ORIGINAL RESEARCH ARTICLE

Are attitudes towards infertility associated with gender perception?

DOI: 10.29063/ajrh2024/v28i9.6

Hasret Parlan[1] and Rojjin Mamuk[2]*

Department of Nursing, Dr. Burhan Nalbantoğlu State Hospital, Nicosia, North Cyprus[1]; Nursing Department, Faculty of Health Sciences, Eastern Mediterranean University, Famagusta, North Cyprus[2]

***For Correspondence:** Email: rojinmamuk@gmail.com; Phone: +903926303939

Abstract

Infertility is not life-threatening but is nevertheless an important problem that threatens a couple's wellbeing due to its negative impact on their emotional health and quality of life. This descriptive, correlational study aimed to determine the relationship between university students' attitudes towards infertility and their gender perceptions. The study was conducted in a state university with a total of 602 students. Data were collected using a personal information form, the Attitude Toward Infertility Scale (ATIS), and the Gender Perception Scale (GPS). The scales have no cut-off value and higher scores indicating positive perception of gender and infertility. The study data were evaluated with Spearman's correlation analysis and simple linear regression analysis test was used to analyze the association between GPS and ATIS scores and also the statistical significance was accepted as $p<0.05$. As a result 63.1% of the students were female; 80.9% had knowledge about infertility and gender inequality. The students' mean GPS and ATIS scores were 104.60±15.54 (range: 52-125) and 49.11±7.62 (range: 19-60), respectively. GPS and ATIS scores were positively associated in linear regression analysis ($\beta=0.30$; $p<0.001$) and correlation analysis (rho:0.590; $p<0.001$). The results of this study showed that university students had positive gender perception and attitudes toward infertility. In addition, students' attitudes toward infertility were directly associated with the modifiable factor of gender perception. *(Afr J Reprod Health 2024; 28 [10]:62-71).*

Keywords: Attitude; gender perception; infertility; university students

Résumé

L'infertilité ne met pas la vie en danger mais constitue néanmoins un problème important qui menace le bien-être d'un couple en raison de son impact négatif sur leur santé émotionnelle et leur qualité de vie. Cette étude descriptive et corrélationnelle visait à déterminer la relation entre les attitudes des étudiants universitaires à l'égard de l'infertilité et leurs perceptions de genre. L'étude a été menée dans une université publique avec un total de 602 étudiants. Les données ont été collectées à l'aide d'un formulaire de renseignements personnels, de l'échelle d'attitude envers l'infertilité (ATIS) et de l'échelle de perception du genre (GPS). Les échelles n'ont pas de valeur seuil et des scores plus élevés indiquent une perception positive du genre et de l'infertilité. Les données de l'étude ont été évaluées avec l'analyse de corrélation de Spearman et un simple test d'analyse de régression linéaire a été utilisé pour analyser l'association entre les scores GPS et ATIS et la signification statistique a également été acceptée comme $p<0,05$. En conséquence, 63,1 % des étudiants étaient des femmes ; 80,9 % avaient des connaissances sur l'infertilité et l'inégalité entre les sexes. Les scores GPS et ATIS moyens des étudiants étaient respectivement de 104,60 ± 15,54 (plage : 52-125) et 49,11 ± 7,62 (plage : 19-60). Les scores GPS et ATIS étaient positivement associés dans l'analyse de régression linéaire ($\beta = 0,30$; $p < 0,001$) et l'analyse de corrélation (rho : 0,590 ; $p < 0,001$). Les résultats de cette étude ont montré que les étudiants universitaires avaient une perception et des attitudes positives en matière de genre à l'égard de l'infertilité. De plus, les attitudes des étudiants à l'égard de l'infertilité étaient directement associées au facteur modifiable de la perception du genre. *(Afr J Reprod Health 2024; 28 [9]: 62-71).*

Mots-clés: attitude; perception du genre; infertilité; étudiants universitaires

Introduction

Although reproduction is not a vital need for humans, it is necessary in order to continue the next generation. Therefore, having children is considered the main determinant of marriage and family structure in most societies[1]. From this perspective, infertility is not life-threatening but is nevertheless an important problem that threatens a couple's wellbeing due to its negative impact on their emotional health and quality of life[2,3].

Infertility, which is defined as the inability to conceive for at least 12 months despite regular, unprotected sexual intercourse, affects an estimated 48 million couples and 186 million individuals worldwide, as well as their families and society[4].

