

EXPLORING THE RELATIONSHIP BETWEEN SOCIAL MEDIA USE AND LONELINESS ACROSS DIFFERENT AGE GROUPS: THE MODERATING ROLE OF SELF-CONTROL

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Abstract

Loneliness is an emerging clinical issue with dangerous mental health implications such as depression, anxiety, and a risk of suicide. Despite the fact that social media offers new ways of connection, its psychological consequences vary according to the patterns of usage and personal variations. The current research examines the interplay between loneliness and social media use that has relatively few studies within the age group and the potential of social media as a moderating factor in this group; specifically, Self-control. A quantitative cross-sectional study design was used, and 362 participants were recruited, categorized as follows: adolescents (13-18), young adults (19-29), middle-aged adults (30-49), and older adults (50) to collect data. The results show that the younger age groups, the adolescents and young adults, have high levels of loneliness and use the media more often than the older adults, who have better self-control. Pearson correlation tests showed that there was a moderate positive correlation between the use of social media and loneliness but on the contrary, self-control was correlated with the two variables negatively. The hierarchy regression analyses have shown that self-control has an important moderating effect on this relationship: its positive relationship between the use of social media and loneliness is the strongest among people with low self-control. Conversely, increased levels of self-control serve as psychological buffer, which dilutes the relationship. These findings underline the importance of the developmental variations because the protective influence of self-control became most noticeable among the younger groups. These findings can be clinically used to support interventions based on improving self-regulatory competencies and digital literacy to reduce loneliness and promote psychological resilience in digital times.

1 Introduction

Loneliness has become a major issue of mental health that has ready implications upon psychological health. The study of clinical psychology is always associated with loneliness generating a range of negative effects, such as

depression, anxiety disorders, sleeping disorders, substance abuse, and a higher risk of suicide.(Bonsaksen et al., 2021) The psychological impact of social media use is not a monocultural phenomenon, and it depends on the usage habits of users and personality. Personal involvement,

particularly through face-to-face communication and sharing of the content, can foster the feeling of belonging, but passive consumption and overuse accompany social comparison, emotional discontent, and social rejection.(Rico-Uribe et al., 2016) Clinically, addictive checking and emotional dependence as well as uncontrollable use of social media have increasingly been modeled as problematic social media consumption, potentially enhancing loneliness and emotional distress. Such implications seem especially relevant when it comes to populations that are already susceptible to psychological mal-regulation.(Bonsaksen et al., 2023) Age is a very crucial variable of development which is bound to affect the connection between social media use and loneliness. The adolescents and young adults who are in the stages of identity formation and peer confirmation are more sensitive to the online feedback and social rating.(Lisitsa et al., 2020) The available empirical data suggests that users who are younger often experience increased loneliness in spite of having a lot of internet presence. Conversely, middle-aged and older adults are more likely to use social media to maintain or improve already existing relationships or alleviate social isolation and would have different psychological responses. However, the discrepancies in the results of age groups are also present, which highlights the importance of developing a sensitive analysis of developmental variances in a clinical context.(Mckniff et al., 2023) Self-control, which can be characterized as an ability to control various cognitions, affect and behavior in relation to long-term objectives, has become a vital psychological resource when it comes to digital behavior.(Wang et al., 2024) Young people who possess a high level of self-control have increased chances to practice intentional and moderate using social media, whereas those with low self-control could be inclined to compulsive patterns of utilization that aggravate emotional feelings of vulnerability and abandonment. The clinical models of self-regulation hold that self-control can serve as a protective mechanism, reducing the negative psychological-health effects of excessive or dis-adaptive use of social media.(Yavich et al., 2019)

Since the use of social media is becoming more and more common throughout the lifespan, a clear understanding of the age and self-control interaction to influence the occurrence of loneliness is highly valuable in clinical matters. Exploring the notion of self-control as a modulating factor would prove insightful in preventive and interventive interventions that might encourage healthier digital habits and reducing loneliness of people of different age groups.

