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RESEARCH ARTICLE

Aggression Mediates Relationships between Social Media Addiction and Adolescents' Wellbeing

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Abstract:

Background:

Digital technologies have an important role in human behavior and well-being.

Aim:

The study aimed to investigate the mediation role of aggression in the relationship between social media addiction and mental well-being.

Methods:

The study participants comprised 1354 adolescents, of whom 808 were female and 546 were male. The mean age of the participants was 14.12 (SD= 1.51). Data were gathered *via* the Bergen Social Media Addiction Scale, Buss Perry Aggression Questionnaire, and Warwick-Edinburgh Mental Wellbeing Scale.

Results and Discussion:

The results of the study demonstrated aggression to partially mediate the relationship between social media addiction and mental well-being. Hence, it can be said that social media addiction negatively predicts mental well-being through aggression.

Conclusion:

As a result, mental health professionals should take into account the role of social media addiction and aggression when they work with adolescents who need help to improve their mental well-being.

Keywords: Social media addiction, Aggressiveness, Mental well-being, Psychological disorders.

Article History

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1. INTRODUCTION

For many years, health has been considered a state of complete well-being encompassing emotional, social, and mental well-being rather than the absence of a physical illness. Therefore, being psychologically healthy is one of the important indicators of health. In this respect, one of the important indicators of strong psychological health is well-being. Well-being is conceptualized in different ways by different researchers. In this context, subjective well-being is defined as the individual experiencing positive emotions more frequently than negative emotions and being satisfied with his/her life [1]. Researchers who have developed the concept of

psychological well-being argue that enjoying life alone will not be an indicator of well-being, and they emphasize the importance of being functional in behavioral terms [2]. Mental well-being, which includes both these understandings of well-being, is explained as being emotionally, cognitively, and psychologically functional [3].

Well-being, which indicates strong mental health, is negatively associated with psychological disorders, such as depression and anxiety [4]. On the other hand, resilience [5], quality of life [6], and mindfulness [7, 8], which are defined as psychological strengths of the individual, are found to be positively associated with well-being. For this reason, well-being is sometimes used synonymously with mental health.

There are various factors that affect mental health and mental well-being. In particular, the use of technological

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products and platforms, which is increasing day by day, has become an important factor affecting mental health. Social media, which is one such platform, can become an addiction, especially when used excessively [9]. Individuals with social media addiction, which is described as a behavioral addiction, tend to increase the duration of social media use, seeking satisfaction and experiencing feelings, such as anxiety, stress, and anger when they cannot access social media [10]. These qualities have the same characteristics of tolerance and withdrawal similar to the current features of substance abuse [10]. For this reason, some researchers prefer to use the concept of social media addiction because it has similar aspects to substance addiction. However, some researchers avoid the term addiction and express this concept as excessive or maladaptive social media use.

A review of studies on social media use has concluded that the majority of research is focused on the pathological aspects of social media use, highlighting its negative impact on mental health and well-being [11]. In this context, Hou *et al.* [12] found a correlation between social media addiction, weakened mental health, and reduced academic performance among university students. Similarly, Rasmussen *et al.* [13] found that social media use negatively regulated mental well-being due to difficulties in emotion regulation and stress. In addition, meta-analysis findings in a study that systematically reviewed studies examining the relationships between social media addiction and well-being revealed social media addiction to be negatively associated with well-being [14]. Furthermore, social media addiction has been found to be negatively correlated with psychological distress, including depression, anxiety, and stress [15, 16], as well as sleep quality, which is very important for mental health [17]. Therefore, it can be argued that social media addiction is a risk factor for mental well-being.

One of the risks of excessive or maladaptive use of social media networks for students is aggressive behavior. A moderate positive correlation was found between social media addiction and aggression [18]. Similarly, the aggression levels of adolescents with internet addiction, which is closely related to social media addiction, were high [19]. In line with this, it can be said that as social media addiction increases, there is an increase in aggressive behaviors.

Bullying, which includes aggressive behavior, also occurs in internet environments and is called cyberbullying. Cyberbullying is defined as repetitive aggressive behavior by a group or an individual using electronic means against a person who cannot easily defend himself [20]. In this respect, social media creates a suitable environment for the emergence of cyberbullying and related aggressive behaviors. Individuals with social media addiction use social media for an increasing amount of time. For this reason, it can be thought that increasing time will increase the duration of aggression and exposure to aggression. Some research findings have shown social media addiction to be positively related to aggression [18] and cyberbullying [21]. In addition, social media addiction negatively affects empathy, which is a very important feature in terms of social relationship quality [22]. Therefore, it can be thought that the weakness of a basic social skill, such as empathy, will increase aggression.

