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RESEARCH ARTICLE

Fear of missing out in the association between social media addiction and suicidal ideation among medical students: A cross-sectional mediation analysis

Sosyal medya bağımlılığı ile tıp fakültesi öğrencilerinde intihar düşüncesi arasındaki ilişkide gelişmeleri kaçırma korkusu: Kesitsel bir aracılık analizi

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Abstract

Aim: This study aimed to examine the associations among social media addiction, FoMO, and suicidal ideation in medical students and to investigate whether social media addiction was indirectly associated with suicidal ideation through FoMO.

Methods: A cross-sectional study was carried out among 202 undergraduate medical students attending Karabük University during the 2024–2025 academic year. Participants completed a sociodemographic questionnaire together with the Social Media Addiction Scale, Fear of Missing Out Scale, Beck Depression Inventory, and Beck Scale for Suicide Ideation. Spearman`s rank correlation coefficients were computed to investigate the relationships between the research variables. The hypothesized indirect effect of social media addiction on suicidal ideation through FoMO was evaluated with Hayes' PROCESS macro using Model 4. Age, gender, academic year, and depressive symptom severity were included in the model as covariates.

Results: FoMO scores were positively and significantly correlated with suicidal ideation, depression, and social media addiction. Social media addiction was significantly associated with FoMO, and FoMO was significantly associated with suicidal ideation after adjustment for depression and the other covariates. The direct association between social media addiction and suicidal ideation was not significant, whereas a small but statistically significant indirect association through FoMO was observed.

Conclusion: The findings indicate a small but statistically significant indirect association between social media addiction and suicidal ideation through FoMO. Given the cross-sectional design, this finding should not be interpreted as evidence of a temporal or causal relationship.

Keywords: Suicide, fear of missing out, social media addiction.

Özet

Amaç: Bu çalışma, tıp fakültesi öğrencilerinde sosyal medya bağımlılığı, FoMO ve intihar düşüncesi arasındaki ilişkileri incelemeyi ve sosyal medya bağımlılığının FoMO aracılığıyla intihar düşüncesiyle dolaylı olarak ilişkili olup olmadığını araştırmayı amaçlamıştır.

Yöntemler: Kesitsel olarak tasarlanan bu çalışma, 2024–2025 eğitim-öğretim yılında Karabük Üniversitesinde öğrenim gören 202 tıp fakültesi öğrencisi ile gerçekleştirilmiştir. Katılımcılar sosyodemografik bilgi formunun yanı sıra Sosyal Medya Bağımlılığı Ölçeği, Gelişmeleri Kaçırma Korkusu (FoMO) Ölçeği, Beck Depresyon Envanteri ve Beck İntihar Düşüncesi Ölçeğini doldurmuştur. Araştırma değişkenleri arasındaki ilişkiler Spearman sıra korelasyon analizi ile değerlendirilmiştir. Sosyal medya bağımlılığının intihar düşüncesi üzerindeki gelişmeleri kaçırma korkusu aracılığıyla oluşan dolaylı etkisi, Hayes'in PROCESS makrosunda Model 4 kullanılarak test edilmiştir. Yaş, cinsiyet, sınıf düzeyi ve depresif belirti şiddeti modele kovaryans değişkenleri olarak dâhil edilmiştir.

Bulgular: FoMO puanları; intihar düşüncesi, depresyon ve sosyal medya bağımlılığı ile pozitif yönde ve istatistiksel olarak anlamlı ilişkiliydi. Sosyal medya bağımlılığı FoMO ile, FoMO ise depresyon ve diğer kovaryatlar için düzeltme yapıldıktan sonra intihar düşüncesi ile anlamlı düzeyde ilişkiliydi. Sosyal medya bağımlılığı ile intihar düşüncesi arasındaki doğrudan ilişki anlamlı değilken, FoMO üzerinden küçük fakat istatistiksel olarak anlamlı bir dolaylı ilişki saptandı.

Sonuç: Bulgular, sosyal medya bağımlılığı ile intihar düşüncesi arasında FoMO üzerinden küçük fakat istatistiksel olarak anlamlı bir dolaylı ilişki olduğunu göstermektedir. Çalışmanın kesitsel tasarımı nedeniyle bu bulgu zamansal veya nedensel bir ilişki olarak yorumlanmamalıdır.

Anahtar Kelimeler: İntihar, gelişmeleri kaçırma korkusu, sosyal medya bağımlılığı.

