ORIGINAL RESEARCH ORİJİNAL ARAŞTIRMA

Determining the Relationship Between Student Nurses' Compassion Levels and Their Attitudes Towards Disabled Individuals: Descriptive and Correlational Study

Öğrenci Hemşirelerin Merhamet Düzeyleri ile Engelli Bireye Yönelik Tutumları Arasındaki İlişkinin Belirlenmesi: Tanımlayıcı ve İlişki Arayıcı Çalışma

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ABSTRACT Objective: This study aims to analyze the relationship between the compassion levels of nursing students and their attitudes towards disabled people. **Material and Methods:** This study was conducted in the descriptive-correlational design type. The sample of the study comprised 339 students, who studied at the Department of Nursing of a foundation university. Descriptive information form, Compassion Scale (CS), and Multidimensional Attitudes Scale towards Persons with Disabilities (MAS) were used for data collection. **Results:** The mean CS and MAS scores were 95.98±15.47 and 113.11±14.7, respectively. There was a positive correlation between the scores obtained from MAS, CS and the kindness, common humanity and mindfulness dimensions of CS. We also found a negative correlation between the scores obtained from MAS and the indifference, separation and disengagement dimensions of CS (p<0.01). Multiple regression model analysis showed that compassion level was the only factor influencing attitudes towards disabled people. **Conclusion:** The nursing students had a high level of compassion and positive attitudes towards disabled people. As the level of compassion increased, they had more positive attitudes. Compassion level was the only factor affecting the attitudes towards disabled people. At this point, during nursing education, it is recommended that students plan training topics related to compassion, as well as training on approach and communication, according to the disability level of disabled individuals. Besides, scenario-based simulation may be used to contribute to compassion levels and positive attitudes of nursing students towards disabled people.

Keywords: Disabled people; nursing students; compassion; attitudes

ÖZET Amaç: Bu çalışma, hemşirelik öğrencilerinin merhamet düzeyleri ile engelli bireylere yönelik tutumları arasındaki ilişkiyi incelemek amacıyla planlanmıştır. **Gereç ve Yöntemler:** Bu çalışma, tanımlayıcı-ilişki arayıcı tasarım tipinde planlandı. Araştırmanın örneklemini bir vakıf üniversitesinin hemşirelik bölümünde öğrenim gören 339 öğrenci oluşturdu. Verilerin toplanmasında; "tanıtıcı özellikler bilgi formu", "Merhamet Ölçeği (MÖ)" ve "Engellilere Yönelik Çok Boyutlu Tutum Ölçeği (EYÇBTÖ)" kullanıldı. **Bulgular:** Araştırmamızda, öğrencilerin MÖ toplam puanı 95,98±15,47, EYÇBTÖ toplam puanı 113,11±14,7 bulundu. Ölçekler arasındaki korelasyon incelendiğinde; öğrencilerin EYÇBTÖ ile MÖ toplam puanı ve sevecenlik, paylaşımların bilincinde olma ve bilinçli farkındalık alt boyut puanları arasında istatistiksel olarak anlamlı pozitif yönlü bir ilişki; umursamazlık, bağlantısızlık ve ilişki kesme alt boyut puanları ile arasında istatistiksel olarak anlamlı negatif yönlü bir ilişki varlığı saptandı (p<0,01). Yapılan çoklu linear regresyon modeli analizi sonucunda öğrencilerin engelli bireye yönelik tutumuna etki eden tek bağımsız değişkenin merhamet düzeyleri olduğu belirlendi. **Sonuç:** Hemşirelik öğrencilerinin merhamet düzeyleri yüksek, engelli bireylere yönelik tutumları ise olumlu yönde bulundu. Öğrencilerin merhamet düzeyleri arttıkça engelli bireylere yönelik tutumlarında olumlu yönde artış olduğu görüldü. Öğrencilerin engelli bireylere yönelik tutumuna etki eden tek bağımsız değişkenin merhamet düzeyi olduğu saptandı. Bu noktada hemşirelik eğitimi süresince öğrencilere, engelli bireylerin engel düzeyine göre yaklaşım ve iletişim ile ilgili eğitimlerin yanı sıra merhamet ile ilişkili eğitim konularının planlanması da önerilir. Ayrıca hemşirelik öğrencilerinin merhamet düzeyleri ve tutumlarının olumlu yönde gelişmesine katkıda bulunabilecek senaryo tabanlı simülasyon eğitimlerinden yararlanılabilir.