Studies have shown aggression to have negative effects on mental health [23]. Similarly, verbal aggression causes mental health problems in adolescents and young people [24]. On the other hand, aggression is negatively associated with mental health and well-being [25, 26]. In addition, the verbal aggression of the parent is also negatively related to the child's mental well-being [27]. In terms of not being in a physical environment, it can be said that social media is a more suitable environment for verbal aggression. As a result, social media addiction may be related to the fact that individuals behave aggressively more easily by minimizing emotional interaction during communication. Thus, the mental well-being of individuals may potentially decrease.

Adolescence is a period in which friendship relations are at the forefront regarding social development [28] and sometimes even preferred over family relations. For this reason, satisfactory friendship relations are an important factor that positively affects the mental health of adolescents [29, 30]. Today, many social media environments, such as WhatsApp, Facebook, Instagram, Snapchat, *etc.*, provide the opportunity to develop and maintain friendship relations. However, excessive use of social media can have a negative impact on social relationships instead of enhancing them [31, 32]. Therefore, the findings of this study are crucial in terms of offering insights to adolescents on improving their friendships by understanding the relationship between social media addiction and mental well-being.

As technological devices, such as computers, tablets, and smartphones, and internet access have become easily accessible, social media usage frequency has also increased. Significantly, the quarantine measures taken during the COVID-19 pandemic have increased social media usage [33]. Individuals have started to use social media more for their family, friends, and business relations since face-to-face communication was limited during the pandemic [34]. One of the important measures to reduce the spread of the COVID-19 pandemic worldwide was the transition to distance education at all levels, including Turkey. In this context, it can be argued that adolescents, whose face-to-face social relations are quite limited, start to use social media more frequently to cope with this situation. Increasing frequency of use also increases the risk of social media addiction [35, 36]. Therefore, many studies on social media addiction have been conducted in research on social media use [14, 12, 35]. These studies have shown that social media addiction negatively affects aggression [18] and mental well-being [13]. Within this framework, the study aimed to examine the mediating role of aggression in the relationship between social media addiction and mental well-being. For this purpose, the hypotheses of the research are as follows:

H₁: Social media addiction predicts mental well-being negatively.

H₂: Social media addiction predicts aggression positively.

H₃: Aggression predicts mental well-being negatively.

H₄: Aggression mediates the relationship between social media addiction and mental well-being.

2. METHOD

2.1. Design

The research employed a quantitative research design, specifically a cross-sectional correlational design, to investigate the relationship between adolescents' smartphone addiction, aggression, and mental well-being. By utilizing this design, we were able to assess the associations and potential mediation effects among these variables, providing valuable insights into the complex interplay between smartphone addiction, aggression, and mental well-being in adolescents.

2.2. Participants

The present study was carried out on adolescents ($N = 1354$) living in Baku, Azerbaijan. Participants consisted of 808 females (59.7%) and 546 males (40.3%), and their ages ranged from 10 to 18 ($M=14.12$, $SD=1.55$). Most participants' parents lived together ($n = 1234$, 91.1%), while a minor participant's parent was divorced ($n = 120$, 8.9%). 87 (6.4%) participants had single siblings, 646 (47.7%) participants were first children, 243 (17.9%) participants were middle children, and 378 (27.9%) were last children.

2.3. Ethics

In accordance with the guidelines set forth in the Helsinki Declaration of 1975, as revised in 2013, this study followed ethical protocols and received approval from the Ethics Committee of the Psychology Scientific Research Institute in Baku, Azerbaijan (Approval number: T-320). Prior to their participation, informed consent was obtained from all participants, ensuring their voluntary and informed agreement to take part in the study.

2.4. Measures

2.4.1. Bergen Social Media Addiction Scale

The scale was developed by Andreassen *et al.* [37] to measure the social media addiction levels of individuals. It comprises 6 items and a 5-point Likert type. Higher scores show a higher level of social media addiction. Cronbach alpha coefficient for this scale has been found to be .82. In this study, a back translation process has been conducted, and a confirmatory factor analysis (CFA) has been performed. The CFA revealed the original single-factor structure to be confirmed in the Azerbaijani sample ($\chi^2 = 114.03$, $df = 9$, $GFI = 0.972$, $AGFI = 0.935$, $NFI = 0.933$, $IFI = 0.938$, $CFI = 0.938$, $SRMR = 0.044$). Furthermore, the reliability coefficient was found to be acceptable ($\alpha = .75$).