Infertility is a traumatic experience in every respect, because people generally only learn that they are infertile when they decide to have children. Afterwards, the examinations and treatments involved in the process of assisting reproduction impose a considerable psychological and economic burden on couples, regardless of whether the process is ultimately successful or not[3,5-7].

In addition to these expensive and complex medical procedures, couples (especially women) are subject to negative sociocultural attitudes toward infertility, because having children is a sign of increased status and value in most cultures[5,8,9]. In contrast, childlessness carries the opposite connotations, and these attitudes are even more pervasive in underdeveloped and developing countries[9,10]. Gender and gender roles, which are embedded in cultural and social codes like a silent contract and accepted by most members of society, are closely related to this situation.

Sex is a set of genetic, physiological, and biological characteristics that present a person as female or male[11]. Gender, on the other hand, is a concept that varies as a result of the interaction of these characteristics with social, cultural, political, and economic frameworks[11-13]. The concept of gender in sociology developed by the Ann Oakley in 1972. According to Oakley, while sex refers to biological distinction between males and females, gender refers to the unequal division between masculinity and femininity. However, in recent years, gender refers to socially determined personality traits, roles, and responsibilities of men and women.

Gender roles are defined as the behaviors that society expects from an individual based on their biological characteristics. In many cultures gender roles indicates that males are attributed active roles for instead intelligence, courageousness, strength, etc. while females are attributed passive roles in particular compassion, emotionality, dependence, and submissiveness. However the most prevalent of gender roles is that of "mother" for women and "father" for men. For this reason, deficiencies in this regard are judged by both the individual and society[3,11].

A literature review based on this theoretical information revealed studies showing that gender differences affect attitudes towards infertility and the treatment approach[14-16]. However, there are no studies investigating the relationship between gender perception and attitudes toward infertility.

By nature, infertility is not completely preventable or treatable. Furthermore, this problem is expected to continue to affect an increasing number of couples in the future[17]. However, when an individual learns that they are infertile, it may be possible to prevent or minimize potential adversities such as societal pressure and feelings of worthlessness and failure. This study was conducted to determine the relationship between university students' gender perceptions and attitudes towards infertility.

Research questions

1. What are students' gender perceptions and attitudes towards infertility?
2. Are there relationship between university students' gender perceptions and attitudes towards infertility?
3. What other factors affect students' gender perceptions and also attitudes towards infertility?.

Methods

Study design and population

This descriptive and correlational study was conducted in North Cyprus. The study population consisted of 1057 first- and fourth-year students in the Eastern Mediterranean University Faculty of Health Sciences and Faculty of Educational Sciences. Of these, 621 were in the Faculty of Educational Sciences and 436 were in the Faculty of Health Sciences. Sample size was calculated based on the known population size. With a 95% confidence interval and 5% sampling error, we calculated that at least 238 students from Education Faculty and 204 students from Health Sciences Faculty were necessary. No sample selection method was used, and the study was completed with a total of 602 students. The inclusion criteria were: studying in Turkish-language undergraduate programs of the Education Faculty and Health Sciences Faculty of the university, being a first- or fourth-year student, and volunteering to participate in the study. Our decision to conduct the study in this population was based on the idea that Education Faculty and Health Sciences Faculty students will

serve society in their social worker roles after graduation.

Data collection process and tools

This study was conducted online during full lockdown conditions imposed due to the COVID-19 pandemic. In the research, data were collected between December 1, 2019 and July 6, 2020. A link to a personal information form, the Gender Perception Scale (GPS), and the Attitude Toward Infertility Scale (ATIS) on the Google Forms platform was sent to the students by email. The settings of the form enabled it to be completed only once and answering all questions was mandatory, thus preventing duplicate forms and missing data.

Personal information form: This form was prepared by the researchers in line with the related literature[8-16]. The form consisted of 14 questions regarding the participants' descriptive characteristics such as age, gender, economic status, and family structure.

Gender Perception Scale (GPS): The GPS was developed in Turkish by Altınova and Duyan[18] in 2013 to assess the gender perceptions of university students. The unidimensional scale has a total of 25 items rated on a 5-point Likert scale: completely agree (5), agree (4), not sure (3), disagree (2), completely disagree (1). The items comprise 10 positive statements and 15 negative expressions (which are reverse scored). The scale has no cut-off value. Scores range from 25 to 125, with higher scores indicating positive perception of gender. Positive gender perception equates to a more egalitarian attitude that is against gender-based discrimination. The Cronbach's alpha value of the scale was 0.87 in the original study[18] and 0.90 in the present study.