Anahtar Kelimeler: Engelli birey; öğrenci hemşire; merhamet; tutum

The term "disabled person" refers to any person, who has difficulties in adapting to daily life and meeting routine needs due to loss of physical, sensory, mental, and social abilities to various degrees as a consequence of any reasons at birth or later, and who needs care, rehabilitation, protection, support services and counseling due to these reasons.[1] According to the World Health Organization, approximately 15% of global population lives with some form of disability.[2] According to Ministry of Family, Labor and Social Services, the number of disabled people in Türkiye is 2,511,950 and 775,012 are gravely disabled.[3] Trying to survive in society, disabled people experience various problems in daily life, such as, communication and transportation problems, inability to act independently and receive adequate healthcare services and the negative attitudes and behaviors of health professionals.[4,5] Other problems related with health professionals include lack of communication and awareness, insufficient information sharing, dismissive behavior, discrimination and negative attitudes.[5-8]

Attitude refers to positive or negative reactions towards someone or something, which is expressed in beliefs, emotions or intentional behavior.[9] Negative attitudes towards disabled people may prevent these individuals to benefit from social and healthcare services. In this sense, the concept of attitude towards disabled people is an important one.[10,11] Analysis of the literature reveals that developing positive attitudes towards these people may be gained through education, information, support, healthy communication with disabled people and a compassionate approach.[9,11,12] At this point, compassion is one of the most important predictors influencing the attitudes towards disabled people.[12,13]

Compassion may be defined as the feeling of pity that leads human beings to be sensitive to the problems of fellow humans and other living creatures and to help them.[14] It is a behavioral, cognitive and emotional attitude towards supporting people in need.[12] The analysis of the literature shows that the people with a higher level of compassion have a higher tendency to support others.[15,16] Nursing profession, which aims to help disabled people that cannot meet their needs on their own, also requires

compassion for patients.[17,18] Various studies have separately analyzed the compassion levels and attitudes of health professionals towards disabled people.[12,19,20] However, only a limited number of studies analyzed the relationship between these variables.

Nurses, who play a crucial role in healthcare and rehabilitation of disabled people, should start developing positive attitudes towards these people during undergraduate studies.[21] Compassion, which affects the development of positive attitudes, may be developed through education.[22,23] Since they will be health professionals in the near future, it is important to determine the attitudes of students towards disabled people and the possible impact of compassion on these attitudes. The findings of such a study may be used to plan programs to improve not only the level of compassion of nursing students but also their attitudes towards disabled people during undergraduate education. Due to this reason, it is aimed to analyze the relationship between the level of compassion and attitudes of nursing students towards disabled people. The research questions included the followings:

■ What is the compassion level of nursing students?

■ What are nursing student's attitudes towards disabled?

■ Is there a correlation between the level of compassion and the attitudes towards disabled people?

MATERIAL AND METHODS

AIM AND RESEARCH DESIGN

This study aim, the correlation between the level of compassion and the attitudes of nursing students towards disabled people. This research was planned in the descriptive correlation design type.

POPULATION AND SAMPLING

The population of the research consists of 430 students studying in the nursing department of a foundation university in the spring semester of the 2022-2023 academic year. The sample size was determined to be at least 204 students with an acceptable error of 5% and a confidence level of 95% by

using the formula of sampling with finite population. Students who volunteered to participate in the research and were studying in the nursing department were included in the study. Of the 430 nursing students, 23 refused to participate, 21 filled the data collection tools incomplete, and 47 were absent from the classroom at the time of data collection. The study was completed with the participation of 339 students who met the inclusion criteria.

DATA COLLECTION TOOLS

In this study, data were collected using Descriptive Information Form, Compassion Scale (CS) and Multidimensional Attitudes Scale towards Persons with Disabilities (MAS).

DESCRIPTIVE INFORMATION FORM

This form was comprised eight questions on gender, age, class, disabled friends and relatives, relationship with disabled people, prior education on disability and the type and level of disability. The questions were created by the researchers by scanning the relevant literature.[12,24,25]

CS

CS was improved by Pommier and concerted into Turkish by Akdeniz and Deniz. CS comprised six dimensions, namely kindness, mindfulness, common humanity, indifference, disengagement, and separation. The Cronbach's alpha of the CS was 0.85.[26,27]

MAS

The scale, which was adapted into Turkish by Yelpaze and Türküm, is composed of 31 items in three subscales, namely, affection, cognition and behavior. Higher scores obtained from the scale indicated more positive attitudes. The Cronbach's alpha of MAS was 0.90.[28]

DATA COLLECTION PROCESS

Data collection was carried out in the classroom during the course hours of the nursing students. Courses were determined before data collection and permission for data collection was obtained from the lecturer. The nursing students were informed about the aim of the research, data collection period, and data collection tools. Voluntary informed consent form was distributed to the nursing students and written informed consent was obtained. Data collection forms were distributed to the nursing students that agreed to participate and were received back in the same classroom. Data collection took approximately 15 minutes.

ETHICAL CONSIDERATIONS

Ethical permission was obtained from the Scientific Research and Publication Ethics Committee of the Eastern Mediterranean University (date: November 23, 2022, no: ETK00-2022-0261). Institutional permission was obtained for the study to be conducted in the nursing department. In order to obtain written consent from the students participating in the study, a voluntary informed consent form prepared in accordance with the principles of the Declaration of Helsinki was used.

