Original Article

The use of virtual social networks and the relationship to emotional intelligence among nursing students

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Abstract

Objectives: This study was conducted with the aim of determining the degree and type of use of electronic social networks and the relationship to emotional intelligence among nursing students.

Methods: This descriptive correlational study included 406 students of the Tabriz University of Medical Sciences Faculty of Nursing and Midwifery who were selected using the census method. The data gathering tools were a researcher-made demographic questionnaire, a questionnaire on Internet-based social network use, and the Siberia Schering's Emotional Intelligence Standard Questionnaire. The data were analyzed using SPSS for Windows, Version 16.0 (SPSS Inc., Chicago, IL, USA), descriptive statistics, and inferential statistics, using the Pearson correlation coefficient.

Results: The mean total score reflecting use of virtual social networks was 116.81±17.20 (scale: 38–190), and the overall emotional intelligence score was 99.27±11.48 (scale: 33–165). The emotional intelligence and social network use dimensions that received the highest scores were related to self-motivation and sharing academic content. There was a negative statistical relationship between the use of Internet-based social network applications and emotional intelligence variables (r=-0.40; p<0.001).

Conclusion: Due to the negative relationship between the use of virtual space and emotional intelligence and the positive effect that the emotional intelligence component can have in establishing a proper relationship between nurse and patient, university officials should consider methods to guide safe and appropriate student use of virtual networks.

Keywords: Emotional intelligence; nursing students; Telegram; virtual social networks.

Advances in information technology and expansion of the World Wide Web led to the emergence of web-based communication tools known as virtual social networks.[1] Though Internet-based social networks are relatively new, rapid growth has resulted in the number of users of some of these social networks reaching more than a billion.[2] According to a study conducted in the United States in 2015, 60% of people over the age of 18 and 73% of youth 12–17 years old use social networks.[3] In Iran, the popularity of social networks has increased significantly. Farajpour et al.[4] reported in 2017 that over 75% of smartphone users used virtual social network applications.

Virtual social networks allow users to participate in horizontal communication in cyberspace, including content creation, information sharing, and creating friendships circles and other groups.[5]

The widespread popularity of virtual social networks offers the user numerous opportunities and may facilitate life, but

What is presently known on this subject?
- The use of virtual social networks has become an integral part of the lives of many students and has a direct effect on all aspects of their academic life. One of the factors involved in choosing and using these networks is emotional intelligence.

What does this article add to the existing knowledge?
- The results of this study indicated that there was moderate social network use and emotional intelligence development among the nursing students studied. A statistically significant negative relationship was observed between the use of social networks and emotional intelligence.

What are the implications for practice?
- The negative relationship between emotional intelligence and the use of social networks indicates that training and educational efforts to promote emotional intelligence skills would be valuable as a means to reduce the potential negative effects of virtual social network use and to enhance the academic achievement and professional capabilities of nursing students.

may also present potential threats to well-being.[6,7] Negative effects, such as personality disorder, stress, depression, poor sleep, exposure of private life to public environments, and putting face-to-face relationships at risk, have been observed.[8]

Various factors are involved in choosing and using these networks, including emotional intelligence.[9] The concept and structure of emotional intelligence was first introduced by John Mayer and Peter Salovey.[10] They defined emotional intelligence as a form of social intelligence that involves the capability of individuals to recognize their own emotions and those of others, discern different feelings, and regulate their thoughts and actions using emotional information. It was defined as the ability to observe, perceive, express, recognize, and control emotions, and to apply that information to thoughts and behavior.[11] Emotional intelligence includes skills such as maintaining motivation and resilience in the face of problems, regulating emotional states, and practicing empathy and showing kindness to others.[12] Emotional and social intelligence training has been used to promote academic and professional status as well as mental health.[13] In addition, unlike cognitive intelligence, which is sometimes viewed as a constant and unchangeable ability, emotional intelligence can be developed and improved using specific quantitative and qualitative education, which could provide a public benefit, particularly in careers such as nursing.[14]

The use of virtual social networks has become an integral part of the lives of many students and has a direct effect on all aspects of their academic life.[15] A recent study in Iran noted the variable of emotional intelligence as a predictor in the use of virtual space.[16] Yet, despite their significant influence, there is little research related to the relationship between the use of social networks and emotional intelligence. Given that nursing students are the future nurses of society and can help to improve the quality of nursing care, and that emotional intelligence is a powerful component of nurses' ability to communicate effectively with patients, this study was conducted to examine the social network use of nursing students and its relationship to emotional intelligence.

