



# Determination of the effect of gender perception among university students on attitudes towards disabled women

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## ABSTRACT

**Introduction and aim.** This study investigates the effect of gender perception among university students on attitudes towards disabled women.

**Material and methods.** The target population of this descriptive and cross-sectional study consisted of university students enrolled in the Faculty of Health Sciences in a province located in southern Türkiye. The Socio-demographic Form, the Gender Perception Scale, and the Attitudes towards Disabled Women Scale were administered to the participants through Google Forms. The sample of the study consisted of 644 students registered at the Faculty of Health Sciences and meeting the inclusion criteria.

**Results.** A positive and moderately significant correlation was found between gender perception and attitudes towards disabled women among students who were enrolled in the Faculty of Health Sciences. The variables explaining 26.3% of the total variance for the attitudes towards disabled women included the presence of a disabled individual in the family, education of disabled individuals together with individuals with no disabilities, views about the marriage of disabled women, kinship with the disabled relative, and gender perception scale score.

**Conclusion.** It was concluded that gender perception had a significant effect on the attitudes of students enrolled in the Faculty of Health Sciences towards disabled women.

**Keywords.** disabled women, gender, university student

## Introduction

Disability is a physical, mental, or neurological dysfunction that affects all or some parts of an individual's life.<sup>1</sup> Disability can be affected by cultural sociocultural, demographic, and environmental factors such as age, chronic diseases, socioeconomic conditions, wars, migration, natural disasters, social beliefs, perceptions, and social roles.<sup>2,3</sup> Disabled individuals have the same rights as other individuals by law, yet they face problems such as stigmatization, lack of access to health

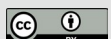
services, limited access to education and employment opportunities, and exclusion from daily life activities, and thus they are considered as a disadvantaged group.<sup>1,3-5</sup> According to the World Health Organization, there are 1.3 billion disabled people in the world; one out of every six people has a disability and disabled people constitute 16% of the world population.<sup>6</sup> As for Turkey, the proportion of disabled population in the total population is reported to be 6.9%, which is 5.9% in men and 7.9% in women.<sup>6</sup>

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In the global gender equality report published by the United Nations Entity for Gender Equality and the Empowerment of Women, Turkey ranks 129<sup>th</sup> out of 146 countries, indicating that women in Turkey face serious inequalities in areas such as education, health, economic opportunities, and political participation.<sup>7</sup> This low ranking indicates that gender inequality is still a major problem in Turkey, and women face discrimination in many areas of society. This situation creates even more severe challenges, especially for disabled women, and the awareness and education of health sciences students on this issue plays a critical role in combating these inequalities. Women are exposed to disabilities more than men due to factors such as higher life expectancy than men, gender perception, social roles and norms, taboo beliefs and thoughts, poverty, culture, status, lack of education and employment, and difficulties in accessing health care services.<sup>8-10</sup> Society reportedly displays positive attitudes and behaviors towards disabled women, yet these women are exposed to negative and exclusionary attitudes and behaviors.<sup>7</sup> Negative attitudes towards disabled women have been found to negatively affect their self-confidence, productivity, and participation in work and school life and cause them to experience poverty and social avoidance.<sup>11</sup> Social judgment and negative attitudes cause women to experience conditions such as frustration, unhappiness, anxiety, deterioration in body image, shame, decreased self-esteem, and isolation.<sup>9,12</sup>

Negative attitudes towards disabled women also lead to problems such as inadequate access to reproductive and sexual health services, violence, rape, being deprived of family planning methods, lack of menstrual hygiene, experiencing chronic diseases and recurrence of existing diseases, increased alcohol and cigarette use, and increased sexually transmitted diseases.<sup>5,13,14</sup> Factors negatively affecting attitudes towards disabled women include variables such as individuals' age, gender, income level, education level, and their parents' education level.<sup>15-18</sup> The increase in the individual's education level positively affects attitudes toward disabled women. Iwakuma et al. found that the training given to university students for disabled individuals decreased students' perception of disability as a difficulty and enabled them to feel closer to disabled individuals.<sup>18</sup> Disabled women are affected mostly by the health personnel's negative and judgmental attitudes and behaviors.<sup>19</sup> Determination of the gender perceptions and attitudes towards disabled women among Faculty of Health Sciences students, who are the health personnel candidates of the future, is highly important in terms of contributing to the work, education, family life, and health status of disabled women.

