

Loneliness and Depression: Investigating the Mediated Moderated Role of Social Media Addiction and Religiosity

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Abstract

This study aims to study the social media addiction and religiosity that may create loneliness and depression in the users and to examine the factors that affect user's experiences and levels of suffering in their life. Loneliness and depression are major mental health problems that affect individuals worldwide, and investigating the factors that contribute to these conditions is essential for effective intervention strategies. With a quantitative approach, data will be collected from a diverse sample of participants, using validated measures to assess loneliness, depression, social media addiction, and religiosity. Advanced statistical techniques such as regression and moderation analysis will be used to analyze the data and determine the extent to which social media addiction can be a potential moderator of loneliness and depression, as well as religiosity. It mediates relationships between characters. By examining these factors, the primary objective of this study is to delve into the intricate dynamics among loneliness, depression, social media addiction, and religiosity in order to gain a more profound comprehension of their interrelationships.

Keywords: Social Media Addiction, Depression, Loneliness, Religiosity

Introduction

Social networking sites (SNS) have completely replaced how individuals collaborate and communicate, providing previously unheard-of possibilities for connection and knowledge sharing (Liu et al., 2016). However, there are worries about social media's possible detrimental effects on mental health due to its widespread use and overreliance (Givertz et al., 2013). Social media is paradoxical in that it promotes connectedness and social interaction but can also exacerbate feelings of isolation and depressed symptoms. People may experience loneliness when comparing their lives to others' allegedly perfect ones that are posted on social media (Appel et al., 2020). This might impact how they view reality and reduce their sense of self-worth. A person may prioritize online interactions over in-person relationships, which compromises their real-life social connections, leading to social isolation as a result of excessive social media use (Winstone et al., 2021).

Social networking has many advantages, including making it easier to connect with others and giving users access to tools and information. On the contrary, social media

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addiction is distinguished by an individual's inability to control their usage, preoccupation with social media activities, and the adverse impact it has on various aspects of their life. Addiction can, therefore, result from excessive or compulsive use of social media (Primack et al., 2017). Feelings of social isolation, separation, and a lack of fulfilling social connections are all characteristics of the complex emotional condition of loneliness. It can be caused by a number of things, such as a loss of social connections, modifications in family dynamics, or a lack of social networks that are encouraging (Gottlieb & Bergen 2010).

A person's level of religious involvement, beliefs, and practices is referred to as their religiosity. Various studies suggest that people who participate in religious practices, beliefs, and communities experience lesser levels of loneliness and depression (Yohanne et al., 2012). People may experience a feeling of purpose, social connectedness, and a support system through trying times by participating in religious activities and rituals (Wang et al., 2008). However, if religion becomes extremely dogmatic or inflexible and causes guilt, shame, or social isolation, it can also have detrimental impacts on mental health. It is essential to comprehend how religion functions in the context of isolation and despair in order to fully appreciate its potential.

Social media addiction and religion are two recent characteristics that have drawn interest in the field of mental health study (Dykstra & Fokkema 2007). Chukwuere and Chukwuere (2017) have maintained that it is very significant to examine the developing social media addiction trend and the strong religious impact on Pakistani Society. Hawi and Samaha (2017) also encouraged to development of prospective ways for intervention and prevention by comprehending how social media addiction and religiosity affect loneliness and sadness.

Problem Statement

Loneliness and depression, these two disorders are closely related, with loneliness frequently serving as an important predictor of depressive symptoms (Ceyhan & Ceyhan, 2008). Effective therapeutic and prevention methods depend on an understanding of the causes of loneliness and sadness. Depression and loneliness are becoming more common, especially in recent years. Social contacts and a sense of community have declined as a result of modern lifestyle elements such as growing urbanization, technology improvements, and changes in social dynamics (Kontos et al., 2010). Excessive internet use without control can have an adverse effect on individuals' mental, physical, social well-being and cognitive development (Mayda, 2015). To better understand how social media addiction and religiosity relate to loneliness and depression, this study will look at how these factors may affect people's experiences and levels of suffering.

