Research

Examining the Relationship Between Social Media Addiction Level, Emotional State, and Mental Well-being among Early Childhood Teacher Candidates

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Abstract:

This study explores the relationship between social media addiction, mental well-being, and emotional states among Early Childhood Education (ECE) candidates. Utilizing a sample of 330 ECE students from Düzce University and Alanya Alaaddin Keykubat University, the research employed the Social Media Addiction Scale-Adult Form, Positive and Negative Affect Schedule (PANAS), and the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) to gather data. Findings revealed that ECE candidates exhibited moderate levels of social media addiction, with age and daily internet usage time being significant predictors, while gender was not a significant factor. Despite moderate addiction levels, participants reported above-average mental well-being, potentially attributed to positive digital engagement. The study also found significant correlations between social media addiction and negative affect, as well as a negative relationship with mental well-being and positive affect. These findings highlight the need for targeted interventions that focus on healthy digital engagement and emotional resilience, particularly for younger candidates and those heavily engaged online. The study's implications underscore the critical role of ECE candidates in modeling balanced digital behaviors to future generations, emphasizing the integration of digital literacy and emotional intelligence into educational curricula. Early childhood teacher candidates' social media addiction levels, emotional states, and mental well-being

Keywords:

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INTRODUCTION

Social media has rapidly transformed how individuals interact, communicate, and engage with the surrounding environment over the last decade. Defined as "websites which facilitate profile creation and the visibility of connections between users" (Sims et al., 2017), it has become a predominant leisure activity for many individuals, including teachers and student candidates. Presently, nearly half of the global population (49%; 3.80 billion people) are active social media users, and this number continues to grow daily (Kemp, 2020). People engage with social media for various purposes, including maintaining relationships, accessing information, and entertainment (Boyd & Ellison, 2007; Lin & Lu, 2011), making it an integral part of daily life for many. For ECE candidates, who are often young adults themselves, social media serves as a crucial platform not only for personal interaction and professional development. They use social media to connect with peers, share educational resources, discuss teaching methodologies, and participate in professional communities. Moreover, teachers use social media to engage with parents and students, enhancing communication and support outside the classroom (Carpenter & Krutka, 2014). Despite the numerous advantages and opportunities offered by social media, concerns about its overuse have been mounting worldwide (Baccarella et al., 2018).

Excessive or addictive social media use is defined as "a behavioral addiction characterized by a preoccupation with social media, driven by an uncontrollable urge to engage with it, and dedicating so much time and effort to social media that it interferes with other important aspects of life" (Hilliard, 2024). The duration of social media use showed a significant but weak correlation with depressive symptoms. In contrast, social media addiction is a much stronger predictor of adverse mental health effects (Cunningham et al., 2021). Therefore, social media addiction, characterized by maladaptive usage patterns, poses a greater threat to mental health than the frequency of social media engagement (Thomas et al., 2022).

More specifically, social media addiction is notably linked to higher levels of depressive symptoms, anxiety, and stress in young adults (Jiang, 2021; Sampasa-Kanying & Lewis, 2015; Shannon et al., 2022). Various factors may contribute to this association. Using social media as a stress reliever can be a coping strategy to mask or reduce depression and anxiety symptoms (Wolfers & Schneider, 2021). Some young individuals spend considerable time passively scrolling or observing others' lives without direct interaction (Thorisdottir et al., 2019), leading to heightened social comparison and subsequent feelings of depression and low self-esteem (Keles et al., 2020; Verduyn et al., 2020). Moreover, the constant pressure to respond to notifications can increase anxiety, especially when people feel they might miss important updates (Karim et al., 2020).

Understanding the relationship between social media addiction, mental well-being, and emotional state is particularly important for ECE candidates because their emotional and mental well-being is crucial for their personal health and their effectiveness as

educators. Research indicates that social media addiction can lead to emotional dysregulation, manifested as increased irritability, mood swings, and heightened emotional sensitivity (Beyens et al., 2020). These emotional disturbances can impede their ability to provide a supportive and nurturing environment for young children, ultimately affecting the developmental outcomes of those in their care. Hence, this study examined the relationship between social media addiction levels, emotional states, and mental well-being among ECE candidates, providing insights that could inform the development of supportive measures and interventions in educational settings. To address this, the study formulated specific research questions and sought answers to them.

Q1. What is the social media addiction level of ECE candidates?

Q2) What is the level of mental well-being of ECE candidates?

Q3) What are the positive and negative affect levels of ECE candidates?

Q4) Do the social media addiction levels of ECE candidates differ significantly according to age, gender, and daily Internet usage time?

Q5) Do the mental well-being levels of ECE candidates differ significantly according to age, gender, and daily Internet usage time?

Q6) Do the positive and negative affect levels of ECE candidates differ significantly according to age, gender, and daily Internet usage time?