2.4.2. Buss-perry Aggression Questionnaire (BAQ)

Buss and Durke [38] developed it to measure the aggression level. It consists of 12 items with a 5-point Likert scale. The Buss-Perry Aggression Questionnaire comprises four subscales: verbal aggression, physical aggression, anger, and hostility. Higher scores show a higher level of aggression. Cronbach alpha coefficient was found to be .5 for this scale. The adaptation of the scale into the Azerbaijani language was conducted by Rustamov *et al.* [39], and the confirmatory factor analysis confirmed the four-factor structure in the Azerbaijani sample ($\chi^2 = 364.82$, $df = 48$, $CFI = 0.941$, $NFI = 0.933$, $GFI = 0.954$, $IFI = 0.941$, $AGFI = 0.926$, and $SRMR = 0.041$). The

reliability coefficient was found to be acceptable for this scale ($\alpha = .86$).

2.4.3. Warwick-Edinburgh Mental Well-being Scale Short Form

The short form of this scale was developed by Haver *et al.* [40]. This uni-dimensional scale comprises 7 items rated on a 5-point Likert scale. A higher score indicates higher mental well-being. Cronbach alpha coefficient was found to be .86 for this scale. In this study, the back translation process has been conducted, and a confirmatory factor analysis (CFA) has been performed. The CFA revealed the original single-factor structure to be confirmed in the Azerbaijani sample ($\chi^2 = 20.93$, $df = 14$, $GFI = 0.996$, $AGFI = 0.991$, $NFI = 0.990$, $IFI = 0.997$, $CFI = 0.997$, and $SRMR = 0.019$). Furthermore, the reliability coefficient was found to be acceptable ($\alpha = .70$).

2.5. Data Analysis

The multiple mediating effects of aggression on the relationship between social media addiction and well-being were examined using the bootstrapping procedure *via* IBM SPSS Statistics 22 with a PROCESS macro developed by Hayes [41]. Gender was entered into the model as a control variable. 5000 bootstrapped samples were used to estimate 95% confidence intervals of the indirect effects of aggression. The model was not considered significant for mediation when the bootstrapped confidence intervals were zero [41].

3. RESULTS

Means, standard deviations, skewness, kurtosis, and correlations for the variables are shown in Table (1). The ranges of skewness (from -0.33 to 0.40) and kurtosis (from -1.02 to -0.20) for all the main variables were in the acceptable range for normality criteria between -2 and +2 (Kline, 2010). Results indicated social media addiction to be negatively associated with wellbeing ($r = -.362$, $p < .01$) and positively associated with physical aggression ($r = .379$, $p < .01$), verbal aggression ($r = .322$, $p < .01$), anger ($r = .359$, $p < .01$), and hostility ($r = .221$, $p < .01$). Wellbeing was found to be negatively associated with psyche ($r = -.385$, $p < .01$), verbal communication ($r = -.345$, $p < .01$), anger ($r = -.429$, $p < .01$), and hostility ($r = -.308$, $p < .01$).

Fig. (1) depicts the effect of social media addiction on well-being through physical aggression, verbal aggression, anger, and hostility. The total indirect effect was found to be significant for social media addiction on well-being ($B = -.368$, $SE = .02$, 95%CI = $-.418 - -.318$). When mediator variables were entered into the model, the direct effect of social media addiction on well-being was significantly reduced ($B = -.201$, $SE = .02$, 95%CI = $-.259 - -.156$), suggesting a partial mediating role. Of the proposed mediators, the specific indirect effects were significant for psyche ($B = -.043$, $SE = .01$, 95%CI = $-.072 - -.016$), verbal aggression ($B = -.026$, $SE = .01$, 95%CI = $-.046 - -.006$), anger ($B = -.075$, $SE = .01$, 95%CI = $-.103 - -.050$), and hostility ($B = -.016$, $SE = .01$, 95%CI = $-.029 - -.004$). Therefore, the bootstrap procedure showed the indirect effect of social media addiction on well-being through dimensions of aggression, which was found to be significant (Table 2).

Table 1. Descriptive statistics and reliabilities for the study variables.

