

Investigating the mediating role of social support in the relationship between addiction to social network, media literacy and emotional intelligence

Hossein Eskandari*
Nasrin Baratzadeh Ghahramanloo

(Received 22 April 2020; accepted 16 July 2020)

Abstract

This research aims to provide a theoretical model to explain addiction to social network using media literacy and emotional intelligence as independent variables and social support as the mediator. The study population includes all students of Bojnord's university in 2017-2018 academic year. It was determined based on three indices: a medium effect size of 0.30, a test power of 0.85, and an alpha of 0.05. A sample of 160 people was determined by G-Power software, and 178 questionnaires were completed. The sampling was conducted using available sampling method. To do so, the link of research questionnaires was offered to volunteer students. The main research instruments were: social support questionnaire, addiction to social network questionnaire, emotional intelligence questionnaire and multidimensional social support questionnaire. The exploratory nature of research data was analyzed by partial least squares method and PLS software. Results showed the reliability of the measurement model, the structural model and the overall research model (GOF=0.66). According to the results, all direct effects were significant. That is, social support ($r=0.84$, $P<0.0001$), media literacy ($r=0.698$, $P<0.0001$) and emotional intelligence ($r=0.798$, $P<0.0001$) were significantly correlated with addiction to virtual social network. Also, Sobel statistics and its significance level suggested the indirect effect of media literacy ($P<0.024$) and emotional intelligence ($P<0.011$) on addiction to social network through social support. Emotional impulse control, awareness of media content and processes, and a sense of belonging and relationship with other people in the real world predict addiction to virtual social networks. Hence, the social support of government and authentic sources can mediate the association between addiction to social network and emotional intelligence in university students and improve their media literacy.

Keywords: addiction to virtual social network, emotional intelligence, media literacy, social support.

Hossein Eskandari (Corresponding Author): Assistant Professor, Faculty of Humanities, University of Bojnord, Bojnord, Iran | Email: eskandari3@yahoo.com

Nasrin Baratzadeh Ghahramanloo: Master of Counseling, University of Bojnord, Bojnord, Iran | Email: n.baratzadeh1@gmail.com



This is an open access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (CC BY NC), which permits distribution and reproduction in any medium, provided the original work is properly cited and is not used for commercial purposes.

Introduction

Addiction to social network is a form of addiction to the Internet that is characterized with obsession with social media (Griffiths, 2000). Numerous studies have investigated the relationship between addiction to the internet and mental- social/ personality variables such as sensation seeking, pleasant experience, loneliness, depression and personality disorders (e.g. Betul et al., 2020; Caplan, 2002; Chou et al., 2005; Huang et al., 2010; Van Zalk, 2016; Yaffe & Seroussi, 2019). Similarly, many studies have explored addiction to social network and psychological variables (Kuss & Griffiths, 2011; Blackwell et al., 2017; Calancie et al., 2017; Rollero et al., 2019; Hou et al., 2019; Lee, 2019).

These studies have particularly stressed the social support concept (Algtewi et al., 2015). Social support describes social resources or social assistance received by people when they are in need of help, consultation, confirmation or protection. It could be offered by family, friends, relatives, colleagues, and other significant people. In other words, social support is the perception that one is cared for, protected, respected and valued by others, treated as a part of social network with assistance and commitment.

Studies suggest that social support influences addiction to social network. For example, Niemz, Griffiths and Banyard (2006) revealed the relationship between loneliness and addiction to Internet. Hardie and Tee (2007) reported that people receiving high social support from Internet are more likely to use Internet abundantly. Research results by Livingstone (2014) also suggest that modified relationship between peers, parents and children can alter their orientation towards the social network. Öztosun (2018) observed a significant relationship between social support and addiction to the Internet in adults.

Some studies have shown that the lack of social support may precipitate the use of Internet and cyberspace. For example, Argyris et al. (2015), studied addiction to Internet and loneliness among high school students in Greece, reporting a positive and significant correlation between addiction to Internet and loneliness. It seems that there is a relationship between excessive use of Internet or addiction to Internet and social phobia. Also, Jung et al. (2019) demonstrated that individual social networks, as well as the perceived quality of social support received in the routine life prevent the incidence of Internet use disorder (or addiction to the social network).

Another concept that has a bearing on the extent of social network use and addiction is media literacy concept. UNESCO (2013: 29) defines media and information literacy as follows: a set of competencies that empower citizens to access, retrieve, understand, evaluate, use, create and share information and media content in a variety of formats and

tools in a critical, ethical and effective way as a way of participating and engaging in personal, professional and societal activities. Daneels and Vanwynsberghe (2017) define social media literacy concepts with the following criteria, "The technical and cognitive competencies allow users to use social media effectively for social interaction and communications on the web." In this definition, technical competencies describe knowledge and skills that could be employed to create, navigate, organize, produce and share social media contents.

By this definition, people with media literacy can use diverse media, resources and information channels in their private, occupational and public life. The findings of Walther, Hanewinkel and Morgenstern (2014), Turel, Mouttapa and Donato (2015), Mun and Lee (2015), Vondráčková and Gabrhelik (2016), and King et al. (2018) emphasize the role of media literacy role in preventing Internet addiction.

In addition to media literacy, another factor that can alleviate drawbacks of addiction is emotional intelligence. It is defined as an emotional information process that enables appropriate perception of one's self and other emotions, proper expression of emotions, and emotional adaptation to enhance life desirability (Tsaousis & Nikolaou, 2005). Indeed, emotional intelligence embraces a set of emotions, social knowledge, and abilities that help us react to environmental factors and pressures. Also, it leads to enhanced performance in the realm of self-awareness, social awareness, relationship management and self-management (Cho, 2010).

