media usage on wellbeing (Ostic et al., 2021). Universities may get benefit from the findings and recommendations of such studies for improving the mental wellbeing of students through use of social media. Teachers may encourage students to use social media for supporting their studies. Students may interact through instant messaging and e-mail for the purpose to coordinate among group work, ask questions and share learning material through various social media platforms. In this regard teachers support and effective teaching strategies may play key role (Hrastinski & Aghaee, 2012). Mental wellbeing of prospective teachers is of great value as they are our future teachers. Seminars and workshops may be offered frequently for enhancing the mental wellbeing and reducing the perceived stress among prospective teachers.

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