RESEARCH ARTICLE
DOI: 10.26650/CURARE.2024.1274679
CURARE - Journal of Nursing 2024;4:9-15

Determining the Factors Affecting the Compassion Levels of Students Studying in Health Sciences: A Cross-Sectional Study

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Citation: Tiryaki Şen H, Öztürk Yıldırım T, Kuşcu Karatepe H, Polat Ş. Determining the factors affecting the compassion levels of students studying in health sciences: a cross-sectional study. CURARE - Journal of Nursing 2024;4:9-15. https://doi.org/10.26650/CURARE.2024.1274679

ABSTRACT

Objective: This study is being conducted to determine the perceived compassion levels of students studying in health sciences and the factors affecting these.
Method: The universe of this descriptive and cross-sectional study consists of university students studying in 2- and 4-year health-related undergraduate programs, with data being obtained from 920 students. The data were collected in Turkiye's Marmara and Mediterranean regions between March 15, 2019 and April 15, 2019. The data consist of answers to questions examining the students' sociodemographic characteristics and to the Compassion Scale. The data analysis benefits from descriptive statistics; number, percentage, mean, and standard deviation values; independent samples t-test results, and one-way analysis of variance (ANOVA).
Results: The study has found the students to have good compassion levels, with these levels having been determined to differ according to gender, class, and age. The female students' mean compassion scores both overall as well as for the six subdimensions were found to be higher than the male students' mean scores. A very significant difference ($p<0.001$) was determined between the mean overall compassion score and the mean score for the indifference subdimension according to the students' grade levels. A very significant difference ($p<0.001$) was also found between the mean scores for the kindness and separation subdimensions, as well as a significant difference ($p<0.05$) among the mean scores for the common humanity, mindfulness, and disengagement subdimensions.
Conclusion: Students' perceived compassion levels were determined to change as a result of many factors. Universities must use all available resources to demonstrate and model compassionate behavior so that students do not lose sight of what compassion means with regard to their profession and the provision of quality care.
Keywords: Compassion, affecting factors, students

INTRODUCTION

Despite the many years of research, ongoing studies are still needed to understand how helping professionals manage their personal suffering is associated with helping others (1). Compassionate healthcare delivery is related to positive patient outcomes. Educational interventions that develop compassion for healthcare students have been suggested to also be able to increase health, reduce burnout, and improve caregiver-patient relations (2).

Compassion is a focused emotion at the individual level toward one's own or another's suffering. It is an emotional response created as an individual preference in response to a call for help from others and can occur as a result of interpersonal interaction (3). Compassion is also expressed as a factor that increases self-esteem (4). For individuals to show compassion, they need to interact with each other, share the pain of others, and show empathy (5). Compassion is a reaction to human vulnerability and creates a desire to act on the behalf of others. In other words, the state of taking action distinguishes compassionate behavior from empathy, sympathy, and pity (6). Health education has been suggested as being effective at providing compassion and that the qualities of compassion and compassionate care are not included in the curriculum of health care education programs. In addition to theoretical components, learning environments that nurture

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Submitted: 31.03.2023 • **Revision Requested:** 17.05.2023 • **Last Revision Received:** 11.09.2023 • **Accepted:** 23.11.2023

the development of compassion should be encouraged in education programs (7).

Individuals with a high perception of compassion have been reported as being associated with low levels of stress, anxiety, and depression. Compassion improves positive emotions such as happiness, optimism, positive affect, and life satisfaction (8). Individuals suffer inside and outside an organization due to the changing pace of life. The pace of life and ongoing trends of change have affected individuals' work models and increased the need for compassionate actions (9). Compassion helps patients develop meaningful relationships with care providers and enables care providers to improve therapeutic relationships (10). Compassion also helps improve patients' trust in health workers and satisfaction with their care, self-esteem, and therapeutic relationships (11).

Many international studies and reviews (12, 13) have placed an increased emphasis on promoting a culture of compassionate care among healthcare providers (14) and especially on promoting compassion in health professional students (15, 16). Many studies have theoretically (17-19) and empirically (20-22) demonstrated the conceptualization of compassion and its expression in clinical settings. Although studies are found in the literature to have examined students' compassion levels, the strengths of the current study are that it includes students studying in different departments in the field of health sciences and that it has a relatively high number of samples.