Although the literature includes studies on health workers and disability, no studies have been found to have examined attitudes towards disabled women in the context of gender. The present study is believed to contribute to the field in this aspect.

### *Research questions*

Q1) Is the perception of gender equality among university students related to attitudes towards disabled women?

Q2) Do sociodemographic features and some variables affect the perception of gender equality among university students?

Q3) Do sociodemographic features and some variables affect attitudes towards disabled women among university students?

### **Aim**

In this regard, this study aims to determine the effect of gender perception among Faculty of Health Sciences students on attitudes toward disabled women.

### **Material and methods**

#### *Design*

This study was conducted between January 1 and May 20, 2023 and utilized a descriptive and cross-sectional design.

#### *Sample*

The study data were collected online (Google Forms). The form started with a question indicating the respondent's consent to participate in the study. While the target population of the study consisted of 1134 students enrolled in the Faculty of Health Sciences in a province located in southern Turkey, the sample was determined as 419 students using the sample calculation with a known population method (99% confidence interval, 5% margin of error) (<https://www.calculator.net/sample-size-calculator.html>). Considering the possible losses, 50% more than the planned sample size was included. As a result, 644 students who were enrolled in the Faculty of Health Sciences and met the inclusion criteria were included. The inclusion criteria were being over 18 years of age and being a student at the Faculty of Health Sciences. Not being an active student and having any disability were determined as the exclusion criteria.

#### *Data collection*

Data were collected using the socio-demographic form, the Gender Perception Scale, and the Attitudes Towards Disabled Women Scale.

#### *Socio-demographic form*

The Socio-demographic form, which was developed by the authors based on the literature, consists of 19 questions collecting data about the socio-demographic char-

acteristics of the students (gender, class year, department, income level, family type, etc.) as well as their disability-related condition (the presence of a disabled individual in the family, education of disabled individuals together with individuals with no disabilities, etc.).<sup>13,19</sup>

#### *Gender Perception Scale (GPS)*

The 25-item scale was developed by Altınova and Duyan in 2013, who also performed the validity and reliability of the scale, to measure how gender roles are perceived.<sup>21</sup> The scale is responded on a five-point Likert scale (1=strongly disagree, 5=strongly agree). While 10 items on the scale are positive statements, 15 items are negative statements. The scores to be obtained from the scale range between 25 and 125, with higher scores indicating egalitarian gender perception. Cronbach's alpha reliability coefficient of the scale was reported to be 0.87.<sup>21</sup> This study found Cronbach's alpha value of the scale as 0.93.

#### *Attitudes towards Disabled Women Scale (ATDWS)*

The 17-item scale, which aims to determine attitudes towards disabled women, was developed by Yılmaz and Ören in 2021.<sup>14</sup> The scale is responded to on a five-point Likert scale (1= Strongly agree, 5= Strongly disagree) and includes four sub-scales: disabled women and their private lives, disabled women and disadvantages, disabled women and social support, and disabled women and gender. Scores to be obtained from the scale range from 17 to 85 points. The scale has no reverse items, and higher scores indicate higher positive attitudes toward disabled people. Cronbach's alpha values of the sub-scales were determined as 0.873, 0.736, 0.639, and 0.679, respectively. Cronbach's alpha value was determined as 0.817 for the whole scale. In this study, Cronbach's alpha values of the sub-scale were determined as 0.924, 0.834, 0.750, and 0.768, respectively. Cronbach's alpha value of the scale was determined as 0.901 for the total scale in this study.

#### *Statistical analysis*

Data were analyzed using the SPSS 25.0 package program (IBM, Armonk, NY, USA). Data analysis included descriptive statistics (number, percentage, median, mean, standard deviation), Skewness and Kurtosis for normality distribution, t-test, One-Way ANOVA, Mann Whitney U test, and Kruskal Wallis test. Bonferroni correction was used to determine which groups indicated the difference in the analysis of multiple groups.

Pearson correlation analysis was used for the comparison of the Attitudes towards Disabled Women Scale with disability-related variables. Multiple Linear Regression analysis was used to see the effects of variables related to the Attitudes towards Disabled Women Scale. Statistical significance was determined as  $p < 0.05$ .

