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The Role of Family Cohesion in Internet Addiction and the Development of Alexithymia in Male Adolescent Users of Facebook and Twitter

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Abstract

Background: *Families' efforts to provide for their children's basic needs can have psychological impacts, such as children and adolescents feeling dissatisfied with their family environment and turning to online platforms that may not benefit their mental well-being. This study aimed to explore how family cohesion influences Internet addiction and the development of alexithymia in male adolescent users of Facebook and Twitter.*

Methods: *Descriptive-correlational and cross-sectional research methods, along with path analysis, were utilized in this study. The research population consisted of all male Facebook and Twitter adolescent users in Isfahan from September to November 2021. A total of 261 male adolescents were selected as the statistical sample using purposeful sampling. The research utilized the Family Content Scale (FCS), Young's Internet Addiction Scale (IAT), and Toronto Alexithymia Scale (TAS-20) as measurement tools. Descriptive statistics were analyzed using SPSS version 26 software, while path coefficients were analyzed. Additionally, data were analyzed and modeled through Pearson's correlation, multiple regression analysis, and beta coefficient. A significant level was set at 0.05.*

Results: *Based on the research, family cohesion had no significant effect on alexithymia (β=-0.144, P-value=0.124). Likewise, family cohesion had a negative and significant effect on Internet addiction (β=-0.761, P-value<0.001). At the same time, Internet addiction had a positive and significant effect on alexithymia (β=0.461, P-value<0.001). The Internet addiction variable was significant as a mediating variable in the relationship between family cohesion and alexithymia (P-value<0.001).*

Conclusions: *The results of the study suggested that a lack of family cohesion may contribute to the development of alexithymia and Internet dependency.*

Keywords: Family cohesion, Internet addiction, Alexithymia, Adolescent, Virtual networks, Facebook, Twitter.

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Introduction

In recent times, the progress of mechanization and shifts from traditional to modern lifestyles have impacted both general and mental health statuses[1]. The societal trend towards a more dominant lifestyle is leading to a decline in family cohesion as individuals have fewer opportunities to spend time together[2]. Family cohesion refers to the strong bond, close relationship, and emotional dedication that family members have toward each other[3]. A cohesive and secure family provides a nurturing and encouraging atmosphere for all its members to grow and reach their highest potential at every stage of life. This type of family is adaptable enough to handle challenges and its members collaborate to resolve issues, adjust to unforeseen circumstances, and support one another during tough times[4]. In families with low cohesion, due to strained relationships among family members and an unsuitable environment, adolescents and young adults develop an interest in places other than their home[5].

Social media platforms like Twitter and Facebook offer interactive features like chat rooms and emails that attract and engage users, providing a virtual space for communication and interaction[6]. Increasing social protection and joint activities with family members such as watching TV, eating, shopping, and spending time together outside can lead to a decrease in internet usage and addiction[7]. One of the main risk factors for adolescents and youth is poor family performance, as family plays a crucial role in their socialization. Internet addiction is considered to be one of the risk factors associated with this issue[8]. The scientific definition of the term refers to the uncontrollable and excessive use of the Internet, which may result in irritability when access is restricted[9]. Internet addiction is defined by two types of symptoms: psychological symptoms, including feelings of emptiness, depression, mood swings, social issues, lack of family connection, and decreased interaction with real individuals, and physical symptoms such as hand neurological syndrome, dry eyes, migraine headaches, sleep disturbances, and irregular eating habits [10]. The etiology of this disorder is influenced by two main factors. The first factor is the appeal and distinctiveness of the Internet, while the second factor involves feelings of discontentment with the surroundings and internal negative emotions[11].

Li et al.'s study demonstrates that the connection between alexithymia and Internet addiction in middle school students is influenced by internal factors, highlighting the importance of positive psychology and family dynamics[12]. Moreover, the findings of this research indicate that both alexithymia and internet addiction can adversely affect interpersonal relationships by hindering emotional expression, communication, and social interaction[13]. Alexithymia, a collection of cognitive characteristics seen in certain individuals with psychosomatic conditions, was initially introduced by Sifneos in 1970. This trait is a distinct quality, or rather, a combination of qualities, that can be found in different

levels in each person[14]. According to Luminet et al. (2021), alexithymia could result in ineffective and rigid emotional regulation methods, increasing the likelihood of developing various physical and mental health issues[15]. Similarly, Schimmenti et al. (2017) discovered that individuals with Internet addiction exhibited higher levels of alexithymia compared to those without addiction, with a significant positive connection between the two[16]. Mahapatra and Sharma[17] and Wachs et al[18] proposed that alexithymia could serve as a significant risk factor for Internet addiction[17,18]. While Mahapatra and Sharma (2018) noted a potential causal link between alexithymia and Internet addiction, the specific factors influencing this relationship are yet to be fully understood[17].