Materials and Method

Research Design

This research was designed as a descriptive correlational study.

Population and Sample

This study was conducted by census sampling of all undergraduate nursing students of the Tabriz University of Medical Sciences Faculty of Nursing and Midwifery who met the inclusion criteria (n=406). The enrollment criteria were at least 1 semester of study at the university, membership in a virtual social network, good physical and mental health according to their own statement, and consent to participate in the study.

Data Collection Tools

The study data were collected using a sociodemographic information form developed by the researchers, a questionnaire that examines social network use, and the Siberia Schering Emotional Intelligence Standard Questionnaire.

Sociodemographic Information Form

The researchers designed a sociodemographic information form comprising questions related to student characteristics (age, sex, marital status, semesters of study, average family income, employment, and type of cellphone used).

Siberia Schering Emotional Intelligence Standard Questionnaire

The Siberia Schering Emotional Intelligence Standard Questionnaire evaluates students using 5 subscales of self-motivation (7 questions), self-awareness (8 questions), self-control (7 questions), social consciousness or empathy (6 questions), and social skills (5 questions) and a 5-point Likert scale (1=completely disagree and 5=totally agree). The possible total score is 33-165. Each respondent receives 6 separate scores, 5 of which are related to each of the components and a score of total emotional intelligence.[17] This questionnaire was used and normed by Mansouri[17] with university students in the city of Tehran, Iran. Reliability assessment yielded an internal consistency (Cronbach's alpha) score of 0.84 for the whole test, and for each subscale: self-motivation: 0.54, self-awareness: 0.659, self-control: 0.64, social consciousness: 0.51, and social skills: 0.51. The structure validity of this test was also reported to be satisfactory (p=0.001; r=0.63).

Questionnaire Gauging Rate of Social Network Use

The questionnaire used to inquire about social network participation has 38 questions and includes 8 subscales: relationships (10 questions), content sharing (5 questions), academic tasks (3 questions), learning scientific content (3 questions), excessive consumption (5 questions), trust in networks (3

questions), privacy (3 questions), and unconventional issues (6 questions) scored on a 5-point Likert scale. The possible total score is 38–190. To determine the face and content validity of the questionnaire, the tool was administered to 10 professors of the Faculty of Nursing and Midwifery of Tabriz University of Medical Sciences and professors of the Faculty of Education & Psychology of Tabriz University. Revisions were made based on their comments. The reliability of the instrument was assessed using the questionnaire results of 30 undergraduate students of the Faculty of Nursing and Midwifery of Tabriz University of Medical Sciences. The Cronbach's alpha was 0.81 for the complete questionnaire, indicating an acceptable level of reliability.

Ethical Dimensions of the Study

Approval for the research was granted by the deputy of research, the dean of the Faculty of Nursing and Midwifery, and the Tabriz University of Medical Sciences Ethics Committee (IR.TBZMED.rec.13970640).

Data collection began with a researcher attending classes of potential participants to introduce themself and explain the research objectives, the confidentiality procedures to be used, and reinforce that participation was voluntary. Those electing to enroll provided written, informed consent. The questionnaires were distributed to the students who met the inclusion criteria and the completed forms were returned a week later.

Analysis of the Data

The data were analyzed using SPSS for Windows, Version 16.0 software (SPSS Inc., Chicago, IL, USA) and descriptive and inferential statistics were generated. The normal distribution was evaluated using the one-sample Kolmogorov-Smirnov test, and since the significance values were <0.05, non-parametric tests were used for advanced analysis. Descriptive statistics (percentage, mean, SD, minimum, maximum) were used to analyze the demographic characteristics of the students. Pearson's correlation coefficient was applied to determine the relationship between use of virtual social networks

Table 1. Demographic characteristics of the nursing students

Variable	Class	Number	Percent
Interest in the field of study	Yes	256	67
	No	126	33
Desire to continue education	Yes	255	66/9
	No	126	33/1
Father's occupation	Self-employed	333	62/8
	Employed or retired	136	36/7
	Unemployed	2	0/5
Mother's occupation	Homemaker	310	83/6
	Employed or retired	56	15/1
	Self-employed	5	1/3
Father's education	No high school diploma	136	36/7
	High school diploma or associate's degree	152	41
	Bachelor's degree or more	83	22/4
Mother's education	No high school diploma	211	57
	High school diploma or associate's degree	112	30/3
	Bachelor's degree or more	47	12/7
Academic semesters	2	60	15/7
	3	54	14/1
	4	61	15/9
	5	57	14/9
	6	62	16/2
	7	55	14/4
	8	34	8/9
Number of children in the family	2–1	243	43/1
	4–3	163	45/9
	5 or more	39	11/1
Family income	Income more than expenditures	54	14/3
	Income equal to expenditures	236	62/4
	Income less than expenditures	88	23/3

and emotional intelligence. Statistical significance was set at p<0.05.