Variable	Correlations					Descriptive Statistics			
	1	2	3	4	5	Mean	SD	Skewness	Kurtosis
1. Social media addiction	–	-	-	-	-	15.36	5.10	.210	-.464
2. Psychological aggression	.379**	–	-	-	-	10.06	3.73	.317	-.456
3. Verbal aggression	.322**	.604**	–	-	-	7.61	2.91	.402	-.439
4. Anger	.359**	.541**	.454**	–	-	6.58	2.57	-.259	-1.029
5. Hostility	.221**	.432**	.398**	.476**	–	8.82	2.44	-.015	-.204
6. Mantel wellbeing	-.362**	-.385**	-.345**	-.429**	-.308**	24.40	5.20	-.332	-.222

Note: ** $p < .01$.

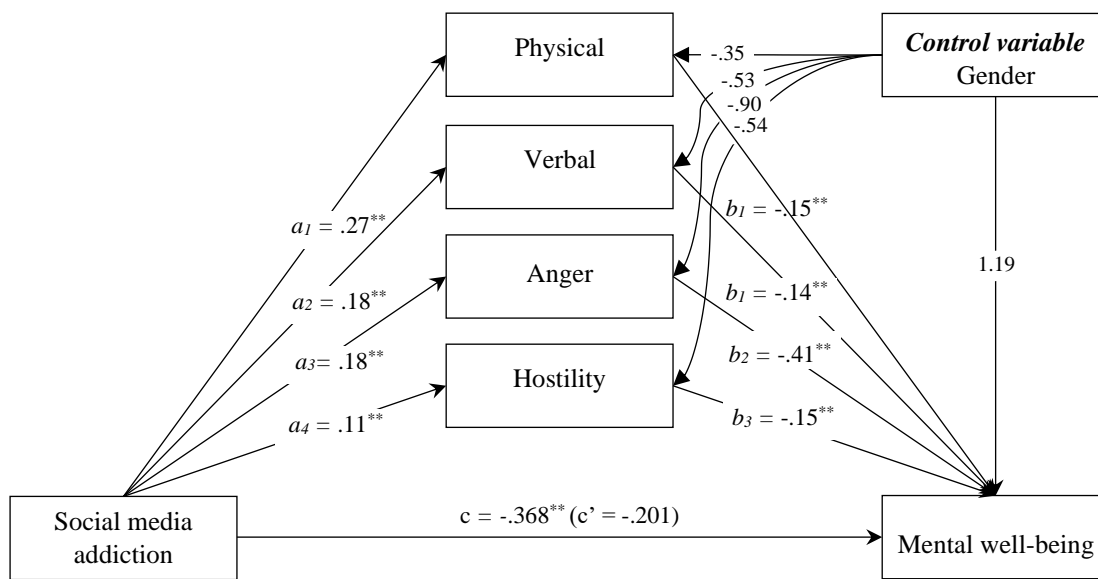


Fig. (1). Mediation bootstrapping analyses.

Table 2. Social media addiction predicts wellbeing through aggression after controlling for gender.

Variable	Value	SE	LL 95% CI	UL 95% CI
<i>Bootstrap results for indirect effect</i>				
SMA → Psychological → Wellbeing	-.043	.01	-.072	-.016
SMA → Verbal → Wellbeing	-.026	.01	-.046	-.006
SMA → Anger → Wellbeing	-.075	.01	-.103	-.050
SMA → Hostility → Wellbeing	-.016	.01	-.029	-.004

Note: Bootstrap sample size = 5000; LL lower limit; UL upper limit; CI confidence interval; SMA social media addiction.

4. DISCUSSION

In the study, the mediating role of aggression in the relationship between social media addiction and mental well-being was examined. In this context, it was found that social media addiction predicted mental well-being negatively (H_1) and predicted aggression positively (H_2). In addition, aggression has been found to predict mental well-being negatively (H_3). Finally, aggression was a partial mediator in the relationship between social media addiction and mental

well-being (H_4). As a result, all the hypotheses of the research were confirmed.

Research findings show that as social media addiction increases, mental well-being decreases. Similarly, previous research findings indicate that social media addiction is negatively related to mental well-being [11, 13]. However, studies showing that social media addiction is positively associated with psychological disorders [15, 16] also support the findings of this research. Mental well-being is related to the

individual's emotional, social, and cognitive strength [3]. Individuals who are psychologically fragile and have weak social competencies experience social media addiction more frequently [42]. Therefore, it can be interpreted as an expected situation that social media addiction, which has maladaptive features both emotionally and socially, predicts mental health negatively.

It has been found that the aggression of individuals with high social media addiction is also high. When the previous research findings were examined, positive relationships were seen between social media addiction and aggression [18]. In addition, social media addiction is also positively related to cyberbullying, which is a form of aggression that occurs on the internet and social media [21]. Therefore, it can be said that previous research findings are in the same direction as these research findings. There are research findings that social media addiction negatively affects social competencies [42] and social skills [22]. Individuals with social skills deficiency may have more aggressive behaviors [43]. In this respect, it may become possible for social media-addicted individuals with social skills deficiency to display more aggressive attitudes to resolve conflicts in interpersonal relationships.

