PAPER DETAILS

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PAGES: 216-225

ORIGINAL PDF URL: https://dergipark.org.tr/tr/download/article-file/2513121

Kırşehir Ahi Evran Üniversitesi Sağlık Bilimleri Dergisi 2022, Cilt 6, Sayı 3, 216-225.
Araştırma Makalesi / Research Article

Investigation of Nursing Students' Alexithymia and Perceived Empathetic Self-Efficacy and Social Self-Efficacy Levels

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ABSTRACT

This study was conducted to evaluate the levels of empathic self-efficacy and social self-efficacy perceived with alexithymia in nursing students. This was a descriptive study. The universe of the study consisted of 301 nursing students studying at the Nursing Health School in the 2020-2021 academic year. No sample was performed in the study, and the sample of 180 students participating in the study was formed. Data were collected using the Perth Alexithymia Questionnaire and the Empathetic Self-Efficacy and Social Self-Efficacy Scale. It was determined that students were prone to alexithymia (Pert Alexithymia Scale total score: 84.37±24.64) and having problems in interpersonal communication (Empathetic self-efficacy dimension: 22.45±3.67, Social self-efficacy dimension: 18.86±3.33). The findings emphasized that more attention should be given to the potential role of effective communication and alexithymia levels in the education of nursing students. In-class trainings are suggested in appropriate courses to determine and examine the alexithymia levels of nursing students.

Keywords: Alexithymia, nursing student, perceived empathetic self-efficacy, social self-efficacy.

Hemşirelik Öğrencilerinin Aleksitimi ve Algıladıkları Empatik Öz-yeterlik ve Sosyal Öz-Yeterlik Düzeylerinin İncelenmesi

ÖZET

Bu çalışma, hemşirelik öğrencilerinde aleksitimi ile algılanan empatik öz-yeterlik ve sosyal öz-yeterlik düzeylerini değerlendirmek amacıyla yapılmıştır. Tanımlayıcı bir çalışmadır. Araştırmanın evrenini 2020-2021 eğitim öğretim yılında Hemşirelik Sağlık Yüksekokulunda öğrenim gören 301 hemşirelik öğrencisi oluşturmuştur. Çalışmada örneklem seçimine gidilmemiş olup, çalışmaya katılan 180 öğrenci örneklemi oluşturmuştur. Veriler, Perth Aleksitimi Anketi ve Empatik Öz-yeterlik ve Sosyal Öz-yeterlik Ölçeği kullanılarak toplanmıştır. Öğrencilerin aleksitimi eğilimli oldukları (Pert Aleksitimi Ölçeği toplam puanı: 84.37±24.64) ve kişilerarası iletişimde sorun yaşadıkları (Empatik öz-yeterlik boyutu: 22.45±3.67, Sosyal öz-yeterlik boyutu: 18.86±3.33) belirlendi. Bulgular, hemşirelik öğrencilerinin eğitiminde etkili iletişim ve aleksitimi düzeylerinin potansiyel rolüne daha fazla önem verilmesi gerektiğini vurgulamıştır. Hemşirelik öğrencilerinin aleksitimi düzeylerinin belirlenmesi ve incelenmesi için uygun derslerde ders içi eğitimler planlanması önerilir.

Anahtar kelimeler: Aleksitimi, algılanan empatik öz-yeterlik, hemşirelik öğrencisi, sosyal öz-yeterlik.

Sorumlu yazar: brslml@hotmail.com
Geliş tarihi: 28.06.2022
Kabul tarihi: 30.11.2022
Atıf için: Molu, B., Taşdelen Baş, M., & Özpulat, F. (2022). Investigation of nursing students' alexithymia and perceived empathetic self-efficacy and social self-efficacy levels. KAEÜ Sağl. Bil. Derg., 6(3), 216-225.

INTRODUCTION

Alexithymia is a word derived from the Greek words for speech and feeling (Aslan et al., 2021). Alexithymia is generally used to describe people who have difficulty recognizing their emotions and expressing them verbally (Bostan et al., 2020). Alexithymic individuals cannot fully describe and express their emotions. Alexithymic individuals may have difficulties not only in describing their feelings but also in describing the feelings of others, and their empathy abilities may also be limited (Taş & Sevinç, 2019).