Research Objectives

- To study the social media addiction and religiosity that may create loneliness and depression in the users.
- To examine the factors that affect user's experiences and levels of suffering in their life.

Literature Review

Social media addiction is distinguished by the unrestrained and uncontrolled engagement with social media platforms, resulting in significant time and energy devoted to these activities, thereby adversely affecting critical facets of one's life Kuss and Griffiths (2014). Social media addiction is so common among children, teens, and young adults that it can make a difference both personally and socially (Aydin et al., 2021). The excessive utilization of social media platforms can lead to social isolation, and low self-esteem, increasing the risk of depression. According to Savci and Aysan (2016), Social media use is positively linked with feelings of loneliness. Research findings have indicated that social media use increases with emotional symptoms, and increased social media use increases feelings of loneliness. Youssef et al., (2020) examine the relationship between social media disruption and loneliness between Lebanese adults. Research has revealed that interruptions in social media use are linked with higher levels of loneliness. Gong et al., (2021) found a significant correlation between addiction to social networking sites and loneliness. Research indicates a positive association between social media addiction and depression both directly and indirectly, through loneliness and unmet interpersonal needs.

Haand and Shuwang (2020) conducted a study examining the relationship between social media addiction and depression among students. Their findings suggest a positive correlation between social media addiction and depression, with a corresponding increase in depression levels as social media addiction rises. Peper and Harvey (2018) also explored that the digital addiction increased loneliness. In this study, students with higher phone usage demonstrated a higher likelihood of experiencing increased levels of depression, isolation, and anxiety in contrast to those who used their phones less frequently. The meta-analysis carried out by Keles et al., (2020) indicated a correlation between social media use and mental well-being problems in adolescents, but this relationship is likely to be multifactorial and depression is one of them.

Almenayes (2014) includes using people with strong traditional religious beliefs, limiting media avoidance, and strongly valuing connections with like-minded and social groups. The results also show that many social media users have a stronger preference for face-to-face communication over online exposure using social media. This is truer for men than women. Wood et al., (2016) explore the association between social media addiction and religion/spirituality. This paper reveals that social media interventions were negatively linked with aspects of mental health and psychological

self-efficacy and that spirituality was associated with social media aggression and psychological distress. These results lead to a hypothesis that suggests increased social media distraction could have a negative impact on cognitive abilities in various domains and hinder cognitive adaptation.

Pfeifer and Waelty (1999) point out, religion play an important role in managing depression and anxiety, especially by providing meaning and hope beyond the status quo. Neurotic conflicts and anxieties in religious patients are not necessarily caused by religious commitment, but rather by underlying psychopathology. Jansen et al., (2010) examined the link between religious beliefs, anxiety, and depression in university students. The research reveals that self-reported religious influence and self-reported religiosity are positively associated with depression but not with stress. The research found a negative relationship between worship attendance and anxiety and depression. These results imply that specific aspects of religion might have a more significant impact on preventing depression. It suggests that these aspects of religion play distinct roles in an individual's mental well-being. Therefore, this article suggests that there is a connection between depression and religion.

Yohannes et al., (2008) explore the relationship between depression and religious involvement in elderly patients receiving respite care. The study found that religious involvement was associated with positive health perceptions, fewer illnesses, and fewer cigarettes. Basic religious activity was associated with less depression, female gender, and less likelihood of living alone. The study also found that gender was a significant moderator of the interactions between public religious beliefs, private practices, and domestic activism, with domestic religious activism being more strongly associated with women. Papacharissi and Rubin's (2000) study revealed that college students facing depression exhibited a higher inclination to utilize online forums as a means of connecting with fellow individuals experiencing similar struggles with depression.

Loneliness is a distressing emotional state caused by the disconnect between people's relationships and the relationships they desire. Throughout the literature, loneliness is treated as a one- and multi-dimensional construct that includes social and emotional isolation. Fauziyyah & Ampuni (2018) findings suggest that loneliness is primarily rooted in interpersonal issues, as all of the statistically significant loneliness/attributional style effects were related to interpersonal factors. According to Phu and Gow (2019), individuals who allocated more time to social media reported higher levels of loneliness. Furthermore, both loneliness and social media usage showed associations with crucial health variables, including depression, dietary habits, sleep patterns, and overall personal health.