DATA ANALYSIS

SPSS version 25.0 (IBM Corp., Armonk, NY, USA) was used for data analysis. The Kolmogorov-Smirnov test was used to assess the normality of the data. Based on the results, we used parametric tests for the data analysis. In addition to descriptive statistics, we used independent sample t-test for binary comparison and one-way analysis of variance for multiple comparison. Pearson's correlation analysis was performed to analyze the relationship between two continuous variables. Multivariate linear regression model was performed to analyze the effects of dependent variables on the attitudes towards disabled people. Statistical significance was set at $p < 0.05$.

RESULTS

DESCRIPTIVE CHARACTERISTICS

The mean age of participants was 20.9±3.2 years (range: 18-35), 67% (n=227) were female and 33% (n=112) were male. The percentages of first, second, third and fourth-year students were 32.7% (n=111), 24.8% (n=84), 24.8% (n=84) and 17.7% (n=60), respectively. Only 14.7% (n=50) received prior education on disability and 49.9% (n=169) had friends or relatives with disability, including 18.3% (n=62) first and second-degree relatives. Finally, 22.4% (n=76) of the friends and relatives had physical disability and

TABLE 1: Descriptive characteristics.	
Variables (n=339)	**n (%)**
Age, mean (SD)	20.9 (3.2)
Gender	
Female	227 (67)
Male	112 (33)
Class	
1st year	111 (32.7)
2nd year	84 (24.8)
3rd year	84 (24.8)
4th year	60 (17.7)
Friends & relatives with disability	
Yes	169 (49.9)
No	170 (50.1)
Relationship with disabled person	
1st- and 2nd-degree relatives	62 (18.3)
Distant relatives and friends	107 (31.6)
Type of disability	
Mental	54 (15.9)
Physical	76 (22.4)
Mental and physical	39 (11.5)
Level of disability	
Mild	10 (2.9)
Moderate	105 (31)
Severe	54 (15.9)
Received education on disability	
Yes	50 (14.7)
No	289 (85.3)

SD: Standard deviation.

31% (n=105) had a moderate level of disability (Table 1).

COMPASSION LEVELS

Total CS score was 95.98±15.47. The mean scores of the kindness, indifference, common humanity, separation, mindfulness and disengagement subscales were 15.71±4.23, 7.43±3.2, 15.17±4.04, 7.67±3.2, 15.40±3.83 and 7.22±3.14, respectively (Table 2). Compared to males, female participants obtained statistically significantly higher scores from the kindness, common humanity and mindfulness dimensions (p<0.001) and significantly lower scores from indifference, separation and disengagement dimensions (p<0.01 and p<0.001). Total CS (p=0.029), kindness (p=0.005) and mindfulness (p=0.029) scores of 4th year students were significantly higher. Finally, common humanity score of participants with disabled friends and relatives (p=0.011) was significantly higher than other students. These findings indicated that female and 4th year students had a higher level of compassion whereas students with disabled friends and relatives had a higher level of compassion about common humanity (Table 3).

MULTIDIMENSIONAL ATTITUDES TOWARDS DISABLED PEOPLE

Total MAS score was 113.11±14.7. The mean scores obtained from affection, cognition and behavioral

	TABLE 2: Means, standard deviations, Cronbach's alpha values and correlations.												
No.	**Variables**	**Mean (SD)**	**α**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	Affection	44.86 (8.94)	0.81	NA									
2	Cognition	35.56 (8.25)	0.95	-0.073									
3	Behavior	32.69 (5.31)	0.79	0.160**	0.407**								
4	MAS-Total	113.11 (14.7)	0.84	0.624**	0.664**	0.686**							
5	Kindness	15.71 (4.23)	0.90	-0.096	0.516**	0.381**	0.368**						
6	Indifference	7.43 (3.20)	0.74	-0.084	-0.102	-0.291**	-0.213**	-0.215**					
7	Common humanity	15.17 (4.04)	0.82	-0.125*	0.461**	0.369**	0.316**	0.795**	-0.074				
8	Separation	7.67 (3.20)	0.69	-0.101	-0.101	-0.280**	-0.220**	-0.165**	0.697**	-0.079			
9	Mindfulness	15.40 (3.83)	0.84	-0.101	0.517**	0.352**	0.356**	0.875**	-0.148**	0.802**	-0.100		
10	Disengagement	7.22 (3.14)	0.74	-0.118*	-0.144**	-0.326**	-0.270**	-0.261**	0.758**	-0.131*	0.747**	-0.190**	
11	CS-Total	95.98 (15.47)	0.91	-0.022	0.460**	0.472**	0.416**	0.829**	-0.620**	0.735**	-0.594**	0.786**	-0.667**

**p<0.01; *p<0.05; Pearson correlation test; SD: Standard deviation; α: Cronbach's alpha; MAS: Multidimensional Attitudes Scale towards Persons with Disabilities; CS: Compassion Scale; NA: Not available.

TABLE 3: Mean CS scores according to descriptive characteristics.