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INTRODUCTION

With the rapid transformation brought about by the digital age, social media has evolved beyond being merely a means of communication in individuals' daily lives and has become an indispensable infrastructure through which basic needs such as access to information, self-expression, socialization, and entertainment are met. Particularly for young adults and university students, whose lives are centered around technology, these platforms serve as essential tools both for accessing academic materials and for maintaining social networks (1,2). However, the unlimited accessibility offered by social media does not always remain within a functional framework; uncontrolled use may evolve in some individuals into a pathological pattern of addiction that threatens psychological well-being and impairs daily functioning (1,2).

Problematic social media use may be conceptualized as a behavioral addiction when individuals experience difficulty regulating their online activity. Rather than being defined solely by prolonged use, it involves impaired control, discomfort or withdrawal-like reactions when access is restricted, and persistent engagement despite negative consequences for academic performance and interpersonal functioning (3).

An increasing amount of research associates problematic social media usage with several psychological issues, including symptoms of depression and anxiety, feelings of loneliness, negative self-image, and diminished self-worth. These associations indicate that excessive or poorly controlled social media use may increase emotional vulnerability, particularly during adolescence (4,5).

In recent years, the concept of "fear of missing out" (FoMO), which is considered one of the psychosocial dynamics that may fuel this addictive process, has come to the forefront. FoMO is defined as the intense anxiety experienced by individuals due to concerns about being unaware of events, posts, or opportunities within their social environment, or fears of exclusion or being left behind (6). It may lead individuals to perceive that others are constantly having more rewarding experiences (6). This perception can trigger feelings of inadequacy and worthlessness, pushing the individual into a continuous checking cycle and, consequently, creating a vicious cycle that reinforces social media addiction (7,8).

Digital behavioral addictions are not limited to mood-related variables such as depression and anxiety, but have also been associated with a more critical dimension, namely suicidal ideation and self-harm tendencies (9,10). "Idealized" representations of life on social media, filtered content, achievement-oriented posts, body image pressures, and negative experiences such as cyberbullying or exclusion may drive individuals toward feelings of hopelessness and helplessness, thereby facilitating the emergence of suicidal thoughts or exacerbating existing suicidal ideation (10,11).

Among the groups affected by these risk factors, medical students constitute a population that requires particular psychological sensitivity. Intensive and prolonged educational processes, high academic expectations, examination stress, responsibilities associated with clinical clerkships, on-call duties, and concerns about the future may increase stress levels and heighten vulnerability to psychiatric symptoms in these students (12). The literature reports that depression, anxiety disorders, and sleep problems are more prevalent among students in health-related fields compared with the general population (13,14). More strikingly, while these students are preparing to support the mental health of others as future healthcare professionals, they may simultaneously neglect their own psychological needs and hesitate to seek help (15).

Medical students may represent a particularly relevant population for examining the interplay between social media addiction, FoMO, and suicidal ideation because medical education combines substantial academic demands with competitive performance expectations, restricted social time, and ongoing professional identity formation. These stressors may increase vulnerability to psychological distress and peer comparison, while the continuous exposure to idealized peer experiences on social media may intensify feelings of falling behind or missing out (16). Moreover, FoMO may promote persistent social media engagement and problematic smartphone use, potentially contributing to sleep disruption and academic burnout (17), which are themselves relevant to psychological distress and suicidal ideation among

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medical students (18,19). Thus, the combination of the unique demands of medical training and the pervasive nature of social media may make medical students an especially informative population in which to examine the associations among social media addiction, FoMO, and suicidal ideation.

In this context, it is crucial to analyze modern psychosocial risk factors like social media addiction and FoMO collectively among medical students. Examining the connections between these characteristics and suicidal ideation within a cohesive framework may enhance comprehension of the fundamental cognitive and emotional mechanisms. Consequently, this study aimed to examine the associations among social media addiction, FoMO, and suicidal ideation in medical students and to investigate whether social media addiction was indirectly associated with suicidal ideation through FoMO.

METHODS

Sample and Study Design

This descriptive cross-sectional study included medical students from the first to sixth academic years at Karabük University Faculty of Medicine during the 2024–2025 academic year. The target population consisted of students enrolled in the faculty, and the study sample comprised those who volunteered to participate. Throughout the data gathering phase, the objectives, extent, and confidentiality protocols of the research were thoroughly communicated to the participants both orally and in written form; it was emphasized that participation was completely voluntary and would not entail any compensation or penalties. No personally identifiable information, including identity specifics or student identifiers, was gathered, and data security was emphasized.