Attitude Toward Infertility Scale (ATIS): The ATIS was developed in Turkish by Siyez et al[19] in 2018 to determine university students' attitudes toward infertility. The scale is unidimensional and consists of 12 items, 8 of which contain negative statements. Like the GPS, the items are rated on a 5-point Likert scale from completely agree (5) to completely disagree (1), and negatively worded items are reverse scored. Scores range from 12 to 60, with no cut-off value. A higher score indicates a more positive attitude toward infertility (i.e., the individual considers infertility to be acceptable both for themselves and their relatives). The Cronbach's alpha value of the scale was 0.85 in the original study[19] and 0.84 in the present study.

Statistical analyses

IBM SPSS Statistics version 25.0 software was used to analyze the data. The distribution of the participants' descriptive characteristics was determined by frequency analysis. The distribution of scale scores was tested using the Kolmogorov-Smirnov test and were found to be non-normal. Therefore, nonparametric tests were used in analyses. GPS and ATIS scores were compared according to sociodemographic characteristics using Mann-Whitney U test if the independent variable had two categories and Kruskal-Wallis H test was used if there were three or more categories. Spearman's correlation analysis and simple linear regression analysis test was used to analyze the association between GPS and ATIS scores. Also the statistical significance was accepted as $p<0.05$.

Results

This study was conducted with a total of 602 students (281 educational sciences students and 321 health sciences students). The students' mean GPS score was 104.60±15.54 (range: 52-125) and their mean ATIS score was 49.11±7.62 (range: 19-60).

Comparisons of the students' mean GPS and ATIS scores based on selected descriptive characteristics are shown in Table 1. We observed that the students' scale scores differed significantly according to gender, with female students having higher GPS and ATIS scores than male students ($p<0.05$). Comparison based on family structure showed that students who grew up in a nuclear family had higher scores on both scales compared to those who grew up in extended or single-parent families ($p<0.05$). The students' longest place of residence was not associated with a significant difference in GPS score, but those who lived primarily in urban areas had higher scores on the ATIS than those who lived in rural/suburban areas ($p<0.05$).

Table 1: Comparison of the students' GPS and ATIS scores according to selected characteristics

Descriptive Characteristics	Total	GPS Score		ATIS Score	
	N %	Mean ± SD	P	Mean ± SD	P
Gender					
Female	368(61.13)	109.57±12.47	<0.001*	50.85±6.74	<0.001*
Male	234(38.87)	96.79±16.67		46.38±8.12	
Age					
18-20 years	200(33.22)	105.55±14.39	0.087	49.19±6.95	0.943
21-23 years	279(46.35)	105.22±15.70		49.10±7.87	
≥24 years	123(20.43)	101.67±16.70		49.01±8.15	
Family type					
Nuclear family[1]	372(61.79)	107.27±13.82	<0.001**	50.26±6.90	<0.001**
Extended family[2]	143(23.75)	99.64±15.98	Difference:	47.30±7.93	Difference:
Single-parent family[3]	87(14.46)	100.78±18.47	1-2, 1-3	46.28±9.41	1-2, 1-3
Place of longest residence					
Rural/suburban area	200(33.22)	103.03±15.82	0.068	47.86±8.14	0.009*
Urban area	402(66.78)	105.39±15.36		49.73±7.28	
Income level					
Income less than expenses	80(13.29)	101.63±16.17	0.151	48.31±8.36	0.124
Income equal to expenses	403(66.94)	104.98±15.65		48.87±7.65	
Income greater than expenses	119(19.77)	105.33±14.60		50.46±6.89	
Siblings					
None[1]	54(8.97)	104.19±16.06	<0.001**	47.91±0.73	0.215
One sibling[2]	248(41.20)	106.19±15.29	Difference:	49.83±0.48	
Two siblings[3]	163(27.08)	105.50±14.95	1-5, 2-5,	49.21±0.94	
Three siblings[4]	84 (13.95	103.92±15.11	3-5, 4-5	47.68±0.85	
Four or more siblings[5]	53(8.80)	95.96±16.29		48.89±7.83	
Maternal education level					
Did not complete elementary school[1]	43(7.14)	95.37±16.92	0.001**	49.00±7.27	0.124
Elementary school[2]	143(23.75)	105.56±13.76	Difference:	50.27±7.46	
Middle school[3]	90(14.95)	102.32±17.20	1-2, 1-3,	47.71±8.43	
High school[4]	223(37.04)	105.65±15.31	1-4, 1-5	48.71±7.58	
University[5]	103(17.11)	106.86±14.96		49.62±7.19	
Paternal education level					
Did not complete elementary school[1]	24(3.99)	97.63±15.86	0.010**	49.33±7.57	0.229
Elementary school[2]	128(21.26)	102.38±16.29	Difference:	49.25±8.15	
Middle school[3]	104(17.28)	104.63±15.66	1-2, 1-3, 1-4,	48.50±7.83	
High school[4]	201(33.39)	104.60±15.63	1-5, 2-5	48.42±7.68	
University[5]	145(24.09)	107.72±14.03		50.33±6.82	
Faculty					
Health Sciences	321(53.32)	104.65±15.58	0.935	49.08±7.33	0.636
Educational Sciences	281(46.68)	104.55±15.52		49.14±7.96	
Year of Study					
First year	272(45.18)	103.77±16.34	0.421	48.65±7.68	0.151
Fourth year	330(54.82)	105.29±14.84		49.49±7.57	
Knows about gender concept					
Yes	487(80.90)	105.31±15.43	0.010*	49.37±7.68	0.035*
No	115(19.10)	101.60±15.70		47.99 ± 7.32	
Knows about infertility concept			<0.001*		0.081
Yes	487(80.90)	105.73±15.26		49.28±7.82	
No	115(19.10)	99.84±15.87		48.39±6.69	
Infertility in family/friends					
Yes	149(24.75)	104.45±15.72	0.950	47.26±8.62	0.005*