Alexithymia is primarily characterized by difficulties in cognitive processing and regulation of emotions. It is believed that the challenges related to emotional experiences are interlinked with alexithymia[19]. Another perspective that is starting to gain traction is that the structure mainly demonstrates deficiencies in the conscious ability to experience excitement due to emotional arousal from autonomous activities[20]. Additionally, the family environment influences the development of alexithymia tendencies[21]. Alexithymia is a prominent clinical feature that can interfere with interpersonal relationships, especially in the family setting. This observation is also supported by numerous studies[18-22]. Based on the findings, it is important to consider the influence of family on raising a healthy generation. Families focused solely on fulfilling their child's basic needs could lead to attachment issues and psychological consequences related to behavior. Children and teenagers becoming disillusioned with their families and turning to virtual spaces, which cannot adequately support their mental well-being, are some of the issues identified. As a result, this research aimed to examine the impact of family cohesion on the emergence of alexithymia and Internet addiction among male adolescent users of Facebook and Twitter.

Materials and Methods

This research is part of descriptive-correlational research, and the cross-sectional research method and structural equation modeling (SEM) was used. The statistical population of this research included all male adolescent users of Facebook and Twitter in Isfahan from September to November 2021. The statistical sample included 161 male adolescents were selected among the patients through targeted sampling. The adequacy of the sample size was determined using Cohen's formula in 2013[19]. This calculation was performed to identify the appropriate sample size for the study, considering the research variables and the use of structural equation modeling. In this research, the assumed effect size is equal to 0.3, the Desired statistical power level is equal to 0.8, the number of latent variables is equal to 3, the number of observed variables is equal to 52 cases, and the probability level is equal to 0.01 were considered. According to Loehlin and Beaujean, 250-350 participants are enough to test the proposed model and research hypotheses[19]. Therefore, the researcher chose a sample size of 261 people. The eligibility requirements for participating in the research study involved being a teenager aged between 14 and 18 who was studying in the first or second year of high school

and spent more than an hour using Facebook and Twitter. Those who refused to participate or did not answer at least 6 questions on each survey were not included in the study. The investigation was conducted systematically. Initially, the researcher obtained the necessary authorization from their university to carry out the study. Subsequently, the researcher visited two undisclosed government hospitals in Tehran. The researcher then collaborated with the hospitals' management departments to proceed with the study. In addition, the researcher communicated with the hospital's admissions department, providing them with a message that outlined the research objectives and requested their cooperation. Furthermore, comprehensive information, including the research goals, permits, and ethical guidelines, was shared to ensure transparency.

The male adolescent users participating in the research were assured that their details would not be included in any research documents and that they had the option to withdraw from the study at any time. The participants were thoroughly instructed on how to complete the questionnaires and were given the choice to do so either online or in person. Due to limitations in participant cooperation, the entire research process, including questionnaire completion, lasted approximately six months. Out of the 2000 questionnaires distributed, only 261 were returned and utilized for analysis. Throughout the study, all ethical considerations were strictly adhered to, and participants were free to withdraw from the study whenever they wished.

The Family Content Scale (FCS): The Family Cohesion Scale developed by Samani 23 was used to assess the level of family togetherness. This scale comprises 28 statements, each rated on a Likert scale from strongly agree to strongly disagree. Scores range from 1 for strongly agree to 5 for strongly disagree. The maximum score possible on this scale is 140, with the minimum being 28. It has shown strong reliability, with reported alpha coefficients of 0.90 and 0.79 23. According to a study by Mirzaei et al. (2015) involving students, the alpha coefficient was found to be 0.6024.

Young's Internet Addiction Scale (IAT): IAT was utilized by researchers to evaluate Internet addiction[25]. This tool consists of 20 statements rated on a five-point Likert scale. The minimum score is 20 and the maximum score is 100. Based on their scores, individuals are divided into three categories: not addicted to the internet (scores 20-49), at risk for internet addiction (scores 50-79), and addicted to the internet (scores 80-100). Alavi et al. confirmed the validity and reliability of the scale in Iran in 2010. The study found strong results for content and convergent validity, test-retest reliability (r=0.82), internal consistency (α=0.88), and split-half reliability (r=0.72)[26].