Q7) Is there a statistically significant relationship between the level of ECE candidates' social media addiction, mental well-being, and positive and negative affectivity?

Q8) To what extent can demographic variables (age, gender, daily Internet usage time) predict the level of social media addiction among ECE candidates?

Q9) To what extent does the level of social media addiction predict the mental well-being of ECE candidates?

Q10) To what extent do the levels of positive and negative affect predict the mental well-being of ECE candidates?

METHOD

Study Design

In this study, a correlational research design, which is a type of quantitative research method, was employed. As noted by Creswell (2005), this design assesses the extent of the relationship between two or more variables, allowing for the examination of their interconnections. Additionally, correlational research does not establish cause-and-effect

relationship established between the variables, and researchers cannot manipulate variables (Fraenkel & Wallen, 2006).

Participants

The study involved ECE teacher candidates enrolled in the ECE Program at Düzce University and the department of Child Development at Alanya Alaaddin Keykubat University. A total of 330 teacher candidates completed the online surveys. Detailed participant information collected via a personal information form is presented in Table 1.

Table 1

Personal Information About Participants

Personal Information	Options	n	%
Age	"18"	19	5.8
	"19"	66	20.0
	"20"	74	22.4
	"21"	71	21.5
	"22 and over"	100	30.3
Gender	"Female"	285	86.4
	"Male"	45	13.6
Daily Internet Usage Time	"1-3 hours"	93	28.2
	"4-7 hours"	207	62.7
	"8 hours and over"	30	9.1
Total		330	100%

Instruments

Four instruments were used for data collection. These included the "Personal Information Form," the "Social Media Addiction Scale-Adult Form" (Şahin & Yağcı, 2017), the "Positive and Negative Affect Schedule (PANAS)" (Gençöz, 2000), and the "Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)" (Keldal, 2015). These tools provided comprehensive data on various aspects relevant to the research objectives.

The Personal Information Form collected basic demographic information, namely, age, gender, and daily Internet usage time of the participants.

Table 2

Scale Reliability Analysis Results

	α
Social Media Addiction Scale-Adult Form	
Virtual Tolerance	0,82
Virtual Communication	0,76
Total	0,86
The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)	0,92
Positive and Negative Affect Schedule (PANAS)	
Positive Affect	0,89
Negative Affect	0,86

Şahin and Yağcı (2017) developed the 'Social Media Addiction Scale-Adult Form' to assess social media addiction in adults aged 18-60. This 5-point Likert scale comprises 20 items divided into two subdimensions: "Virtual Tolerance" and "Virtual Communication." The overall reliability coefficient (Cronbach's Alpha) is 0.94, with subdimension reliability coefficients of 0.92 for Virtual Tolerance and 0.91 for Virtual Communication. In this study, reliability analysis yielded a Cronbach's Alpha of 0.86 for internal consistency, with subdimension coefficients of 0.82 and 0.76 for virtual tolerance and virtual communication, respectively (Table 2).

Tennant et al. (2007) developed the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) to assess individuals' mental well-being. Keldal (2015) conducted the Turkish adaptation, confirming a single-factor structure with a Cronbach's alpha coefficient of 0.89. In this study, the Cronbach's Alpha coefficient was 0.92 (Table 2). The scale comprises 14 items rated on a 5-point Likert scale, with scores ranging from 14 to 70. There were no reverse-scored items, and higher scores indicated higher levels of mental well-being.

Watson et al. (1988) developed PANAS to assess the emotional states of individuals during the previous week. The scale includes 10 positive and 10 negative affect items, each rated on a 5-point Likert scale from 1 (very slightly or not at all) to 5 (extremely). Scores for each affect dimension ranged from 10 to 50. The correlations of positive and negative affect levels with the Beck Depression Inventory are 0.35 and 0.56, respectively, and with the State-Trait Anxiety Inventory's state anxiety score are 0.35 and 0.51. The Turkish validity and reliability study was conducted by Gençöz (2000), with internal consistency coefficients of 0.83 for

positive affect and 0.86 for negative affect. Test-retest values ranged from 0.40 to 0.54. Factor analysis confirmed that items were grouped under positive and negative affect factors, as in the original scale. In this study, for PANAS, the reliability analysis yielded a Cronbach's Alpha of 0.89 for Positive Affect and 0.86 for Negative Affect.

Table 3 presents examples of questions from the Personal Information Form and items from the Social Media Addiction Scale-Adult Form, WEMWBS, and PANAS, which were utilized for data collection.

Table 3

Sample Questions and Items in the instrument

Instrument	Sample Questions and Items
Personal Information Form	How old are you?
	What is your gender?
Social Media Addiction Scale-Adult Form	"I see social media as an escape from the real world."
	"I spend more time on social media than I originally planned."
	"Being on social media comforts me when I feel unhappy."
Positive and Negative Affect Schedule (PANAS)	"Interested"
	"Distressed"
	"Excited"
Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)	"I am optimistic about the future."
	"I feel useful."
	"I feel relaxed."