Variables	Kindness Mean (SD)	Indifference Mean (SD)	Common humanity Mean (SD)	Separation Mean (SD)	Mindfulness Mean (SD)	Disengagement Mean (SD)	CS-Total Mean (SD)
Age							
18-20	15.89 (4.07)	7.22 (3.14)	15.44 (3.90)	7.58 (3.20)	15.58 (3.65)	7.05 (2.99)	97.06 (14.47)
≥21	15.56 (4.36)	7.60 (3.26)	14.96 (4.14)	7.73 (3.22)	15.27 (3.98)	7.35 (3.25)	95.11 (16.22)
t/p-value	0.720/0.472	1.093/0.275	1.102/0.271	0.432/0.666	0.747/0.455	0.852/0.395	1.170/0.243
Gender							
Female	16.52 (3.87)	7.04 (3.02)	15.78 (3.69)	7.19 (2.85)	16.10 (3.36)	6.69 (2.80)	99.47 (14.32)
Male	14.08 (4.47)	8.21 (3.43)	13.95 (4.43)	8.63 (3.64)	13.99 (4.33)	8.28 (3.52)	88.89 (15.36)
t/p-value	5.175/<0.001*	3.206/0.001*	3.778/<0.001*	3.676/<0.001*	4.526/<0.001*	4.159/<0.001*	6.244/<0.001*
Class							
1st, 2nd and 3+ years	15.44 (4.32)	7.48 (3.22)	15.04 (4.17)	7.72 (3.21)	15.19 (3.94)	7.34 (3.19)	95.13 (15.63)
4th year	16.95 (4.52)	7.20 (3.16)	15.82 (3.33)	7.40 (3.18)	16.38 (3.15)	6.62 (2.83)	99.93 (14.17)
t/p-value	2.879/0.005*	0.614/0.540	1.570/0.119	0.710/0.478	2.194/0.029*	1.631/0.104	2.196/0.029*
Friends & relatives with disability							
Yes	16.06 (4.05)	7.34 (3.01)	15.73 (3.68)	7.67 (3.17)	15.74 (3.56)	7.21 (3.12)	97.31 (15.22)
No	15.36 (4.38)	7.52 (3.39)	14.62 (4.30)	7.66 (3.25)	15.07 (4.07)	7.22 (3.18)	94.65 (15.66)
t/p-value	1.515/0.131	0.534/0.593	2.566/0.011*	0.011/0.991	1.611/0.108	0.014/0.989	1.590/0.113
Relationship with disabled person							
1st and 2nd-degree relatives	15.85 (4.00)	7.10 (2.52)	15.73 (3.28)	7.60 (3.13)	15.35 (3.59)	6.87 (2.68)	97.37 (13.53)
Distant relatives and friends	16.18 (4.09)	7.48 (3.27)	15.74 (3.91)	7.71 (3.20)	15.96 (3.53)	7.41 (3.34)	97.28 (16.18)
t/p-value	0.498/0.619	0.789/0.431	0.022/0.982	0.224/0.823	1.071/0.286	1.151/0.252	0.039/0.969
Type of disability							
Mental	16.37 (3.92)	7.65 (3.31)	15.89 (3.77)	8.13 (3.44)	15.69 (3.54)	7.56 (3.73)	96.61 (15.07)
Physical	16.39 (3.76)	6.84 (2.58)	16.05 (3.36)	7.03 (2.82)	15.91 (3.40)	6.87 (2.68)	99.62 (14.65)
Mental and physical	14.97 (4.65)	7.87 (3.28)	14.90 (4.12)	8.28 (3.24)	15.49 (3.93)	7.41 (2.98)	93.79 (16.09)
F/p-value	1.838/0.162	1.951/0.145	1.342/0.264	2.936/0.056	0.188/0.829	0.867/0.422	1.995/0.139
Level of disability							
Mild	18.50 (2.72)	6.60 (2.07)	18.20 (1.48)	5.30 (1.64)	17.20 (3.65)	5.50 (2.27)	108.50 (11.32)
Moderate	16.00 (3.97)	7.54 (3.09)	15.48 (3.82)	7.84 (3.17)	15.74 (3.49)	7.46 (3.19)	96.38 (15.09)
Severe	15.72 (4.32)	7.07 (3.00)	15.78 (3.57)	7.78 (3.24)	15.46 (3.66)	7.06 (3.04)	97.06 (15.49)
F/p-value	2.039/0.133	0.748/0.475	2.546/0.081	3.055/0.050	1.007/0.368	1.922/0.150	2.975/0.054
Received education on disability							
Yes	16.40 (3.78)	7.48 (3.00)	15.44 (3.37)	7.50 (3.25)	15.90 (3.45)	6.90 (2.83)	97.86 (14.95)
No	15.59 (4.30)	7.42 (3.24)	15.13 (4.15)	7.60 (3.20)	15.32 (3.89)	7.27 (3.19)	95.65 (15.57)
t/p-value	1.249/0.212	0.118/0.906	0.583/0.562	0.398/0.691	0.991/0.323	0.768/0.443	0.932/0.352

*p<0.05; F: One-way analysis of variance test; t: Independent sample t-test; SD: Standard deviation; CS: Compassion Scale.

subscales were 44.86±8.94, 35.56±8.25 and 32.69±5.31, respectively (Table 2). Female participants obtained significantly higher scores from the behavioral subscale of MAS (p<0.001). Total MAS scores of the fourth-year students were significantly higher (p=0.043). Participants with disabled friends and relatives obtained significantly higher scores from the cognition subscale of MAS (p=0.014). On the other hand, participants aged 21 years and above received significantly higher scores from the cognition subscale of MAS (p=0.002) but their behavioral scores were significantly lower (p=0.038) (Table 4).