As discussed earlier, it seems that the support latent in social networks contributes to the manifestation of internet addiction (social network addiction). That is, if social support and real relationship are reinforced, we can prevent addiction to cyberspace or reduce its rate. On the other hand, social support can mediate the relationship between emotional intelligence and internet addiction; hence, it is assumed that by strengthened emotional intelligence, social support is boosted. This, in turn, has a bearing on alleviating addiction to a virtual social network. Thus, emotional intelligence can directly or (indirectly through the mediating role of social support) reduces addiction to virtual social networks.

Given the predictive role of emotional intelligence in the success of interpersonal relationships in the real world, as well as the mediating role of social support in the association between emotional intelligence and social network addiction and the relationship between media literacy and social network addiction, this research aims to propose an explanatory model about the connection between media literacy and addiction social network with the mediating role of social support. Moreover, it seeks to explore the relationship between emotional intelligence and social net-

work addiction (Figure 1). Table 1 is a brief literature review about the relationship of media literacy, emotional intelligence and social support in one hand and social network addiction in other hand. As it's shown in this table, the examination of relationships among these variables was carried separately. The present study has tried to study these variables together.

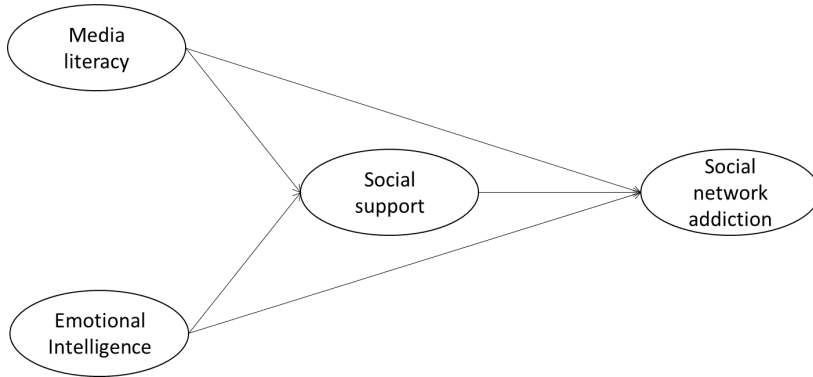


Figure 1. The conceptual model

Social support theory is one of the hypotheses that provide the theoretical base of this study. Social support theory is based on the works of Don Drennon-Gala and Francis Cullen, who drew on insights from several theoretical traditions. The theory is centered on the proposition that instrumental, informational, and emotional supports reduce the likelihood of delinquency and crime (Kort-Butler, 2017). Later on, this theory was developed and applied to many disciplines such as psychology, medicine, sociology, nursing, public health, education, rehabilitation, and social work.

A large body of empirical works support this view, suggesting that people who are more socially integrated and are in supportive and rewarding relationships have better mental health and higher levels of subjective well-being (Feeney & Collins, 2015). Notably, the results of a meta-analysis (Holt-Lunstad & Smith, 2012) show that being socially integrated in a network of meaningful relationships is a greater predictor of mortality compared to many other lifestyle behaviors such as smoking, physical activity and so forth

Social support theory has also been extended to the Internet and social media. As technology advances, the online support becomes more pervasive. Social support can be offered through social media websites such as blogs, Facebook groups, and online support groups. According to Hwang, this support resembles face-to-face social support, but also offers unique aspects of convenience, anonymity, and non-judgmental interactions (Wong & Ma, 2016).

Table 1. Related literature review in relationship between EQ, media literacy, and social support on one hand and internet addiction in other hand

Authors	Target population	Variables	Findings	Effect of EQ on reduction of IA	Effect of media literacy on reduction of IA	Effect of social support on reduction of IA
Hardie and Tee (2007)	Adults	Loneliness, Social Support Networks, Internet Addiction	Online social networks were significant predictors of excessive internet use	-	-	√
Leung and Lee (2012)	Children and adolescents	Internet literacy, Internet addiction, academic performance	Higher internet literacy related to better academic performance and lower internet addiction	-	√	-
Floros and Siomos (2013)	Adolescents	Parenting style, social networking, Internet addiction disorder (IAD)	Negative correlation between optimal parenting and motives for social network participation and IAD	-	-	√
Gumuc and Dogan (2013)	Adolescents	Internet addiction, social support and family activities	Family activities had a higher level of perceived social support and a lower level of Internet addiction	-	-	√
Walther et al. (2014)	Adolescents and parents	Media literacy, digital media use, adolescents	Parental media monitoring and rules at home effects adolescents' media use behavior	-	√	-

Authors	Target population	Variables	Findings	Effect of EQ on reduction of IA	Effect of media literacy on reduction of IA	Effect of social support on reduction of IA
Argyris et al. (2015)	Teenagers	Internet addiction & loneliness	High positive correlation between loneliness and Internet addiction	-	-	√
Burnay et al. (2015)	Youths and adults	Psychological factors, Internet addiction	Internet addiction is related to obsessive passion	-	-	√
Chng et al. (2015)	Parents and youths	Family environment, pathological internet use (PIU)	Family environment for students with PIU was significantly less positive	-	-	√
Daneels and Vanwynsberghe (2017)	Parents, adolescents	Social media use, social media literacy	Parents mostly use active mediation focusing on risks and safety on social media.	√	-	-
Blackwell et al. (2017)	Youths	Psychological factors, social media use and addiction	Only fear of missing out predicted social media addiction.	-	-	√
Langarizadeh et al. (2018)	Youths	Internet addiction, information literacy	The higher information literacy, the lower level of Internet addiction	-	√	-