No	453(75.25)	104.66±15.50		49.72±7.17	
Wants children in future					
Yes, wants 1 child[1]	126(20.93)	105.16±13.71	<0.001**	49.86±6.71	<0.001**
Yes, wants 2 children[2]	305(50.66)	103.93±15.30	Difference:	48.39±7.41	Difference:
Yes, wants 3 or more children[3]	83(13.79)	100.96±17.18	2-4, 2-5,	47.16±8.32	2-4, 2-5,
Has no preference[4]	58(9.63)	109.74±15.66	3-4, 3-5	51.95±7.66	3-4, 3-5
Does not want children[5]	30(4.98)	109.23±17.48		53.20±8.45	
Would consider adoption					
Yes[1]	302(50.17)	108.43±12.68	<0.001**	51.26±6.53	<0.001**
No[2]	80(13.29)	97.64±18.10	Difference:	46.03±10.45	Difference:
Not sure[3]	220(36.54)	101.89±16.68	1-2, 1-3, 2-3	47.27±6.94	1-2, 1-3

GPS: Gender Perception Scale, ATIS: Attitude Toward Infertility Scale, *p<0.05 (Mann-Whitney U test), **p<0.05 (Kruskal-Wallis H test)

Table 2: Regression analysis of GPS and ATIS scores (N=602)

	Unstandardized		Standardized	t	p
	β	Standard Error	Beta		
(Constant)	18.04	1.69		10.706	<0.001*
Attitude Toward Infertility Scale	0.30	0.02	0.61	18.633	<0.001*

GPS: Gender Perception Scale, ATIS: Attitude Toward Infertility Scale, *p<0.05 (F=347.201; p<0.05) (R2=0.367, Adj R2=0.365)

Table 3. Correlation analysis between GPS and ATIS scores (N=602)

		Attitude Toward Infertility Scale
Gender Perception Scale	rho	0.590
	p	<0.001*

GPS: Gender Perception Scale, ATIS: Attitude Toward Infertility Scale, *p<0.05

In contrast, number of siblings was not associated with a significant difference in ATIS scores, while students with four or more siblings had significantly lower GPS scores than those with fewer or no siblings (p<0.05). Similarly, comparisons according to parental education levels showed no relationship with ATIS scores, whereas GPS scores were lower among students whose parents did not graduate from elementary school compared to the other students (p<0.05).

We also analyzed the students' scale scores according to their self-reported knowledge of gender and infertility (Table 1). There were significant differences in the mean scores of both scales between those who did and did not know about the concept of gender, with higher scores among those who reported knowing (p<0.05). In contrast, in the comparison between students did and did not know about infertility, only GPS scores varied significantly, with higher scores among those who knew about infertility (p<0.05). Personal acquaintance with infertile individuals/couples was only associated with lower ATIS score (p<0.05). Comparisons of scale scores according to the number of children the students wanted to have in the future and whether they would consider adoption. Students who reported not wanting children or expressed no preference about whether they have children in the future had significantly higher scores on both scales compared to students who wanted three or more children (p<0.05). Similarly, students who said they may consider adopting in the future had higher scores on both scales than those who would not consider adoption or were not sure (p<0.05). No differences in scores were detected according to the students' age, income level, faculty, or year of study (p>0.05).