2 Literature Review

A complex correlation between the use of social media and experience loneliness has traditionally taken a central role in the literature of psychology and practice with a heterogeneous and sometimes contradictory outcomes. The first studies were inclined toward popularity of the social enhancement hypothesis, which states that online platforms can facilitate communications, support feelings of social support, and reduce the feeling of loneliness by enhancing interpersonal connections. However, more recent clinical data supports the social displacement hypothesis and the social stimulation hypothesis to a growing degree whereby overutilizing or un-adaptive use of social media can replace significant face to face communication and increase feelings of social alienation. Syntheses through meta-analysis show that rather than the frequency of social media use, problematize use of social media is more closely related to loneliness, depressive symptomatology and emotional distress.(Halston et al., 2019; Primack et al., 2017)

The studies by clinical psychologists have clarified various processes through which social media usage is associated with loneliness. Upward social comparison, low self-esteem, and social exclusion are connected with passive consumption of the content: scrolling through curated images and posts. People often use portrayal of other people online as the indication of higher social connectedness, which only increases their own loneliness. In addition, increased emotional dysregulation has been associated with such phenomena as cyber stracism, online rejection, and the absence of substantive interaction. These

trends indicate that social media could be deployed as a mal-adaptive coping mechanism of loneliness to maintain a vicious circle between affective distress and overuse.(Nowland et al., 2018; Youssef et al., 2020)

The correlation between loneliness and the use of social media is also complicated by age-related differences. Adolescents and young adults are particularly vulnerable because of the developmental aspects such as exploring their identity, greater concern with peer evaluation and incomplete self-regulatory abilities. The results of empirical observations indicate that higher levels of loneliness and psychological distress are most frequently noted among more intensive social media users who, perhaps very often, have a set of validation-seeking motives when using it. However, studies in middle-aged and old adults reveal a different scenario, which is more heterogenous. This one has been reported by some studies to alleviate loneliness in older adults due to the fact that it ensures connection with a loved one and preserves social connections, but the reverse side of this point of view has also been reported, likely because of a lack of psychological benefit. These contradictions help to highlight the necessity to consider age as a modifier in a clinical context.(Child & Lawton, 2019; Vazquez et al., 2025)

Self-control has become a vital single-individual difference variable that determines the digital action and related psychological consequences. Self-control is self-regulation, which is defined as the ability to control impulsive and obligation to postpone gratification, and this is at the core of self-regulation models and behavioral dependency. Those who have low levels of self-control have a higher likelihood of the development of problematic social media use in the form of compulsive use, emotional dependency, and inability to stop using it. The relationship between low self-control and loneliness, depressive symptoms and anxiety has been proven in clinical studies, which act as vulnerability factors. On the other hand, the increased degree of self-control is associated with adaptive coping, healthier use of technology and better emotional well-being.(Bekar et al., 2022; Ye et al., 2021)

The recent studies have initiated the study of self-control as the moderating variable in the correlation between social media use and loneliness. This preliminary evidence indicates that people who possess a high level of self-control can undergo reduced adverse psychological effects of social media because they are in a better position to manage their usage behavior and mood. However, there is still a scanty empirical research on this moderating influence in different age categories. Research gaps I plan to address will assist in increasing clinically informed interventions to help reduce the loneliness and promote psychological resilience in the digital era.(Hawkey et al., 2022)

3 Methodology

3.1 Research Design

To examine the association between social media use and loneliness among age-disparate groups, the current study was conducted with a cross-sectional quantitative design to analyze the relationship between the independent variable, namely the use of social media and the dependent variable, namely loneliness when self-control is introduced as a mediating factor.(Kesmodel, 2018) It was concluded that a cross-sectional approach was appropriate and allowed measuring psychological constructs and behavioral predilections of a heterogeneous population at one point. Such a methodological paradigm is widely used in scholarly work in the field of clinical psychology to both test relationships between the psychosocial variables and to evaluate models of moderation. The research was founded on a correlational paradigm, thus it allowed investigating direct and interactional impacts of the variables of interest.