Data collection and analysis

Prior to data collection, ethical approval for the study was obtained from the ethics committee of Düzce University. The data collection instruments were digitized and made accessible online. These digital surveys were distributed to the ECE teacher candidates. The data collected from the participants in the online setting were imported into SPSS 26.0 statistical software for the analyses.

Prior to data analysis, skewness and kurtosis values were evaluated to verify the normality of the data distribution obtained from the scales. The results indicated that the

skewness and kurtosis values ranged from +1.5 to 1.5, confirming that the data followed a normal distribution (Tabachnick & Fidell, 2013). Therefore, parametric tests were applied during the analysis due to the data normality.

Descriptive statistics were utilized to determine values such as the mean, minimum, and maximum scores and the standard deviation from the scores obtained by ECE teacher candidates on the Social Media Addiction Scale-Adult Form, PANAS, and WEMWB. The Independent Samples t-Test was used to examine differences in scale scores by gender, while a one-way analysis of variance (ANOVA) was utilized to assess scale scores based on age and daily Internet usage time. The "Pearson Product-Moment Correlation Coefficient" was calculated to identify significant relationships between social media addiction levels and positive/negative affect, as well as mental well-being. The significance level was set at 0.05. If the ANOVA results were significant, the LSD test was used to identify the source of the differences.

The assumptions for the regression analysis were examined, and the tolerance index was found to be 0.996 for age, 0.998 for gender, and 0.998 for daily Internet-usage time. The variance inflation factor (VIF) was found to be 1.004 for age, 1.002 for gender, and 1.002 for daily Internet-usage time. These results indicate that there is no multicollinearity among the variables. A multiple regression analysis was conducted to examine the impact of participants' gender, age, and daily Internet usage time on their social media addiction levels; the impact of participants' positive and negative affect on their mental well-being; and a regression analysis was conducted to determine the extent to which social media addiction influences mental well-being.

Ethical Considerations

Ethical Review Board: Scientific Research and Publication Ethics Committee of Düzce University

Date of Ethics Review Decision: 21.03.2024

Ethics Assessment Document Issue Number: 2024/90

FINDINGS

In this section, the findings from the analysis that respond to the research questions are discussed.

Levels of social media addiction, mental well-being, and positive and negative affectivity among Ece candidates

Table 4

Descriptive Analysis Results of the Score Averages

	N	Min.	Max.	$\bar{x}$	S

Social Media Addiction					
Virtual Tolerance	330	1,18	5,00	2,96	0,70
Virtual Communication	330	1,00	4,44	2,31	0,62
Total	330	1,10	4,75	2,67	0,60
WEMWBS	330	1,00	5,00	3,44	0,77
PANAS					
Positive Affect	330	1,00	5,00	3,00	0,81
Negative Affect	330	1,00	5,00	2,44	0,81

According to Table 4, the sample group's mean score on the Virtual Tolerance subscale of the Social Media Addiction Scale was 2.96, while the mean score on the Virtual Communication subscale was 2.31, with an overall mean score of 2.67. Considering the minimum and maximum possible scores on the scale, it can be concluded that the social media addiction levels of the sample group were slightly above average.

The sample group's mean score on WEMWBS is 3.44, indicating that their mental well-being is above average.

The Positive Affect subscale of the PANAS had a mean score of 3.00, while the Negative Affect subscale had a mean score of 2.44. These scores indicate that the sample group had positive affect levels above average and negative affect levels below average.

Differences in the social media addiction level of Ece candidates according to personal characteristics

Table 5

Differences in the Social Media Addiction Level of Participants According to Gender

Social Media Addiction	Gender	N	$\bar{x}$	S	t	p
Virtual Tolerance	Woman	285	**32,98**	7,68	2,087	**0,038***
	Man	45	30,40	7,9961		
Virtual Communication	Woman	285	20,76	5,52	-0,842	0,400
	Man	45	21,53	6,48		
Total	Woman	285	53,75	11,78	0,945	0,345
	Man	45	51,93	13,37		

*p<0,05

According to Table 5, there was a significant difference in the Virtual Tolerance subscale scores of the Social Media Addiction Scale between genders (p<0.05). The mean score for females ($\bar{x}$=32.98) is significantly higher than that for males ($\bar{x}$=30.40). However, the Virtual Communication subscale and the total scores did not show a significant gender difference.