Nurses fulfill their basic responsibility of care through interpersonal relationships with sick or healthy individuals. In this respect, it is important to examine future nurses in terms of alexithymia (Aksoy & Coban, 2017). The quality of the care relationship between nurses and patients depend on nurses' empathy skills (Çaka et al., 2018). Empathy is the key to healthy communication (Bas-Sarmiento et al., 2019). It is stated that nurses and nursing students with a higher empathy will communicate effectively and increase the quality of nursing care (Aksoy & Coban, 2017). In the studies conducted, researchers emphasize that empathy is the most important component in helping personal relationships to create an environment of trust, improve patient outcomes positively, reduce physiological disorders, and improve self-awareness (Ferri et al., 2019; Ter Beest et al., 2018).

Perceived empathetic self-efficacy is the individual's experience of emotions from another's perspective. It is the belief in one's efficacy to respond empathetically to the distress or distress of others and to sense the feelings of another (Li et al., 2019). The perceived empathic skills of nurses and nursing students may positively affect their competencies (Aslan et al., 2021). Perceived social self-efficacy is the set of skills and behaviors necessary to initiate and maintain communication, establish positive relationships with others, and be accepted by them (Warshawski et al., 2019). Perceiving oneself as a socially competent individual enables one to behave more confidently in their interactions. In addition, perceiving oneself in a socially inadequate and dysfunctional position may lead to negative consequences such as shyness, loss of motivation, and low achievement (Sangani & Jangi, 2019).

It is important to determine the alexithymia levels, perceived empathic self-efficacy, and social self-efficacy of nursing students and to make appropriate attempts to increase emotional awareness. It is thought that it is important to consider whether nursing students and the individuals they care for feel lonely, whether they can overcome difficulties, and whether they have the characteristics of recognizing, distinguishing, and expressing their emotions, and their levels. When the literature is examined, while there are adequate studies on empathy and communication skills for nursing students, there are very few studies investigating the alexithymia variable that may negatively affect empathy skills (Aslan et al., 2021; Çaka et al., 2018; Dincer & Inangil, 2022). The objective of this study was to investigate the factors affecting alexithymia and perceived empathetic self-efficacy and social self-efficacy levels in nursing students.

Research Questions

1. Does alexithymia have an effect on perceived empathic self-efficacy in nursing students?
2. Does alexithymia have an effect on social self-efficacy in nursing students?

MATERIAL AND METHOD

Study Type

This descriptive study was conducted with nursing students at the Nursing Health School during the 2020-2021 academic year.

Population and Sampling

This study included nursing students (1st, 2nd, 3rd, and 4th year nursing students) enrolled in a nursing school in Turkey. The universe of the study consisted of 301 nursing students studying at the Nursing Health School in the 2020-2021 academic year. No sample was performed in the study, all students who agreed to participate in the study were included. The study was completed with a total of

180 nursing students who were students in the Nursing Health School at the time of the study, who filled in the data collection forms, and who volunteered to participate in the study. The rate of participation in the study was 59%. In the school where the study was conducted, the courses that include the empathic approach are concentrated in the 1st and 4th grades.

Data Collection Tools

Three forms were used as data collection tools.

Introductory information form: The introductory information form was designed by the researchers to determine the sociodemographic characteristics and communication status of the students; it consists of 12 questions (Aksoy & Coban, 2017; Aslan et al., 2021).

Perth alexithymia questionnaire: Perth Alexithymia Questionnaire (PAQ) was developed by Preece et al. (Preece et al., 2018) and adapted into Turkish by Bilge and Bilge (Bilge & Bilge, 2020). The PAQ is a 24-item self-report measure of alexithymia. Alexithymia is a multidimensional construct comprising five components: difficulty recognizing negative emotions; difficulty recognizing positive emotions; difficulty expressing negative emotions; difficulty expressing positive emotions and general extroverted thinking, whereby one tends to not focus their attention on their emotions. The PAQ is designed to assess all components of alexithymia, and do so across negative and positive emotions (Preece et al., 2018). The Cronbach's alpha internal consistency coefficient of the scale in the study was found to be .939. PAQ Sub-Dimensions and min-max values are shown in Figure 1.