Authors	Target population	Variables	Findings	Effect of EQ on reduction of IA	Effect of media literacy on reduction of IA	Effect of social support on reduction of IA
Öztoşun (2018)	Adolescent	Social support & ostracism experiences, Internet addiction	Perceived social support and ostracism experiences are able to predict Internet addiction	-	-	√
Rollero et al. (2019)	Adults	Gender, personality, emotions, online social activity	Emotional competence reduces information-seeking (using social networks to learn about others) and communication (using social networks to communicate with others)	-	-	√
Jung et al. (2019)	Adults	Social network, Internet use disorder (IUD)	Quantity and quality of social network is against IUD	-	-	√
Betul et al. (2020)	Adolescents	Psychological factors, social media addiction	Social media correlated with depression, anxiety and psychological distress	-	-	√

Methods

Participants and Procedures

This study has a correlation design type and uses structural equation modeling (SEM) for the analysis of structural relationships. To access accurate information and reduce error rate, this research uses a second generation of SEM called partial least squares (PLS2) method. Study population includes all students of Bojnord university in 2017-2018 academic year. Based on the standards of G- power software and considering indices of medium effect size (0.30), test power (0.85), alpha (0.05) and degree of freedom (5), a sample size of at least $n=160$ students was estimated. However, to account for the dropout and mortality of subjects, a sample size of $n=178$ was considered.

The reason for adopting PLS-SEM instead of OLS-SEM is that SEM research is commonly divided into two different methods: covariance-based SEM (CB-SEM) and variance-based SEM (VB-SEM). The CB-SEM is usually used to test statistical hypothesis and to confirm/ reject theories. The CB-SEM often uses ordinary least squares (OLS) method and maximum likelihood (ML) method for parameter estimation, which are known as confirmatory methods. In contrast, VB-SEM approaches are primarily used to develop explorative theories. Since we are proposing a new model for the mediating role of social support in the relationship between media literacy, emotional intelligence and addiction to social media, we need to first utilize explorative theory development before testing and confirming our hypotheses.

Measures

In this research, four standard questionnaires have been used: the media literacy questionnaire by Azizi (2014), a modified version of which was used here. This scale examines media literacy in three dimensions of consumption diet, message features, and message critique. The reliability of this scale has also been measured (overall Cronbach's Alpha: 0.89, consumption diet: 0.86, message feature: 0.92, and message critique: 0.89). The social network addiction questionnaire by Cecilie Andreassen (2012), which is known as BFAS (Bergen's Facebook Addiction Scale). With a reliability of 0.82, a slightly-modified version of this questionnaire known as addiction to social network questionnaire (not merely Facebook) was used in this paper (Andreassen, 2012).

Social support questionnaire or multidimensional scale of perceived social support (MSPSS) is a 12-item instrument developed by Zimet et al. (1988). It evaluates perceived social support by three sources of family, friends, and other significant people in one's life. Previous studies

in Iran have reported a desirable Cronbach's alpha coefficient for the questionnaire subscales (Jennaabadi, 2016: 17). Emotional intelligence questionnaire is utilized to assess emotional intelligence components (regulating emotion, evaluating and expressing emotion, enjoying emotion). This 33-item questionnaire was developed by Shoot et al. (1998) based on the original questionnaire of emotional intelligence by Mayer and Salovey (1993). The overall reliability of the scale has been estimated at 0.84 and for the adolescent in Iran (Javaheri Kamel, 2006).

In this research, in addition to descriptive statistical methods, structural equation modeling (SEM) with the partial least squares (PLS) and Smart PLS2 software were used to examine proposed assumptions. The relationship between variables was calculated by Pearson's correlation coefficient. The internal consistency of measurement model was assessed using combined reliability (CR) instead of Cronbach's alpha coefficient, convergent validity, divergent validity, factor analysis, and quality measurement models (Cv Com). Structural models fitness was also analyzed and examined by t significance coefficient, coefficient of determination index, prediction credibility index and effect size. After verifying structural parts and overall measurement of the model, to evaluate assumptions, t- statistics and Beta regression coefficient (path coefficient) were used. In this research, considering the small sample size (174 people), and large number of items for each variable, we used SEM methods by the PLS procedure.

Results

Bivariate analyses

After evaluating normality of research variables, the correlation matrix of research variables was drawn, as shown in Table 2.

Table 2. Correlation matrix of research variables

	1	2	3	4
1. Emotional Intelligence	1			
2. Media literacy	0.691**	1		
3. Social support	0.811**	0.736**	1	
4. Social network addiction	-0.840**	-0.698**	-0.798**	1

** equals to significance

As shown by the results of Table 2, all correlation coefficients are significant at an alpha level of 0.01. According to the measurement model, the standardized factor loads of all items and latent variables were greater than 0.4. The results of the first and second-order components

of credibility based on Cronbach’s alpha coefficient and combined reliability coefficient are provided in Table 3.

Table 3. Results of Cronbach’s alpha coefficient and combined reliability coefficient

Variables	(Alpha >0.7)	(CR>0.7) *
Emotional regulation	0.93	0.94
Emotional expression	0.93	0.94
Emotion use	0.89	0.91
Family	0.86	0.90
Friends	0.80	0.87
Others	0.86	0.91
Social support	0.84	0.88
Social network addiction	0.80	0.86
Emotional Intelligence	0.96	0.96
Media literacy	0.96	0.96

*CR= combined reliability coefficient

Also, the results of structural model fitness of the research suggest the desirability of proposed values, as depicted in Figure 2.