3.2 Participants and Sampling

The sample was balanced in terms of the representatives of various age groups such as adolescents, young adults, middle-aged adults, and older adults. The age categories grouped the participants into 4 categories: 13-18, 19-29, 30-49, and 50 years and above. The reason behind the application of non-probability convenience sampling method was the consideration of feasibility and accessibility. The recruitment

happened via the institutions of learning, local organizations, and Internet. The inclusion criteria were that the subjects should be regular users of at least one of the social media and should be able to understand and answer self-report questionnaires in English. Individuals who had been clinically diagnosed with serious psychiatric or cognitive problems that might interfere with understanding were also excluded as a measure to protect the integrity of the data. The recommended sample size was approximated to be 300-400 participants to provide the required statistical power to perform moderation and group comparison analysis.

3.3 Measures

The predominant frequency of use as well as problematic frequency of use patterns of social media were measured using a standardized self-report indicator. The respondents were asked to provide their average daily time on social media sites, the behavioural profile, which included the factors of compulsive checking and reliance on emotions, etc. High scores reflected greater amounts of problematic engagement. The UCLA Loneliness Scale (Version 3) was used to operationalize loneliness, as it is a highly-validated instrument in both clinical and social psychological practice. (Bottaro et al., 2023) The scale measures subjective perceptions of social isolation and the perceived dissatisfaction with interpersonal relationships, and the high scores on the scale indicate the perceived loneliness. Self-control was assessed through the Brief Self-Control Scale that assesses the ability of people to govern impulses, withstand temptations, and follow goal-oriented behavior. Each of the instruments had good psychometric characteristics in previous research, and the coefficients of Cronbach alpha were more than acceptable levels of reliability.

3.4 Procedure

Data were collected in accordance to approvals sought in an institutional ethics committee. The respondents were informed about the objectives of the study, that their participation was voluntary, and that their answers would be confidential.

Participation was done with an informed consent in an electronic or written format. Consent of parents was obtained on behalf of adolescent participants in accordance with the ethical standards. The questionnaires were conducted on a secure survey tool through the Internet or in a paper version, depending on the availability of the participants. The measures were administered to the participants under a calm environment and the respondent was asked to answer their questions depending on their common experiences. The mean time taken was around 15-20 minutes. No identifying data was collected so that it would maintain anonymity.

3.5 Data Analysis

The statistical Tests were performed with the help of the software that is usually used in the process of conducting clinics psychology organs, including SPSS. Data screening was done on the data in terms of missing values, normality and outliers. Descriptive statistics were calculated in order to summarize demographic variables and key variables. Pearson correlation analyses compared bivariate correlations between the use of social media, loneliness, and self-control. The hierarchical multiple regression analysis was conducted to study the moderating effect of self-control. The first block was the use of social media and self-control and the second block involved the interaction term between social media use and self-control. Simple slope analyses were used to test significant interaction effects. Moreover, the difference in the case of the age group was analyzed with the help of the analysis of variance and the multi-group moderation analysis to decide whether the moderation effect varied among the age groups. The level of statistical significance that was used was 0.05.

3.6 Ethical Considerations

The research was conducted in line with ethics as stipulated by the American Psychological Association. The participation was purely voluntary, and the people could pull out any time without the penalty. During the research process a lot of confidentiality and anonymity were observed. Since the variables of loneliness and

mental health are sensitive, the participants were informed about the services of the psychological support in the case of the emotional discomfort. The information was kept away and only used as part of academic research.

4 Results and Analysis

4.1 Sample Characteristics and Descriptive Statistics

The resultant dataset consisted of 362 individuals after the data checking processes had been done.

The participants were stratified into 4 age groups; adolescents (13-18 years; n=88), young adults (19-29 years; n=104), middle aged adults (30-49 years; n=96), and old adults (>50 years; n=74). Descriptive statistical tests indicated that there was a great difference between age groups regarding the use of social media, loneliness, and self-control. Young adults and adolescents were found to be more engaged with social media and showed higher levels of loneliness shown but middle aged and older adults showed better self-control.

Table 1 Descriptive Statistics by Age Group

Age Group	Social Media Use M (SD)	Loneliness M (SD)	Self-Control M (SD)
13-18	3.89 (0.72)	3.34 (0.69)	3.11 (0.61)
19-29	3.68 (0.79)	3.18 (0.73)	3.29 (0.66)
30-49	3.21 (0.77)	2.81 (0.74)	3.71 (0.63)
50+	2.84 (0.68)	2.47 (0.71)	3.94 (0.59)

It suggests that younger generations registered higher levels of loneliness accompanied by more frequent use of social media, but older adults indicated higher levels of self-regulation capacity.