PAQ Sub-Dimensions			
Sub-Dimensions	**M±SD**	**+1 Ss (prone to alexithymia)**	**+2Ss (alexithymic)**
Difficulty recognizing negative emotions	10.27±5.72	15.99	21.71
Difficulty recognizing positive emotions	9.03±5.56	14.59	20.15
Difficulty expressing negative emotions	11.74±6.14	17.88	24.02
Difficulty expressing positive emotions	10.53±5.89	16.42	22.31
General extroverted thinking	19.86±9.17	29.03	38.20
PAQ	**M±SD**	**+1 Ss (prone to alexithymia)**	**+2Ss (alexithymic)**
Perth Alexithymia scale total score	61.42±29.25	90.67	119.92

Figure 1. PAQ Sub-Dimensions and min-max values

Perceived empathetic self-efficacy and social self-efficacy scale: The Perceived Empathetic Self-Efficacy and Social Self-Efficacy Scale (PESE + PSSE) was developed by Di Giunta et al. (2010), consists of 11 items and two dimensions, and includes a 5-point Likert-type rating ("1" Not at all appropriate, "5" Completely appropriate) (Di Giunta et al., 2010). High scores obtained from the first sub-dimension of the scale, empathic self-efficacy, indicate the individual's perception of being able to respond empathetically to the needs and feelings of other people. High scores obtained from the second sub-dimension, social self-efficacy, indicate that the individual perceives himself as competent in initiating and managing interpersonal relationships. The min-max scores of the empathic self-efficacy dimension are (1-6) and the min-max scores of the social self-efficacy are (7-11). Turkish validity and reliability were adapted by Akın and Başören in 2015 (Akın & Başören, 2015). The Cronbach's alpha internal consistency coefficient of the scale in the study was found to be .910.

Data Collection

The data collection forms prepared in the Google docs program were sent online (WhatsApp or e-mail) to the nursing students of a university between May 17th and June 17th, 2021. Furthermore, 180 nursing students were reached between the specified dates. The survey was completed with 180 students (59% completed).

Data Analysis

Data analysis The SPSS 24.0 software (SPSS Inc., Chicago, IL, USA) was used in the statistical analysis. Descriptive statistics included numbers, percentages, mean, standard deviation, and categorical results. The level of significance was $p < 0.05$. Cronbach's alpha test was used to determine the reliability of the data collection tools used in the study. Dependent variable; Alexithymia, Perceived Social Self-Efficacy, Perceived Empathic Self-Efficacy) and the independent variables (age, gender, income status, social activity, and communication characteristics) were made by applying the multiple linear regression model. Odds ratios (OR) and 95% confidence intervals (95% CI) were reported.

Limitations of The Study

The students participating in the study were students of a single university. The limitation of the study was the collection of data online. Also, this study was conducted with a small number of nursing students.

Ethical Committee Approval

The study approval was acquired from University Ethics Committee (date:29.04.2021-decision number: E.66954). In the digital environment, consent was obtained from the nursing students by sending the form, including necessary explanations about the aim and implementation method of the study online, to nursing students included in the study. During the study, ethical guidelines (institutional permission, permission to use the scales, and informed consent from students) were followed. The study was conducted by the Declaration of Helsinki.

RESULTS

The mean age of the students was 20.0±1.62; 88.9% of them were female, 81.7% of them had a nuclear family structure, 34.4% of them were first-year students and 71.1% of them resided in a university dormitory. It was determined that 57.8% of the students did not have problems in interpersonal relations, and 82.2% of them had problems in communication with the patient in clinical practice (Table 1).