#### *Ethical approval*

Before the study was conducted, ethics committee approval (dated 28.12.2022 and decision number 2022/10/12) was obtained from the Scientific Research and Publication Ethics Board of a state university. The participants were informed before the study was started, and their informed consent was obtained online (Google Forms).

#### **Results**

Table 1 demonstrates students' sociodemographic characteristics and the relationship between some variables and GPS and ATDWS. Students' average age was found  $20.74 \pm 1.93$  years. While 75.5% of the students were female, 30.9% were enrolled in the second year, 77.8% were enrolled in the nursing department, 63.2% had income equal to expenses, 82% lived in a nuclear family, mothers of 37.9% graduated from primary school, fathers of 28.9% graduated from high school, the longest place of residence was a district or village for 50.2%, 21.6% lived in the Black Sea region, 55.4% had three or more siblings, 74.1% had a sister, and 86.8% had parents together.

The Gender Perception Scale median score was found to be significantly higher in females compared to males; those enrolled in the departments of Nursing and Nutrition and Dietetics compared to those in the Department of Social Service; those living in nuclear families compared to those living in extended families; those whose mothers are primary school graduates compared to those whose mothers are illiterate; those whose fathers are high school and university graduates compared to those whose fathers are literate; those whose fathers are primary school, secondary school, high school, and university graduates compared to those whose fathers are illiterate; those living in a city compared to those living in a district; those living in the Black Sea region compared to those living in Eastern and Southeastern Anatolia region; those who had one or two siblings compared to those who had three or more siblings; and those who had sisters compared to those who did not have sisters.

Attitudes towards Disabled Women Scale mean score was found to be higher in females compared to males; those who were in the first and second year than those who were in the third year; those who were in the Department of Nursing and Nutrition and Dietetics than those who were in Social Service; and those who had two siblings than those who had three or more siblings. The Bonferroni test, which was conducted to determine which group differed in terms of the geographical region of residence, indicated no differences between the groups, yet the Attitudes towards Disabled Women Scale mean score was found to be higher in students living in the Aegean region.

The Gender Perception Scale total median score was found to be significantly higher in those who did not