TABLE 4: Mean MAS scores according to descriptive characteristics.				
	Affection	Cognition	Behavior	MAS-Total
Variables	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Age				
18-20	45.03 (8.59)	33.99 (8.47)	33.34 (4.75)	112.36 (13.78)
≥21	44.72 (9.23)	36.83 (7.87)	32.16 (5.68)	113.71 (15.42)
t/p-value	*0.322/0.748*	***3.195/0.002****	***2.082/0.038****	*0.839/0.402*
Gender				
Female	44.28 (8.97)	36.04 (7.80)	33.68 (4.90)	114.00 (14.09)
Male	46.03 (8.81)	34.60 (9.07)	30.69 (5.56)	111.31 (15.79)
t/p-value	*1.695/0.091*	*1.440/0.151*	***4.840/<0.001****	*1.586/0.114*
Class				
1st, 2nd and 3rd years	44.66 (8.62)	34.18 (8.45)	32.52 (5.32)	112.36 (14.57)
4th year	45.77 (10.35)	37.35 (7.07)	33.48 (5.25)	116.60 (14.96)
t/p-value	*0.771/0.443*	*1.855/0.064*	*1.276/0.203*	***2.035/0.043****
Friends & relatives with disability				
Yes	44.25 (9.19)	36.66 (7.87)	32.74 (5.41)	113.65 (15.03)
No	45.46 (8.67)	34.47 (8.50)	32.64 (5.23)	112.58 (14.39)
t/p-value	*1.253/0.211*	***2.464/0.014****	*0.170/0.865*	*0.672/0.502*
Relationship with disabled person				
1st- and 2nd-degree relatives	43.69 (9.27)	37.45 (8.04)	33.56 (5.13)	114.71 (15.55)
Distant relatives and friends	44.57 (9.17)	36.21 (7.77)	32.26 (5.53)	113.04 (14.76)
t/p-value	*0.597/0.552*	*0.992/0.323*	*1.515/0.132*	*0.696/0.488*
Type of disability				
Mental	44.39 (10.28)	36.09 (8.09)	32.13 (5.55)	112.61 (15.68)
Physical	44.39 (8.78)	37.42 (6.87)	32.68 (5.86)	114.50 (14.98)
Mental and physical	43.77 (8.56)	35.97 (9.33)	33.69 (4.14)	113.44 (14.52)
F/p-value	*0.068/0.934*	*0.641/0.528*	*0.951/0.388*	*0.252/0.777*
Level of disability				
Mild	47.00 (9.27)	36.50 (9.73)	33.50 (5.21)	117.00 (15.11)
Moderate	43.63 (8.74)	36.63 (7.66)	32.70 (5.52)	112.96 (14.62)
Severe	44.94 (10.03)	36.76 (8.07)	32.67 (5.31)	114.37 (15.96)
F/p-value	*0.841/0.433*	*0.007/0.993*	*0.105/0.901*	*0.417/0.660*
Received education on disability				
Yes	46.24 (9.34)	36.70 (6.85)	31.70 (6.12)	114.64 (15.89)
No	44.62 (8.86)	35.37 (8.47)	32.86 (5.15)	112.85 (14.50)
t/p-value	*1.184/0.237*	*1.055/0.292*	*1.268/0.210*	*0.795/0.427*

*p<0.05; F: One-way analysis of variance test; t: Independent sample t-test; SD: Standard deviation; MAS: Multidimensional Attitudes Scale towards Persons with Disabilities.

LEVEL OF RELATIONSHIP BETWEEN CONTINUOUS VARIABLES

Table 2 presented the correlation between MAS and CS scores. There was a positive and statistically significant relationship between the scores of MAS, CS (r=0.416; p<0.01) and the kindness (r=0.368; p<0.01), common humanity (r=0.316; p<0.01) and mindfulness (r=0.356; p<0.01) dimensions. On the other hand, we found a negative and statistically significant relationship between the scores obtained from MAS and the indifference (r=-0.213; p<0.01), separation (r=-0.220; p<0.01) and disengagement (r=-0.270; p<0.01) dimensions of CS.

FACTORS RELATED WITH ATTITUDES TOWARDS DISABLED PEOPLE

In order to determine the factors affecting the attitudes towards disabled people, we performed enter method of multiple linear regression model and used the variables with statistical significance, namely gender, class and level of compassion ($F_{(3-335)}$=24.310, p<0.001; R^2=0.18). The model did not have multicollinearity and autocorrelation (Durbin Watson test=1.798; variance inflation factor=<10). The model showed that the level of compassion was the only variable that influenced the attitudes of participants towards disabled people [B=4.40 (95% confidence interval "CI"=0.31; 0.50); pr^2=0.40; p<0.002] (Table 5).