Table 6

Differences in the Social Media Addiction Level of Participants According to Age

Social Media Addiction	Age	N	x̄	S		Sum of Squares	df	Mean Squares	F	p
Virtual Tolerance	18	19	31,15	7,57	Between groups	618,472	4	154,618	2,615	**0,035***
	19	66	33,95	7,55	Within groups	19214,161	325	59,120	Difference: 19 > 22 and above,	
	20	74	34,44	7,77	Total	19832,633	329			
	21	71	31,54	8,07						
	22	100	31,47	7,45					20 > 21, 22 and over	
Virtual Com.	18	19	20,47	5,25	Between groups	292,299	4	73,075	2,316	0,057
	19	66	21,42	4,59	Within groups	10254,356	325	31,552		
	20	74	22,33	6,17	Total	10546,655	329			
	21	71	20,02	5,44						
	22	100	20,10	5,96						
Total	18	19	51,63	11,39	Between groups	1732,162	4	433,041	3,079	**0,016***
	19	66	55,37	10,63	Within groups	45706,326	325	140,635	19 > 22 and above,	
	20	74	56,78	12,17	Total	47438,488	329			
	21	71	51,57	12,62					20 > 21, 22 and over	
	22	100	51,57	11,90						

*p<0,05

According to Table 6, there was a significant difference between the participants' ages and their scores on the Virtual Tolerance subscale and the overall Social Media Addiction Scale scores (p<0.05). The LSD test, used to identify the source of this difference through multiple comparisons, indicates that participants aged 19 have a significantly higher Virtual Tolerance subscale score (x̄=33.95) and total scale score (x̄=55.37) compared to those aged 22 and above. Similarly, participants aged 20 and older had significantly higher scores (x̄=34.44 for the subscale; x̄=56.78 for the total scale) than those aged 21 and 22 and above. However, the Virtual Communication subscale scores did not vary significantly with age. Overall, it is

noteworthy that participants aged 19 and 20 had higher social media addiction scores than the other participants.

Table 7

Differences in Social Media Addiction Level according to Daily Internet Usage Time

Social Media Addiction	Daily Int. Usage Time	N	x̄	S		Sum of Squares	df	Mean Squares	F	p
Virtual Tolerance	1-3 hrs	93	27,45	7,28	Between groups	3733,551	2	1866,775	37,917	**0,000***
	4-7 hrs	207	34,27	6,80	Within groups	16099,082	327	49,233	Difference: 8 hours and over
	8 hours or more	30	37,40	7,59	Total	19832,633	329		> 4-7 hrs > 1-3 hrs
Virtual Com.	1-3 hrs	93	18,65	5,57	Between groups	726,960	2	363,480	12,104	**0,000***
	4-7 hrs	207	21,50	5,13	Within groups	9819,695	327	30,030	Difference: 8 hours and over
	8 hours or more	30	23,36	7,25	Total	10546,655	329		> 4-7 hrs > 1-3 hrs
Total	1-3 hrs	93	46,10	11,48	Between groups	7740,419	2	3870,209	31,880	**0,000***
	4-7 hrs	207	55,77	10,42	Within groups	39698,069	327	121,401	Difference: 8 hours and over
	8 hours or more	30	60,76	13,34	Total	47438,488	329		> 4-7 hrs > 1-3 hrs

*p<0,05

According to Table 7, there was a significant difference between the participants' daily Internet usage time and their scores on the Virtual Tolerance and Virtual Communication subscales, as well as the overall Social Media Addiction Scale scores (p<0.05). The LSD test, used to determine the source of this difference through multiple comparisons, shows that the scores for those who spend 8 hours or more on the Internet ($\bar{x}$=37.40 for the Virtual Tolerance subscale; $\bar{x}$=23.36 for the Virtual Communication subscale; $\bar{x}$=60.76 for the total scale) are significantly higher than the scores for those who spend 4-7 hours ($\bar{x}$=34.27; $\bar{x}$=21.50; $\bar{x}$=10.42) and 1-3 hours ($\bar{x}$=27.45; $\bar{x}$=18.65; $\bar{x}$=11.48) on the Internet. Overall, it is

noteworthy that as daily Internet usage time increases, the participants' social media addiction scores also increase.

Differences in the level of mental well-being of Ece candidates according to personal characteristics

Table 8

Differences in WEMWBS Score among Participants According to Gender

	Gender	N	$\bar{x}$	S	t	p
WEMWBS	Woman	285	48,66	10,62	2,056	**0,041***
	Man	45	45,11	11,68		

*p<0,05

According to Table 8, there was a significant difference between the participants' gender and WEMWBS scores (p<0.05). The scores for women ($\bar{x}$=48.66) are significantly higher than those for men ($\bar{x}$=45.11).

There is no significant differences between the participants' age, daily Internet usage time, and WEMWBS scores (p>0.05).

Differences in the positive and negative affect levels of Ece candidates according to personal characteristics

There was no significant difference between the participants' gender and their scores on the subscales of the PANAS (p>0.05).