Toronto Alexithymia Scale (TAS-20): Bagby et al. developed a self-report questionnaire consisting of 20 questions to assess alexithymia[27]. The questionnaire includes three dimensions: difficulty in identifying feelings (7 questions), difficulty in describing feelings (5 questions), and focusing on external experiences (8 questions). Responses are rated on a 5-point Likert scale ranging from strongly agree (1) to strongly

disagree (5). A score above 60 indicates severe alexithymia, while a score below 52 suggests mild alexithymia or no alexithymia[28]. The validity of the scale for Iranian samples is high, with alpha coefficients of 0.79 for the total scale, 0.75 for difficulty in identifying feelings, 0.71 for difficulty in describing feelings, and 0.66 for focusing on external experiences[28].

Results

At first, the researcher investigated the descriptive statistics of the demographic variables of the research (Table 1). The participants were divided into four age groups: 14 to 15 years old (17.9%), 15 to 16 years old (20.6%), 16 to 17 years old (11.1%) and 17 to 18 years old (50.4%). Similarly, the participants were divided into four groups in terms of time of use: 1-2 hours per day (6.5%), 2-3 hours per day (30.9%), 3-4 hours per day (43.1%) and more than 4 hours per day. days (19.5%) were divided. In terms of education, the participants were divided into two groups: the first year of high school (41.2%) and the second year of high school (58.8%).

Descriptive statistical analysis of the scores of the dimensions of alexithymia and the total score of alexithymia as well internet addiction and family cohesion are shown in Table 2.

Table 1. Description of the demographic variables

Variables	Groups	Frequency	Percent	Sample size	Median
Education	First year of high school	108	41.2	261	2
	Second year of high school	154	58.8		
Age	14-15	47	17.9	261	4
	15-16	54	20.6		
	16-17	29	11.1		
	17-18	132	50.4		
Time of use	1-2	17	6.5	261	3
	2-3	81	30.9		
	3-4	113	43.1		
	+4	51	19.5		

Table 2. Mean and standard deviation of scores of the dimensions of alexithymia and the total score of variables

Components of alexithymia	M±SD	Variables	M±SD
Difficulty in identifying feelings	18.3±3.97	Alexithymia (total)	55.05±12.66
Difficulty in describing feelings	13.1±3.67	Internet addiction	41.62±13.14
Focus on external experiences	23.63±8.13	Family cohesion	89.2±14.13

As it is shown in Table 2, the mean and the standard deviation of the research components (alexithymia scores and the total score of alexithymia, internet addiction, and family cohesion) are provided here for the purposes of the study. Based on this, the mean and standard deviation of difficulty in identifying feelings (18.3±3.97), difficulty in describing feelings (13.1±3.67), focus on external experiences (23.63±8.13), alexithymia (55.05±12.66), Internet addiction (41.62±13.14) and family cohesion (89.2±14.13). Table 3 shows the correlation between research variables based on Pearson's correlation coefficient.

Table 3. Pearson's correlation coefficient between alexithymia, Internet addiction and family cohesion

Variables		1	2	3
Family cohesion	Pearson's r	—		
	df	—		
	P-value	—		
Internet addiction	Pearson's r	-0.761***	—	
	df	260	—	
	P-value	< 0.001	—	
Alexithymia	Pearson's r	-0.494***	0.570***	—
	df	260	260	—
	P-value	< 0.001	< 0.001	—

Note. * P-value<0.05, ** P-value<0.01, *** P-value<0.001

As the findings show, there was a negative and significant relationship between the variable family cohesion and Internet addiction (r=-0.761, P-value>0.001). Likewise, there was a negative and significant relationship between family cohesion and alexithymia (r=-0.494, P-value<0.001). However, there was a positive and significant relationship between Internet addiction and alexithymia (r=0.570, P-value>0.001). To

implement the structural equation model, first the assumptions were checked. The sample size of 261 people is sufficient to implement the structural equation model. The outlier data were analyzed using the Mahalanobis distance index and it was found that there is no need to remove any of the data. The condition of normality was checked with the Shapiro-Wilk test, and due to the non-normality of the main variables, the PLS method was used to check the research model, which does not require the variables to be normal. Two indicators, Variance Inflation Factor (VIF) and Tolerance, were used to check the collinearity between independent variables (Table 4). This assumption was also confirmed.

Likewise, before implementing the model, the researcher used the regression method to investigate the effect of the research variables on the dependent variable (Table 5).