Table 1. Distribution of Students by Socio-Demographic Characteristics

Characteristics (n=180)		**n**	**%**
Gender	Female	160	88.9
	Male	20	11.1
Class level	1. st y	62	34.4
	2. nd y	48	26.7
	3. rd y	43	23.9
	4. th y	27	15.0
Monthly Income rate	Income less than expenses	64	35.6
	Income equal to expenses	104	57.8
	Income more than expenses	12	6.6
Place of residence at university	At a dormitory	128	71.1
	House (alone or other)	12	6.7
	With family	40	22.2
Place of residence	Village	23	12.8
	District	77	42.8
	Province	56	31.1
	Big city	24	13.3
Family structure	Nuclear family	147	81.7
	Extended family	31	17.2
	Broken family	2	1.1
Number of siblings	Only child	16	8.9
	1-3 siblings	124	68.9
	4 or more siblings	40	22.2
Social activity status	Sufficient	19	10.6
	Partly enough	102	56.6
	Insufficient	59	32.8
School achievement status	Successful	45	25.0
	Moderately successful	128	71.1
	Unsuccessful	7	3.9
Having problems in interpersonal relationships	Yes	76	42.2
	No	104	57.8
Having trouble communicating with the patient	A lot of problems	6	3.3
	From time to time	148	82.2
	No	26	14.5

The mean scores of the students for the whole PAQ and PESE + PSSE and its sub-dimensions are given in Table 2. It was found that the nursing students in the study were prone to alexithymia according to the PAQ scale. While the scores of the PESE + PSSE sub-dimension show the students' perception of being able to respond empathetically to the needs and feelings of other people at a sufficient level, the scores obtained from the social self-efficacy sub-dimension show that the students perceive themselves as adequately competent in initiating and managing interpersonal relationships.

Table 2. Students' PAQ and PESE+PSSE Scoring Characteristics

PAQ Sub-Dimensions (N=180)	**Min-Max**	**Mean±SD**
Difficulty recognizing negative emotions (+1 Sd 15.99 = prone to alexithymia)	4-28	14.15±4.78
Difficulty recognizing positive emotions (+1 Sd 14.59= prone to alexithymia)	4-26	13.51±5.18
Difficulty expressing negative emotions (+1 Sd 17.88=prone to alexithymia)	4-28	15.98±4.80
Difficulty expressing positive emotions (+1 Sd 16.42=prone to alexithymia)	4-28	14.31±5.02
General extroverted thinking (+1 Sd 29.03= prone to alexithymia)	8-51	26.40±9.13
Perth Alexithymia scale total score (+1 Sd 90.67= prone to alexithymia)	24-160	84.37±24.64
PESE + PSSE Sub-Dimensions (n=180)	**Min-Max**	**Mean±SD**
Empathic self-efficacy dimension (1-6)	11-30	22.45±3.67
Social self-efficacy dimension (7-11)	10-25	18.86±3.33

Table 3 shows the effects of nursing students' age, gender, income, social activity, and communication characteristics on alexithymia. Being between the ages of 18-21 (β=.199, t=2.764, <.05) and having

problems in interpersonal communication have a statistically significant and positive effect on the presence of alexithymia (β=.395, t=5.031, <.001).

Table 3. The Effect of Nursing Students' Age, Gender, Income Status, Social Activity and Communication Characteristics on Alexithymia

Alexithymia						**95% Cl**		
	B	**Std. Error**	**β**	**t**	**p**	**Lower**	**Upper**	**VIF**
(Constant)	64.513	7.591		8.499	**<.001**	49.510	79.516	
18-21 years	11.987	4.336	.199	2.764	**.006**	3.416	20.557	1.089
Male	9.771	5.606	.125	1.743	.083	-1.310	20.851	1.086
Low income level	5.243	7.818	.103	.671	.504	-10.210	20.695	4.975
Middle income level	-1.287	7.195	-.026	-.179	.858	-15.507	12.934	4.475
Sufficient social activity	-4.757	6.255	-.058	-.760	.448	-17.120	7.607	1.210
Insufficient social activity	-.711	3.784	-.014	-.188	.851	-8.190	6.768	1.147
Having problems with interpersonal communication	19.336	3.843	.395	5.031	**<.001**	11.740	26.932	1.295
Having trouble communicating with the patient	6.533	9.024	.052	.724	.470	-11.303	24.368	1.072