Participants were recruited on a voluntary basis from students enrolled at Karabük University Faculty of Medicine. Eligibility required being at least 18 years old, having sufficient Turkish proficiency to understand the questionnaires, providing informed consent after reviewing the study information, and completing all study measures. Responses were excluded when the questionnaire was incomplete or invalid, consent was not obtained, the participant was younger than 18 years, or a current psychiatric disorder was self-reported.

Ethics Committee Approval

This study was approved by the Karabük University Rectorate Non-Interventional Clinical Research Ethics Committee, in accordance with decision no. 2025/2343, dated 23.05.2025. Following review of the study's aim, rationale, approach, and methodology, the ethics committee unanimously determined the research to be ethically appropriate. Written informed consent was obtained from all participants, and the study was conducted in accordance with the principles of the Declaration of Helsinki.

Sampling and Data Collection Process

Data were collected between 24.05.2025-30.12.2025. A non-probability convenience (voluntary) sampling method was employed. A total of 254 students enrolled in the 1st-6th grades of Karabük University Faculty of Medicine were reached and 242 of them agreed to participate in the study. Incomplete or invalid questionnaires, participants who did not provide consent or were younger than 18 years, and those who self-reported a current psychiatric disorder were excluded from the analysis (n = 40); of these, 21 were excluded because they self-reported a current psychiatric disorder. The final analysis was performed on data from 202 participants.

Risk Management Procedure

A predetermined safety protocol was implemented for participants identified as having suicidal ideation during the study. Participants identified as high-risk based on scale scoring were informed by a psychiatrist/psychiatry resident present within the research team during data collection, and, where deemed necessary, were referred to the Department of Psychiatry at Karabük University Faculty of Medicine and/or referred for emergency psychiatric evaluation. At the conclusion of the study, all participants were provided in writing with mental health support resources they could contact if needed.

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Data Collection Instruments

Data were collected through face-to-face interviews using a questionnaire consisting of three sections. The first section included 11 questions assessing sociodemographic characteristics, including age, gender, marital status, academic year, and duration of social media use. The second section included four validated scales assessing the study variables.

Beck Depression Inventory (BDI): Developed by Beck et al. (1961), this 21-item self-report scale is designed to assess the severity of depressive symptoms and aims to determine symptom intensity rather than establish a diagnosis. Items are scored between 0 and 3, and the total score ranges from 0 to 63. Scores are classified as 0–9 minimal, 10–16 mild, 17–29 moderate, and 30–63 severe. A cut-off score of 17 and above is generally accepted as indicating a clinically significant level of depression (20). The validity and reliability studies of the Turkish adaptation of the scale were supported by item analysis and split-half methods, with correlation coefficients reported as r=.80 and r=.74, respectively (21). Cronbach's alpha value for the BDI scale was calculated as 0.86 in our study.

Social Media Addiction Scale: This 41-item scale, developed to determine university students' social media use habits and addiction levels, uses a 5-point Likert-type rating format ranging from "Never" to "Always." The total score ranges from 41 to 205 and categorizes individuals from "no addiction" to "very high addiction" (22). The scale demonstrated strong internal consistency, as reflected by Cronbach's alpha coefficients between 0.892 and 0.967. The Cronbach's alpha coefficient for the Social Media Addiction Scale in the present sample was 0.96, indicating excellent internal consistency.

Beck Scale for Suicide Ideation (BSSI): This 19-item semi-structured scale evaluates individuals' suicidal thoughts, plans, and intent. Each item is scored between 0 and 2. The total score ranges from 0 to 38, with higher scores indicating more severe suicidal tendency. Factor analysis revealed a six-dimensional structure comprising active/passive suicidal desire, intent, protective factors, certainty of thoughts, and level of preparation (23). Validity and reliability studies of the Turkish form have demonstrated that the scale can be used in both research and clinical practice (24). Cronbach's alpha value for the BSSI scale was calculated as 0.81 in our study. The BSSI was administered face-to-face by a psychiatrist. The items were presented to the participants by the psychiatrist, and their responses were recorded by the clinician.