The results of simple linear regression analysis of the association between the students' GPS scores and their ATIS scores are shown in Table 2. According to the model generated, GPS score explained 36.5% of the total variance in ATIS

score. Each 1-unit increase in GPS score was associated with a 0.3-unit increase in ATIS score (β=0.30; $p<0.05$).

In addition, correlation analysis also demonstrated a strong positive association between GPS and ATIS scores ($p<0.05$) (Table 3).

Discussion

University students are an important group that represents the future population and reflects the gender perspectives of the society they live in. In particular, students who will graduate from educational sciences and health sciences faculties are expected to contribute to public health and the egalitarian social structure in their future professional roles. Therefore, it is necessary to evaluate university students' attitudes toward vulnerable groups in society and the factors affecting these attitudes. In this study, we investigated the relationship between university students' attitudes toward infertility, which is a major cause of psychosocial problems, and their gender perceptions.

Mean GPS scores for university students in Turkey have been reported ranging from 92.45±15.63 to 107.60±13.60[20-22]. The mean GPS score in our study was higher than in most samples in Turkey. Considering that the highest score that can be obtained from the scale is 125, we considered the participants to have fairly positive gender perceptions. Two studies conducted with university students in Turkey also revealed positive attitudes toward infertility[23,24]. However, in a study comparing university students in United States and Turkey, it was determined that Turkish students found infertility less acceptable[25]. The mean ATIS score in our study indicated that the students had a positive attitude toward infertility. This finding is consistent with most studies conducted in Turkey.

It is known that gender has an effect on perceptions, behaviors, and opinions. In previous studies, it was reported that women had more positive gender perception compared to men[20,26]. The women in the present study also demonstrated more positive gender perception. As with gender perception, both the literature and the current study indicate that female students have more positive attitude toward infertility compared to male students[24,25]. However, other studies have shown that compared to male students, the possibility of future infertility creates more anxiety in female students, and female students would be more upset if they experience infertility[27,28]. The gender-based difference in attitudes toward both gender and infertility may result from the fact that men are more likely to adopt traditional views in Turkish society, whereas women are the main victims of problems arising from gender inequality.

As in all learning processes, an individual's perception of gender forms from an early age as a result of interactions with the people they live with. Family structure is an important factor in this, but conflicting results have been reported regarding which family type positively affects gender perception. Gönenç *et al*[29] found that students from large families had more positive gender perceptions than students from nuclear families, whereas Özpulat and Özvarış[21] showed that family type had no impact on gender perception. In contrast, Uçtu and Karahan[26] observed more positive gender perceptions among those who grew up in nuclear families, as in our study. In addition, we also found that attitudes toward infertility were more positive in students who grew up in a nuclear family than those who grew up in other family structures. This finding may be explained by fact that nuclear families are generally more modern and libertarian, while negative social beliefs are more easily transferred in large families where several generations live together.

In traditional societies, having a child is considered essential for a real, strong family, and therefore a woman's status is determined by her fertility potential[1]. Childless families and especially women face pressure and judgment from society[3]. For this reason, number of siblings, number of children, or the desired/planned number of children may give clues regarding gender perception. For example, a study conducted among students in Turkey showed that a lower number of siblings was associated with a more positive attitude toward honor[30]. In the present study, students with four or more siblings had more negative gender perceptions than those with fewer siblings. In contrast, students who did not want children in the future or said it did not matter had more positive gender perceptions and attitudes toward infertility compared to those who wanted to have more than three children. Two other studies conducted in Turkey also indicated that those who did not want to have children in the future or wanted a small number of children had more positive attitudes towards infertility[23,31].

In other recent studies conducted among students, most have stated that in the event of involuntary childlessness, they will first try modern treatment methods and if that fails, some may adopt while others would prefer to live a childless life[32-34]. In our review of the literature, we determined that with the exception of one study, female students were more open to adoption than male students[32-34]. In our study, both gender perception and attitudes toward infertility were more positive among students who said they would consider adoption. This suggests that gender perception both imposes parenthood, yet causes hesitancy toward adoption in the case of involuntary childlessness.