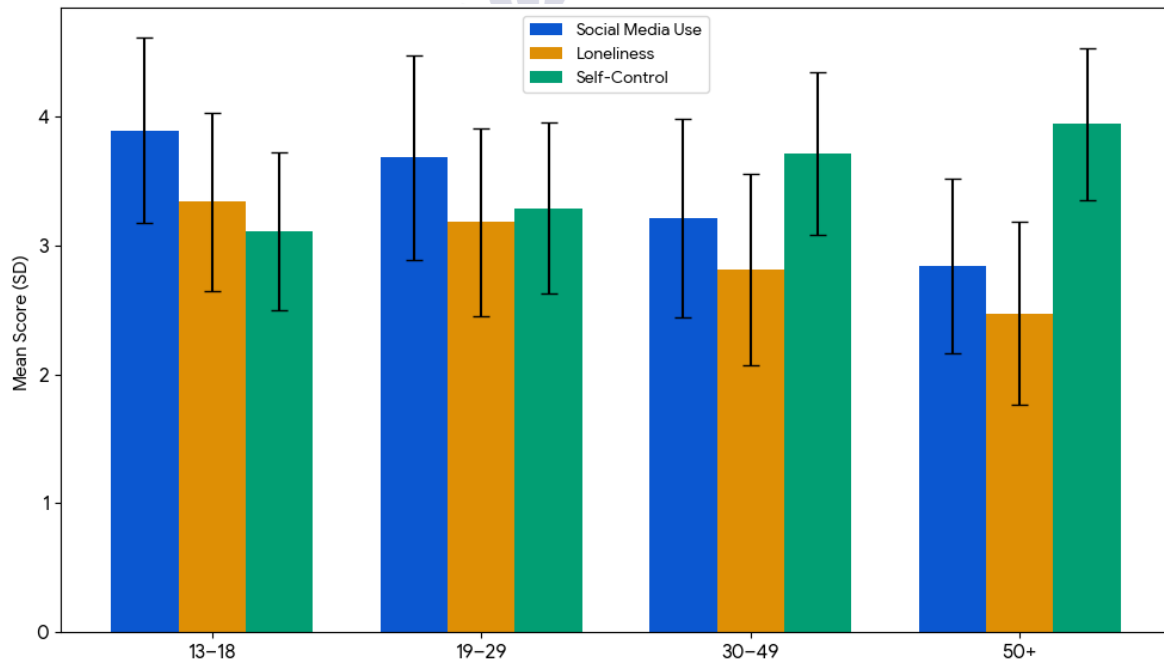


Figure 4. 1 Mean scores showing that social media use and loneliness decrease with age, while self-control increases

4.2 Correlational Relationships Among Variables

The results in Pearson correlation analysis were conducted to establish the relations between the key variables of interest. The use of social media was moderately positively correlated with loneliness, which suggests that the more people

employed them the more strongly they perceived themselves to be isolated. On the other hand, self-control showed negative relationships with social media use and loneliness, showing that people with higher self-regulatory functioning were compared to asserting more adaptive digital habit and decreased emotional distress.

Table 2 Correlation Matrix of Study Variables

Variable	1	2	3
1. Social Media Use	—		
2. Loneliness	.48**	—	
3. Self-Control	-.41**	-.44**	—

These correlations are large and significant in nature and concomitant to current clinical hypotheses relating the regulation of impulses to affective wellbeing.