According to Rokach et al., (2012), Loneliness is a universal phenomenon that goes beyond age, gender, geography, and culture, involving both personal and situational factors. This study sought to conduct an exploration of whether coping with loneliness was impacted by religious observance. Research shows that religion affects how

people deal with loneliness. Among religious subgroups with different levels of adherence, beliefs, and interpretations of religious laws and practices, it is possible that the difference is a result of everyday practice. Rote et al., (2013) examine the connection between religious commitment and loneliness. The authors introduce and analyze a theoretical model proposing that religious beliefs connect to loneliness through the mediating effects of social connectedness and social backing. Their findings reveal that attending religious services is associated with higher levels of social connectedness and social backing, which subsequently lead to lower levels of loneliness. The study suggests that attending religious services can function as a protective factor against loneliness in later life by integrating older individuals into more extensive and supportive social networks.

Aylaz et al., (2012) investigate the correlation between depression and loneliness in older adults, as well as the factors that impact this relationship. Research has unveiled a notable association between loneliness and depression among socially engaged older individuals. Erzen and Çikrikci (2018) discuss the link between loneliness and depression. The study found that loneliness had a moderate effect on depression. This suggests that loneliness is a major contributor to depression. The findings corroborate the hypothesis of a positive association between depression and loneliness. This study used a meta-analysis to pool the results of several independent studies on the topic and analyze the statistical results.

Social media addiction may be an important mediator between religiosity, loneliness, and depression. According to a study by Lin et al., (2011), social media addiction is positively correlated with depression and loneliness. Furthermore, religious affiliation can negatively impact social media addiction. Kuss and Griffiths (2017) expressed that social media addiction is frequently used interchangeably with social networking site addiction, but they are distinct concepts. While social media refers to a wide range of social functions, including social networking sites, social networking sites addiction specifically refers to the compulsive use of social networking sites that can lead to symptoms and consequences similar to drug addiction. The inclusion of religion could be crucial for grasping the correlation between social media addiction, loneliness, and depression. Valente & Okulicz-Kozaryn (2021) revealed that individuals with religious affiliations exhibited lower levels of loneliness and depression.

Research Questions

- What is the relationship between social media addiction, religiosity, and their contribution to loneliness and depression in users?
- What factors affect the user's experiences and levels of suffering in their life.

Theoretical Framework

This study by Choi and DiNitto (2013) examined the uses and gratification of social media among depressed individuals. The authors used the uses and gratification theory

to understand how people with depression use social media platforms to meet their specific needs. The results show that people with depression use social media to find emotional support gain information about depression and treatment options and take action. The study sheds light on the active role people play when using social media to cope with depression and emphasizes the importance of understanding the satisfaction derived from these platforms.

A study by Lopez et al., (2019) disclosed that teenagers who experience loneliness are more prone to using social media to connect with friends and family, seek information related to loneliness, and evade problems. Overall, the UGT noted that social media can be a useful tool for lonely people, but it is also important to use it healthily. When using social media to manage loneliness, it is important to: Be mindful of your time: It's easy to get stuck on social media, so it's important to be mindful of the time you spend. So, in this study uses and gratification was applied. So, by using previous literature the conceptual model of the study is below.