Table 4. Examining the assumption of non-collinearity between predictor variables

Variable	Collinearity Statistic	
	Tolerance	VIF
Family cohesion	2.37	0.421
Internet addiction	2.37	0.421

Table 5. Multivariate regression analysis

Predictor	Estimate	SE	t	P-value	R	R^2	Adjusted R^2	F
Intercept	17.268	4.5158	3.82	<0.001				
Family cohesion	-0.125	0.0680	-1.84	0.067	0.578	0.334	0.329	64.9
Internet addiction	0.303	0.0514	5.90	<0.001				

Based on Table 5, it was observed that the family cohesion variable does not have a significant direct effect on alexithymia (P-value=0.067). However, Internet addiction increased alexithymia and had a significant effect on it (P-value<0.001). In total, the regression model was significant and 33.4% of the variance of alexithymia was explained based on the model. After running the model, the researcher checked the path coefficients between the research variables and the significance level between the variables in Table 6. In this research, the researcher set the bootstrap value to 5000.

Table 6. Standard research coefficients

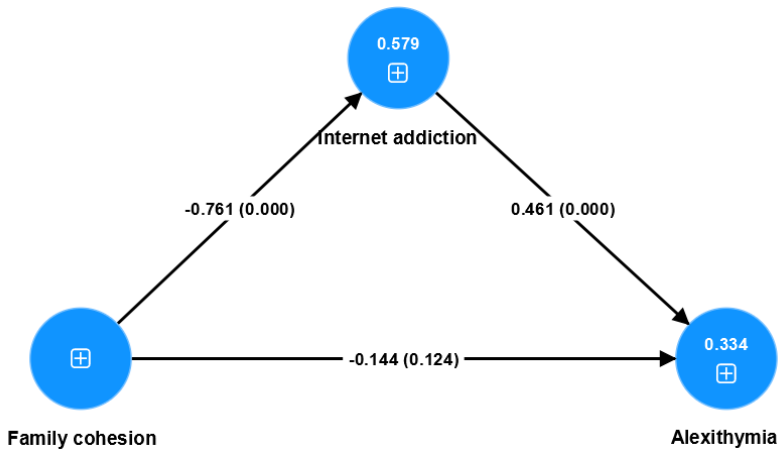| Path between variables	Path coefficient	STDEV	Significance level	T-value	Result
Family cohesion -> Alexithymia	-0.144	0.093	0.124	1.540	**Rejection**
Family cohesion -> Internet addiction	-0.761	0.029	0.000	25.907	**Confirmation**
Internet addiction -> Alexithymia	0.461	0.096	0.000	4.783	**Confirmation**

Figure 2. Path coefficients between variables and significance level

Based on the results shown in Table 6 and Figure 2, family cohesion had no significant effect on alexithymia (β=-0.144, P-value=0.124). Likewise, family cohesion had a negative and significant effect on Internet addiction (β=-0.761, P-value<0.001). At the same time, Internet addiction had a positive and significant effect on alexithymia (β=0.461, P-value<0.001). Next, the researcher used the bootstrap method to investigate the indirect effect of the research variable.

Table 7. Total indirect effects between research variables

Path between variables	Beta	STDEV	P-value	T-value	Result
Family cohesion-> Internet addiction -> Alexithymia	-0.351	0.077	0.000	4.581	Confirmation

According to Table 7, the Internet addiction variable was significant as a mediating variable in the relationship between family cohesion and alexithymia (P-value<0.001). This effect is negative because family cohesion had a negative effect on Internet addiction and indirectly had a negative effect on alexithymia. The researcher used the Sobel test to check the significance of the mediating variable of the research. This test was calculated based on the following formula.

$$Z\ value = \frac{|a \times b|}{\sqrt{(b^2 \times S_a^2) + (a^2 \times S_b^2) + (S_a^2 \times S_b^2)}}$$

a: The value of the path coefficient between the independent variable and the mediator

b: Path coefficient value between mediating and dependent variable

Sa: The standard error of the path between the independent variable and the mediator

Sb: Standard error of the path between the mediator and dependent variable

In the Sobel test, if the Z value exceeds 1.96, it can be confirmed that the mediating effect of a variable is significant at the 95% confidence level. The Z value for Internet addiction as a mediator for Family cohesion and alexithymia variables was equal to -4.7236. According to the values obtained in the Sobel test, it can be concluded that the mediating variable of the research is significant. The researcher also examined the determination coefficient of endogenous variables in the research.