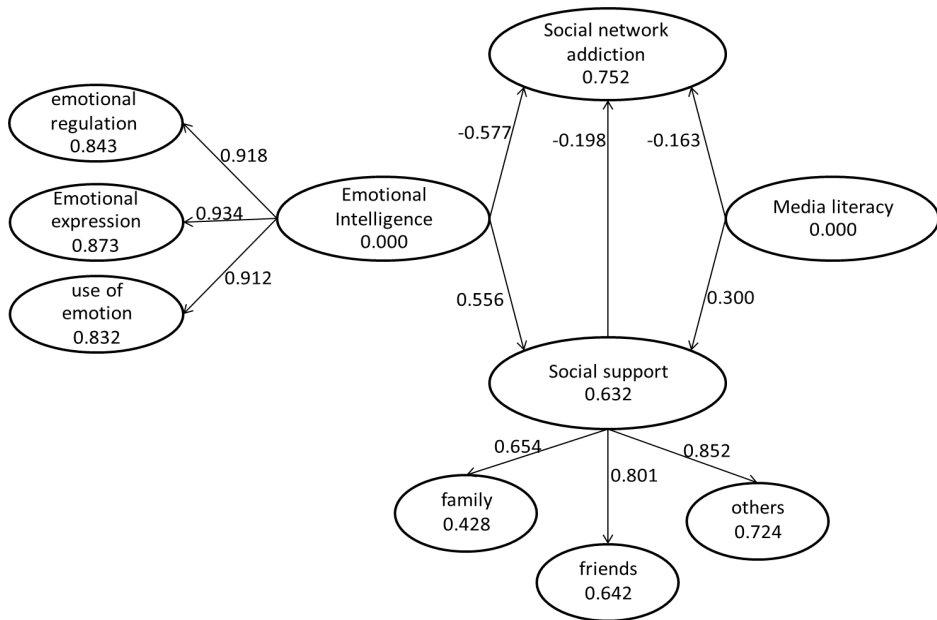


Figure 2. Research model with standardized factor loading

The t values of all dependent and independent variables in the model are greater than 1.96 at asinificant level of 95%, which reveal the

structural model suitability. Furthermore, according to the R^2 values of the model's endogenous variables, the coefficient of determination for the original endogenous variables of social support and addiction to social network are 0.632 and 0.751, respectively. Hence, it can be argued that emotional intelligence and media literacy can predict 63.2% of variations in the social support. Also, the coefficient of determination for addiction to social network shows that variables of emotional intelligence, media literacy and social support can predict about 75.1% of variation in addiction to social network.

In addition, Q2 criterion for the original indigenous variables of social support and addiction to social network were estimated at 0.277 and 0.380, respectively. The results demonstrate the desirable predictive power of the model. Furthermore. Another criterion used for examining structural model was effect size. Cohen (1988) proposed the effect size criteria to evaluate the intensity of relationship among the model's latent variables. Using this criterion, we can measure the effect size of the exogenous variable on the endogenous variable in the SEM. Accordingly, values of 0.02, 0.15 and 0.35 reveal low, medium and large effect sizes of a construct on another, respectively. The results are listed in Table 4.

Table 4. F^2 coefficient of research variables

Effective variables	Effected variable	$R^2_{included}$	$R^2_{excluded}$	f^2	Explaining
Emotional Intelligence	Social support	0.632	0.477	0.30	values of 0.02, 0.15 and 0.35 indicate
Media literacy		0.632	0.587	0.11	small, medium and large impact sizes, respectively
Emotional Intelligence	Social network	0.751	0.63	0.33	
Media literacy	addiction	0.751	0.737	0.05	
Social support		0.751	0.739	0.05	

In this research, based on the conceptual model, these criteria can be calculated only for variables of social support and addiction to social network, as shown in the table above. Finally, the model consisting of both measurement model and structural model parts were estimated at 0.66 using GOF index, with the results showing the desirability of the model. The analysis of main research assumptions

regarding the direct and intermediate path significance is provided in Tables 5 and 6.

Table 5. Path coefficients and direct correlation between research variables

Directed path	Correlation coefficient	T	Correlation R	Sig
Emotional Intelligence→ Social network addiction	-0.577	8.28	-0.840	0.001
Emotional Intelligence→ Social support	0.556	9.31	0.811	0.001
Media literacy→ Social support	0.300	4.38	0.738	0.001
Media literacy→ Social network addiction	-0.163	2.54	-0.698	0.001
Social support→ Social network addiction	-0.198	2.61	-0.798	0.001

The coefficients related to the effect of emotional intelligence on addiction to social network (-0.577), emotional intelligence on social support (0.556), media literacy on social support (0.300) and addiction to social network (-0.163) and social support on addiction to social network (-0.198) were calculated. Given that the significance of values (t-value) in all paths is greater than these values, it can be concluded that these path coefficients are significant at an error rate of 0.05. The Pearson’s correlation coefficients of the forementioned variables display a statically significant relationship.

As shown in Table 6, the indirect effect size of emotional intelligence on addiction to the social networks by the mediator variable of social support was estimated at -0.11. The significance level of Sobel test with a value of 2.513 is 0.011, which is less than the error rate of 0.05. Thus, the research assumption based on the mediating role of social support on the relationship between emotional intelligence and addiction to social networks is confirmed with 95% probability. Also, the indirect effect size of media literacy on addiction to social networks by the mediator variable of social support is estimated as -0.06. The significance level of Sobel test with a value of 2.242 is 0.024, which is less than the error rate of 0.05. Hence, the hypothesis regarding the mediating role of social support on the relationship between media literacy and addiction to social networks is confirmed with 95% probability.