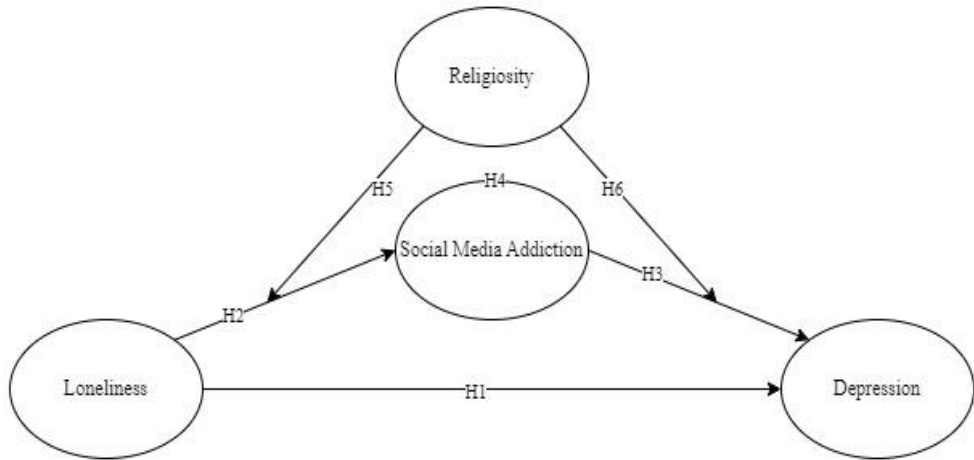


Figure 1: Research Model

Research Design

In this study, the population consists of individuals from Lahore, Pakistan who use social media and the researcher utilized non-probability purposive sampling to collect the data for the following study, cross cross-sectional survey was conducted including both self-administrated and online surveys. There were 45 independent items so, sample size of the survey is 249. Within this study, four primary variables have been identified, encompassing the independent variable of loneliness, the dependent variable of depression, the mediator variable. of social media addiction, and the moderator variable of religiosity. Social media addiction is measured by six items on a Likert scale from 1=rarely to 5=very often adapted from Tutgun and Deniz (2015).

Sample items are “You spend a lot of time thinking about social media or planned use of social media. “You feel an urge to use social media more and more.”. Loneliness is measured by 20 items on the Likert scale, 1=Never and 4=very often. The UCLA loneliness scale is the most widely used instrument for assessing loneliness. It measures subjective feelings of social isolation and lack of meaningful social connection. Developed by Russell et al. (1978) at the University of California, the construct contains 20 items that measure different dimensions of loneliness, including social and emotional. Sample items are: “How often do you feel alone?”, “How often do you feel part of a group of friends?” To measure depression 12 item scale of Poulin et al., (2015) has been used 1=never and 4 = very often. Sample items are: “I felt that I had nothing to look forward to”, “I felt downhearted and blue”. Khan's (2014) scale of religiosity was adopted for the study, having 1= strongly disagree and 5= strongly agree. Sample items are: “My thoughts often drift to God.”; “I think about God all the time.”

Data Analysis

In this study, there were 41.4 percent of the respondents were female and almost 59% percent of the respondents were male. The majority of the respondents (77%) belonged to the urban area and only (23%) of the respondents were from rural areas. While talking about the sect of the respondents, a large portion (46%) were Sunni Brelvi, followed by (20%) Sunni Deobandi, then (13%) Ahle hadith, (10%) from Shias shown in table 1.

Table 1: Demographics

Gender	F	Percent	CP
Female	103	41.4	41.4
Male	146	58.6	100
Region			
Rural	58	23.3	23.3
Urban	191	76.7	100
Sect			
Ahle Hadees	33	13.3	13.3
Muslim Only	14	5.6	18.9
Other	11	4.4	23.3
Shia	26	10.4	33.7
Sunni (Braelvi)	115	46.2	79.9
Sunni (Deobandi)	50	20.1	100
Total	249	100	

Table 2 shows the descriptive statistics and alpha value of all the constructs. Social media addiction has 06 items Cronbach alpha value is ahead from 0.7, having mean is equal to 3.3 and the standard deviation is 0.86. Loneliness has 20 items having 0.79 Cronbach’s value and mean is equal to 2.67 and the standard deviation is 0.43.

Depression has 12 items having 0.92 Cronbach’s value mean and standard deviation value is 2.5 and 0.94 respectively. Religiosity has 20 items having 0.933 Cronbach’s value, a mean is 4 and a standard is 1.