It is possible that an individual's perception of gender may be affected by their parents' education level as well as their own. This is supported by our findings and two previous studies showing that students with low maternal/paternal education level had more negative views of gender and equality[21,35]. On the other hand, some studies have indicated that maternal and paternal education level does not affect the perception of gender[29].

According to the literature data, students know the concept of gender and recognize that gender inequality is a problem in Turkish society[36]. In this study, students who reported knowing about the concepts of gender and infertility had more positive gender perceptions. This shows that receiving education, doing research, or having knowledge about gender perception promotes a positive perspective of gender perception and infertility.

The presence of infertile individuals in an individual's social circle enables closer observation of the related psychosocial problems[3]. This experience may positively or negatively influence attitudes toward infertility. Çakır *et al*[37] found that students with infertile individuals in their families or social circles had more positive attitudes toward infertility than those without. In contrast, Taşçı and Özkan[31] found that personal acquaintance with someone dealing with infertility was not associated with attitudes toward infertility. In the present study, however, students who reported having an infertile individual in their family or social environment had more negative attitudes towards infertility. Infertility treatment is a long, costly process with repeated losses and a low chance of success. Witnessing this situation may have negatively affected students' attitudes.

An individual's environmental and social setting is among the important factors that can influence health-related beliefs, perceptions, attitudes, and behaviors[38,39]. Dönmez and Emül[24] and Koropeckyj-Cox & Çopur[25] and showed that Turkish university students who grew up in cities had more positive attitudes toward infertility. We also observed in this study that students with the longest residence in urban areas had more positive attitudes towards infertility. This has been attributed to sociocultural differences between rural and urban life.

Previous studies have sought a relationship between gender roles and fertility. For example, a study conducted in Iran showed that women's embracing gender roles was significantly associated with gender equality and fertility[40]. The authors reported that number of children was positively associated with adoption of gender roles and negatively associated with agreement with gender equality. In another study, it was shown that there was no relationship between Finnish women's attitudes toward gender roles and their fertility[41]. However, there are no studies in the literature investigating the relationship between gender perception and attitude toward infertility, as in this study. Our novel study demonstrated that a positive perception of gender was associated with positive attitude toward infertility. The strong positive correlation between the scale scores also supported the results of regression analysis. These findings indicate that gender perception is an important factor directly associated with attitudes toward infertility.

Ethical consideration

Before starting the study, ethical approval was obtained from the Eastern Mediterranean University Ethics Committee (ETK00-2019-0216, dated October 21, 2021) and a research permit was obtained from the university rectorate. Participants were asked to submit their consent via an online consent form prepared in accordance with the Declaration of Helsinki.

Conclusion

The educational sciences and health sciences students in this study had both positive gender perception and positive attitudes toward infertility. The students' attitudes towards infertility were

directly associated with gender perception, which is a modifiable factor. In addition, both gender perception and attitudes toward infertility were more positive among women, those who grew up in a nuclear family, those who reported knowing about gender, those who wanted few or no children in the future, and those who would consider adoption. On the other hand, gender perception was more negative among students with four or more siblings and those with low parental education levels, and more positive among those who reported knowing about infertility. Growing up in rural areas and knowing infertile people were associated with negative attitudes toward infertility.

Based on the results of the study, we recommend integrating policies to improve gender perception into the undergraduate curricula of departments educating students who will contribute to public health and social equality in the future, such as the health and educational sciences. In addition, policies to improve gender perception should be supported in all areas of social life as a strategy to reduce the psychosocial problems that infertile individuals may experience.

Strengths and limitation

In the literature, there are studies reflecting the university students' gender perceptions and attitudes towards infertility. Contrary to other studies, this is the first study to examining the relationship between university students' gender perceptions and attitudes towards infertility. On the other hand the results of this study cannot be generalized to all university students since it was a single-center study.

Acknowledgments

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. Also the study was generated from the first author postgraduate thesis completed in Eastern Mediterranean University. The study was presented at the II International Dr. Safiye Ali Congress on Multidisciplinary Studies in Health Sciences, September 30- October 2, 2022, Online.

Conflict of interest

The authors declare that there is no conflict of interest.

Contribution of authors

HP and RM contributed to the conception and design of this study. HP contributed to the acquisition and analysis of the data for the work. HP and RM contributed to the interpretation of the data. HP and RM wrote the first draft. All authors critically reviewed the manuscript and approved the version for submission.