MATERIAL AND METHOD

Purpose and Type of Study: This study was conducted using a descriptive cross-sectional design to determine the perceived compassion levels of students studying in health sciences and the factors affecting these. The research questions are as follow:

- How do students perceive their levels of compassion?

- Does a difference exist between students' perceived levels of compassion and their sociodemographic characteristics?

Place and Sample of the Study: The study population consists of university students studying in health-related undergraduate programs at universities in the Marmara and Mediterranean regions of Türkiye, which has seven geographical regions. The study sample consists of 920 people who voluntarily participated, who completed the questionnaires in their entirety between March 15, 2019 and April 15, 2019, and who were selected using random sampling.

Data Collection Tools: The study's data were collected through an online questionnaire.

Introductory Information Form: The first part of this form has five questions about age, gender, the department in which they are studying, their school year, and the geographical region where their university is located.

Compassion Scale: This scale was developed by Pommier (2010), with its Turkish adaptation, validity, and reliability study being conducted by Akdeniz and Deniz (2016) (23, 24). The scale consists of 24 items and six dimensions in total. The Turkish validity and reliability study calculated a Cronbach's alpha of 0.85. This study found Cronbach's alpha for the overall scale to be 0.89. The Cronbach's alpha values for the subdimensions are 0.75 for kindness, 0.73 for indifference, 0.57 for common humanity; 0.68 for separation disconnection, 0.64 for mindfulness, and 0.71 for disengagement. The scale is a 5-point Likert-type scale scored as 1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Frequently, and 5 = Always. High scores on the scale indicate a high level of compassion, while low scores indicate a low level of compassion.

Data Collection: An online survey was used to collect data from students studying at two public universities and two foundation universities in the Marmara and Mediterranean regions between March 15, 2019 and April 15, 2019. After obtaining approval from the departments where the study was conducted, the study's online questionnaire form was emailed to the students by the department authorities, and the data were then collected.

Ethical Considerations: Ethics committee approval No. 2018/10 (dated 28.12.2018) was obtained for this study from Ethics Committee of Yeni Yüzyıl University. Permission was obtained from the institutions where the study was conducted. An informed consent form was included on the first page of the online data collection tool that was created for the participants; upon informing the participants, their consent was obtained. Permission for the study to use the Compassion Scale was obtained from the scale's author.

Limitations of the Study: The limitations of this study are its cross-sectional design and use of the survey method to obtain the data. Other limitations of this study include the fact that it was conducted with students from four universities in only two regions of Turkiye and that the data were collected using a self-report scale.

Data Analysis: The data were analyzed using the program SPSS version 22.0. Before determining which analysis methods to use, whether the data are normally distributed or not was checked. The study uses number, percentage, mean, and standard deviation values, as well as the independent samples t-test results, one-way analysis of variance (ANOVA) to evaluate the data and Tukey's honestly significant difference (HSD) test to determine the difference between groups. The significance level is accepted as ($p<0.05$).

RESULTS

The distributions for the sociodemographic characteristics of the students participating in the study are given in Table 1. The descriptive statistics results, including the students' lowest and highest scores, mean, and standard deviation for the Compassion Scale, are given in Table 2. The findings regarding the comparison of the mean scores for the overall Compassion Scale and its subdimensions according to the students' sociodemographic characteristics are given in Table 3.

Table 1. Sociodemographic characteristics of students

Features	Min-Max.	Mean±SD
Age	17-38 (years)	20.92±1.91
	n	%
Gender		
Woman	660	71.7
Male	260	28.3
Section		
Nursing	384	41.7
Nutrition and Dietetics	138	15.0
Physiotherapy and Rehabilitation	172	18.7
Occupational Health and Safety	37	4.0
Health Management	42	4.6
Emergency Aid and Disaster Management	32	3.5
Paramedic	115	12.5
Classroom		
1st grade	247	26.9
2nd grade	302	32.8
3rd grade	223	24.2
4th grade	148	16.1

Table 2. Students' scores on the Compassion Scale (n=920)

Scale and Dimensions		Min.-Max.	$\overline{X}$ ±SD
Compassion Total Scale		1-5	4.00±.60
Sub-dimensions	Kindness	1-5	4.10±.77
	Indifference	1-5	3.97±.84
	Common humanity	1-5	3.98±.75
	Separation	1-5	3.93±.80
	Mindfulness	1-5	3.99±.73
	Disengagement	1-5	4.01±.82

When analyzing the mean scores from the Compassion Scale according to students' gender, both the mean total score and mean scores from the six subdimensions were higher for the female students compared to the male students ($p < .001$; Table 3).