Table 2: Descriptive Statistics and Cronbach Alpha Value

	Items	Alpha	Mean	SD
SMA	06	0.741	3.0305	.86353
Loneliness	20	0.785	2.6650	.42645
Depression	12	0.923	2.5144	.93861
Religiosity	20	0.933	4.0114	1.00292

In table 3, it is evident that loneliness exhibits a significant and robust association with social media addiction. Similarly, depression also demonstrates a strong and positive relationship with social media addiction. However, religiosity, in contrast, shows no significant relationship with social media addiction.

Table 3: Correlation Matrix

Constructs	SMA	Loneliness	Depression
Loneliness	.585**		
Depression	.386**	.400**	
Religiosity	-.002	.046	.042

The table 4 shows that loneliness leads to depression as the p-value is less than a 5% level of significance (b=0.88, t=6.86, p<0.000). It means that one unit change in loneliness increases 0.88-unit depression of the respondents, Hence, H1: Loneliness increases the depression is significant. For H2: Loneliness exacerbates social media addiction; the table 4 shows that Loneliness exacerbates social media addiction as the p-value is less than 5% level of significance (b=0.6, t=11.33, p<0.000). It means that one unit change in loneliness increases 0.6-unit depression of the respondents. For H3: Social Media addiction leads to depression. The table 4 shows that social media addiction leads to depression as the p-value is less than 5% level of significance (b=0.42, t=6.6, p<0.000). It means that one unit change in loneliness increases 0.42-unit depression of the respondents, hence, social media addiction increases the depression.

Table 4: Regression coefficient

Relationship	R	RSqr	B	SE	t	P value
Loneliness & Depression	0.4	0.16	0.88	0.86	6.86	0.000
Loneliness & Social Media Addiction	0.6	0.35	0.6	0.11	11.33	0.000
Social Media Addiction & Depression	0.39	0.15	0.42	0.064	6.6	0.000

For, H4: Social media addiction mediates the relationship between loneliness and depression; The study assessed the significant mediating role of social media addiction between Loneliness and depression. The results exposed in table 5 that a significant indirect effect of loneliness on depression exists (b= 0.273, [0.0839, 0.512]), supporting H4. Furthermore, the direct effect of loneliness on depression in presence of the social media addiction was also existed significantly (b = 0.5828, p < 0.0002). Hence, social media addiction partially mediated the relationship between loneliness and depression.

Table 5: Mediation effect

Relationship`	Total	Direct	Indirect	Confidence Interval		Conclusion
	Effect	Effect	Effect	Lower	Upper	
Loneliness->Social Media Addiction->Depression	0.8862	0.5828	0.2975	0.0839	0.5123	Partial Mediation

Hypothesis H5 suggested that the indirect effect of loneliness on depression through social media addiction will be moderated by religiosity. H5 was supported as the index of moderated mediation (index = 0.05 95% CI = [0.01, 0.12]) is significant since the 95% CI does not include zero. Moreover, all the other paths indirect and direct relationships are also significantly presented in the table 6.

Table 6: Moderated mediation effect

Direct Relationships	Unstandardized Coefficient	T values
Loneliness -> Social Media Addiction	0.32	2.02
Social media addiction -> Depression	0.25	3.28
Loneliness -> Depression	0.58	3.76
Loneliness * Religiosity -> Social Media Addiction	0.21	2.14

Indirect Relationships	Direct Effect	Indirect Effect (SE)	Confidence Interval	T values
Loneliness ->Social Media Addiction -> Depression	0.58	0.29 (0.11)	[0.09, 0.50]	2.64

Probing Moderated Indirect Relationships	Effect	SE	Confidence Interval	T values
Low level of Religiosity	0.24	0.09	[0.07, 0.44]	2.67
High level of Religiosity	0.35	0.12	[0.11, 0.59]	2.92
Index of Moderated Mediation	0.05	0.03	[0.01, 0.12]	1.67

In the last hypothesis, H6; the moderated effect of religiosity on the mediated effect of social media addiction on loneliness and depression does not have any significant relation as there is no change in R-square and the figure also suggests that there is no significant impact of religiosity in the required path (index = -0.004, 95% CI = [-0.1658, 0.1599]), Figure 2 also shows there is no moderation effect in H6.