Table 6. Intermediate correlation coefficient of the research variable

Paths	Standard path	t	Sobel test index	sig	Results
Social support → Emotional Intelligence	0.556	9.31	2.513	0.011	Confirmed
Social network addiction → Social support	-0.198	2.61			Confirmed
Social network addiction → Emotional Intelligence	-0.577	8.28			Confirmed
The indirect effect of EQ on social network addiction through Social support		$0.556 \times (-0.198) = -0.11$			
Social support → Media literacy	0.300	4.38	2.242	0.024	Confirmed
Social support → Social network addiction	-0.198	2.61			Confirmed
Social network addiction → Media literacy	-0.163	2.54			Confirmed
The indirect effect of media literacy on social network addiction through social support		$0.30 \times (-0.198) = -0.06$			

Discussion

In sum, the results show that emotional intelligence has a positive effect on addiction to social networks. That is, higher emotional intelligence is associated with higher social support and lower addiction to social networks. Media literacy affects addiction to a social network and has a positive effect on social support. That is, higher media literacy is linked to higher social support and lower addiction to social networks. Social support also affects addiction to social networks so that higher social support is associated with lower addiction to the social network. Find-

ings demonstrate the mediating role of social support on the relationship between emotional intelligence and addiction to social networks as well as the relationship between media literacy and addiction to social networks.

The findings are in line with those reported by Floros and Siomos (2013), Lu and Yeo (2015), and Burnay, Billieux, Blairy and Larøi (2015). For example, in a recent paper entitled 'addiction to Internet among Malaysian students: risk factors and cognitive aberration role', depression, loneliness, and stressful events along with cognitive aberrations have been reported to be strong predictors of internet addiction among students.

Regarding the effect of the emotional intelligence on social support, current research findings are aligned with that of Karademas (2006). He showed that people with high emotional understanding can communicate more effectively with others and rely on their support. In return, people with poor emotional understanding have weak social adaptability, which can adversely affect the extent of social support they receive.

The results of this study regarding the relationship between media literacy and addiction to the Internet are aligned with those reported by Leung and Lee (2012), Wu and Liu (2013), Langarizadeh et al. (2018). Media literacy helps individuals manage their interaction and use of media. Media literacy represents a set of knowledge, insight, skills, and experiences that are used to access, analyze, evaluate, use, produce and communicate with various media such as Internet and social network. This kind of knowledge and skills enable users to take the control of the social network rather than the opposite. In other words, media literacy diminishes the psychological dependence of individuals on the media.

As for the relationship between social support and addiction to the social network, various research has confirmed the findings of our research. Durkee et al. (2012) in their study on examining the prevalence of Internet usage among European adolescents, came to the conclusion that the rate of Internet addiction was higher in students who did not live with their father and mother, or had unemployed parents. Also, the way they communicated with their parents and spent time with them was reversely correlated with addiction to the Internet. Gunuc and Dogan (2013) found a significant relationship between social support by parents and family and addiction to the Internet. Wartberg et al. (2015) explored the prevalence of addiction to the Internet among German adolescents, reporting that people addicted to the Internet had lower life satisfaction and impaired family function.

Internet, in general, and social networks, in particular, can serve as

a compensation mechanism. If some social needs like a sense of belonging and satisfactory relationship are not satisfied in the real world, they are substituted with the relationships forged in the cyberspace. In this regard, Chih-Hung et al. (2009) showed that Internet addicts were less extroverted and their level of psychosis was higher than others. Most of Internet addicts declared they did not have a warm relationship with their parents, as they tended to be rejecting and punishing (especially the mother). Indeed, the lack of a strong parental support or peer support can lead to a sense of incompetence and worthlessness that is used by individuals as a way of escaping reality.

In another research, Ling-yan, Deng and Ran (2007) looked at the family function of adolescents with Internet addiction. The results showed that the adaptability and solidarity in the family was significantly lower in the internet-addicted group. Chng, Li, Liao and Khoo (2015) investigated the moderating effects of the family environment for parental mediation and pathological Internet use in youths, suggesting that a warm family environment and supporting parents could predict adolescent cyberbullying.

Conclusion

A combination of time spent in cyberspace and psychological dependence on Internet contributes to Internet addiction. The time spent in cyberspace is positively correlated with the number of depressive symptoms and the perceived level of anxiety and behavioral problems, hyperactivity, depression and poor physical health, and negatively related to the quality of life (Machimbarrena et al., 2019; El Asam et al., 2019; Lin et al., 2016; Twenge et al., 2017; Woods, 2016). The excess use of cyberspace may increase the number of online friends, but it is also associated with lower scores on health-based quality of life, as well as reduced perceived social support (Takahashi et al., 2018; Müller et al., 2014).

Given the adverse effects of Internet addiction, various studies have attempted to identify the factors involved in Internet addiction. The present study studied media literacy and emotional intelligence mediated by social support. The results of this study, especially the effect of social support on Internet addiction, are in line with the literature.

The main contribution of the current research to the literature is approving the mediating role of social support in the relationship between both media literacy and emotional intelligence and addiction to virtual social network (Yu et al., 2017; Yu & Chao, 2016; Reer & Krämer, 2017; Lai & Kwan, 2017; Hahn et al., 2017). Although media literacy and emotional

intelligence are effective in controlling Internet addiction to alleviate their drawbacks, another effective and useful variable called social support is required. In other words, in the presence of a strong support relationship with the targeted social network (family, friends, etc.) we can indirectly shape and reinforce emotional intelligence through adaptability. Also, given the parents' informal training on how to manage media usage in family environment and formal media literacy training, we can draw on the benefits of media literacy (Wang & Ma, 2018).

One of the reasons for Internet addiction, especially social networks, is that users enjoy the Internet support they receive in these spaces. In some cases, this type of support heightens the fear of miss out. That is, you are afraid that others may have fun or interesting experiences while you are not invited, unable to attend, or unaware of. Thus, you feel that ongoing connection to the Internet is essential to remain posted on what others are doing (Kennedy, 2019). Adolescents, in particular, feel left out of the friendly groups and communities to which they belong, so they assume in the case of failure to response to a friend's message or delay in sending such a response, they may be replaced by a "better" friend (Shafer, 2017). However, if social support is boosted in the real world, the need for Internet support declines, which consequently diminishes Internet addiction.