When examining the students' mean Compassion scores to the grade level, a significant difference was found to exist between the mean total score and the mean score for the indifference subdimension ($p < 0.001$), between the mean scores for the kindness and separation subdimensions ($p < 0.01$), and among the mean scores for the common humanity, mindfulness, and disengagement subdimensions ($p<0.05$; Table 3).

In the further analysis conducted to determine between the grades in which the difference occurred, the mean total score for compassion and the mean scores for the subdimensions of indifference and disconnection were significantly higher for second- and fourth-year students compared to first- and third-year students ($p < 0.05$), with the mean scores for the subdimensions of compassion also being significantly higher for first-, second-, and fourth-year students compared to third-year students ($p < 0.05$; Table 3).

The second- and fourth-year students' mean scores for the subdimension of common humanity were determined to be significantly higher than those of first-year students. The second-year students' mean scores for the subdimensions of common humanity and mindfulness were determined to be significantly higher than those of the third-year students. The second-year students' mean scores for the subdimension of separation disconnection were significantly higher than the means for first- and third-year students ($p < 0.05$; Table 3).

A significant difference was also found for the mean total score and mean scores for the subdimensions of the Compassion Scale according to the departments in which the students study. The mean total Compassion Scale score and mean score for the subdimension of common humanity are significantly higher for the students studying in the Departments of Nursing, Nutrition and Dietetics, Physiotherapy and Rehabilitation, Health Management, and Emergency Aid and Disaster Management compared to those of the students studying in the Paramedic and Occupational Health and Safety Departments ($p < 0.05$; Table 3).

The mean kindness subdimension scores for the students studying in the Departments of Nursing, Nutrition and Dietetics, Physiotherapy and Rehabilitation, Health Management, Emergency Aid and Disaster Management, and Paramedics are significantly higher than the mean scores for those studying in the Department of Occupational Health and Safety ($p < 0.05$; Table 3).

The mean scores from the subdimensions of indifference and of separation disconnection for students studying in the Departments of Nursing, Nutrition and Dietetics, Physiotherapy and Rehabilitation, and Health Management are significantly higher than the mean scores from these subdimensions for the students studying in the Departments of Paramedics and Occupational Health and Safety ($p < 0.05$). The mean separation subdimension score was also higher for students in the Emergency Aid and Disaster Management Department compared to the mean separation subdimension score for students in the Paramedic Department (Table 3).

The mean mindfulness subdimension scores for the students studying in the Departments of Nutrition and Dietetics, Physiotherapy and Rehabilitation, Health Management, and Emergency Aid and Disaster Management are significantly higher than those for students studying in the Paramedics and Occupational Health and Safety Departments. The mean mindfulness subdimension scores for the students studying in the Department of Nursing are also significantly higher than those for students studying in the Department of Emergency Aid and Disaster Management ($p < 0.05$; Table 3).

The mean separation subdimension scores for students studying in the Department of Nursing and the Department of Physiotherapy and Rehabilitation were found to be significantly higher compared to those for students studying in the Emergency Aid and Disaster Management, Paramedic, and Occupational Health and Safety Departments ($p < 0.05$; Table 3).