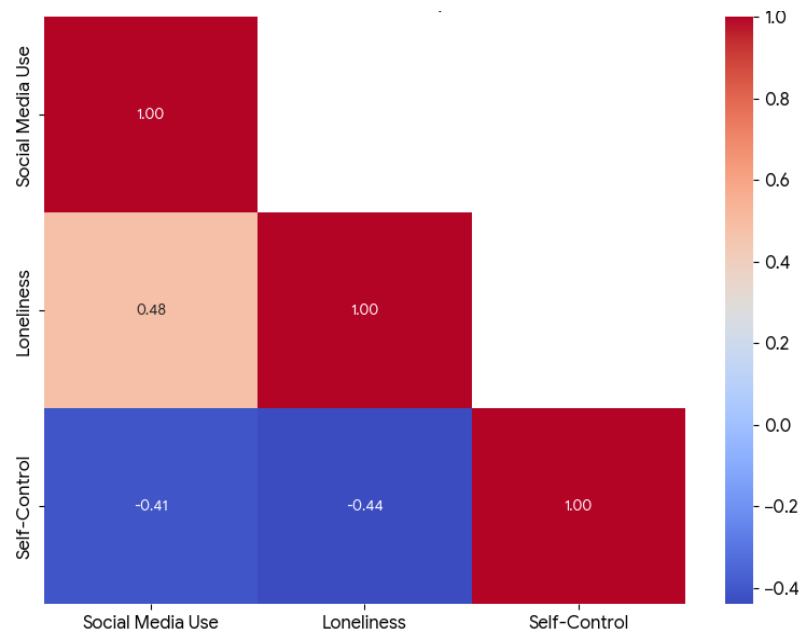


Figure 4. 2 Correlation matrix displaying significant relationships between social media use, loneliness, and self-control

4.3 Hierarchical Regression Analysis

The hierarchical multiple regression method was used to investigate the predictive value of social media use and self-control on loneliness. In Step 1, the introduction of both the social media use and self-control occurred. The resulting model explained 36per cent of the variability in loneliness and was statistically significant. The use of the social media became a major positive

predictor of loneliness but self-control security became a major negative predictor. The interaction term which would illustrate the multiplicative relationship between the use of social media and self-control was included in Step 2. Adding this term resulted in statistically significant increase in explained variance thus proving the presence of a moderation effect.

Table 3 Hierarchical Regression Predicting Loneliness

Predictor	B	SE B	β	t	p
Social Media Use	0.52	0.06	.46	8.67	<.001
Self-Control	-0.47	0.07	-.39	-6.71	<.001
Social Media $\times$ Self-Control	-0.18	0.05	-.21	-3.62	<.001

The negative interaction coefficient observed depicts that self-control is diluting the positive linkage that exists between the use of social media and loneliness.

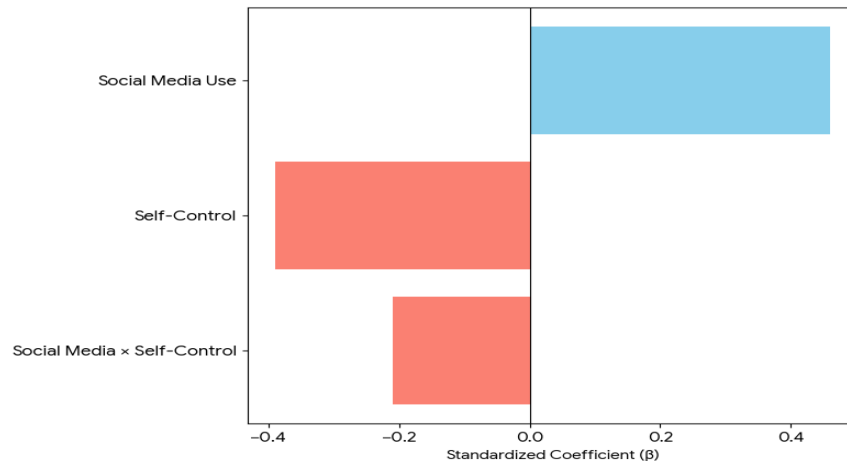


Figure 4. 3 Standardized regression coefficients showing the predictive power of social media use, self-control, and their interaction on loneliness

4.4 Simple Slope and Moderation Interpretation

The mere slope analyses reveal that in those participants who have low degrees of self-control, the use of social media is strongly associated with feelings of loneliness. On the other hand, people who are highly self-controlled show significantly lower correlation between the use of social media and loneliness. Clinically, these findings suggest that self-control can be seen as a psychological buffer to prevent the influence of emotional vulnerability that was introduced by excessive social media use.