Another finding of the study indicates that when aggression increases, mental well-being decreases. Similarly, research findings also show that as aggression increases, mental well-being decreases [25, 26]. In addition, the mental well-being of individuals who are exposed to parents' aggressive behavior decreases [27]. In addition, there are research findings showing that aggression negatively affects the mental health of adolescents. Therefore, it can be said that the findings of the previous research and the findings of this study are in accordance with each other. Aggression is a behavior that usually occurs with negative emotions, such as anger, frustration, disappointment, and deception [44]. Well-being, on the other hand, has the feature of experiencing positive emotions more frequently than negative ones [1]. Therefore, the findings related to the fact that aggressive behaviors that occur mostly with negative emotions can decrease mental well-being in which positive emotions are dominant seem to be compatible with the characteristics of these two concepts.

The final finding of the research in line with the purpose is that aggression partially mediates the relationship between social media addiction and mental well-being. While there are no studies directly examining this specific relationship, the literature provides relevant evidence. Previous studies have shown a positive association between social media addiction and aggression [18, 21], a negative association between social media addiction and mental well-being [11, 13], as well as a negative relationship between aggression and mental well-being [25, 26]. These findings, taken together, suggest consistency with the research findings on the mediating role of aggression. In other words, the findings of this study, which show that social media addiction negatively predicts mental well-being by increasing aggression, are supported by previous research findings.

5. IMPLICATION

The relationship between social media use and mental health has received considerable attention in recent years, with particular emphasis on the impact of the COVID-19 pandemic. The general population, including adolescents, has experienced a surge in social media usage, intensifying the focus on understanding its effects [45, 46]. This surge in social media usage has led to an increase in social media addiction, characterized by excessive use and loss of control over one's online behaviors [47]. One of the critical risk groups in terms of social media addiction is adolescents. Adolescents frequently use social media to communicate with their friends and to get news. Characteristics, such as adolescence being a critical period in personality development, and the fact that sensation-seeking and risk-taking behaviors are seen more frequently in adolescence are factors that pose a risk for social media addiction. In addition, these features cause adolescents to be more vulnerable psychologically. Therefore, within the framework of the findings of this research, it is important to improve the skills of using social media effectively in order to develop and protect the mental well-being of adolescents.

In this respect, it may be effective to protect and improve the mental health of adolescents, especially if school counselors working in secondary and high schools conduct studies to prevent social media addiction and turn to practices aimed at improving the skills to use social media effectively. In addition, it may be recommended that other mental health professionals working with adolescents carefully examine their client's social media use habits and help them transform addictive behaviors into effective social media use skills.

Considering that aggression plays an important mediating role between social media addiction and mental well-being, it would be a functional way for all mental health professionals working with adolescents to consider the role of aggression when conducting studies that prevent social media addiction and improve mental well-being. Especially since cyberbullying is a behavior that occurs in social media environments, it may not be observed in schools. For this reason, school counselors' taking into account the behaviors of students in virtual environments while evaluating students' out-of-school behaviors will enable them to effectively prevent social media addiction and improve mental well-being.

6. LIMITATIONS

There are some limitations involved in the study. Firstly, the data collection method was limited to self-reporting tools. Future research can involve the use of different measurement tools. Secondly, the results were based on cross-sectional analysis. We could improve our knowledge more through longitudinal data on how changes in time and contextual factors affect social media addiction, aggression, and mental well-being. Finally, only aggression was examined as a mediating variable in the research. Other possible mediating variables can be considered in future research.

CONCLUSION

Adolescence is a developmental period that includes many risks for mental health in terms of rapid emotional, social, and

cognitive development, and is a kind of maturation period. For this reason, understanding the factors affecting the mental health of adolescents will increase the quality of psychological help services given to them. In line with the findings of this study, it is concluded that in order to improve the mental well-being of adolescents, the development of social media addiction and aggressive behaviors of adolescents should be prevented, and if the development of these behaviors cannot be prevented, these behaviors should be reduced.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study followed ethical protocols and received approval from the Ethics Committee of the Psychology Scientific Research Institute in Baku, Azerbaijan (Approval number: T-320).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee, and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Prior to their participation, informed consent was obtained from all participants, ensuring their voluntary and informed agreement to take part in the study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available within the article.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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