Table 3. Comparison of mean scores of Compassion Scale according to sociodemographic characteristics of students (n=920)

Features	n	Compassion Scale Total Mean±SD	Compassion Scale Subscales					
			Kindness Mean±SD	Indifference Mean±SD	Common humanity Mean±SD	Separation Mean±SD	Mindfulness Mean±SD	Disengagement Mean±SD
Gender								
Woman	660	4.08±.56	4.17±.76	4.08±.81	4.05±.72	4.03±.77	4.05±.72	4.13±.77
Male	260	3.77±.62	3.91±.77	3.69±.85	3.82±.79	3.67±.82	3.85±.74	3.70±.87
t		7.079	4.676	6.510	4.133	6.412	3.742	6.887
p		0.000	0.000	0.000	0.000	0.000	0.000	0.000
Classroom								
1st grade[a]	247	3.93±.66	4.10±.81	3.86±.88	3.89±.84	3.83±.91	3.97±.81	3.90±.93
2nd grade[b]	302	4.09±.52	4.18±.75	4.09±.74	4.08±.70	4.01±.70	4.06±.67	4.12±.72
3rd grade[c]	223	3.90±.62	3.96±.77	3.82±.90	3.93±.76	3.85±.77	3.89±.74	3.96±.84
4th grade[d]	148	4.07±.57	4.14±.70	4.10±.80	4.02±.64	4.06±.78	4.03±.68	4.04±.78
(SD: 3/916/919)		6.429	3.856	7.357	3.598	4.362	2.788	3.494
p		0.000	0.009	0.000	0.013	0.005	0.040	0.015
Difference		a, c < b, d	a, b, d > c	a, c < b, d	a<b, d / b>c	a, c < b, d	b > c	a, c < b
Section								
Nursing[a]	384	4.03±.56	4.08±.73	4.03±.79	3.99±.70	4.01±.69	3.98±.71	4.10±.73
Nutrition and dietetics[b]	138	4.03±.63	4.17±.78	3.97±.85	4.03±.76	3.94±.88	4.03±.72	4.05±.79
Physiotherapy and Rehabilitation[c]	172	4.11±.55	4.19±.71	4.07±.78	4.14±.69	4.05±.72	4.09±.69	4.14±.72
Health Management[d]	42	4.13±.54	4.20±.78	4.09±.84	4.14±.56	4.10±.79	4.18±.58	4.06±.75
Emergency Aid and Disaster Management[e]	32	4.01±.60	4.20±.66	3.91±1.01	4.10±.65	3.93±.82	4.14±.65	3.77±.95
Paramedic[f]	115	3.72±.66	4.02±.90	3.67±.94	3.71±.96	3.49±.98	3.85±.84	3.58±1.09
Occupational Health and Safety[g]	37	3.65±.58	3.68±.86	3.66±.79	3.57±.75	3.64±.74	3.59±.83	3.76±.85
(SD: 6/913/919)		8.253	2.920	4.297	6.449	8.568	3.923	8.154
p		0.000	0.008	0.000	0.000	0.000	0.001	0.000
Difference		a,b,c,d,e > f,g	a,b,c,d,e,f > g	a,b,c,d > f,g	a,b,c,d,e>f,g	a,b,c,d > f,g / e>f	b,c,d.e > f,g / a>g	a,c > e,f,g / b,d>f

t: Independent samples t test, SD:918
F: Analysis of variance in independent groups, further analysis: LSD test. SD: Between groups/within groups/total degrees of freedom

When examining the disengagement subdimension, the mean scores from this subdimension for students in the Department of Nursing and Department of Physiotherapy and Rehabilitation are higher than those for students in the Emergency Aid and Disaster Management, Paramedic, and Occupational Health and Safety Departments ($p < 0.05$). In addition, the mean disengagement subdimension scores for the students in the Department of Nutrition and Dietetics and the Department of Health Management are higher than those for students in the Paramedic Department (Table 3).

DISCUSSION

This study was conducted to determine the perceived compassion levels of students studying in the Health Sciences and the factors affecting them. The students were determined to have good perceived compassion levels. The study's results are similar to those in other studies conducted with nursing students (25, 26).

With regard to the subdimensions in the study, the students had the highest mean score in the kindness subdimension. The studies by Babahanoğlu et al. (2021) and Cingöl et al. (2018) also reported the kindness subdimension to have the highest mean score (25, 27). Kindness means being understanding and caring towards oneself and others. Being understanding creates a sense of closeness and reduces the differentiation between the individual and others. Individuals with high levels of kindness free their attention toward being open and sensitive to the pain of others and are more sincere. Indifference has the opposite structure of kindness and becomes more prominent in those with low levels of kindness (23).