Table 9

Differences in the PANAS Scores of Participants According to Age

PANAS						Sum of Squares	df	Mean Squares	F	p
	Age	N	$\bar{x}$	S						
Positive Affect	18	19	27,21	7,61	Between groups	223,556	4	55,889	0,849	0,495
	19	66	30,60	7,41	Within groups	21386,335	325	65,804		
	20	74	30,10	7,86	Total	21609,891	329			
	21	71	29,42	8,06						
	22	100	30,52	8,81						
Negative Affect	18	19	20,31	8,20	Between groups	1057,856	4	264,464	4,101	**0,003***
	19	66	23,72	7,44	Within groups	20959,307	325	64,490		

20	74	27,24	8,32	Total	22017,164	329	Difference: 20 >
21	71	24,76	7,64				18, 19, 22 and
22	100	23,38	8,40				over, 21 > 18

*p<0,05

According to Table 9, there was a significant difference in the PANAS Negative Affect subscale scores among participants of different ages (p<0.05). The LSD test, used to identify the source of this difference through multiple comparisons, indicates that the scores for participants aged 20 ($\bar{x}$=27.24) are significantly higher than the scores for those aged 18 ($\bar{x}$=20.31), 19 ($\bar{x}$=23.72), 22, and older ($\bar{x}$=23.28), and the scores for those aged 21 ($\bar{x}$=24.76) are significantly higher than the scores for those aged 28 ($\bar{x}$=20.31). Overall, it is noteworthy that participants aged 20 exhibit the highest levels of negative affect.

There is no significant differences between the participants' daily Internet usage times and their PANAS scores (p>0.05).

Relationship between the levels of social media addiction, mental well-being, and positive and negative affectivity among Ece candidates

Table 10

Relationship Between the Levels of Social Media Addiction, WEMWBS, and the PANAS Score of Participants

		Virtual Tolerance	Virtual Com.	Total Social Media Addiction	WEMWBS	Positive Affect	Negative Affect
Virtual Tolerance	r	1	0,590**	0,925**	**-0,144****	**-0,167****	**0,327****
	p		0,000	0,000	**0,009**	**0,002**	**0,000**
Virtual Com.	r	0,590**	1	0,853**	**-0,185****	**-0,111***	**0,331****
	p	0,000		0,000	**0,001**	**0,044**	**0,000**
Total Social Media Addiction	r	0,925**	0,853**	1	**-0,180****	**-0,160****	**0,367****
	p	0,000	0,000		**0,001**	**0,004**	**0,000**
WEMWBS	r	-0,144**	-0,185**	-0,180**	1	**0,663****	**-0,432****
	p	0,009	0,001	0,001		**0,000**	**0,000**
Positive Affect	r	-0,167**	-0,111*	-0,160**	0,663**	1	**-0,376****
	p	0,002	0,044	0,004	0,000		**0,000**

Negative Affect	r	,327**	,331**	,367**	-,432**	-,376**	1
	p	,000	,000	,000	,000	,000	

There was a low negative correlation between participants' scores on the Virtual Tolerance (r=-0.144, p=0.009) and Virtual Communication subscales (r=-0.185, p=0.001), as well as the total scores of the Social Media Addiction Scale (r=-0.180, p=0.001), and their WEMWBS scores. This indicates that as the participants' levels of social media addiction increase, their mental well-being decreases, or conversely, as their social media addiction levels decrease, their mental well-being improves.

Additionally, there was a low negative correlation between the Virtual Tolerance, Virtual Communication subscales, total Social Media Addiction Scale scores, and the Positive Affect subscale scores of the PANAS (r=-0.167, p=0.002; r=-0.111, p=0.044; r=-0.186, p=0.004). There was also a moderate positive correlation with the Negative Affect subscale scores (r=0.327, p=0.000; r=0.331, p=0.000; r=0.367, p=0.000). This indicates that as the participants' social media addiction levels increase, their positive and negative emotions decrease. Conversely, as their social media addiction levels decrease, their positive and negative emotions decrease.

Finally, there was a moderate positive correlation between WEMWBS scores and the PANAS Positive Affect subscale scores (r=0.663, p=0.000) and a moderate negative correlation with the PANAS Negative Affect subscale scores (r=-0.432, p=0.000). This indicates that as the participants' mental well-being improves, their positive and negative emotions also increase and decrease, respectively. Conversely, as mental well-being decreases, positive emotions decrease, and negative emotions increase.

Prediction of Ece candidates' social media addiction based on personal characteristics

The assumptions for the regression analysis were examined, and the tolerance index was found to be 0.996 for age, 0.998 for gender, and 0.998 for daily Internet-usage time. The variance inflation factor (VIF) was found to be 1.004 for age, 1.002 for gender, and 1.002 for daily Internet-usage time. These results indicate that there is no multicollinearity among the variables.

A multiple regression analysis was conducted to examine the impact of gender, age, and daily Internet usage time on social media addiction levels. In this analysis, being female was set as the independent variable for gender, age 20 as the independent variable for age, and 8 hours or more as the independent variable for daily Internet usage time, with other variables being assigned as dummy variables. The results of the multiple regression analysis are presented in Table 11.