Fear of Missing Out in Social Environments (FoMO) Scale: This one-dimensional 10-item scale measures the concern of being unable to stay informed about developments in one's social environment and uses a 5-point Likert-type rating format ranging from 1 = "Strongly disagree" to 5 = "Strongly agree." The score range is 10–50, with higher scores reflecting a more intense fear of missing out 6. In the Turkish adaptation, the Cronbach's alpha coefficient was found to be 0.81, and test-retest reliability was also reported as .81. Item-total correlation values ranged between 0.36 and 0.77 (25). The internal consistency of the FoMO Scale in the present sample was good (Cronbach's α = 0.87).

The third section of the questionnaire included additional questions regarding participants' daily duration of online activities and social media use habits (6).

Statistical Analysis

Data analysis was undertaken using IBM SPSS Statistics for Windows, version 25.0 (IBM Corp., Armonk, NY, USA). Prior to inferential testing, the distributional properties of the continuous variables were evaluated to determine the appropriate form of descriptive reporting. Normality evaluation was conducted through the Kolmogorov–Smirnov test. Continuous variables with distributions compatible with normality were summarized as mean ± standard deviation. When the normality assumption was not met, results were expressed as median, interquartile range, and minimum–maximum values. This approach allowed the descriptive statistics to reflect the underlying distribution of each variable more accurately.

Spearman's rank correlation coefficients were calculated to evaluate the relationships among the continuous study variables.

The indirect association between social media addiction and suicidal ideation through FoMO was examined using Model 4 of Hayes' PROCESS macro, version 4.2.

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Social media addiction was entered as the independent variable, FoMO as the mediator, and suicidal ideation as the outcome variable. Age, gender, academic year, and total BDI score were included as covariates. The mediator model estimated the association between social media addiction and FoMO after adjustment for the covariates. The outcome model estimated the associations of FoMO and social media addiction with suicidal ideation after adjustment for the same covariates. The indirect effect was evaluated using bias-corrected 95% bootstrap confidence intervals based on 5,000 resamples. An indirect effect was considered statistically significant when its confidence interval did not include zero. For all other analyses, statistical significance was defined as a two-sided p value <0.05.

RESULTS

Sociodemographic Characteristics of the Participants

A total of 202 medical students were included in the study. The median age was 23 years (range: 18–30 years). Of the participants, 67.8% were female (n = 137) and 32.2% were male (n = 65). Most participants were single (95.0%, n = 192), whereas 5.0% were married (n = 10).

When history of chronic disease was evaluated, 15.8% of the participants (n=32) were found to have at least one chronic disease, while 84.2% (n=170) reported no chronic disease. (Table 1.)

Table 1. Sociodemographic characteristics of the participants (n=202)

Variables	n or Median (Min–Max)	%
Age (years)	23.0 (18.0-30.0)	
Gender		
Female	137	67.8
Male	65	32.2
Marital Status		
Single	192	95.0
Married	10	5.0
Living Arrangement		
Living with family	35	17.3
Living with friends	27	13.4
Living alone	70	34.7
Living in a dormitory	70	34.7
Chronic disease		
Yes	32	15.8
No	170	84.2
Academic Year		
1st year	36	17.8
2nd year	30	14.9
3rd year	22	10.9
4th year	19	9.4
5th year	45	22.3
6th year	50	24.8

Note: n = number; % = percentage; Min = minimum; Max = maximum; SD = standard deviation.

Descriptive Statistics of Scale Scores

Regarding the scale scores, the median FoMO total score was 12.00 (range: 10–45), the median BSSI total score was 3.00 (range: 0–15), and the median BDI total score was 14.00 (range: 0–48).

The mean SMAS total score was 99.00 ± 29.36 (range: 43–184). Among the SMAS subdimensions, the mean scores were 27.49 ± 8.16 (range: 10–47) for Virtual Tolerance and 37.40 ± 11.20 (range: 16–66) for Control/Difficulty. The Communication and Problem subdimensions showed non-normal distributions; their median scores were 19.00 (range: 10–45) and 12.50 (range: 7–30), respectively (Table 2).

Relationships Between Variables

The correlations among individuals' age, FoMO, BSSI, BDI, and SMAS scores were assessed by Spearman correlation analysis. No meaningful correlation was identified between age and scale scores (p>0.05).

The overall FoMO score had modest positive relationships with BSSI (r=0.203, p=0.004) and BDI (r=0.176, p=0.012). A significant positive association was identified between FoMO and the total score of the SMAS (r=0.615, p<0.001).