The study's subdimension of separation saw the students' lowest mean score. This finding is similar to those in the studies of Cingöl et al. (2018), Babahanoğlu et al. (2021), and Özdelikara et al. (2021) (25, 26, 27). The sense of separation is an opposite construct to the subdimension of common humanity. Common humanity involves recognizing that another's situation is not separate from one's own understanding due to a shared human experience. Separation involves a sense of separation

from others, especially when others suffer. When individuals start to see others as separate from themself, they may stop approaching others with compassion in situations of suffering (23). When examining the scale items belonging to the separation subdimension, items are seen that include an individual being insensitive in a negative situation. The separation levels of the students in this study should be low, and having a low separation level may also hint towards having a high level of common humanity.

The mean total scale score and mean scores for the subdimensions of compassion differ according to the students' gender. The mean total compassion score and mean subdimension scores for female students are higher than those for male students. The literature shows studies to have reported compassion to be affected by gender (25, 28). Dizer and İyigün (2009) reported women to have more pronounced feelings of compassion and pity than men (29). Babahanoğlu et al.'s (2021) study on social worker students reported students' compassion levels and compassion subdimension levels to differ according to gender, with these levels being higher in women than in men (27). Female students perceive themselves as more compassionate than male students do.

Although the total score of the Compassion Scale and all the averages for the subdimensions are significantly higher for female students than for male students in this study, the highest average scores from the Compassion Scale's subdimensions for female students are, in order, kindness, disengagement, and indifference. For boys, the three highest mean subdimension scores are for kindness, mindfulness, and common humanity. Kindness is the subdimension with the highest mean for both gender groups. Kindness and sincerity help one develop the perception that the world is a safe place and allow individuals to be open to themself and others. People with low levels of kindness and sincerity perceive the world as dangerous and direct their attention negatively toward themself for protection (23). The high kindness scores for the male and female students may be vital for allowing them to be more open to themselves and the outside world, to show sincere interest in the needs of others, and to create a positive workplace environment, such as in volunteer activities. The fact that the subdimension of common humanity had the second highest mean score among male students may indicate that men "tend to see the pain and suffering of others not as a separate event but as a part of the human experience," as emphasized by Pommier (2010) (23). Mindfulness was the subdimension with the third highest mean among the male students. According to Neff (2003), mindfulness involves "a balanced approach to one's negative emotions" (30). Mindfulness comes from a place of emotional balance and allows one to care for others (23). Thus, when individuals suffer or witness someone suffering, they don't let the pain take over. According to the findings from the current study, male students are able to successfully manage negative emotions, although less so than female students. The female students had the second and third highest mean scores for the subdimensions of disengagement and indifference. Women having both kindness as the highest mean score and indifference as the second highest mean score among the subdimensions was an unexpected result due to indifference being the opposite construct of kindness. However, Pommier (2010) reported "In situations where there is a threat, attention to the safety of the self becomes a close priority, the individual feels the need to focus attention on the self as a protective reaction and may feel indifference to the suffering of others or become more attuned to the world by looking at the world from a critical perspective" (23). The fact that female students' scores for the indifference subdimension were second highest after kindness may be because they see their environment and the world as more threatening and look at these more critically than males. The female students' third highest mean subdimension score was for disengagement. Disengagement is an emotionally unstable response that can interfere with mindfulness (23). The presence of disengagement in female students indicates them to be more likely than male students "to be unable to hold painful thoughts and emotions in a balanced way, to over-focus on pain, or to deny it" (31). Another reason can be explained by women's active participation and openness to experience. Determining the factors affecting the level of compassion and its subdimensions and enabling development can be said to be able to increase students' compassion levels.