Table 11

Regression Analysis of Participants' Social Media addictions Based on Personal Characteristics

Variables	B	Standard Error	β	t	p	r	rp	Tolerance Index	VIF
Constant	48,001	1,629		29,465	0,000	-	-	-	-
Age	3,648	1,396	0,141	2,613	0,009	0,132	0,143	0,996	1,004
Gender	0,540	1,695	0,017	0,319	0,750	0,012	0,018	0,998	1,002
Daily Internet Usage Time	7,289	2,024	0,194	3,602	0,000	0,188	0,196	0,998	1,002

R=0,235   *R²*=0,055
$F_{(3-326)}$=6,357   p= 0,000

In Table 11, examining the zero-order and partial correlations between participants' demographic variables and the predicted level of social media addiction revealed a significant relationship between these demographic variables and participants' social media addiction (R=0.235, R²=0.055, F (3, 326) =6.357, p=0.000). The demographic variables explained 5.5% of the variance in the participants' social media addictions levels.

A weak positive correlation is observed between age and social media addiction (r=0.132, p=0.009), as well as between daily Internet usage time and social media addiction (r=0.188, p=0.000). The gender variable does not have a significant relationship with participants' social media addictions.

According to the standardized regression coefficients, the relative impact of the predictor variables on the dependent variable is in the following order: daily Internet usage time (8 hours or more) (β=0.194), age (20 years) (β=0.141), and gender (β=0.017). In other words, a one-unit increase in daily Internet usage time resulted in approximately a 0.19-unit increase in the participants' social media addiction level, whereas a one-unit increase in the age variable resulted in a 0.14-unit increase in the social media addiction level. Based on the significance tests of the regression coefficients, the mathematical model for predicting participants' social media addiction can be expressed as follows: *age = 3.648, gender = 0.540, daily internet usage time = 7.289.*

Prediction of Ece candidates' mental well-being based on social media addictions

To examine the effect of participants' social media addiction levels on their mental well-being, a simple regression analysis was conducted. The results of the simple regression analysis are presented in Table 12.

Table 12

Regression Analysis of Mental well-beings Based on Social Media Addiction

Variable	B	Standard Error	β	t	p
Constant	59,469	2,752		21,613	0,000
Social Media Addiction Scale	-0,226	0,054	-0,226	-4,198	0,000
R= 0,226		*R²*=0,051			
F(1-328)= 17,624		p=0,000			

In Table 12, the correlation between participants' social media addiction levels and their mental well-being indicates a significant relationship (R=0.226, R²=0.051, F(1-328)=17.624, p=0.000). This relationship is negative and of weak magnitude.

Participants' levels of social media addiction explained 5.1% of the variance in their mental well-being. A one-unit increase in social media addiction levels resulted in an approximately 0.23-unit decrease in participants' mental well-being levels.

Prediction of Ece candidates' mental well-being based on social media addictions

The results of the multiple regression analysis examining the effects of participants' positive and negative affect on their mental well-being are presented in Table 13.

Table 13

Regression Analysis for Predicting Participants' Mental well-beings Based on Affect (Positive and Negative)

Variables	B	Standard Error	β	t	p	r	rp	Tolerance Index	VIF
Constant	31,705	2,631		12,050	0,000	-	-	-	-
Positive Affect	0,778	0,058	0,583	13,526	0,000	0,599	0,540	0,858	1,165
Negative Affect	-0,282	0,057	-0,213	-4,948	0,000	-0,264	-0,198	0,858	1,165
R=0,692		*R²*=0,479							
F(2-327)=150,138		p=0,000							

In Table 13, examining the zero-order and partial correlations between participants' affect (positive and negative) and their mental well-being showed a significant relationship (R=0.692, R²=0.479, F (2-327) =150.138, p=0.000). Affect explains approximately 48% of the variance in participants' mental well-being.

There was a moderate positive correlation between positive affect and mental well-being (r=0.599, p=0.000) and a weak negative correlation between negative affect and mental well-being (r=-0.264, p=0.000). According to the standardized regression coefficients, the relative impact of the predictor variables on the dependent variable is positive affect (β=0.583) and negative affect (β=-0.213). In other words, a one-unit increase in positive affect resulted in a 0.54-unit increase in mental well-being, whereas a one-unit increase in negative affect resulted in an approximately 0.20-unit decrease in mental well-being. Based on the significance tests of the regression coefficients, the mathematical model for predicting participants' mental well-being based on affect can be expressed as follows: *Positive Affect = 0.778, negative affect = 0.282.*

DISCUSSION

The findings reveal several important insights into the relationship between social media addiction, mental well-being, and emotional states among ECE candidates. The ECE candidates displayed a moderate level of social media addiction, which is consistent with existing research indicating that young adults and university students are increasingly engaged with social media, reflecting broader societal trends (Kuss & Griffiths, 2011; Andreassen et al., 2012). Such behaviors can be understood in the context of the ubiquitous presence of social media in everyday life, serving as a primary medium for social interaction, information dissemination, and entertainment (Perrin & Anderson, 2019).