Table 8. Coefficient of determination of the model

Variables	R-square	R-square adjusted
Alexithymia	0.334	0.329
Internet addiction	0.579	0.577

The researcher checked the reliability and validity of the research model in Table 9.

Table 9. Reliability and validity of the model

Variables	Cronbach's Alpha	Composite Reliability	Average variance extracted (AVE)
Family cohesion	0.862	0.88	0.65
Internet addiction	0.852	0.87	0.57
Alexithymia	0.881	0.901	0.55

As it is clear from Table 9, the reliability and validity of the model have been confirmed. The reliability of Cronbach's alpha and the combined reliability of the variables are higher than 0.7. Similarly, the validity of the model is also using the AVE index, since its value is higher than 0.5 for the research variables, it can be concluded that the validity of the model is confirmed and it can be concluded that the validity of the model is confirmed. In the same way, the researcher examined the fit of the model. All fit indices of the model were confirmed. SRMR or Standardized Root Mean Square Residual Index is the difference between the observed correlation and the correlation matrix of the structural model. SRMR value for the model was equal to 0.043.

Discussion

This study aimed to examine how family cohesion influences the development of alexithymia and Internet addiction in male adolescents who use Facebook and Twitter. The findings indicated a strong negative connection between family cohesion components and Internet addiction. Additionally, Internet addiction was found to have a significant impact on family cohesion. The findings align with the findings of Sarour and El Keshky[30], Sela et al[31], Nikdel et al[32], Lian et al[33], and Shi et al[34].

Lian et al highlighted the positive impact of peer bonding on the connection between family cohesion and flexibility in influencing automatic thoughts and addiction to mobile phones. Moreover, both the direct association between family cohesion and adaptability and mobile phone addiction as well as the indirect effect of automatic thoughts were moderated by peer attachment[33]. Shi et al revealed that self-esteem, anxiety, and

depression mediated the relationship between family atmosphere and internet addiction in parallel and sequence. The pathway of family atmosphere-self-esteem-Internet addiction played a more important role than others[34]. The prior research indicated a significant negative relation between family cohesion and internet addiction, and between deviant peer affiliation and family cohesion, and a significant positive relationship between family adaptability and internet addiction[30].

The evolutionary model of Risky Adolescent Behavior suggests that families with high conflict and low consistency are more prone to having low family participation, which can lead to problematic behavior. On the other hand, according to social control theory, adolescents who have positive family interactions, high family cohesion, and strong attachment to their parents are more likely to engage in non-deviant actions[35]. Adolescents in families characterized by high levels of conflict and inconsistency tend to use internal, external, and sometimes unhealthy coping mechanisms to alleviate the dissatisfaction caused by strained relationships among family members. The internet, with its vast array of information and allure, is often a contributing factor to increased conflict and decreased cohesion within families. Some researchers argue that internet access could potentially disrupt the traditional dynamics of parent-child interactions[36]. The Internet can lead to conflicts between different generations within a family and decrease overall family cohesion. Essentially, excessive time spent on the internet can impact the amount of time children spend with their parents[37]. Spending time together is essential for building a strong relationship between parents and children. Therefore, any decrease in the time spent together will weaken the bond within the family[38]. The information indicated that flexible and cohesive family dynamics have a positive impact, while disconnection and fear of missing out were identified as potential risk factors. These results could offer valuable insights for developing personalized and successful treatments and preventative measures[39].

The study found that family cohesion has a strong negative correlation with the aspects of alexithymia. Furthermore, the different components of alexithymia were able to accurately predict levels of family cohesion. The findings align with the conclusions of previous studies conducted by Taylor et al.[40] and Ünübol and Kaya[41]. Some research has proposed that the lack of parental care or negative consequences like interference and overcontrol may be linked to various psychiatric disorders. Alexithymia could be a key factor in this relationship, as it hinders the expression of emotions and limits imaginative and outward-focused thinking. Additionally, decreased levels of support are connected to patient rejection, dysfunctional families, lack of family unity, and impaired relationship dynamic[41]. In contrast, alexithymia is characterized as a cognitive and emotional issue. It is a unique mental disorder that results from automatic inhibitory processes and excitement, leading to negative effects on interpersonal relationships, including family dysfunction and disunity. Individuals with alexithymia struggle to express and identify their emotions, leading to limited figurative thinking and disrupting the stability and functionality of the family unit[42]. The data indicate that paternal alexithymia is a predictor of children's internalizing and externalizing behavioral problems and that paternal over-reactivity mediates the effect of alexithymia. These results highlight the importance of preventing parental alexithymia and involving fathers in parenting support programs aimed at ensuring children's mental health and adjustment. Numerous studies confirm that issues of parental emotional regulation are associated with children's emotional regulation issues, which in turn impacts their psychosocial adjustment and mental health. Alexithymia is a deficit in emotional competence that has the potential to undermine parents' emotional regulation processes and, therefore, their ability to be effective emotional socializers[43,44].