**Table 1.** Students' Socio-demographic Features and the Relationship of some variables with GPS and ATDWS\*

Socio-demographic features	n (%)	GPS		ATDWS	
		Median (Min–Max)	Test and statistics	Mean±SD	Test and statistics
<b>Gender</b>					
Female	486 (75.5)	110 (65–125)	MU=17083.000	62.9±10.54	t=5.129
Male	158 (24.5)	87 (54–125)	p<0.001	57.32±12.28	p<0.001
<b>Class year</b>					
1st year	172 (26.7)	104.5 (68–125)		63.03±11.38	
2nd year	199 (30.9)	107 (60–125)		62.46±11.5	1>3, 2>3
3rd year	180 (28)	106 (54–125)	KW=3.060	59.26±10.53	F=4.014
4th year	93 (14.4)	103 (65–125)	p=0.382	61.19±11.27	p=0.008
<b>Department</b>					
Nursing	501 (77.8)	107 (60–125)		62.09±10.97	
Midwifery	27 (4.2)	102 (65–125)	1>4; 3>4	61.33±9.72	1>4; 3>4
Nutrition and Dietetics	16 (2.5)	115 (81–125)	KW=16.473	66.38±9.72	F=4.737
Social service	100 (15.5)	98 (54–125)	p=0.001	58.02±12.53	p=0.003
<b>Income level</b>					
Income less than expenses	162 (25.2)	104 (67–125)		61.75±10.84	
Income equal to expenses	407 (63.2)	106 (54–125)	KW=0.929	61.21±11.53	F=0.708
Income more than expenses	75 (11.6)	109 (70–125)	p=0.629	62.84±10.58	p=0.493
<b>Family type</b>					
Nuclear family	528 (82)	107 (54–125)	MU=24105.000	61.68±11.09	t=0.683
Extended family	116 (18)	101.5 (66–125)	p<0.001	60.89±11.96	p=0.495
<b>Mother's education level</b>					
Illiterate	73 (11.3)	97 (54–125)		60.4±11.04	
Literate	55 (8.5)	104 (60–125)		60.55±11.04	
Primary school graduate	244 (37.9)	108 (65–125)		62.05±10.71	
Secondary school graduate	108 (16.8)	106 (70–125)	3>1	61.14±11.9	
High school graduate	119 (18.5)	107 (68–125)	KW=17.314	61.7±11.97	F=0.408
University and above	45 (7)	111 (68–125)	p=0.004	62.29±11.48	p=0.843
<b>Father's education level</b>					
Illiterate	21 (3.3)	81 (65–118)		58.67±13.32	
Literate	23 (3.6)	92 (67–115)		58.57±10.5	
Primary school graduate	185 (28.7)	104 (66–125)	4>2.5>2	61.08±11.39	
Secondary school graduate	142 (22)	108 (54–125)	3>1.4>1.5 >1.6>1	62.23±11.4	
High school graduate	186 (28.9)	108 (66–125)	KW=25.846	62.08±10.62	F=0.851
University and above	87 (13.5)	106 (68–125)	p<0.001	61.7±11.7	p=0.514
<b>Longest place of residence</b>					
City	321 (49.8)	108 (60–125)	1>2	61.48±11.23	
Town	205 (31.8)	103 (66–125)	KW=7.305	61.22±11.46	F=0.300
Village	118 (18.3)	105 (54–125)	p=0.026	62.22±10.97	p=0.741
<b>The geographical region of residence</b>					
Eastern Anatolian Region	89 (13.8)	101 (54–125)		58.72±12.22	
Southeastern Anatolia region	134 (20.8)	103 (60–125)		61.76±10.2	
Marmara region	82 (12.7)	105.5 (66–125)		61.01±11.45	
Central Anatolian Region	114 (17.7)	112.5 (66–125)		63.11±10.74	
Black Sea region	139 (21.6)	108 (68–125)	5>1, 5>2	61.79±11.19	
Mediterranean Region	29 (4.5)	97 (70–125)	KW=27.846	58.1±13.57	F=2.332
Aegean region	57 (8.9)	108 (69–125)	p<0.001	64.12±10.77	p=0.031
<b>Number of siblings</b>					
0	21 (3.3)	108 (72–124)		63.1±10.74	
1	106 (16.5)	111 (66–125)	2>4, 3>4	62.79±11.7	3>4
2	160 (24.8)	110 (68–125)	KW=41.327	63.68±9.97	F=4.511
3 and more	357 (55.4)	102 (54–125)	p<0.001	60.11±11.51	p=0.004
<b>Presence of a sister</b>					
Yes	477 (74.1)	105 (54–125)	MU=35411.500	61.47±11.31	t=-0.238
No	167 (25.9)	108 (68–125)	p=0.033	61.71±11.08	p=0.812
<b>Condition of parents</b>					
Together	559 (86.8)	106 (54–125)		61.8±11.07	
Separate-divorced	43 (6.7)	104 (60–125)	KW=3.051	58.86±13.11	F=1.478
One of the parents passed away	42 (6.5)	101.5 (68–125)	p=0.218	60.74±11.44	p=0.229

\* average age: 20.74±1.93, MU – Mann Whitney U test, t – Independent t-test, KW – Kruskal Wallis test, F – one way ANOVA test

have disabled friends than those who had; those who said yes to the education of disabled individuals together with individuals with no disabilities compared to those who said no; those who thought that a disabled woman should marry a man with no disabilities compared to those who thought that a disabled woman should marry a man with no disabilities and a disabled woman should not marry; those who thought that a disabled man should marry a woman with no disabilities compared to those who thought that a disabled man should marry a disabled woman and a disabled man should not marry.