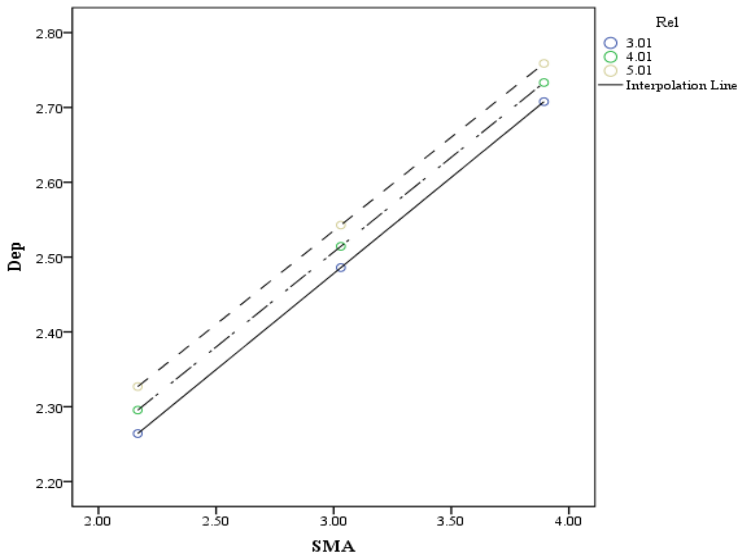


Figure 2: Moderation effect

Conclusion & Discussion

The relationship between loneliness and depression has been the subject of extensive research and speculation. This discussion aims to provide an in-depth analysis of the hypothesis that loneliness increases the risk and severity of depression, drawing from a range of empirical studies and scholarly sources to support and contextualize this relationship. Multiple studies have substantiated the notion that loneliness is a significant predictor of depression. Cacioppo and Hawkey (2020) conducted a pioneering study revealing that loneliness was associated with higher levels of depressive symptoms. Furthermore, a longitudinal study by Van et al. (2021) demonstrated that adolescents who reported greater feelings of loneliness exhibited an escalation in depressive symptoms over time. These findings collectively underline the robust connection between loneliness and depression. Several potential mechanisms have been proposed to explain the link between loneliness and depression. Neurobiologically, loneliness may contribute to dysregulation in stress-related systems, leading to altered cortisol levels and inflammatory processes that influence mood (Cacioppo et al., 2003). Moreover, the cognitive model suggests that loneliness fosters negative self-perceptions and intrusive rumination, similar to

cognitive patterns observed in depression (Isik et al., 2021). This shared cognitive terrain might contribute to the exacerbation of depressive symptoms. The interplay between loneliness and depression is not unidirectional. While loneliness can fuel depressive symptoms, depression itself can lead to social withdrawal and isolation, perpetuating feelings of loneliness.

Loneliness contributes to the exacerbation of social media addiction suggests a link between the emotional condition of loneliness and the tendency to heighten one's involvement with online platforms. A study by Rachubińska et al., (2021) endorses that loneliness contributes to the exacerbation of social media addiction. Loneliness represents a multifaceted emotional encounter arising from the perception of social isolation, while social media addiction refers to the compulsive and disproportionate utilization of social media platforms, which leads to adverse effects on various aspects of an individual's life. To examine this result, we executed a survey that included a varied group of participants from diverse demographic categories. The survey incorporated established tools to quantitatively evaluate both loneliness and social media addiction. Participants self-assessed their degree of loneliness and expounded on their routines of social media utilization. Employing statistical methods, including correlation and regression analyses, our objective was to uncover potential connections and patterns inherent in the collected data. The ramifications of these findings hold significant weight. Individuals contending with loneliness might turn to social media platforms as a means to satisfy their yearning for social interaction and companionship, inadvertently setting the stage for the emergence of addictive tendencies. The immediate gratification and virtual social interactions provided by social media could serve as a temporary remedy for feelings of isolation. However, this mechanism might inadvertently contribute to a cycle wherein loneliness deepens, while the propensity for addiction to social media escalates over time.