A robust positive connection was seen between the entire BSSI score and the BDI (r=0.697, p<0.001). The overall BSSI score exhibited a moderate positive relationship with the total SMAS score (r=0.373, p<0.001). The overall BDI score had a mild to moderate positive correlation with the whole SMAS score (r=0.336, p<0.001). (Table 3.)

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Table 2. Descriptive statistics of participants' scale scores (n=202)

Variables	Descriptive statistics	Min.	Max.
FoMO Total	12.00 (7.25)	10	45
BSSI Total	3.00 (5.25)	0	15
BDI Total	14.00 (12.25)	0	48
SMAS Total	99.00 ± 29.36	43	184
SMAS–Virtual Tolerance subdimension	27.49 ± 8.16	10	47
SMAS–Control/Difficulty subdimension	37.40 ± 11.20	16	66
SMAS–Communication subdimension	19.00 (13.00)	10	45
SMAS–Problem subdimension	12.50 (8.00)	7	30

Note: Data are presented as mean ± standard deviation for normally distributed variables and median (interquartile range) for non-normally distributed variables.
FoMO = Fear of Missing Out; BSSI = Beck Scale for Suicide Ideation; BDI = Beck Depression Inventory; SMAS = Social Media Addiction Scale.

Results of the Mediation Analysis

As the first component of the mediation analysis, a regression model was estimated with FoMO as the outcome variable. Social media addiction was positively associated with FoMO (B = 0.13, SE = 0.01, t = 9.49, p < 0.001, 95% CI [0.10, 0.15]). Age (p = 0.681), academic year (p = 0.098), gender (p = 0.609), and BDI-T (p = 0.925) were not significantly associated with FoMO.

In the outcome model, suicidal ideation (BSSI-T) was entered as the dependent variable. FoMO was positively associated with suicidal ideation after adjustment for social media addiction and the other covariates (B = 0.07, SE = 0.03, t = 2.10, p = 0.037, 95% CI [0.00, 0.13]). BDI-T (B = 0.27, SE = 0.02, t = 13.39, p < 0.001, 95% CI [0.23, 0.31]) and gender (B = 0.90, SE = 0.37, t = 2.47, p = 0.015, 95% CI [0.18, 1.62]) were also significantly associated with suicidal ideation. In contrast, the direct association between social media addiction and suicidal ideation was not statistically significant (p = 0.636). Age (p = 0.263) and academic year (p = 0.353) were also not significantly associated with suicidal ideation.

Table 3. Spearman correlations between participants' scale scores and demographic characteristics (n=202)

		1	2	3	4	5
1-Age (Years)	r	1				
	p	.				
2-FoMO Total	r	-0.050	1			
	p	0.484	.			
3-BSSI Total	r	0.035	0.203**	1		
	p	0.620	0.004	.		
4-BDI Total	r	0.032	0.176*	0.697**	1	
	p	0.648	0.012	<0.001	.	
5-SMAS Total	r	-0.029	0.615**	0.373**	0.336**	1
	p	0.681	<0.001	<0.001	<0.001	.

Note: Spearman correlation analysis was used.
**p < 0.05; **p < 0.01. All analyses were two-tailed.*
FoMO = Fear of Missing Out; BSSI = Beck Scale for Suicide Ideation; BDI = Beck Depression Inventory; SMAS = Social Media Addiction Scale

Table 4. Results of the mediation analysis between social media addiction, FoMO, and suicidal ideation

Predictor	B	SE	t	p	Lower 95% CI	Upper 95% CI
Panel A. Mediator model: FoMO (FOMOT) as the dependent variable						
Constant	2.08	5.33	0.39	0.697	-8.44	12.60
SMAS-T	0.13	0.01	9.49	**<0.001**	0.10	0.15
Age	-0.11	0.26	-0.41	0.681	-0.62	0.41
Year of study	0.55	0.33	1.66	0.098	-0.10	1.21
Gender	0.41	0.80	0.51	0.609	-1.17	2.00
BDI-T	-0.00	0.04	-0.09	0.925	-0.09	0.08
Panel B. Outcome model: Suicidal ideation (BSSI-T) as the dependent variable						
Constant	-0.41	2.43	-0.17	0.866	-5.20	4.38
SMAS-T	0.00	0.01	0.47	0.636	-0.01	0.02
FOMOT	0.07	0.03	2.10	**0.037**	0.00	0.13
Age	-0.13	0.12	-1.12	0.263	-0.37	0.10
Year of study	0.14	0.15	0.93	0.353	-0.16	0.44
Gender	0.90	0.37	2.47	**0.015**	0.18	1.62
BDI-T	0.27	0.02	13.39	**<0.001**	0.23	0.31

Note: SMAS-T = Social Media Addiction Scale total score;
FoMOT = Fear of Missing Out Scale total score;
BSSIT = Beck Scale for Suicide Ideation total score;
BDI-T = Beck Depression Inventory total score;
SE = standard error; CI = confidence interval.