**Table 2.** Relationship between some variables regarding disability and GPS and ATDWS\*

Socio-demographic features	n (%)	GPS		ATDWS	
		Median (Min–Max)	Test and statistics	Mean±SD	Test and statistics
<b>The presence of a disabled individual in the family</b>					
Yes	116 (18)	106 (66–125)	MU=30056.500	59.74±11.42	t=-1.983
No	528 (82)	106 (54–125)	p=0.754	61.73±14.16	p=0.048
<b>Kinship with the disabled person</b>					
1st and 2nd degree kinship					
	54 (35.8)	103.5 (68–125)	MU=2545.000	58.22±13.17	t=-1.521
3rd-degree kinship					
	97 (64.2)	105 (68–125)	p=0.774	61.34±11.43	p=0.130
<b>Presence of a disabled friend</b>					
Yes	105 (16.3)	101 (60–125)	MU=24454.000	61.77±16.75	t=-0.817
No	539 (83.7)	107 (54–125)	p=0.028	59.84±10.74	p=0.415
<b>Education of disabled individuals together with individuals with no disabilities</b>					
Yes	495 (76.9)	108 (60–125)	MU=26888.000	62.03±11.76	t=4.839
No	149 (23.1)	97 (54–125)	p<0.001	54.68±11.7	p<0.001
<b>Having received education on disability</b>					
Yes	176 (27.3)	106 (65–125)	MU=40095.000	59.27±11.36	t=-3.159
No	468 (72.7)	106 (54–125)	p=0.605	62.39±11.1	p=0.002
<b>Views about the marriage of disabled women</b>					
A disabled woman should marry a disabled man					
	102 (15.8)	100 (69–122)	2>1.2>3	60.21±16.53	2>3.1>3
A disabled woman should marry a man with no disabilities					
	500 (77.6)	107 (68–125)	KW=29.282	61.07±10.86	W=32.213
A disabled woman should not marry					
	42 (6.5)	101.5 (75–125)	p<0.001	52.5±8.3	p<0.001
<b>Views about the marriage of disabled men</b>					
A disabled man should marry a disabled woman					
	110 (17.1)	99.5 (69–122)	2>1.2>3	58.72±16.7	2>3.1>3
A disabled man should marry a woman with no disabilities					
	489 (75.9)	107 (68–125)	KW=37.738	61.44±10.64	W=30.217
A disabled man should not marry					
	45 (7)	104 (75–125)	p<0.001	53.42±7.61	p<0.001

\* MU – Mann Whitney U test, t – Independent t-test, KW – Kruskal Wallis test

Attitudes towards Disabled Women Scale mean score was found to be higher in those who did not have a disabled individual in the family compared to those

who had; those who said yes to the education of disabled individuals together with individuals with no disabilities compared to those who said no; those who did not receive education on disability compared to those who did; those who thought that a disabled woman should marry a disabled man or with no disabilities compared to those who thought that a disabled woman should not marry; those who thought that a disabled man should marry a disabled woman or with no disabilities compared to those who thought that a disabled man should not marry.

**Table 3.** Distribution of Students' GPS and ATDWS Total mean scores

Scales and sub-scales	Mean±SD	Median (Min–Max)
GPS total score	102.67±16.45	106 (54–125)
ATDWS total score	61.53±11.25	63 (35–85)
Disabled women and their private lives	24.08±4.96	24 (10–30)
Disabled women and disadvantages	13.77±3.85	14 (4–20)
Disabled women and social support	14.69±3.15	15 (6–20)
Disabled women and gender	8.98±2.88	9 (3–15)

**Table 4.** Relationship between Students' Attitudes towards Disabled Women Scale mean score and some variables\*

	B (95% CI)	Beta	t	p	Zero-order	Partial
Constant	20.642 (8.598–32.686)		3.388	0.001		
Presence of a disabled individual in the family (reference=no)	-4.013 (-8.066–0.039)	-0.143	-1.958	0.052	-0.071	-0.161
Education of disabled individuals together with individuals with no disabilities (reference=no)	4.75 (0.527–8.972)	0.169	2.223	0.028	0.262	0.182
Views about the marriage of a disabled woman (reference=A disabled woman should not marry)	10.549 (3.414–17.683)	0.344	2.923	0.004	-0.001	0.237
A disabled woman should marry a disabled man						
A disabled woman should marry a man with no disabilities	7.062 (0.598–13.526)	0.260	2.159	0.032	0.115	0.177
GPS	0.323 (0.217–0.429)	0.445	6.043	<0.001	0.439	0.450
Kinship with the disabled relative (reference=3 <sup>rd</sup> degree relative)	-2.608 (-6.184–0.969)	-0.103	-1.441	0.152	-0.124	-0.119

\* Multiple Linear Regression Analysis, B – unstandardized coefficient, Beta – standardized coefficient, F=9.905, p<0.001, R=0.541, R2=0.291, AdjR2=0.263, SE=10,415

An analysis of Table 3 shows that the GPS total mean score was 102.67±16.45 and the ATDWS total mean score was 61.53±11.25. ATDWS sub-scale scores were 24.08±4.96 for the disabled women and private life sub-scale; 13.77±3.85 for the disabled women and disadvantages sub-scale; 14.69±3.15 for the disabled wom-

en and social support sub-scale; and  $8.98 \pm 2.88$  and for the disabled women and gender sub-scale.