R:.557, R^2:.311 F:8.167 p <.001

a. Dependent Variable: Alexithymia. b. Reference Categories: Age 22 and over, gender being female, high income level, partially sufficient social activity, not having problems in interpersonal communication, not having problems in communicating with the patient

Table 4 shows the effects of age, gender, income status, social activity, and communication characteristics of nursing students on perceived social and empathetic self-efficacy. Having problems in interpersonal communication in Table 4 has statistically a significant and negative effect on perceived social self-efficacy (β=-.417, t=-5.008, <.001) and in the analyzes (F:5.230, p <.001). The explanatory power of the model was determined as 22%. As a striking result in Table 4, insufficient social activity was found to have statistically a significant and positive effect on perceived empathetic self-efficacy (β=.190, t=2.418, <.05). Also, being male (β=-.191, t=-2.496, <.05) and having problems in interpersonal communication (β=-.289, t=-3.453, <.05) were statistically significant on perceived empathetic self-efficacy, and it was found to have a negative effect.

Table 4. The Effects of Nursing Students' Age, Gender, Income Status, Social Activity and Communication Characteristics on Perceived Social and Empathic Self-Efficacy

Perceived Social Ability						**95% Cl**		
	B	**Std. Error**	**β**	**t**	**p**	**Lower**	**Upper**	**VIF**
(Constant)	19.952	1.130		17.660	**<.001**	17.719	22.185	
18-21 years	-.791	.645	-.094	-1.225	.223	-2.066	.485	1.089
Male	-1.424	.834	-.130	-1.707	.090	-3.074	.225	1.086
Low income level	.557	1.164	.078	.479	.633	-1.742	2.857	4.975
Middle income level	1.090	1.071	.158	1.018	.310	-1.026	3.207	4.475
Sufficient social activity	.753	.931	.065	.809	.420	-1.087	2.593	1.210
Insufficient social activity	.323	.563	.045	.573	.567	-.790	1.436	1.147
Having problems with interpersonal communication	-2.865	.572	-.417	-5.008	**<.001**	-3.995	-1.734	1.295
Having trouble communicating with the patient	.235	1.343	.013	.175	.861	-2.419	2.890	1.072
Perceived Empathic Self-Efficiency						**95% Cl**		
	B	**Std. Error**	**β**	**t**	**p**	**Lower**	**Upper**	**VIF**
(Constant)	22.670	1.259		18.011	**<.001**	20.182	25.158	
18-21 years	-.314	.719	-.033	-.437	.663	-1.736	1.107	1.089
Male	-2.320	.930	-.191	-2.496	**.014**	-4.157	-.483	1.086
Low income level	-.158	1.296	-.020	-.122	.903	-2.720	2.404	4.975
Middle income level	1.339	1.193	.174	1.123	.263	-1.019	3.697	4.475
Sufficient social activity	1.729	1.037	.135	1.667	.098	-.321	3.779	1.210
Insufficient social activity	1.517	.627	.190	2.418	**.017**	.277	2.757	1.147
Having problems with interpersonal communication	-2.201	.637	-.289	-3.453	**.001**	-3.460	-.941	1.295
Having trouble communicating with the patient	-2.037	1.496	-.103	-1.361	.176	-4.994	.921	1.072

R: .473, R^2: .224 R:.467, R^2:.219 F:5.230, p <.001F:5.069, p <.001
Perceived Social Ability- Dependent Variable: Perceived Social Self-Efficacy
Perceived Empathic Self-Efficiency- Dependent Variable: Perceived Empathic Self-Efficacy
Reference Categories: Age 22 and over, gender being female, high income level, partially sufficient social activity, not having problems in interpersonal communication, not having problems in communicating with the patient

DISCUSSION

The nursing profession is a profession that requires constant communication with people. Nurses' physiological, psychological and social, holistic care with their patients, their understanding, and strong communication skills can increase the quality of care. In this respect, it is important for nursing students, who will do the nursing profession in the future, to gain communication and empathy skills. In the studies, it was reported that for nursing students not to have difficulties in communicating with their patients, they should be able to communicate effectively, express their feelings and thoughts, and recognize alexithymia (Aksoy & Coban, 2017; Sancar & Aktas, 2019).