Results

Of 406 questionnaires distributed to students, 382 (94.34%) complete forms were returned. The majority of the participants were female (53.5%), single (88.5%), resided in student dormitory housing (60.3%), had no children (96%) and were unemployed (79.7%). The mean age of the participants was 22.09±3.55 years, and the mean grade point average for the previous semester was 3.30±0.32 (scale: 1–4). The mean daily hours spent studying at the time of examinations and during non-examination periods was 8.09±3.24 hours and 1.72±1.1 hours, and the daily study of academic and non-academic materials was 1.19±0.87 hours and 1.01±0.73 hours, respectively. Additional demographic characteristics of participants are shown in Table 1.

The mean daily amount of time spent using the Internet and the monthly rate of data usage was 4.11±2.59 hours and 3.38±1.17 GB, respectively. The students used the Internet more often to use social applications such as Telegram (Telegram Messenger LLP) and Instagram (Kevin Systrom and Mike Krieger; Facebook Inc., Menlo Park, CA, USA). The student responses indicated that the most common negative experience was drowsiness and lack of concentration in the classroom. The most frequently used social networking software among the students was Telegram (93.8%), followed by Instagram (77.3%), WhatsApp (Facebook Inc., Menlo Park, CA) (46.8%), imo (PageBites Inc., Palo Alto, CA, USA) (40.5%), and Facebook (Facebook Inc., Menlo Park, CA) (24.34%). Students spent the most hours per day using Telegram (2.16 hours), Instagram (2.16 hours), Line (Line Corp., Tokyo, Japan) (1.62 hours) and Viber (Rakuten Inc., Tokyo, Japan) (1.25 hours). The products with the longest period of membership were Viber (3.39 years) and Telegram (3.26 years).

The students' preferred social network applications were Telegram, Instagram, WhatsApp, imo, Twitter, and Facebook, respectively. The top choices as resources for scientific material and entertainment were Telegram and Facebook, respectively. Telegram and Instagram were the best known; 51.9% and 46.7% of the participants were well informed of Telegram and Instagram features. The primary reasons students elected to sign up to these social networks were to communicate with friends, learn class news, education, entertainment, and to make or find friends. The major subject of interest was entertainment, and the biggest problem reported was the high cost and low speed of the Internet. The highest scores among the different dimensions of the questionnaire about the use social networks were related to content sharing and academic work, while the lowest scores were related to unconventional problems and addiction. Additional details are presented in Table 2.

Table 2. Mean and SD of the total score and dimensions of the social network use questionnaire

Aspects	Mean (SD)	Minimum	Maximum	Mean percentage
Content sharing	18.39 (3.20)	10	44	73.56
Academic tasks	10. 14 (2.07)	4	15	67.6
Learning scientific material	9.98 (2.30)	4	15	66.53
Communication	32.18 (6.09)	14	44	64.36
Excessive use	15.55 (4.96)	5	71	62.2
Privacy	7.14 (2.53)	3	15	47.6
Trust in networks	8.10 (2.44)	3	14	54
Unusual issues	15.30 (5.01)	6	30	51
Total score	116.81 (17.20)	63	182	61.47

SD: Standard deviation.

Table 3. Mean and SD of the Siberia Schering Emotional Intelligence Standard Questionnaire total score and dimensions

Emotional intelligence dimension	Mean (SD)	Minimum	Maximum	Mean percentage
Self-motivation	22.31(3.88)	12	35	63.74
Empathy	18.24(3.60)	8	28	60.8
Self-awareness	23.91 (3.29)	11	35	59.77
Self-regulation	20.67(5.15)	9	31	59.07
Social skill	14.07(2.99)	5	21	58.8
Total emotional intelligence score	99.27 (11.48)	66	140	60.16

SD: Standard deviation.