References

1. Kır I. The functions of family as a social institution. Electronic Journal of Social Sciences. 2011; 10(36): 381-404.
2. Seymenler S and Siyez MD. Infertility counseling. Current Approaches in Psychiatry. 2018; 10(2): 186-197. https://doi.org/10.18863/pgy.358095.
3. Yücesoy H, Yıldırım F and Şahin E. A current look at the cultural, economic, psychosocial, and sexual aspects of infertility: Basic nursing approaches. Androl Bul. 2021; 23:256−263. https://doi.org/10.24898/tandro.2021.97360.
4. World Health Organization. Infertility. Geneva; 2020. Available from: https://www.who.int/news-room/fact-sheets/detail/infertility.
5. Dyer SJ and Patel M. The economic impact of infertility on women in developing countries—A systematic review. Facts Views Vis. ObGyn, 2012; 4(2): 102–109.
6. Greil AL, McQuillan J, Lowry M and Shreffler KM. Infertility treatment and fertility-specific distress: A longitudinal analysis of a population-based sample of US women. Soc. Sci. Med. 2011; 73(1): 87–94. https://doi.org/10.1016/j.socscimed.2011.04.023.
7. Yılmaz B and Şahin NH. Methods of individual coping with infertility stress: A systematic review. CBU-SBED. 2020; 7(1): 84-95. https://doi.org/10.34087/cbusbed.583933.
8. Gibson DM and Myers JE. The effects of social coping resources and growth-fostering relationships on infertility stress in women. J. Ment. Health Couns. 2002; 24(1): 68–80.
9. Mumtaz Z, Shahid U and Levay A. Understanding the impact of gendered roles on the experiences of infertility amongst men and women in Punjab. Reprod Health. 2013; 10(3): 2-10. https://doi.org/10.1186/1742-4755-10-3.
10. Batool SS and de Visser RO. Experiences of infertility in British and Pakistani women: A cross-cultural qualitative analysis. Health Care Women Int. 2016; 37:180–96. https://doi.org/10.1080/07399332.2014.980890.
11. West C and Zimmerman DH. Doing gender. Gender Soc. 1987: 1: 125–151. https://doi.org/10.1177/0891243287001002002.
12. Durgun C and Gök GO. Comparatıve analysis of BRCS & G7 in the context of social gender inequality. Beykent University Journal of Social Sciences. 2017; 10(2): 20-32. https://doi.org/10.18221/bujss.288737.