Social media addiction contributes to the onset of depression implying a potential causal connection between excessive utilization of online platforms and the manifestation of depressive symptoms. Karakose et al., (2023) also endorse this result. Social media addiction, characterized by compulsive and emotionally distressing online involvement, intersects with depression, a mood disorder marked by enduring emotions of sadness, hopelessness, and diminished interest in activities. The ramifications of these findings hold significance, underscoring a potential causal route connecting social media addiction to the genesis of depression. The compulsive actions and the possibility of social comparisons inherent in excessive social media engagement could potentially contribute to unfavorable self-perceptions, feelings of isolation, and a decline in self-esteem – all established factors linked to the emergence of depressive symptoms. The outcomes of our study highlight a significant connection between social media addiction and depression. As individuals progressively incorporate social media into their daily routines, it becomes imperative to acknowledge the potential repercussions of excessive usage on mental well-being. By acknowledging and tackling the potential adverse effects of social media addiction,

we can actively work towards fostering more balanced online behaviours and bolstering mental health.

Social media addiction acts as an intermediary between loneliness and depression and posits that excessive online involvement could play a central role in magnifying the impact of loneliness on depressive symptoms. Mieczkowski et al. (2023) also endorse the finding. Loneliness, characterized by a subjective emotional state arising from perceived social isolation, is proposed to indirectly influence depression by affecting the emergence of addictive behaviours on social media platforms. The consequences of these findings carry substantial significance. The outcomes emphasize the potential function of social media addiction as a mechanism that accentuates the detrimental influence of loneliness on mental well-being. Engaging excessively with social media platforms could potentially heighten feelings of isolation, cultivate unfavourable self-perceptions, and consequently, contribute to the initiation or escalation of depressive symptoms.

Religiosity moderates the indirect impact of loneliness and depression through social media addiction indicating that the extent of religiosity could potentially alter the way these variables interact. Muhammad (2022) endorse this result. Religiosity, which encompasses religious convictions and practices, is postulated to contribute to determining the intensity and character of the association between loneliness, social media addiction, and depression. The findings' implications hold significance, indicating that religiosity might operate as a protective factor, alleviating the detrimental consequences of social media addiction on the connection between loneliness and depression. Religious beliefs and practices could equip individuals with coping strategies and social reinforcement that assist in mitigating the possible unfavorable outcomes stemming from excessive online involvement. The outcomes of our study propose that religiosity acts as a moderator in the indirect link between loneliness and depression, which is mediated by social media addiction. Recognizing the moderating influence of religiosity provides us with a deeper understanding of potential safeguarding elements that could influence the effects of social media on mental well-being. This comprehension can inform the development of interventions and approaches aimed at cultivating mental wellness in our progressively digitalized society.

The mediated role of social media addiction moderated by religiosity presents a complex interplay between these elements within the framework of the relationship between loneliness and depression. Furthermore, religiosity, encompassing an individual's religious beliefs and practices, serves as a moderator in this dynamic, indicating that the impact of social media addiction could be influenced by an individual's level of religiosity. The findings carry significant implications, revealing the intricate nature of the relationship between loneliness and depression in the digital era through the lenses of mediation and moderation. The roles of mediation and moderation shed light on how the negative association between loneliness and depression can be influenced in a multifaceted manner. Social media addiction can

potentially magnify the adverse consequences of loneliness on depression, with an additional layer of influence stemming from an individual's religious beliefs and practices.

Limitations & Recommendations

Due to time constraints, the sample size was small and taken non-randomly. Instead of using social media addiction, it can be checked by using particularly Facebook addiction, Instagram addiction, and so on. Moreover, the responses of the religiosity scale were positively skewed, so religiosity did not show any relationship with other variables. So, future researchers should increase the sample size and take specific digital media platforms, moreover, different religiosity scales should be used to check the result.

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