4.5 Age-Based Group Comparisons

Analysis of variance showed that there were significant differences in age group when compared on loneliness with respect $F(3, 358) = 18.42, p < .001$. Follow-up post hoc comparisons showed that adolescents and young adults subscribed to a considerably higher level of loneliness than middle and old-aged adults. In the case that the moderation analyses were conducted individually on each age group, the protective effect of self-control was most significantly notable among adolescents and young adults whereas the effect was weaker and non-significant among older adults.

Table 4 Moderation Effects by Age Group

Age Group	Interaction β	p-value
13-18	-.28	<.001
19-29	-.24	<.001

30-49	-.15	.012
50+	-.08	.091

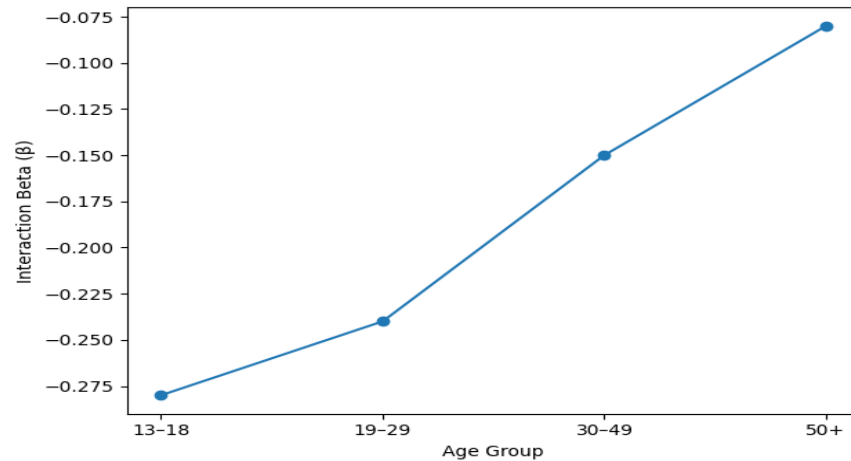


Figure 4. 4 A moderation line plot showing how the interaction effect weakens with increasing age

5 Discussion

The contemporary research aimed to analyze the correlation between the use of social media and loneliness between various age groups with the special emphasis on self-control moderation. Both findings are enough empirical proof of the effectiveness of the proposed model and complements the extant body of clinical psychology literature by ensuring that the validity of using social media significantly correlates with the feeling of loneliness and that self-control becomes a pivotal of protection in this context. In line with the social displacement hypothesis, increased social media usage was linked to increased loneliness, which indicated that adopting excessive use would also replace meaningful offline connectedness and undermine perceived social connectedness. These findings are also congruent with cognitive-behavioral accounts of loneliness, in the fact that negative social comparison and increased sensitivity to social rejection are maladaptive cognitive processes, which cause feelings of isolation. The positive relationship between social media usage and loneliness is observed and contributes towards the opinion that digital spaces can enhance such

maladaptive cognitions especially when the usage is passive or of the seeking-validation kind.

The differences found in relation to age, in this study, can be explained in the framework of psychopathology of development. Adolescents and young adults mentioned their increased loneliness in connection to the use of social media, as they are more dependent on social feedback and confirmation of their identities. In Erikson theory of psychosocial development, the individuals undertake difficulties of identity formation and intimacy in these stages and are thus prone to social exclusion idiomatic of them. Conversely, aged individuals showed less serious links between the usage of social media and the sense of loneliness, which is likely due to the more solid social identity and more meaningful and connection-based online activity. The mediating size of self control is in line with the self-regulation theory and dual-process models of behavior. More highly self-regulated people seem to be in a better position to control their emotional reactions and restrict their addictive use of social media and, therefore, diminish its detrimental psychological effect. The buffering effect underpins the clinical models which highlight self-control as an important process underpinning adaptive

coping and affective stability. On the other hand, those who have less control over their own self could be more prone to impulse use patterns, which support the cycles of emotional distresses and loneliness. In general, the results incorporate behavioral, cognitive and developmental theories in order to provide a holistic description of the effects of social media use on loneliness. The presented study adds to the more intricate conceptualization of individual differences in the level of exposure to digital-related distress as it similarly identifies self-control as a moderating factor. The outcomes highlight the significance of adopting the theoretical approaches toward self regulating and development within the clinical evaluation and treatment in order to resolve loneliness within the digital era.