While media literacy and emotional intelligence can have a direct effect on social network addiction, another main issue is the context in which they are both used. This context is created when people receive social support and expand their social relationship network, and experience productive and satisfactory relationships in non-cyberspace (Morgan et al., 2017). In this context, media literacy can be particularly helpful for realizing and analyzing cyber contents, and fostering emotional intelligence for regulating emotions in the cyberspace.

The adverse outcomes of Internet misuse can be curbed and controlled by various methods such as teaching media literacy (knowledge and skills) and emotional intelligence along with reinforcing and generalizing its usage in various areas of life. Recently a new concept, digital intelligence (DQ) has been introduced that covers both concepts of media literacy and EQ. DQ is a new form of intelligence that embraces a comprehensive set of technical, cognitive, meta-cognitive, and socio-emotional competencies grounded in universal moral values that enable individuals to adapt to the demands of digital life (Park, 2019: 14). Therefore, in addition to increasing social support, it is possible to promote media literacy and emotional intelligence, or more generally the concept of digital intelligence, among users.

References

- Algtewi, E.E., Owens, J. and Baker, S.R. (2015). Analyzing people with head and neck cancers' use of online support groups. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 9(4): article 6. <http://dx.doi.org/10.5817/CP2015-4-6>.
- Andreassen, C.S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110: 501-517.
- Argyris, V., Karapetsas, V., Karapetsas, A., Zygouris, N.C. and Fotis, A.I. (2015). Internet addiction and loneliness. *Encephalos*, 52(3): 4-9.
- Azizi, S.A. (2014). Investigating media literacy status of public relations officers of Kermanshah City. MA Thesis, Allameh Tabataba'i University, Faculty of Social Sciences. [in Persian]
- Betul, K., McCrae, N. and Annmarie, G. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth*, 25(1): 79-93. doi: 10.1080/02673843.2019.1590851.
- Blackwell, D., Leaman, C., Tramposch, R., Osborne, C. and Liss, M. (2017). Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction. *Personality and Individual Differences*, 116: 69-72. <https://doi.org/10.1016/j.paid.2017.04.039>.
- Burnay, J., Billieux, J., Blairy, S. and Larøi, F. (2015). Which psychological factors influence Internet addiction? Evidence through an integrative model. *Computers in Human Behavior*, 43(0): 28-34.
- Calancie, O., Ewing, L., Narducci, L.D., Horgan, S. and Khalid-Khan, S. (2017). Exploring how social networking sites impact youth with anxiety: A qualitative study of Facebook stressors among adolescents with an anxiety disorder diagnosis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(4). <http://dx.doi.org/10.5817/CP2017-4-2>.
- Caplan, S.E. (2002). Problematic Internet use and psychosocial well-being: development of a theory-based cognitive-behavioral measurement instrument. *Computers in Human Behavior*, 18(5): 553-75. [Google Scholar]
- Chih-Hung, K., Ju-Yu, Y., Cheng-Sheng, Ch., Yi-Chun, Y. and Cheng-Fang, Y. (2009). Predictive values of psychiatric symptoms for Internet addiction in adolescents, a 2-year prospective study. *Arch Pediatr Adolesc Med.*, 163(10).
- Chng, G.S., Li, D., Liau, A.K. and Khoo, A. (2015). Moderating effects of the family environment for parental mediation and pathological internet use in youths. *Cyberpsychology, Behavior, and Social Networking*, 18(1): 30-36.

- Cho, S. (2010). The role of IQ in the use of cognitive strategies to learn information from a map. *Learning and Individual Differences*, 20(6): 694-698.
- Chou, C., Condrón, L. and Belland, J.C. (2005). A review of the research on internet addiction. *Educ Psycho Rev.*, 17(4): 363-88.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.
- Daneels, R. and Vanwynsberghe, H. (2017). Mediating social media use: Connecting parents' mediation strategies and social media literacy. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(3): article 5. <http://dx.doi.org/10.5817/CP2017-3-5>.
- Durkee, T., Kaess, M., Carli, V., Parzer, P., Wasserman, C., Floderus, B., Apter, A., Balazs, J., Barzilay, Sh., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Cotter, P., Despalins, R., Graber, N., Guillemin, F., Haring, Ch., Kahn, J.P., Mandelli, L., Marusic, D., Mészáros, G., Musa, G.J., Postuvan, V., Resch, F., Saiz, P.A., Sisask, M., Varnik, A., Sarchiapone, M., Hoven, Ch.W. and Wasserman, D. (2012). Prevalence of pathological internet use among adolescents in Europe: demographic and social factors. *Addiction*, 107(12): 2210-2222.
- El Asam, A., Samara, M. and Terry, P. (2019). Problematic internet use and mental health among British children and adolescents. *Addict. Behav.* 90: 428-436. doi: 10.1016/j.addbeh.2018.09.007.
- Feeney, B.C. and Collins, N.L. (2015). New look at social support: A theoretical perspective on thriving through relationships, *Pers Soc Psychol Rev.*, 19(2): 113-147. doi:10.1177/1088868314544222.
- Floros, G. and Siomos, K. (2013). The relationship between optimal parenting, Internet addiction, and motives for social networking in adolescence. *Psychiatry Research*, 209(3): 529-534.
- Griffiths, M.D. (2000). Internet addiction: Time to be taken seriously? *Addiction Research*, 8: 413-418. <https://doi.org/10.3109/16066350009005587>.
- Gunuc, S. and Dogan, A. (2013). The relationship between Turkish adolescents' Internet addiction, their perceived social support, and family activities. *Computer in Human Behavior*, 29(6): 2197-2207.
- Hahn, E., Reuter, M., Spinath, F.M. and Montag, C. (2017). Internet addiction and its facets: The role of genetics and the relation to self-directedness. *Addictive Behaviors*, 65: 137-146. doi: 10.1016/j.addbeh.2016.10.018 PMID:27816039.