In the study, it was determined that nursing students were prone to alexithymia, and perceived empathetic self-efficacy and social self-efficacy scores were high. In a study, it was determined that nursing students had "moderate alexithymia" and had moderate difficulty in recognizing and understanding the emotions and extroverted thoughts of the students (Sancar & Aktas, 2019). In another study, it was reported that nurses had moderate alexithymia and had difficulty communicating with patients (Aksoy & Coban, 2017). The prone to alexithymia levels of nursing students can cause

difficulties in understanding patients and create difficulties in communicating with patients. It is difficult for alexithymic individuals who have difficulty expressing their feelings to empathize with others and have a positive attitude (Aksoy & Coban, 2017; Di Lorenzo Rosaria et al., 2019; Kritsotakis et al., 2017). Similarly with the results of other studies (Karaismailoğlu et al., 2021; Sancar and Aktaş, 2019); it is suggested that nursing students with alexithymia proneness may have difficulty communicating effectively with the patient.

In the study, it was found that students who had problems in interpersonal communication had prone to alexithymia. In a study, it was found that the alexithymia level and sub-dimensions total score averages according to the variable of interpersonal communication level were found to have lower alexithymia scores of students with "good" interpersonal communication levels than students with "medium" and "poor" interpersonal communication levels (Sancar & Aktas, 2019). In similar studies, they reported that alexithymia disrupts positive interpersonal relationships and is an important risk factor in individuals' interpersonal relationships (Dincer & Inangil, 2022; Sangani & Jangi, 2019). The results of the literature are consistent with our study. The results show that individuals prone to alexithymia difficulties may be experienced in interpersonal relationships.

In the study, having problems in interpersonal communication has a statistically significant and negative effect on perceived social self-efficacy. Social self-efficacy and communication skills should be used effectively for quality care in the nursing profession. In addition, social self-efficacy affects individuals' social relations and problem-solving skills (Akın & Başören, 2015). Social self-efficacy and correct communication skills are based on understanding the patients correctly, determining their needs, and ensuring that they receive quality care (Akın & Başören, 2015). In a study conducted with nursing students, it was reported that students first need to understand and be aware of their emotions to establish a therapeutic relationship with the patient (Aksoy & Coban, 2017). In another study conducted with nursing and midwifery students, it was determined that those who did not experience sensory deprivation had higher empathy (Çaka et al., 2018). Social support and empathy are positive behaviors in terms of understanding and expressing emotions (Yavuzer et al., 2018). In the study, students reported that they sometimes had problems communicating with patients during their clinical practice and that they had difficulties in social competence. This situation suggests that nursing students may have problems starting and maintaining healthy communication.

In the research, it was observed that having problems in interpersonal communication according to gender had a statistically significant and negative effect on perceived empathic self-efficacy. It was determined that there was a difference between the interpersonal communication and perceived empathic self-efficacy characteristics of male students. When the studies are examined, it is seen that there is no difference between gender and empathy skills (Aksoy & Coban, 2017), and in some studies, it is seen that empathy skills are higher in women (Çetişli et al., 2016; Sancar & Aktas, 2019). In a study, it is thought that women can better understand other people's emotions because they have emotional intelligence, and therefore, women's alexithymia levels are lower than men’s (Kojima, 2012).