13. Özaydınlık K. Women in Turkey on the basis of gender and education. Journal of Social Policy Studies. 2014; 14(33): 93-112.
14. Yüksekol ÖD, Duman M and Ozan YD. The relationship between gender perception levels and infertility distress of infertile women in a university hospital, Turkey. Journal of Health Research. 2022; 36(1): 150-157. https://doi.org/10.1108/JHR-04-2020-0088.
15. Fisher JR and Hammarberg K. Psychological and social aspects of infertility in men: An overview of the evidence and implications for psychologically informed clinical care and future research. Asian J Androl. 2012; 14(1); 121-9. https://doi.org/10.1038/aja.2011.72
16. Nagorska M, Bartosiewicz A, Obrzut B and Kolarz DD. Gender differences in the experience of infertility concerning Polish couples: Preliminary research. Int J Environ Res Public Health. 2019; 16(13): 2337.
17. Sun H, Gong TT, Jiang YT, Zhang S, Zhao YH and Wu QJ. Global, regional, and national prevalence and disability-adjusted life-years for infertility in 195 countries and territories, 1990–2017: Results from a global burden of disease study, 2017. Aging (Albany NY). 2019;11(23): 10952–10991. https://doi.org/10.18632/aging.102497. 219
18. Altınova HH and Duyan V. The validity and reliability of Perception of Gender Scale. Society and Social Work. 2013;24(2): 9-22.
19. Siyez DM, Esen E, Baran B, Seymenler S, Kağnici DY and Siyez E. Development of the Attitudes toward Infertility Scale (ATIS): Validity and reliability study. Cukurova Med J. 2018; 43(1): 173-180. https://doi.org/10.17826/cumj.403064.
20. Alabaş R, Akyüz H and Kamer ST. Determination of gender perceptions of undergraduates. Mustafa Kemal University Journal of Social Sciences Institute. 2019; 16(44): 429-448.
21. Özpulat F and Özvarış Ş. The determination of the self-efficacy levels and gender perception among the students of the Akşehir School of Health. STED. 2019; 28(2): 98 – 107.
22. Taşkın P and Nayir F. Does university effect gender perceptions of teacher candidates in Turkey? Reasons and Implications. Multidisciplinary Journal of Gender Studies. 2021; 10(3): 258-278. https://doi.org/10.17583/generos.5573.
23. Siyez DM, Seymenler S, Kağnici DY, Esen E, Siyez E and Baran B. Investigating university students' attitudes towards infertility in terms of socio-demographic variables. Health Psychology Report. 2018; 6(4): 351-360. https://doi.org/10.5114/hpr.2018.77181.
24. Dönmez ÇÇ and Emül GT. The knowledge and attitudes of nursing students infertility and determination of factors affecting these variables. Ordu University J Nurs Stud. 2021; 4(3): 375-381. https://doi.org/10.38108/ouhcd.929199.
25. Koropeckyj-Cox T and Çopur Z. Attitudes about childlessness and infertility treatments: A Comparison of Turkish and American university students. Journal of Comparative Family Studies. 2015; 46(3): 373-402.
26. Uçtu KA and Karahan N. Analysis of the relation between gender roles, social gender perception of the health college students and their violence tendency. Journal of the Human and Social Science Researches. 2016; 5(8): 2882-2905. https://doi.org/10.15869/itobiad.267086.
27. Quach S and Librach C. Infertility knowledge and attitudes in urban high school students. Fertility & Sterility. 2008; 90(6): 2099-2106. https://doi.org/10.1016/j.fertnstert.2007.10.024.
28. Sørensen NO, Marcussen S, Backhausen MG, Juhl M, Schmidt L, Tyden T and Hegaard HK. Fertility awareness and attitudes towards parenthood among Danish university college students. Reprod Health. 2016; 13(146): 2-10. https://doi.org/10.1186/s12978-016-0258-1.
29. Gönenç M, Topuz Ş, Sezer N, Serkan Y and Duman N. Effect of gender course on gender perception. Journal of Ankara Health Sciences. 2018; 7(1): 22-29.
30. Güneri S and Şen S. The attitudes of the university students towards perception of honor attributed to women. STED. 2018; 27(4): 258-266.
31. Taşçı KD and Özkan S. University school for health sciences students' opinions about infertility. Kor Hek. 2007; 6(3): 187-192.
32. Adlani ES, Benksim A, Kaddour YAB, Soummani A and Cherkaoui M. Infertility: Knowledge and attitudes of Moroccan young people—gender approach. Middle East Fertility Society Journal. 2021; 26(14): 2-5. https://doi.org/10.1186/s43043-021-00060-9.
33. Özerdoğan N and Yılmaz B. Turkish university seniors' knowledge of and opinions on fertility and expectations of having children. African Health Sciences. 2018; 18(1): 172-179. https://doi.org/10.4314/ahs.v18i1.22.
34. Shin H, Lee J, Kim SJ and Jo M. Attitudes towards parenthood and fertility awareness in female and male university students in South Korea. Child Health Nurs Res. 2020; 26(3): 329-337. https://doi.org/10.4094/chnr.2020.26.3.329.
35. Çetinkaya KS. The examination of the relationship between tendency of violence and gender roles attitudes among the university students. Nesne. 2013;1(2): 21-43.
36. Daşlı Y. A Field study on determining the attitudes of students on gender roles. YYU Journal of Education Faculty. 2019; 16(1): 364-385.
37. Çakır D, Dağlar G and Bilgiç D. Determination of the department of nursing and midwifery students attitude for infertility. BAUN Health Sci J. 2020; 9(2): 109-114.
38. Şimal N and Gürsoy E. Thoughts of university students on having children in the future and affecting factors. E-Journal of Dokuz Eylul University Nursing Faculty. 2020; 13(3): 148-159. https://doi.org/10.46483/deuhfed.675721.
39. Koçyiğit OT. Infertility and its socio-cultural impacts. İnsanbilim Dergisi. 2012; 1(1): 27-37.
40. Golmakani N, Fazeli E, Taghipour A and Shaker MT. Relationship between gender role attitude and

fertility rate in women referring to health centers in Mashhad in 2013. Iranian Journal of Nursing and Midwifery Research. 2015; 20(2): 269-274.

41. Miettinen A, Basten S and Rotkrich A. Gender equality and fertility: Evidence from Finland. Demographic Research. 2011; 24(20): 469-496. https://doi.org/10.4054/DemRes.2011.24.20.