DISCUSSION

This study provided data on compassion levels and attitudes of nursing students towards disabled people. Additionally, multiple linear regression model revealed the effect of compassion level on the attitudes towards disabled people. We found that compassion levels of participants were high and their attitudes towards disabled people were positive. An increase in compassion level was associated with more positive attitudes.

In addition to necessary technical knowledge and skills, nurses should be compassionate since they witness the patients' private and vulnerable moments while providing nursing care.[29] The participants of our study obtained high scores from CS and the mindfulness, kindness and common humanity dimensions whereas the scores of the indifference, separation and disengagement dimensions were relatively low, indicating high level of compassion. Other studies also revealed high levels of compassion in nursing students.[12,16,20] These findings indicate that the students that preferred to be a nurse cared about the problems of other people.

The analysis of the literature shows that gender, class and disabled friends and relatives are important factors influencing the level of compassion in nursing

	TABLE 5: Factors related with attitudes towards disabled people.							
	Unstandardized Coefficients		**95.0% Confidence Interval for B**					
Variables	**B**	**SE**	**Lower**	**Upper**	**t value**	**p value**	**pr²**	**VIF**
Constant	69.660	6.074	57.711	81.608	11.468	<0.001		
Gender (1=Female, 0=Male)	1.546	1.636	-1.671	4.764	0.945	0.345	0.052	1.120
Class								
(1=4th year, 0=1st, 2nd and 3rd years)	2.261	1.922	-1.520	6.041	1.176	0.240	0.064	1.018
Compassion level	0.404	0.050	0.305	0.502	8.050	**<0.001***	0.403	1.135
Model summary	R^2	0.179						
	$F_{(3-335)}$	24.310						
	p value	<0.001						
	Method	Enter						
	DW	1.798						

*p<0.05; Multivariate linear regression analysis; SE: Standard error; pr2: Partial correlations square; Dependent variable: Multidimensional attitudes towards disabled people; VIF: Variance inflation factor; DW: Durbin Watson test.

students.[12,25] Female participants in our study obtained higher scores from mindfulness, kindness, and common humanity dimensions of CS whereas their scores from indifference, separation and disengagement dimensions were significantly lower than their male counterparts. The finding indicated that female nursing students had higher levels of compassion. Additionally, fourth-year students obtained significantly higher scores of CS and the kindness and mindfulness dimensions. Besides, the participants with disabled friends and relatives obtained higher score from the common humanity dimension (Table 3). These findings indicate that female nursing students are more compassionate than males in general. Higher number of courses and experience with patient care during nursing education may have increased the level of compassion in fourth-year students. Finally, participants with disabled friends and relatives may have had a higher level of compassion due to their observations and experiences with their friends and relatives.

MAS scores of the participants were relatively high, indicating more positive attitudes towards disabled people (Table 2). Our finding is confirmed by the studies of Demirören et al., Altunhan et al. and Uysal et al., who reported positive attitudes of university students towards disabled people.[11,24,30] Kritsotakis et al., on the other hand, reported moderately positive attitudes of university students towards disabled people.[31] Contrary to these studies, Tomczyszyn et al. and Radlinska et al. found that university students had negative attitudes towards physically disabled people.[19,32] These conflicting findings may be related with the sociodemographic characteristics of students and having friends and relatives with disability.[11,24] In our case, half of the participants had disabled relatives and friends and most of these people had moderate levels of disability (Table 1). The age of the participants was positively correlated with cognition and negatively correlated with behavioral subscale of MAS. Female students obtained higher scores from the behavioral subscale. Besides, fourth-year students that received education on disability had more positive attitudes than the students without disability education ($p<0.043$). Moreover, cognitive attitudes of participants with disabled friends and relatives were significantly more positive (Table 4). Multiple regression model analysis on the effects of gender, class and compassion levels on the attitudes towards disabled people showed that the level of compassion was the only variable influencing the attitudes of the participants (Table 5). In other words, the nursing students developed more positive attitudes towards disabled people as their level of compassion increased.

We found a positive and statistically significant correlation between the scorers obtained of MAS, CS and the kindness, common humanity and mindfulness dimensions of CS. There was also a negative and statistically significant correlation between the scores obtained of MAS and the indifference, separation and disengagement dimensions of CS ($p<0.01$) (Table 2). These findings also indicated that the nursing students had more positive attitudes towards disabled people as their level of compassion increased. Similarly, cross-sectional study of Erdoğan and Ceylan on the relationship between compassion levels and the attitudes of nursing students towards autism found that the students with higher levels of compassion displayed more positive attitudes towards people with autism.[12] Other studies also reported positive effects of compassion on positive attitudes.[33,34]

LIMITATIONS

The study was conducted at a single university. Accordingly, the findings may not be generalizable.