Interestingly, despite concerns often associated with social media use, the participants reported above-average mental well-being. Previous studies have highlighted the detrimental effects of extensive social media use, linking it to increased rates of anxiety, depression, and lower life satisfaction (Twenge & Campbell, 2018; Kross et al., 2013). However, the nature of social media usage among the ECE candidates may explain this discrepancy. For instance, active engagement—such as creating content and participating in meaningful online interactions—has been associated with positive outcomes, such as enhanced social connectedness and emotional support (Reinecke & Trepte, 2014). This positive engagement might mitigate some of the adverse effects typically associated with social media use.

Affective states measured by the PANAS indicated higher levels of positive affect and lower levels of negative affect among the participants, potentially contributing to their higher mental well-being. The relationship between social media use and affective states is complex and can vary significantly based on the content consumed and the individual's purpose for using social media. For instance, studies have found that while passive consumption of social media content can lead to feelings of envy and dissatisfaction, active

engagement can foster a sense of community and belonging (Verduyn et al., 2017; Ellison et al., 2007).

Moreover, the findings indicated that female participants scored significantly higher on the Virtual Tolerance subscale compared to male participants. This aligns with previous research indicating that women tend to use social media more intensively for communication and social interaction (Haferkamp et al., 2012). Women's higher Virtual Tolerance scores may reflect a greater tendency to engage in activities that involve sustained social media use, such as maintaining social connections and seeking social validation (Tifferet & Vilnai-Yavetz, 2014). However, it is notable that there were no significant gender differences in the Virtual Communication subscale and total scores, which suggests that although women might have a higher tolerance for social media use, this does not necessarily translate into higher overall social media addiction levels. Additionally, the higher mental well-being scores among female ECE candidates might be due to their generally stronger social networks and greater tendency to seek emotional support, which are critical factors in enhancing mental well-being (Taylor et al., 2000; Matud, 2004).

Age-related differences were evident, with younger participants, particularly those aged 19 and 20, showing higher levels of social media addiction. This finding is consistent with literature indicating that younger individuals are more likely to experience higher levels of social media addiction (Andreassen et al., 2016). This age group, often referred to as "digital natives," has grown up with social media as an integral part of their social and informational landscape, potentially making them more susceptible to its addictive qualities (Przybylski et al., 2013). On the other hand, the absence of significant differences in mental well-being scores based on age indicates that these factors may not have a uniform impact on the well-being of ECE candidates. This finding contrasts with some studies that have found age-related differences in well-being, often showing that younger individuals experience higher levels of stress and lower well-being compared to older adults, possibly due to life transitions and uncertainties (Arnett, 2000).

Related to daily Internet usage time, the results also show a clear and significant correlation with social media addiction levels. Participants who spend 8 hours or more on the internet daily exhibit the highest levels of social media addiction. This finding supports the notion that extensive social media exposure can increase the risk of addiction (Andreassen et al., 2016). Several factors can explain the relationship between internet usage time and addiction levels. First, the more time individuals spend online, the more opportunities they have to engage with addictive features of social-media platforms, such as continuous newsreels, notifications, and social validation mechanisms (Griffiths et al., 2014). Second, prolonged internet use may lead to the displacement of other activities, such as physical exercise and face-to-face interactions, which can further exacerbate feelings of loneliness and dependence on social media for social fulfillment (Twenge & Campbell, 2019). However, the lack of significant differences in mental well-being and affective states according to internet usage time indicates that the nature and context of internet use are

crucial. ECE candidates use the internet mainly for academic purposes or maintaining positive social connections, this might mitigate potential negative effects on their well-being and emotional state (Berryman et al., 2018).

Finally, the study's correlations highlight a significant relationship between social media addiction, mental well-being, and emotional states. Higher levels of social media addiction were associated with lower levels of mental well-being, positive affectivity, and increased negative affectivity, which are consistent with findings from existing literature (Kross et al., 2013; Twenge & Campbell, 2018). This negative correlation between social media addiction and mental well-being underscores the detrimental impact that excessive social media use can have on an individual's overall mental health, highlighting the importance of promoting balanced and mindful social media usage among ECE candidates. The study also identified a moderate positive correlation between social media addiction and negative affectivity, indicating that as addiction levels increase, so do negative emotions. This indicates that interventions aimed at reducing social media addiction should also address the emotional aspects, such as managing the negative feelings associated with social media use.

Last but not least, the regression analyses provided further insights, revealing that age and daily internet usage time are significant predictors of social media addiction levels, whereas gender does not play a notable role. Specifically, ECE candidates around the age of 20 and those who spend 8 hours or more online daily show higher levels of social media addiction. This finding emphasizes the need for targeted interventions for younger individuals who are more vulnerable to developing addictive behaviors related to digital media due to their extensive engagement with online platforms (Andreassen et al., 2016). The analysis also demonstrated a clear negative relationship between social media addiction and mental well-being, explaining a small but significant portion of the variance in well-being scores among ECE candidates. This indicates that reducing social media addiction can potentially improve mental well-being among future educators.