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A small but statistically significant indirect association between social media addiction and suicidal ideation through FoMO was observed (B = 0.009, BootSE = 0.004, 95% CI [0.001, 0.018]). The results of the mediation analysis are presented in Tables 4 and 5 and Figure 1.

DISCUSSION

In this study, the relationships among social media addiction, fear of missing out (FoMO), and suicidal ideation were examined within a multidimensional framework among medical students. Consistent with previous studies, the findings indicate that social media use may be associated with individuals' psychological well-being, beyond being merely a behavioral preference (26). A notable finding of our study is that social media addiction was associated with FoMO and depressive symptoms, while its relationship with suicidal ideation appeared to occur indirectly through FoMO.

Table 5. Bootstrap results for the indirect effect between SMAS-T and BSSI-T through FoMO

Mediator	Indirect effect (B)	BootSE	Lower CI (95%)	Upper CI (95%)
FOMOT	0.009	0.004	0.001	0.018

Note: SMAS-T = Social Media Addiction Scale total score; BSSI-T = Beck Scale for Suicide Ideation total score; FoMO-T = Fear of Missing Out Scale total score; BootSE = bootstrap standard error; CI = confidence interval

In the correlation analysis performed in our research, weak positive correlations were identified between FoMO and both depression and suicidal thoughts, while a moderate positive correlation was noted between FoMO and social media dependency. This suggests that as FoMO levels increase, students' depressive symptoms and suicidal ideation may also tend to increase, while social media use may become more intense and uncontrolled. These findings are consistent with previous studies showing that FoMO is associated with loneliness, anxiety, and problematic social media use (27,28), and our findings are consistent with these observations among medical students. Factors associated with FoMO, such as fear of social exclusion, a tendency toward social comparison, and the perception of "falling behind," may also be relevant to the observed associations with depressive symptoms and suicidal ideation (29).

A robust positive correlation was identified between suicidal ideation and depression, while a weak to moderate positive correlation was observed between suicidal ideation and social media addiction. This result is consistent with depression severity being one of the strongest correlates of suicide risk (30). However, although social media addiction was correlated with suicidal ideation at the bivariate level, its direct association with suicidal ideation was not significant in the mediation model after accounting for FoMO, depression, and other covariates. Intensive social media