Table 4 shows the multiple linear regression analysis performed with gender perception scale-related variables such as the presence of a disabled individual in the family; education of disabled individuals together with individuals with no disabilities; views about the marriage of disabled women; and kinship with the disabled relative. A positive and moderately significant correlation was found between gender perception and attitudes toward disabled women ( $r=0.439$ ;  $p<0.001$ ) ( $r=0.439$ ;  $p<0.001$ ) (Table 4).

The presence of a disabled individual in the family; education of disabled individuals together with individuals with no disabilities; views about the marriage of a disabled woman; kinship with the disabled relative; and the Gender Perception Scale score were found to explain 26.3% of the total variance for the attitudes towards disabled women ( $R^2:0.291$ ,  $\text{Adj}R^2:0.263$ ,  $p<0.001$ ).

## Discussion

This study investigates the effect of social gender equality perception among university students on attitudes towards disabled women.

Gender perception was found to be higher in women in this study ( $p<0.001$ ). In their study conducted with university students, Roca-Hurtuna and Sanz-Ponce found that gender role perception was higher in women than men.<sup>22</sup> Demirkoparan and Beydağ reported higher gender perception in women than men in their study conducted with nurses.<sup>23</sup> Ruiz et al. included female students in the departments of nursing and physiotherapy in their study and found no significant differences between gender role perception and gender.<sup>24</sup> Malkoc reported higher gender perception in men than women among participating social sciences students.<sup>25</sup> Our finding differs from the findings reported by Ruiz et al. and Malkoc.<sup>24,25</sup> Hence, the literature reports different findings, which are considered to result from the differences in women's perception of the gender discrimination they are exposed to. This study found that the gender role perception of Nursing and Nutrition and Dietetics department students was significantly higher than that of social service department students ( $p<0.001$ ). Yanikkerem et al. reported that students enrolled in the Departments of Nursing and Midwifery at the Faculty of Health Sciences had a higher perception of social equality than students in the Department of Social Service.<sup>26</sup> The finding in this study is similar to the one reported by Yanikkerem et al.; Kul Uçtu and Karahan found no relationship between gender perception and the department of study in health high school students.<sup>27</sup> Ünal et al. reported no relationship between predicting gender perception and the department of study.<sup>28</sup> This result is considered to result from being enrolled in departments that address women's

lives and social structure more closely and provide holistic care, which increases gender role perception. This study found that gender role perception was higher in nuclear families than in extended families ( $p<0.001$ ). Coşkun et al. examined gender perception in students of the Faculty of Health Sciences and found that gender perception was higher in nuclear families.<sup>17</sup> The study conducted by Korkmaz and Özbeşler found that gender perception was lower in university students who had extended families.<sup>29</sup> The findings in this study are similar to the findings reported by Korkmaz and Özbeşler and Coşkun et al. Besides studies indicating that gender perception is higher in nuclear families, some other studies indicate that it is higher in extended families and no relationship exists between family type and gender perception.<sup>30,31</sup> This result is considered to be caused by the predominance of gender discrimination, social norms, and roles toward women in extended families.

Gender perception was found to be higher in participating individuals who had one or two siblings and who had a sister ( $p<0.001$ ,  $p<0.05$ ). Yanikkerem et al. found that the understanding indicating men's superiority and women's dependence on men was higher among university students who had three or more siblings compared to those who had no or two siblings.<sup>26</sup> Coşkun et al. determined that gender perception was higher in individuals who had sisters.<sup>17</sup> In their study conducted with academics, Aydin et al. reported that the presence of a sister in the family had no relationship with gender perception. This condition is considered to increase the gender role perception of those who have a sister because it provides the opportunity to be closely involved in women's social, work, and education processes.