Moreover, positive and negative affect were found to be significant predictors of mental well-being, with positive affect having a stronger positive impact than negative affect. This indicates that fostering positive emotional experiences could be particularly beneficial for enhancing the mental well-being of ECE candidates who may face unique stressors related to their training and future roles in early childhood education. The strong association between positive affect and well-being supports the broadening-and-build theory, which proposes that positive emotions expand individuals' thought-action repertoires and build enduring personal resources (Fredrickson, 2001).

These findings collectively emphasize the need for comprehensive strategies that promote healthy digital engagement and emotional resilience among ECE candidates. As future educators, they will need to model and teach balanced digital behaviors and emotional regulation to shape the next generation's relationship with digital media and

overall well-being. By understanding the specific challenges and behaviors of ECE candidates, educational institutions can better support them in developing positive digital and emotional practices that they can, in turn, model for young children.

LIMITATIONS AND RECOMMENDATIONS

The study's sample size, though adequate for exploratory analysis, may limit the generalizability of the findings. The participants were exclusively ECE candidates from specific universities, which may not fully represent the broader population of ECE candidates or students from other disciplines. Future research should include a larger and more diverse sample of participants from various academic disciplines and geographical regions. Moreover, it should employ a cross-sectional design that captures data at a single point in time. This approach limits the ability of researchers to draw causal inferences about the relationships between social media addiction, mental health, and emotional states. Longitudinal studies are needed to establish temporal relationships and causality. The reliance on self-reported measures for assessing social media addiction, mental well-being, and affective states introduces potential biases, such as social desirability bias and inaccurate self-assessment. Incorporating qualitative methods, such as interviews or focus groups, could provide deeper insights into the nuances of social media addiction and its impact on mental well-being. Lastly, given these findings, there is a need for intervention studies that explore strategies to reduce social media addiction and promote healthy digital engagement. Such interventions could focus on digital literacy, emotional regulation and time management skills, specifically tailored for ECE candidates and other student groups.

CONCLUSION

This study underscores the critical need to address the unique challenges faced by ECE candidates in the digital age, particularly social media addiction and its impact on mental well-being and emotional states. The findings highlight that ECE candidates exhibit moderate levels of social media addiction, with younger individuals, especially those aged around 20, and those who spend extensive hours online more susceptible to developing addictive behaviors. This demographic's vulnerability emphasizes the importance of targeted interventions aimed at promoting balanced and mindful social media usage, which is crucial not only for their well-being but also for their future roles as educators.

The significant correlations between social media addiction and mental well-being, including positive and negative affectivity, further illuminate the complex relationship between digital media use and psychological health. While social media can foster social connectedness and emotional support, excessive use, particularly passive consumption, can lead to negative psychological outcomes such as increased anxiety, depression, and reduced life satisfaction. This dichotomy indicates that educational institutions should focus on fostering positive digital engagement strategies that enhance emotional resilience among ECE candidates.

Moreover, the gender differences observed in the study, with female candidates scoring higher on the Virtual Tolerance subscale, indicate that although women may engage more intensively with social media for social interaction, this does not necessarily equate to higher overall addiction levels. This nuance highlights the importance of understanding the different ways in which male and female candidates interact with social media to tailor interventions that cater to the specific needs of each group.

In light of these findings, educational programs must integrate training that promotes digital literacy, emotional intelligence, and mental well-being. As future educators, ECE candidates will play a pivotal role in modeling and teaching balanced digital behaviors to young children, making it imperative that they are equipped with the skills necessary to navigate the digital landscape healthily. By focusing on these areas, educational institutions can help ECE candidates develop the necessary resilience and digital competencies to support their well-being and that of their future students, thereby fostering a healthier, more balanced approach to digital media use in the next generation.

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Data Availability Declaration

Data Availability Upon Formal Request:

While the primary datasets utilized in this study are not publicly accessible due to certain constraints, they are available to researchers upon a formal request. The authors have emphasized maintaining the integrity of the data and its analytical rigor. To access the datasets or seek further clarifications, kindly reach out to the corresponding author. Our aim is to foster collaborative academic efforts while upholding the highest standards of research integrity.

Author Contributions

All authors, Özge PINARCIK SAKARYALI, Nur Banu YİĞİT contributed equally to this work. The team collaboratively handled the conceptualization, methodology design, data acquisition, and analysis. Each author played a significant role in drafting and revising the manuscript, ensuring its intellectual depth and consistency. All authors have thoroughly reviewed and provided critical feedback and approved the final version of the manuscript. They jointly take responsibility for the accuracy and integrity of the research.

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