Table 4. Pearson correlation between the use of social networks and emotional intelligence

Use of social networks		
P	R	Emotional intelligence
0.001	-0.40	

As shown in Table 3, the mean total emotional intelligence score in the nursing student participants was 99.27±11.48 (scale: 33–165) and the highest dimension scores were in self-motivation, empathy, self-awareness, self-regulation, and social skill.

Pearson correlation coefficient analysis demonstrated a negative statistical relationship between the use of social networks and emotional intelligence (r=-0.40; p=0.000) (Table 4).

Discussion

The purpose of this study was to determine the use of virtual social networks and assess the relationship to emotional intelligence among nursing students attending Tabriz University of Medical Sciences in 2018. The majority of students were a member of at least 1 virtual social network, and the most important reasons according to the respondents was to communicate with friends, know class news, study academic and scientific material, entertainment, and to find friends. The results of a systematic meta-analysis conducted by Guria[7] to determine the extent of virtual social network use by medical science students in the United States, Canada, Australia, England, Spain, and Iran indicated that while most students (75%) were members of a social network, only 20% used this technology to share educational information and materials. Javadinia et al.[18] reported in 2012 that about 35% of students were members of a virtual social network. This difference could be due to significant advances in mobile Internet capacity, smartphones, and virtual social networks in recent years.

According to the participants, the most important negative consequences of using social networks have been drowsiness and a lack of concentration in the classroom. The excessive use of virtual social networks, especially at night, can lead to insomnia, drowsiness, and poor quality sleep, and subsequent fatigue and drowsiness during the daytime, which directly decreases concentration and indirectly reduces learning ability in their theoretical and clinical classes. These results are consistent with additional findings of Javadinia et al.,[19] who studied the effect of using virtual social networks on the academic performance of students at Birjand University of Medical Sciences. The most used social network applications in our study were Telegram, Instagram, and WhatsApp, which is consistent with the findings of Ghorbani et al.[20]

The results of this study indicated that the mean emotional intelligence score of the nursing student participants was 99.27%, or about 60.16% of possible score. The mean emo-

tional intelligence score in this study was similar to that reported by Adib-Hajbagheri et al.[21] in the city of Kashan, Iran, while it was lower than that of Banihashimian[22] and Ghahramani et al.[23] in Shiraz, and higher than that of Ranjbar et al.[24] in Mashhad. Given that emotional intelligence is influenced by education and is an acquired ability, these differences may be attributed to factors such as different teaching and learning methods; evaluation systems at universities have apparently influenced emotional intelligence scores in several studies.[21,25,26] Our results revealed a negative statistical relationship between the use of virtual social networks and emotional intelligence; a higher emotional intelligence score correlated with less use of social network applications. This finding is consistent with the results of Taherian et al.,[16] who examined the relationship between the use of social networks and cognitive intelligence, emotional intelligence, creativity, and personality traits. Unlike the results of the current study, Beri[27] observed a positive relationship between social network use and emotional intelligence among Indian students. This could be due to field of study variations or may reflect cultural differences.

Individuals with weak emotional intelligence cannot properly control their negative emotions in the real world, and thus they are often deprived of strong social relationships and to satisfy their basic need for communication, they may seek refuge in virtual networks.[28] In contrast, those with higher emotional intelligence are often more sociable and frequently spend more time communicating with others in the real world and less time in virtual networks.

Strengths and Limitations of the Study

The limitations of self-report surveys should be considered in the evaluation of the results of this study. Extracting a precise understanding of the quality of students' social media behavior remains challenging. In the future, qualitative case studies and/or the use of online tracking systems to observe social media activity may provide more specific data. Generalizing the results of this study to larger populations would be problematic given the relatively small sample size. Finally, the age range of the students in the present study may obscure differences that may be present early or late in youth and adolescence.

Conclusion

The results of this study revealed a significant negative relationship between the use of virtual social networks and emotional intelligence. The Internet and virtual social networks are an integral part of today's modern life, however, they can be a double-edged sword. Therefore, proper planning for virtual network management would help to benefit from the advantages and reduce potential disadvantages. Due to the negative relationship observed, and the positive effect that emotional intelligence can have in the establishment of a constructive relationship between nurse and patient, university officials and au-

thorities may wish to hold specialized workshops related to this topic to explain appropriate use of virtual networks and how to protect students from potential harm, especially freshmen.

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