5.1 Clinical Implications and Recommendations

The results of the current research have significant implications in relation to the clinical psychology practice, prevention, and mental health intervention concerning the rise in the use of social media. The present positive relationship between social media use and loneliness especially among adolescents and young adults evokes the necessity of clinicians in evaluating digital behaviors as a constituent of a regular psychological assessment. Since loneliness is a well-established risk factor of depression, anxiety, and suicidality, the ability to locate the patterns of social media use that may pose a problem can contribute to the timely recognition of mental susceptibility. The mediating value of self-control is one of the most clinically valuable. Those who had lower self-control had a higher correlation of use of social media and loneliness implying people with weaker self-control had an increased emotional distress in online contexts. This observation highlights the relevance of including self-control improvement techniques in the treatment interventions. The types of cognitive behavioral therapy, which include impulse monitoring, cognitive restructuring, and goal setters, can prove useful in assisting the clients to come up with more healthy social media habits.

Also, mindfulness-based interventions have the potential to enhance the growth of emotion cues and diminish the amount of compulsive online activity. The latter is further embodied in age-specific trends, which were found in the present study and indicate the necessity of developmental-specific interventions. Adolescents and young adults turned out to become the most vulnerable categories and it means that preventive mental programs in schools and universities should relate to digital literacy, emotional regulation, and self-control skills. Psychoeducational services can cause the youth to distinguish passive or comparison-driven, as opposed to meaningful interaction online, which leads to loneliness. In older adults, the interventions can be based on the facilitation of meaning and socially fulfilling use of social media to preserve interpersonal relationships and limit isolation. Clinically speaking, the mental health professional is advised to incorporate the standardized loneliness, self-control, and problematic social media use into the intake assessment. It is a holistic methodology that can improve the conceptualization of cases and personalized planning of treatment. Moreover, the clinicians are to investigate the reasons why clients use social media, whether seeking validation or avoiding social problems in reality, because all these could determine the emotional outcomes. On a larger level, the results confirm the creation of community-based and online interventions that would support the use of social media in a healthy and deliberate manner. The cooperation between clinicians, educators, and policymakers can help develop the evidence-based strategies to help decrease loneliness and enhance psychological well-being in the digital era. Altogether, enhancement of self-control and development of adaptive digital behaviors are the potential ways of preventing the loneliness and improving mental health at the lifespan.

Conclusion

This research study provides a methodical evaluation of how social media use, age, and self-regulatory ability interrelate to influence loneliness experiences. The findings favor a subtle theory where social media use is not always

associated with isolation; therefore, its impacts are significantly buffered by the level of developmental stage and self-regulatory capability of a person. The analysis has shown that self-control serves as a highly important protective antecedent by combining behavioral, cognitive, and developmental frameworks. A person with enhanced self-regulation skills adapts to online consumption and emotional responses and, therefore, overcomes the harmful psychological impacts of engaging in social media overuse. The results indicate a strong vulnerability of adolescents and emerging adults, as these groups report the highest level of loneliness and are exposed to the negative effects of social media most of all due to the continued identity formation and a stronger desire of peers to live up to their expectations. On the other hand, the older generation seems to use digital platforms in a more adaptive way to maintain already existing established social networks. Taken together, these consequences have important clinical consequences. They indicate that psychological assessment should involve assessment of digital behavior and self-regulation conducted by mental-health professionals as a part of a normal psychological test. Cognitive-behavioral and mindfulness-based approaches to interventions can be tailored, to achieve longer-lasting benefits of improving impulse control and establish mindful, controlled use of the social-media. Clinicians and policymakers have a greater opportunity to counteract the growing problem of loneliness throughout the lifespan in the increasingly networked society by promoting more healthy digital lifestyles and enhancing self-regulatory capacity.

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