In this study, attitudes towards disabled individuals were found to be more positive in women than men ( $p<0.001$ ). Roca-Hurtuna and Sanz-Ponce also found that women's attitudes toward disability were more positive than men among university students.<sup>22</sup> In their study examining university students' attitudes towards disabled individuals and social likability, Gedik and Toker found that women's attitudes towards disability were more positive.<sup>32</sup> The finding in this study is similar to the findings reported by Hurtuna and Ponce and Gedik and Toker. Ruiz et al. found that gender did not affect university students' attitudes toward disabled individuals. In their study including health personnel, Devkota et al. found that men had a more positive attitude towards disabled individuals than women.<sup>9</sup> It is thought that the difference in the study results stems from the compassionate, gentle, understanding and maternal roles that society imposes on women.

This study found that the presence of a disabled individual increased attitudes toward disabled individuals ( $p<0.05$ ). Roca-Hurtuna and Sanz-Ponce reported that university students who had disabled friends and

acquaintances in their family and business life had positive attitudes towards disabled individuals.<sup>22</sup> Santilli et al. investigated the attitudes of coworkers toward their disabled colleagues and found that social relationships increased work performance.<sup>33</sup> Our findings are parallel to the literature. This finding is considered to result from having a disabled person in a close environment, which makes individuals avoid exhibiting wrong attitudes and behaviors towards disabled individuals. Having received education on disabled individuals was found to increase attitudes towards disabled individuals positively in this study ( $p < 0.05$ ). Iwakuma et al. reported that the education on disabled individuals given to university students decreased students' perception of disability as a difficulty and made them feel closer to disabled individuals.<sup>18</sup> Our finding is similar to the findings reported by Iwakuma et al. Devkota et al., who aimed to determine healthcare personnel's attitudes towards disabled people and found that receiving training on disability did not affect attitudes towards disabled individuals. Although our finding is different from the finding reported by Devkota et al., receiving education about disability increases attitudes toward disability because it decreases misconceptions and increases knowledge about disabled individuals.

Research findings indicate that students who hold the belief that disabled women should marry have more favorable sentiments towards disabled women. Bal investigated attitudes and gender perceptions towards women with orthopedic disabilities and found that the participants thought that disabled women should not marry or they should marry disabled individuals like them because disabled women reportedly cannot be good spouses and mothers.<sup>15</sup> Our finding differs from the finding of Bal, which is related to the sample group of our study consisting of health sciences students, who receive training on disabled women, and their increased awareness on this issue.

In this study, gender perception was found to positively increase attitudes towards disabled individuals. Disabled individuals, who are in the disadvantaged group, were found to be exposed to a second obstacle due to their gender. Women are associated with gender roles such as being a good mother and good wife and having an ideal body. Disabled individuals cannot have these characteristics and therefore they face negative attitudes. Increased gender perception also increases attitudes towards disabled women positively.<sup>34</sup> The literature includes no studies that compared the gender perception scale with Attitudes toward Disabled Women Scale. This study is believed to be unique in this respect and thus contribute to the literature.

#### **Study limitations**

Data of this study were collected from students enrolled in a specific province, which is considered to be a limita-

tion. Additionally, it is not possible to draw causal conclusions based on this study because a cross-sectional design was used. Another limitation of the study is that it does not include open-ended questions about attitudes towards disabled women, and a mixed design was not utilized by adding qualitative analysis.

#### **Conclusion**

This study demonstrated that gender norms of students enrolled in the Faculty of Health Sciences at a public university had a notable impact on their views towards disabled women. Identifying the factors that influence the behaviors and attitudes of future health professionals towards disadvantaged populations throughout the provision of health services is crucial. To promote knowledge and understanding among students, it is crucial to arrange seminars focusing on the role of women in society, disability, and disabled women. These seminars should include informative case studies and involve volunteering efforts with individuals who have impairments. Engaging students in projects focused on disabled women might motivate them to develop educational strategies to address the prevailing challenges in this domain. This study is expected to provide a valuable contribution to experimental research in education. The findings of this study can serve as a reference for designing qualitative research.

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##### *Author contributions*

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##### *Conflicts of interest*

The authors declare no conflict of interest.

##### *Data availability*

All data are available within the manuscript.

##### *Ethics approval*

A state scientific research and publication The Ethics committee decision (decision number 2022/10/12 dated 28.12.2022) was taken from the ethics committee.

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