CONCLUSIONS

In the present study, it was found that nursing students had prone to alexithymia and their perceived empathetic and social self-efficacy had an adequate level. It was also discovered that nursing students who have problems in interpersonal communication harmed perceived social self-efficacy. In nursing education, it is recommended to determine the alexithymia levels of nursing students, the teaching methods that increase their emotional awareness and help them communicate effectively, and the guidance to laboratory and clinical practices to teach them to recognize emotions and communication skills. In addition to this, the methods should be put into practice after they are determined. It may also be beneficial to organize training on peer solidarity, coping skills, social skills, and communication skills. Planning in-service training programs aimed at improving the knowledge and attitudes of nursing students regarding attitudes toward the profession, in increasing the quality of patient care, is expected to positively affect students' attitudes toward alexithymia and perceived empathetic self-efficacy and social self-efficacy levels. It is recommended to repeat the study in a comparatively larger population.

ETHICAL COMMITTEE APPROVAL

The study approval was acquired from University Ethics Committee (date:29.04.2021-decision number: E.66954).

AUTHOR`S CONTRIBUTION

Idea/concept: BM, MTB, FÖ; Design: BM, MTB, FÖ; Consultancy: BM, MTB, FÖ; Data collection and/or Data processing: BM, MTB, FÖ; Analysis and/or interpretation: BM, MTB, FÖ; Literature review: BM, MTB, FÖ; Writing of the article: BM, MTB, FÖ; Critical review: BM, MTB, FÖ.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

FINANCIAL DISCLOSURE

This study has not been financed by any instutional organization.

REFERENCES

Akın, A., & Başören, M. (2015). Validity and reliability of the turkish version of the perceived empathic self-efficacy and social self-efficacy scale. *Bartin University Journal of Faculty of Education*, *4*(2), 603-610. https://doi.org/:10.14686/buefad.v4i2.1082000235.

Aksoy, M., & Coban, G.I. (2017). Examination of nursing students' alexithymia levels in terms of some variables. *Journal of Education and Research in Nursing*, *14*(1), 45-52.

Aslan, G., Bakan, A. B., & Yıldız, M. (2021). An investigation of the relationship between alexithymia and empathy in university students receiving health education. *Perspectives in Psychiatric Care*, *57*(2), 709-716. https://doi.org/10.1111/ppc.12602.

Bas-Sarmiento, P., Fernández-Gutiérrez, M., Díaz-Rodríguez, M., Carnicer-Fuentes, C., Castro-Yuste, C., García-Cabanillas, M. J., Fernández, C. G., Martelo-Baro, M., Paloma-Castro, O., Carmen, P., H., Rodríguez-Cornejo, M., J. & Moreno-Corral, L. (2019). Teaching empathy to nursing students: A randomised controlled trial. *Nurse Education Today*, *80*, 40-51. https://doi.org/10.1016/j.nedt.2019.06.002.

Bilge, Y., & Bilge, Y. (2020). The measurement of attention-appraisal model of alexithymia: psychometric properties of the perth alexithymia questionnaire in Turkish. *Anatolian Journal of Psychiatry, 21(Appendix 2)*, 71-79. https://doi.org/10.5455/apd.133183.

Bostan, T., Bostan, A., Sarpkaya, S., & Yabacı, A. (2020). Examination of high school students' alexithymia levels in terms of loneliness and demographic variables. *Journal of Social And Humanities Sciences Research*, *7*(59), 2651-2663. https://dx.doi.org/:10.26450/jshsr.2062.

Çaka, S.Y., Topal, S., Nemut, T., & Çınar, N. (2018). The relationship between alexithymia and empathy in nursing and midwifery students. *Journal of Human Sciences*, *15*(2), 996-1005.

Çetişli, N., Işık, G., Öztornaci, B., Ardahan, E., Uran, B., Top, E., & Avdal, E. (2016). Intercultural sensitivity of nursing students according to their empathy level. *Journal of Izmir Katip Celebi University Faculty of Health Sciences*, *1*(1), 27-33.

Dincer, B., & Inangil, D. (2022). The effect of affective learning on alexithymia, empathy, and attitude toward disabled persons in nursing students: A randomized controlled study. *Perspectives in Psychiatric Care*, *58*(2), 813-821. https://doi.org/10.1111/ppc.12854.