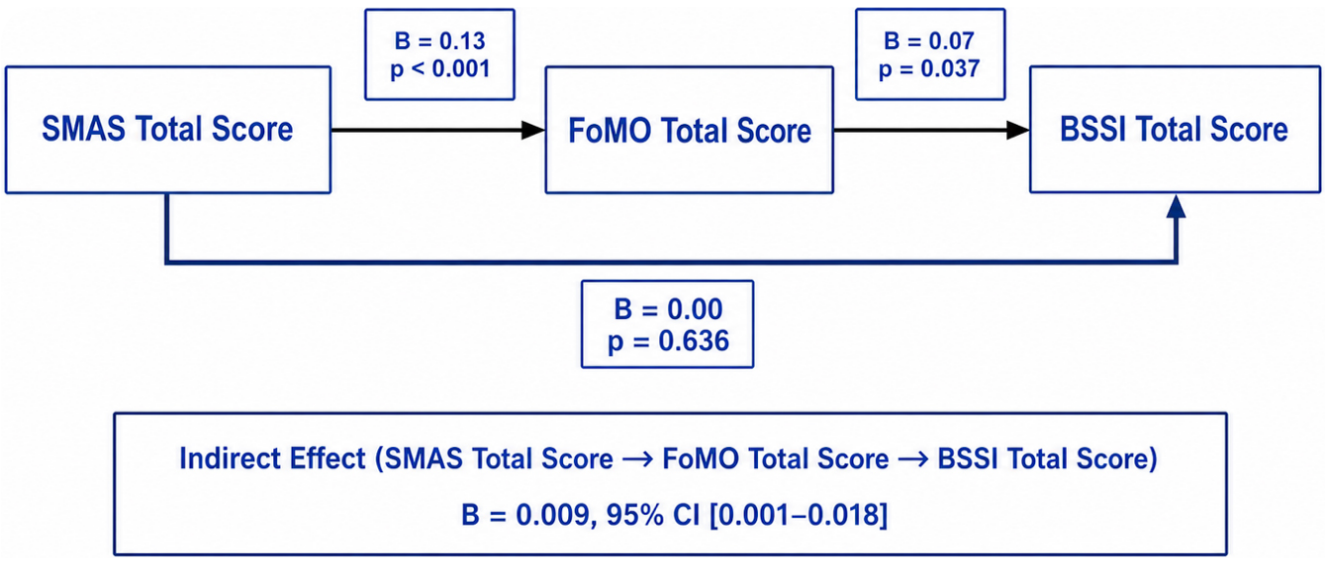

Figure 1. Schematic representation of the mediation model between social media addiction, FoMO, and suicidal ideation

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use may be associated with suicidal ideation, particularly in individuals with depressive symptoms, through its interplay with feelings of loneliness, worthlessness, and hopelessness (1,2). In digital environments where "ideal" lives are displayed, depressed individuals may become more vulnerable to negative social comparisons, which may reinforce maladaptive cognitive processes.

The significant association between social media addiction and FoMO observed in the mediation model suggests that problematic social media use is closely related to cognitive-emotional processes such as the fear of losing social connection and the need to remain constantly connected. Students with higher levels of problematic social media use may experience greater FoMO, which may reflect concerns about "missing out" on rewarding social experiences. This finding is consistent with previous studies demonstrating a close relationship between FoMO and problematic social media use (31,32).

In the outcome model of the mediation analysis, FoMO remained significantly associated with suicidal ideation after adjustment for social media addiction, depression, and sociodemographic covariates. This finding suggests that the association between FoMO and suicidal ideation may persist even when depressive symptoms and other covariates are taken into account. Theoretically, social comparison processes and perceptions of exclusion associated with FoMO may undermine individuals' sense of belonging and may be related to the risk mechanisms described in the interpersonal theory of suicide (33,34). These processes may become particularly pronounced in the medical school environment, where competition and performance pressure are high.

The mediation analysis identified a small but statistically significant indirect association between social media addiction and suicidal ideation through FoMO. In contrast, the direct association between social media addiction and suicidal ideation was not statistically significant after adjustment for the covariates. Given the cross-sectional design, this indirect association should be interpreted as a statistical relationship rather than evidence of a temporal or causal mediation process.

Overall, the findings demonstrate interrelated associations among social media addiction, FoMO, depression, and suicidal ideation in medical students. FoMO may represent an important correlate linking problematic social media use with suicidal ideation; however, longitudinal studies are needed to establish temporal ordering and clarify the direction of these associations.

The strengths of this study include the simultaneous assessment of social media addiction, FoMO, depressive symptoms, and suicidal ideation in a sample of medical students, the use of validated measurement instruments, and the adjustment for relevant covariates in the mediation analysis.

Several limitations should be considered. First, the cross-sectional design precludes conclusions regarding temporal ordering or causality. Second, reliance on self-reported data may have introduced response bias. Third, the single-center design limits the generalizability of the findings. In addition, excluding students who self-reported a current psychiatric disorder limits the generalizability of the findings to medical students with psychiatric disorders. Finally, the study did not separately examine patterns of use across different social media platforms.

CONCLUSION

This study identified significant associations among social media addiction, FoMO, and suicidal ideation in medical students. Most notably, a small but statistically significant indirect association between social media addiction and suicidal ideation through FoMO was observed, whereas the direct association was not statistically significant after adjustment for depression and other covariates. Given the cross-sectional design, these findings do not establish temporal or causal relationships. Further longitudinal research is needed to clarify the direction of these associations and to determine the potential relevance of FoMO in the relationship between problematic social media use and suicidal ideation.

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Ethical Approval: The study was approved by the

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Karabük University Non-Interventional Clinical Research Ethics Committee (decision no: 2025/2343, date: 23 May 2025). Written informed consent was obtained from all participants before enrollment in the study.

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