CONCLUSION

The nursing students had high level of compassion and positive attitudes towards disabled people. As the level of compassion increased, they had more positive attitudes. Female participants, fourth-year students and the participants with disabled friends and relatives had higher level of compassion. Multiple regression analysis showed that compassion level was the only factor affecting the attitudes towards disabled people. According to these findings, it might be suggested that the issues of dealing with disabled people and compassion may be integrated into nursing curriculum. Besides, scenario-based simulation may be used to contribute to compassion levels and positive attitudes of nursing students towards disabled people.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Seda Cevheroğlu;* ***Design:*** *Seda Cevheroğlu, Hülya Fırat Kılıç;* ***Control/Supervision:*** *Seda Cevheroğlu;* ***Data Collection and/or Processing:*** *Seda Cevheroğlu;* ***Analysis and/or Interpretation:*** *Seda Cevheroğlu, Hülya Fırat Kılıç;* ***Literature Review:*** *Seda Cevheroğlu;* ***Writing the Article:*** *Seda Cevheroğlu, Hülya Fırat Kılıç;* ***Critical Review:*** *Seda Cevheroğlu, Hülya Fırat Kılıç;* ***References and Fundings:*** *Seda Cevheroğlu, Hülya Fırat Kılıç.*

▐ REFERENCES

1. T.C. Başbakanlık Özürlüler İdaresi Başkanlığı. Özürlüler Kanunu ve İlgili Mevzuat. 4. Baskı. Ankara: T.C. Başbakanlık Özürlüler İdaresi Başkanlığı Yayınları; 2010. [Link]

2. World Report on Disability 2011. Geneva: World Health Organization; 2011. [PubMed]

3. Aile Sosyal Politikalar Bakanlığı. Engelli ve Yaşlı İstatistik Bülteni. 2021. [Link]

4. Harrison JAK, Thomson R, Banda HT, Mbera GB, Gregorius S, Stenberg B, et al. Access to health care for people with disabilities in rural Malawi: what are the barriers? BMC Public Health. 2020;20(1):833. [Crossref] [PubMed] [PMC]

5. Topaloğlu Ören ED, Dereli F, Yıldırım Sarı H. Engelli bireylerin sağlık hizmetine ve bakıma erişimi ile ilgili yaşadıkları sorunlar [Problems experienced by individuals with disabilities regarding the accessibility to health services and care]. İzmir Katip Celeb Univ Fac Heal Sci J. 2021;6(3):185-92. [Link]

6. Ordway A, Garbaccio C, Richardson M, Matrone K, Johnson KL. Health care access and the Americans with Disabilities Act: a mixed methods study. Disabil Health J. 2021;14(1):100967. [Crossref] [PubMed]

7. Adam E, Sleeman KE, Brearley S, Hunt K, Tuffrey-Wijne I. The palliative care needs of adults with intellectual disabilities and their access to palliative care services: a systematic review. Palliat Med. 2020;34(8):1006-18. [Crossref] [PubMed] [PMC]

8. Mac-Seing M, Zinszer K, Eryong B, Ajok E, Ferlatte O, Zarowsky C. The intersectional jeopardy of disability, gender and sexual and reproductive health: experiences and recommendations of women and men with disabilities in Northern Uganda. Sex Reprod Health Matters. 2020;28(2):1772654. [Crossref] [PubMed] [PMC]

9. Iwakuma M, Miyamoto K, Murata J. Changes in perceptions of japanese university students toward disability: a mixed methods study. Int J Disabil Dev Educ. 2021;70(2):156-68. [Crossref]

10. Finkelstein A, Orr Z. Does volunteering change attitudes towards people with disabilities? A qualitative study of the experience of orthodox Jewish nursing students. Nurse Educ Pract. 2021;55:103141. [Crossref] [PubMed]

11. Demirören N, Su S, Basit G. The effect of advocacy education of nursing students on attitudes towards disability: a quasi-experimental study. Int J Nurs Educ Scholarsh. 2022;19(1). [Crossref] [PubMed]

12. Erdoğan Ç, Ceylan SS. Pediatri hemşireliği dersi alan öğrencilerin merhamet düzeyleri ve otizme karşı tutumları arasındaki ilişkinin incelenmesi: kesitsel çalışma [Examination of the relationship between the students taking pediatric nursing course between the levels of compassion and their attitudes to autism: cross-sectional study]. Turkiye Klin J Nurs Sci. 2022;14(3):682-9. [Crossref]

13. Babahanoğlu R, Tekgöz Obuz A, Gencer N. Sosyal hizmet öğrencilerinin merhamet düzeyleri [Determination of the compassion levels of social work students]. J Soc Soc Work. 2021;32:847-66. [Crossref]

14. Akın HŞ. The concept of compassion and the comparison of Schopenhauer's approach to compassion with the ideas of other philosophers. Turkish J Bioethics. 2018;5(3):126-31. [Crossref]