The type of research and the limitations of the sample size restrict the ability to apply the results and understand cognitive variables. As a result, it is suggested that other researchers interested in clinical matters and family dynamics validate the findings in larger and more diverse populations. Moreover, since it is cross-sectional and not longitudinal, it is not possible to determine if the connection between Family Cohesion in Internet Addiction and the Development of Alexithymia in Male Adolescent Users of Facebook and Twitter is causal.

The study's findings indicated that a lack of unity within the family could potentially lead to the emergence of alexithymia and dependence on the Internet. The results of the present study are important for educators, caregivers, and counselors as they emphasize the importance of alexithymia and symptoms of Internet addiction in the home. It is crucial for treatment strategies to consider the family relationships of those affected. The study suggests that the connection between alexithymia and symptoms of internet addiction is not solely related to the excessive use of social media. This supports the idea that the concept of internet addiction may be too broad.

Ethical Considerations

The ethical guidelines outlined by Isfahan University of Medical Sciences and Health Services with the code IR.MUI.REC.1402.246 were adhered to during the research involving human subjects.

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Conflict of Interest

No conflict of interest.

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References

1. Tanaka K, Tahara M, Mashizume Y, Takahashi K. Effects of Lifestyle Changes on the Mental Health of Healthcare Workers with Different Sense of Coherence Levels in the Era of COVID-19 Pandemic. Int J Environ Res Public Health. 2021 Mar 10;18(6):2801. doi: 10.3390/ijerph18062801

2. Ghahvehchi-Hosseini F, Shahyad S, Pakdaman S. The Role of Attachment, Family Cohesion, and Adaptability in the Prediction of Resilience. International Journal of Behavioral Sciences. 2021 Apr 1;15(1):48-53.

3. Olson DH, Sprenkle DH, Russell CS. Circumplex model of marital and family system: I. Cohesion and adaptability dimensions, family types, and clinical applications. Fam Process. 1979 Mar;18(1):3-28. doi: 10.1111/j.1545-5300.1979.00003.x

4. Beardslee WR. Self-understanding, envisioning the future, and prevention: An appreciation and a reflection on the occasion of the 100th anniversary. Am J Orthopsychiatry. 2024 Mar 21. doi: 10.1037/ort0000733

5. Alm S, Brolin Låftman S, Bohman H. Poor Family Relationships in Adolescence and the Risk of Premature Death: Findings from the Stockholm Birth Cohort Study. Int J Environ Res Public Health. 2019 May 14;16(10):1690. doi: 10.3390/ijerph16101690

6. Wong A, Ho S, Olusanya O, Antonini MV, Lyness D. The use of social media and online communications in times of pandemic COVID-19. Journal of the Intensive Care Society. 2021 Aug;22(3):255-60. doi: 10.1177/1751143720966280

7. Koca SB, Paketçi A, Büyükyılmaz G. The Relationship Between Internet Usage Style and Internet Addiction and Food Addiction in Obese Children Compared to Healthy Children. Turk Arch Pediatr. 2023 Mar;58(2):205-211. doi: 10.5152/TurkArchPediatr.2023.22183

8. Rathi M, Guha P, Neogi R. Internet addiction in adolescents: Role of family, personality and comorbid psychopathology in school children in Eastern India. Indian J Psychiatry. 2022 Jul-Aug;64(4):408-414. doi: 10.4103/indianjpsychiatry.indianjpsychiatry_783_21

9. Kuss DJ, Lopez-Fernandez O. Internet addiction and problematic Internet use: A systematic review of clinical research. World J Psychiatry. 2016 Mar 22;6(1):143-76. doi: 10.5498/wjp.v6.i1.143

10. Kumar M, Mondal A. A study on Internet addiction and its relation to psychopathology and self-esteem among college students. Ind Psychiatry J. 2018 Jan-Jun;27(1):61-66. doi: 10.4103/ipj.ipj_61_17