Di Giunta, L., Eisenberg, N., Kupfer, A., Steca, P., Tramontano, C., & Caprara, G.V. (2010). Assessing perceived empathic and social self-efficacy across countries. *European Journal of Psychological Assessment*, *26*(2), 77-86. https://doi.org/ 10.1027/1015-5759/a000012.

Di Lorenzo Rosaria, V.G., Giulia, S., & Paola, F. (2019). Emotional intelligence, empathy and alexithymia: a cross-sectional survey on emotional competence in a group of nursing students. *Acta Bio Medica: Atenei parmensis*, *90*(Suppl 4), 32. http://dx.doi.org/10.23750/abm.v90i4-S.8273.

Ferri, P., Rovesti, S., Padula, M.S., D'Amico, R., & Di Lorenzo, R. (2019). Effect of expert-patient teaching on empathy in nursing students: a randomized controlled trial. *Psychology Research and Behavior Management*, *12*, 457-467. http:// doi: 10.2147/PRBM.S208427

Karaismailoğlu, D., Kulakaç, N., & Çilingir, D. (2021). Alexithymia level and its effect on communication skills in operating room nurses: the example of the eastern black sea region. *Gumushane University Journal of Health Sciences*, *10*(1), 81-87. http:// doi:10.37989/gumussagbil.798966.

Kojima, M. (2012). Alexithymia as a prognostic risk factor for health problems: a brief review of epidemiological studies. *Bio PsychoSoc Med*, *6*(1), 2- 9. https://doi.org/10.1186/1751-0759-6-21.

Kritsotakis, G., Galanis, P., Papastefanakis, E., Meidani, F., Philalithis, A.E., Kalokairinou, A., & Sourtzi, P. (2017). Attitudes towards people with physical or intellectual disabilities among nursing, social work and medical students. *Journal of Clinical Nursing*, *26*(23-24), 4951-4963. https://doi.org/10.1111/jocn.13988.

Li, J., Li, X., Gu, L., Zhang, R., Zhao, R., Cai, Q., Lu, Y., Wang, H. & Wei, H. (2019). Effects of simulation-based deliberate practice on nursing students' communication, empathy, and self-efficacy. *Journal of Nursing Education*, *58*(12), 681-689. https://doi.org/10.3928/01484834-20191120-02.

Preece, D., Becerra, R., Robinson, K., Dandy, J., & Allan, A. (2018). The psychometric assessment of alexithymia: Development and validation of the perth alexithymia questionnaire. *Personality and Individual Differences, 132*, 32-44. https://doi.org/10.1016/j.paid.2018.05.011.

Sancar, B., & Aktas, D. (2019). The relationship between levels of alexithymia and communication skills of nursing students. *Pakistani Journal of Medical Sciences*, *35*(2), 489. https:// doi: 10.12669/pjms.35.2.604.

Sangani, A., & Jangi, P. (2019). The relationship between alexithymia and shyness in nursing students with mediating roles of loneliness and social identity. *Research and Development in Medical Education*, *8*(1), 41-47.

Taş, İ., & Sevinç, H. (2019). The relationship between alexithymia, computer game addiction and empathic disposition in children: a structural equation modeling. *Mirror Journal of Clinical Psychology*, *6(*3), 271-288.

Ter Beest, H., van Bemmel, M., & Adriaansen, M. (2018). Nursing student as patient: experiential learning in a hospital simulation to improve empathy of nursing students. *Scandinavian Journal of Caring Sciences*, *32*(4), *1390-1397*. https://doi.org/10.1111/scs.12584.

Warshawski, S., Bar-Lev, O., & Barnoy, S. (2019). Role of academic self-efficacy and social support on nursing students' test anxiety. *Nurse Educator*, *44*(1), E6-E10. https://doi: 10.1097/NNE.0000000000000552.

Yavuzer, Y., Albayrak, G., Keldal, G. (2018). The relationship between university students' perceived social support and their depression levels: The mediation effect of problem solving skills. *Hacettepe University Journal of Education*, *33*(1), 242-55. https://doi: 10.16986/HUJE.2017027085.