15. Wu LT, Low MM, Tan KK, Lopez V, Liaw SY. Why not nursing? A systematic review of factors influencing career choice among healthcare students. Int Nurs Rev. 2015;62(4):547-62. [Crossref] [PubMed]

16. Bilgiç Ş. Does the compassion level of nursing students affect their ethical sensitivity? Nurse Educ Today. 2022;109:105228. [Crossref] [PubMed]

17. Perez-Bret E, Altisent R, Rocafort J. Definition of compassion in healthcare: a systematic literature review. Int J Palliat Nurs. 2016;22(12):599-606. [Crossref] [PubMed]

18. Bateman RM, Sharpe MD, Jagger JE, Ellis CG, Solé-Violán J, López-Rodríguez M, et al. 36th International Symposium on Intensive Care and Emergency Medicine. Crit Care. 2016;20(Suppl 2):94. [Crossref] [PubMed] [PMC]

19. Radlińska I, Kożybska M, Karakiewicz B. Attitudes of polish medical and health sciences students towards persons with physical disabilities using the MAS-PL Scale. Int J Environ Res Public Health. 2021;18(15):7787. [Crossref] [PubMed] [PMC]

20. Cevheroğlu S, Firat Kiliç H. Do the compassion and spirituality levels of turkish nursing students influence their attitudes toward organ donation? J Relig Health. 2023;62(2):1019-31. [Crossref] [PubMed]

21. Dincer B, Inangil D. The effect of affective learning on alexithymia, empathy, and attitude toward disabled persons in nursing students: a randomized controlled study. Perspect Psychiatr Care. 2022;58(2):813-21. [Crossref] [PubMed]

22. Şenyuva E, Kaya H, Işık B, Bodur G. Relationship between self-compassion and emotional intelligence in nursing students. Int J Nurs Pract. 2014;20(6):588-96. [Crossref] [PubMed]

23. Kavradım ST, Akgün M, Özer Z, Boz İ. Perception of compassion and professional values in nursing students: a cross-sectional multivariate analysis from Turkey. Nurse Educ Pract. 2019;41:102652. [Crossref] [PubMed]

24. Altunhan A, Bayer R, Açak MZ. Mardin Artuklu Üniversitesi öğrencilerinin engellilere yönelik tutumlarının incelenmesi [Investigation of the attitudes of Mardin Artuklu University students towards disabled people]. J COMU Sport Sci. 2021;4(1):61-70. [Link]

25. Çingöl N, Çelebi E, Zengin S, Karakaş M. Bir sağlık yüksekokulu hemşirelik bölümü öğrencilerinin merhamet düzeylerinin incelenmesi [The investigation of compassion level of nursing students in a health college]. J Clin Psychiatry. 2018;21(1):61-7. [Crossref]

26. Akdeniz S, Deniz ME. The Turkish adaptation of the Compassion Scale : a validity and reliability study. J Happiness Well-Being. 2016;4(1):50-61. [Link]

27. Pommier EA. The Compassion Scale. Humanit Soc Sci. 2011;72:1174. [Link]

28. Yelpaze İ, Türküm AS. Adaptation and validation of Turkey version of multidimensional attitudes toward persons with disabilities. Int J Soc Res. 2018;8(14):169-87. [Crossref]

29. Karakaş M, Çelebi E, Çingöl N, Zengin S. Türkiye'de hemşirelik alaninda merhamet konusuna yönelik yapilan lisansüstü tezlerin incelenmesi [Investigation of the graduate theses that releated to compassion issue in the field of nursing in Turkey]. Gümüşhane Üniversitesi Sağlık Bilim Derg. 2022;11(2):784-93. [Crossref]

30. Uysal A, Albayrak B, Koçulu B, Kan F, Aydın T. Attitudes of nursing students toward people with disabilities. Nurse Educ Today. 2014;34(5):878-84. [Crossref] [PubMed]

31. Kritsotakis G, Galanis P, Papastefanakis E, Meidani F, Philalithis AE, Kalokairinou A, et al. Attitudes towards people with physical or intellectual disabilities among nursing, social work and medical students. J Clin Nurs. 2017;26(23-24):4951-63. [Crossref] [PubMed]

32. Tomczyszyn D, Pańczuk A, Szepeluk A. Attitudes of Students of Social Sciences and Humanities towards People with Physical Disabilities (MAS-PL). Int J Environ Res Public Health. 2022;19(3):1544. [Crossref] [PubMed] [PMC]

33. Bektaş M, Yıldırım G. Hemşirelerin organ bağışı tutumlarının merhamet duygularıyla ilişkisinin değerlendirilmesi [Evaluating the relation of organ donation attitudes of nurses with their sense of mercy]. Lokman Hekim J. 2020;11(1):284-99. [Crossref]

34. Bolgeo T, Ruta F, Damico V, Pancani L, Bertolotti M, Gambarini L, et al. Human organ donation and spirituality: a multicentre observational study aimed at healthcare professionals who work in the Italian context. Ann Ig. 2021;33(6):564-82. [PubMed]