11. Chung S, Lee J, Lee HK. Personal Factors, Internet Characteristics, and Environmental Factors Contributing to Adolescent Internet Addiction: A Public Health Perspective. Int J Environ Res Public Health. 2019 Nov 21;16(23):4635. doi: 10.3390/ijerph16234635

12. Li Y, Yue P, Zhang M. Alexithymia and Internet Addiction in Children: Meaning in Life as Mediator and Reciprocal Filial Piety as Moderator. Psychol Res Behav Manag. 2023 Sep 4;16:3597-3606. doi: 10.2147/PRBM.S423200

13. Matias A, Soeiro C, Almeida I, Santos RP, Baúto RV, Oliveira S. Alexithymia, Personality, Internet Addiction, and Interpersonal Relationships. Medical Sciences Forum. 2023; 22(1):42. doi: 10.3390/msf2023022042

14. Sifneos, P. E. (1973). The prevalence of "Alexithymic" characteristics in psychosomatic patients. Psychother. Psychosom. 22, 255-262. doi: 10.1159/000286529

15. Luminet O, Nielson KA, Ridout N. Having no words for feelings: alexithymia as a fundamental personality dimension at the interface of cognition and emotion. Cogn Emot. 2021 May;35(3):435-448. doi: 10.1080/02699931.2021.1916442

16. Schimmenti A, Passanisi A, Caretti V, La Marca L, Granieri A, Iacolino C, Gervasi AM, Maganuco NR, Billieux J. Traumatic experiences, alexithymia, and Internet addiction symptoms among late adolescents: A moderated mediation analysis. Addict Behav. 2017 Jan; 64:314-320. doi: 10.1016/j.addbeh.2015.11.002

17. Mahapatra A, Sharma P. Association of Internet addiction and alexithymia - A scoping review. Addict Behav. 2018 Jun;81:175-182. doi: 10.1016/j.addbeh.2018.02.004

18. Wachs S, Vazsonyi AT, Wright MF, Ksinan Jiskrova G. Cross-National Associations Among Cyberbullying Victimization, Self-Esteem, and Internet Addiction: Direct and Indirect Effects of Alexithymia. Front Psychol. 2020 Jun 11;11:1368. doi: 10.3389/fpsyg.2020.01368

19. Loehlin JC, Beaujean AA. Path models in factor, path, and structural equation analysis. InLatent variable models 2016 Dec 7 (pp. 15-50). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315643199-6/

20. Panteli M, Constantinou T, Vrachimi-Souroulla A, Fanti K, Panayiotou G. Subjective and Autonomic Arousal toward Emotional Stimuli in Preadolescents

with Externalizing Problems and the Role of Explicit and Implicit Emotion Regulation. Brain Sci. 2024 Jan 16;14(1):84. doi: 10.3390/brainsci14010084

21. Chu Y, Zhang Y, Yang D, Wang S, Liang C, Wang X, Dai H. Influence of family function on social anxiety among Chinese nursing students: The mediating role of alexithymia. Nurs Open. 2023 Mar;10(3):1356-1366. doi: 10.1002/nop2.1385

22. Hogeveen J, Grafman J. Alexithymia. Handb Clin Neurol. 2021;183:47-62. doi: 10.1016/B978-0-12-822290-4.00004-9

23. Samani S. Family cohesion and emotional autonomy in runaway girls. IRANIAN JOURNAL OF PSYCHIATRY AND CLINICAL PSYCHOLOGY [Internet]. 2006;12(3 (46)):258-262.

24. Hossein Khanzadeh AA, Asghari F, Shakerinia I. The role of family cohesion in prediction of aggressive behaviors of children. Quarterly Journal of Child Mental Health. 2015 Sep 10;2(2):73-84.

25. Young KS. A therapist's guide to assess and treat Internet addiction. Website: http://www. keithadkins. com/netaddiction/articles/practitioners. pdf. Accessed. 2010 May;26.

26. Alavi SS. Psychometric properties of Young internet addiction test. International Journal of Behavioral Sciences. 2010 Nov 1;4(3):183-9.

27. Bagby RM, Parker JD, Taylor GJ. The twenty-item Toronto Alexithymia Scale-I. Item selection and cross-validation of the factor structure. Journal of psychosomatic research. 1994 Jan 1;38(1):23-32. doi: 10.1016/0022-3999(94)90005-1

28. Besharat, M. Psychometric Characteristics of Persian Version of the Toronto Alexithymia Scale-20 in Clinical and Non-Clinical Samples. Iranian Journal of Medical Sciences, 2008; 33(1): 1-6.