When analyzing the students' mean overall compassion scores according to grade level, a significant difference is seen to be present between the mean total score and mean subdimension scores. The mean total Compassion Scale scores for 2nd- and 4th-year students is higher than those for 1st- and 3rd-year students. The study had students in 2-year and 4-year programs. If one accepts that students who are about to complete their education have higher compassion scores than other students, perhaps these students can be considered better at approaching themselves, the people they work with in their work environment, and their patients with compassion when starting their professional life, which is a critical issue in the health service sector. Although Bilgiç's (2022) study on student nurses reported no difference to be found regarding the total compassion score and scores on its subdimensions with regard to school year, other studies are also found to have reported a difference to exist (32). Babahanoğlu et al. (2021) reported a difference to be present between the grade level of social worker students and their averages for the compassion subdimensions apart from the subdimensions of indifference and disconnection; when examining the differences among the subdimensions, they reported that the averages of first-year students to be higher than those for fourth-year students (27). Akin et al.'s (2021) study reported midwifery students' grade level to only affect the subdimension of common humanity (25). According to the results of the study, 1st- and 2nd-year students have less interaction and exposure with patients compared to other years. Therefore, the fact that these students have interacted with and provided care for patients for a shorter period of time affects the results in this direction. The different results regarding the different grade levels in the study may result from the lack of a standardized curriculum in schools, the presence of courses on interaction and communication skills

that may affect compassion, and differences in the amount of experience students have with clinical practice and patient interaction.

A significant difference was found regarding the total Compassion Scale score and its subdimension scores according to the departments in which the students study. Because no studies in the literature have included different student groups, this finding cannot be compared with other studies. However, topics such as the different courses and contents of the courses taken by the students according to the departments they study, whether they study in departments that have direct contact with people or not, and whether they have practical courses where they can encounter patients are thought to possibly cause these differences. According to an international survey in which 1,323 nurses, students, educators, and administrators from 15 countries participated, 73% of nurses had received inadequate training to be able develop compassionate care and had moderate perceptions of compassion (33). In the field of nursing as well as in other health-related fields, training on compassion may help students develop their sense of compassion and ensure that they compassionately approach patients and colleagues in their work.

Despite the literature review, no studies had covered the type of students in the sample group, so the discussion has mainly occurred around nursing students. This situation constitutes a limitation of the study.

CONCLUSION AND RECOMMENDATIONS

Students' perceived compassion levels are found to vary with many factors. Universities must use all available resources to demonstrate and model compassionate behaviors so that students do not lose sight of what compassion means to the profession and quality caregiving. The sampled groups are prospective health professionals who will work directly in patient care. Regardless of the department in which they are studying, making sure that students have good levels of perceived compassion is thought will contribute to positive patient care outcomes. These results suggest that students' attitudes toward compassion levels may positively affect their compassion toward themselves and others. To underscore the importance of interpersonal and cognitive skills such as compassion and mindfulness, universities should consider intentionally modeling these skills for students. Modeling compassion development and mindfulness skills in the context of patient interactions can directly address student empathy erosion in addition to stress management training. Such practices may help increase the compassion levels of students in all health professions, especially male students, paramedics, and students in occupational health and safety departments. Therefore, course content at all grade levels could include interventions (e.g., sensitivity training, role-playing, psychodrama) to increase students' sensitivity toward compassion, especially kindness and mindfulness. By illuminating these perspectives, this study hopes to encourage practitioner reflection, such as through peer support meetings or moral case discussions. This might also reveal the extent to which adopting and acquiring perspectives is possible.

Acknowledgement: We thank the students who participated in the research.

Ethics Committee Approval: This study was approved by the ethics committee of Yeni Yüzyıl University, approval No. 2018/10 (dated 28.12.2018)

Informed Consent: Written consent was obtained from the participants.

Peer Review: Externally peer-reviewed.

Author Contributions: Conception/Design of Study- T.Ö.Y., H.T.Ş., H.K.K.; Data Acquisition- T.Ö.Y., H.K.K.; Data Analysis/Interpretation- T.Ö.Y., H.K.K.; Drafting Manuscript- H.T.Ş., T.Ö.Y., H.K.K., Ş.P.; Critical Revision of Manuscript- Ş.P.; Final Approval and Accountability- H.T.Ş., T.Ö.Y., H.K.K., Ş.P.

Conflict of Interest: Authors declared no conflict of interest.

Financial Disclosure: Authors declared no financial support.

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