- Hardie, E. and Tee, M. (2007). Excessive Internet use: The role of personality, loneliness and social support networks in Internet addiction. *Australian Journal of Emerging Technologies and Society*, 5(1).
- Holt-Lunstad, J. and Smith, T.B. (2012). Social relationships and mortality. *Social and Personality Psychology Compass*, 6(1): 41-53. <https://doi.org/10.1111/j.1751-9004.2011.00406.x>.
- Hou, Y., Xiong, D., Jiang, T., Song, L. and Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1): article 4. <http://dx.doi.org/10.5817/CP2019-1-4>.
- Huang, X-q; Li, M-c & Tao, R. (2010). Treatment of Internet addiction. *Current Psychiatry Reports*, 12(5): 462-70. [PubMed] [Google Scholar]
- Javaheri-Kamel, A. (2006). The relationship between attachment styles and emotional intelligence with social skills of guidance school students in Tehran. M.Sc., Tarbiat Modares University. [in Persian]
- Jennaabadi, H. (2016). Determining the relationship between loneliness and social support with mobile phone addiction among students, *Journal of School Psychology*, 5(4): 7-30. [in Persian]
- Jung, S., Sindermann, C., Li, M., Wernicke, J., Quan, L., Ko, H-Ch. and Montag, Ch. (2019). Anxiety-related coping styles, social support, and Internet use disorder. *Frontiers in Psychiatry*, 10. doi: 640. 10.3389/fpsy.2019.00640.
- Karademas, C.E.(2006). Self-efficacy, social support, and well-being: The mediating role of optimism. *Perso Indiv Diffe*, 40: 1281-1290.
- Kennedy, K. (2019). Positive and negative effects of social media on adolescent well-being, A Thesis Submitted in Partial Fulfillment of the requirements for the Degree of master of Science in School Health, Minnesota State University, Mankato.
- King, D.L., Delfabbro, P.H., Doh, Y.Y., Wu, A.M., Kuss, D.J., Pallesen, S., ... and Sakuma, H. (2018). Policy and prevention approach for disordered and hazardous gaming and Internet use: An international perspective. *Prevention Science*, 19(2): 233-249.
- Kort-Butler, L.A. (2017). *Social Support Theory*. Wiley Online Library, <https://doi.org/10.1002/9781118524275.ejdj0066>.
- Kuss, D.J. and Griffiths, M.D. (2011). Online social networking and addiction—A review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8: 3528-3552. <https://doi.org/10.3390/ijerph8093528>.
- Lai, F.T.T. and Kwan, J.L.Y. (2017). Socioeconomic influence on adolescent problematic Internet use through school-related psychosocial

- factors and patterns of Internet use. *Computers in Human Behavior*, 68: 121-136. doi: 10.1016/j.chb.2016.11.021.
- Langarizadeh, M., Naghipour, M., Tabatabaei, S.M., Mirzaei, A. and Eslami, M.V. (2018). Prediction of internet addiction based on information literacy among students of Iran University of Medical Sciences. *Electronic Physician*, 10(2): 6333-6340, doi: <http://dx.doi.org/10.19082/6333>.
- Lee, S. (2019). Predicting SNS addiction with the Big Five and the Dark Triad. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1): article 3. <http://dx.doi.org/10.5817/CP2019-1-3>.
- Leung, L. and Lee, P. (2012). Impact of Internet literacy, Internet addiction symptoms, and Internet activities on academic performance. *Social Science Computer Review*, 30: 403-418. doi: 10.1177/0894439311435217.
- Lin, L., Sidani, J.E., Shensa, A., Radovic, A., Miller, E., Colditz, J.B., Hoffman, B.L., Giles, L.M. and Primack, B.A. (2016). Association between social media use and depression among U.S. young adults. *Depression and Anxiety*, 33(4): 323-331.
- Ling-yan, L.; Deng, HUA, and Ran, T. (2007). The family function of adolescents with excessive internet usage. *Chinese Mental Health Journal*, 21(12): 837-840.
- Livingstone, S. (2014). Developing social media literacy: How children learn to interpret risky opportunities on social network sites. *Communications*, 39(3): 283-303.
- Lu, X. and Yeo, K.J. (2015). Pathological Internet use among Malaysia University Students: Risk factors and the role of cognitive distortion. *Computers in Human Behavior*, 45: 235-242.
- Machimbarrena, J.M. González-Cabrera, J., Ortega-Barón, J., Beranuy-Fargues, M., Álvarez-Bardón, A., and Tejero B. (2019). Profiles of problematic Internet use and its impact on adolescents' health-related quality of life, *Int J Environ Res Public Health*, 16(20): 3877.
- Mayer, J.D. and Salovey, P. (1993). The intelligence of emotional intelligence. *Intelligence*, 17: 433-442.
- Morgan, C., Webb, R.T., Carr, M.J., Kontopantelis, E., Green, J., Chew-Graham, C.A., ... Ashcroft, D.M. (2017). Incidence, clinical management, and mortality risk following self-harm among children and adolescents: A cohort study in primary care. *BMJ* (Online), 359. doi: 10.1136/bmj. j4351.
- Müller, K.W., Glaesmer, H., Brähler, E., Woelfling, K. and Beutel, M.E. (2014). Prevalence of internet addiction in the general population:

- Results from a German population-based survey. *Behav. Inf. Technol*, 33(7): 757-766.
- Mun, S.Y. and Lee, B.S. (2015). Effects of an integrated Internet addiction prevention program on elementary students' self-regulation and Internet addiction. *Journal of Korean Academy of Nursing*, 45(2).
- Niemz, K., Griffiths, M. and Banyard, P. (2006). Prevalence of pathological Internet use among university students and correlations with self-esteem, the General Health Questionnaire (GHQ), and disinhibition; *Cyberpsychology & Behavior*, 8(6): 562-70. doi: 10.1089/cpb.2005.8.562.
- Öztosun, A. (2018). Predictability of Internet addiction with adolescent perception of social support and ostracism experiences, *The Turkish Online Journal of Educational Technology*, 17(4): 32-41.
- Park, Y. (2019). Digital Intelligence: DQ Global Standards Report 2019 Common Framework for Digital Literacy, Skills and Readiness. DQ Institute.
- Reer, F. and Krämer, N.C. (2017). The connection between introversion/extraversion and social capital outcomes of playing World of Warcraft. *Cyberpsychology, Behavior, and Social Networking*, 20(2): 97-103. doi: 10.1089/cyber.2016.0439 PMID:28170308.
- Rollero, C., Daniele, A. and Tartaglia, S. (2019). Do men post and women view? The role of gender, personality, and emotions in online social activity. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1): article 1. <http://dx.doi.org/10.5817/CP2019-1-1>.
- Schutte, N.S., Malouff, J.M., Hall, L.E., Haggerty, D.J., Cooper, J.T., Golden, C. and Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25(2): 167-177.
- Shafer, L. (2017). Social media and teen anxiety. Retrieved from <http://www.gse.harvard.edu/news/uk/17/12/social-media-and-teen-anxiety>.
- Takahashi, M., Adachi, M., Nishimura, T., Hirota, T., Yasuda, S., Kuribayashi, M. and Nakamura, K. (2018). Prevalence of pathological and maladaptive Internet use and the association with depression and health-related quality of life in Japanese elementary and junior high school-aged children. *Soc. Psychiatry Psychiatr. Epidemiol*, 53: 1349-1359.
- Tsaousis, I. and Nikolaou, I. (2005). Exploring the relationship of emotional intelligence with physical and psychological health functioning. *Stress and Health*. 21: 77-86. doi: 10.1002/smi.1042.

- Turel, O., Mouttapa, M. and Donato, E. (2015). Preventing problematic Internet use through video-based interventions: a theoretical model and empirical test. *Behavior & Information Technology*, 34(4): 349-362.
- Twenge, J.M., Joiner, T.E., Rogers, M.L. and Martin, J.N. (2017). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, 17-3 : (1)6 ,
- UNESCO (2013). Global media and information literacy assessment framework: country readiness and competencies, Retrieved, 12/1/2020, from <http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/global-media-and-information-literacy-assessment-framework>.
- Van Zalk, N. (2016). Social anxiety moderates the links between excessive chatting and compulsive Internet use. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 10(3), article 3. doi: 10.5817/CP2016-3-3.
- Vondráčková, P. and Gabrhelik, R. (2016). Prevention of Internet addiction: A systematic review. *Journal of behavioral addictions*, 5(4): 568-579.
- Walther, B., Hanewinkel, R. and Morgenstern, M. (2014). Effects of a brief school-based media literacy intervention on digital media use in adolescents: Cluster randomized controlled trial. *Cyberpsychology, Behavior, and Social Networking*, 17(9): 616-623.
- Wang, P. and Ma, W. (2018). Social networking sites addiction and adolescent depression: A moderated mediation model of rumination and self-esteem. *Personality and Individual Differences*, 127: 162-167.
- Wartberg, L., Kriston, L., Kammerl, R., Petersen, K.U. and Thomasius, R. (2015). Prevalence of pathological Internet use in a representative German sample of adolescents: results of latent profile analysis. *Psychopathology*, 48(1): 25-30.
- Wong, T.K.E. and Ma, W. (2016). Exploring relationship between online social support and individual online subjective well-being among young adults. Conference: International Communication Association ICA 2016, At Fukuoka, Japan, Volume: 2016.
- Woods, H.C. (2016). Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence*, 51: 41-49.
- Wu, M.M. and Liu, Y.H. (2013) Conceptualizing Citizen's Digital Literacy through everyday Internet Use. In: Chang RS., Jain L., Peng SL.

- (eds) *Advances in Intelligent Systems and Applications - Volume 1. Smart Innovation, Systems and Technologies, vol 20*. Springer, Berlin, Heidelberg.
- Yaffe, Y. and Seroussi, D. (2019). Problematic Internet use in Israeli-Arab adolescent males: Do parenting styles matter? *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(4), article 5. <http://dx.doi.org/10.5817/CP2019-4-5>.
- Yu, Q., Zhang, L., Wu, S., Guo, Y., Jin, S. and Sun, Y. (2017). The influence of juvenile preference for online social interaction on problematic Internet use: The moderating effect of sibling condition and the moderated moderating effect of the age cohort. *Computers in Human Behavior*, 68: 345-351. doi: 10.1016/j.chb.2016.11.026.
- Yu, T.K. and Chao, C. M. (2016). Internet misconduct impacts adolescent mental health in Taiwan: The moderating roles of Internet addiction. *International Journal of Mental Health and Addiction*, 14(6): 921-936. doi: 10.1007/s11469-016-9641-y.
- Zimet, G., Dahlem, N., Zimet, S. and Farley, G. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52: 30-41.