29. Sarour EO, El Keshky MES. Deviant peer affiliation as a mediating variable in the relationship between family cohesion and adaptability and internet addiction among adolescents. Curr Psychol. 2022 Jun 6:1-9. doi: 10.1007/s12144-022-03270-0

30. Sela Y, Zach M, Amichay-Hamburger Y, Mishali M, Omer H. Family environment and problematic internet use among adolescents: The mediating roles of depression and fear of missing out. Computers in Human Behavior. 2020 May 1;106:106226. doi: 10.1016/j.chb.2019.106226

31. Nikdel F, Nasab MP. Family communication patterns and internet addiction among Iranian female high school students: The mediating role of psychological needs satisfaction. Cyberpsychology: Journal of Psychosocial Research on Cyberspace. 2022 Nov 29;16(5). doi: 10.5817/CP2022-5-9

32. Lian SL, Cao XX, Xiao QL, Zhu XW, Yang C, Liu QQ. Family cohesion and adaptability reduces mobile phone addiction: the mediating and moderating roles of automatic thoughts and peer attachment. Frontiers in Psychology. 2023 Jun 15;14:1122943. doi: 10.3389/fpsyg.2023.1122943

33. Shi Y, Tang Z, Gan Z, Hu M, Liu Y. Association Between Family Atmosphere and Internet Addiction Among Adolescents: The Mediating Role of Self-Esteem and Negative Emotions. Int J Public Health. 2023 Jun 26;68:1605609. doi: 10.3389/ijph.2023.1605609

34. Ellis BJ, Del Giudice M, Dishion TJ, Figueredo AJ, Gray P, Griskevicius V, Hawley PH, Jacobs WJ, James J, Volk AA, Wilson DS. The evolutionary basis of risky adolescent behavior: implications for science, policy, and practice. Dev Psychol. 2012 May;48(3):598-623. doi: 10.1037/a0026220

35. Wang Q, Peng S, Chi X. The Relationship Between Family Functioning and Internalizing Problems in Chinese Adolescents: A Moderated Mediation Model. Front Psychol. 2021 Mar 24;12:644222. doi: 10.3389/fpsyg.2021.644222

36. Lewis AJ, Knight T, Germanov G, Benstead ML, Joseph CI, Poole L. The Impact on Family Functioning of Social Media Use by Depressed Adolescents: A Qualitative Analysis of the Family Options Study. Front Psychiatry. 2015 Sep 23;6:131. doi: 10.3389/fpsyt.2015.00131

37. Michaelson V, Pilato KA, Davison CM. Family as a health promotion setting: A scoping review of conceptual models of the health-promoting family. PLoS One. 2021 Apr 12;16(4):e0249707. doi: 10.1371/journal.pone.0249707

38. Topino E, Gori A, Jimeno MV, Ortega B, Cacioppo M. The relationship between social media addiction, fear of missing out and family functioning: a structural equation mediation model. BMC Psychol. 2023 Nov 8;11(1):383. doi: 10.1186/s40359-023-01409-7

39. Taylor GJ, Bagby RM, Kushner SC, Benoit D, Atkinson L. Alexithymia and adult attachment representations: Associations with the five-factor model of personality and perceived relationship adjustment. Comprehensive psychiatry. 2014 Jul 1;55(5):1258-68. doi: 10.1016/j.comppsych.2014.03.015

40. Ünübol H, Kaya MB. An examination of the relationship between alexithymia and somatic complaints of mothers and obsessive-compulsive features of children. Journal of Contemporary Medicine. 2019 Jun 6;9(2):128-34. doi: 10.16899/jcm.559584

41. Scarzello D. The Relationship between Paternal Alexithymia and Children's Internalizing and Externalizing Behavioral Problems during Early Childhood. Children. 2023 Sep 1;10(9):1498. doi: 10.3390/children10091498

42. Milojevich HM, Machlin L, Sheridan MA. Early adversity and children's emotion regulation: Differential roles of parent emotion regulation and adversity exposure. Dev Psychopathol. 2020 Dec;32(5):1788-1798. doi: 10.1017/S0954579420001273

43. Osborne KR, Duprey EB, Caughy MO, Oshri A. Parents' maltreatment histories, dimensions of emotion regulation, and connections to offspring self-regulation: A sex-specific transmission pathway. Journal of psychopathology and behavioral assessment. 2021 Dec;43(4):717-29. doi: 10.1007/s10862-021-09881-4