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Does the Level of Altruism of University Students Create A Difference in Their Views on Gamete Donation and Surrogacy?

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ABSTRACT:
Purpose: In Turkey, whose population is predominantly Muslim and where gamete donation and surrogacy are not legal, few studies have so far been conducted to examine university students' views on these practices. For this reason, it is crucial to determine whether the altruism levels of university students who are at reproductive age in Turkey create a difference in their views on gamete donation and the legalization of surrogacy.
Materials and Methods: This is a descriptive cross-sectional study. It was conducted in a Turkish university. A personal information form and the Altruism Inventory were administered to the participating students. A total of 3,979 students participated in the study.
Results: More than half of the participants stated that surrogacy and gamete donation must be legal in Turkey. The mean altruism scores of those who advocated the legality of gamete donation in Turkey were similar to the mean scores of those who did not ($p>0.05$). On the other hand, the mean altruism scores of those who advocated the legality of surrogacy in Turkey were higher than the mean scores of those who did not ($p<0.05$).
Conclusion: Although people have the freedom to make their own decisions about reproduction, the characteristics of the community of which they are a member, their beliefs, educational background, gender, and sub-dimensions of the Altruism Inventory such as charitableness and sociality can influence their views.
Keywords: *Gamete, donation, surrogacy, altruism*

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INTRODUCTION

Assisted reproductive techniques (ARTs) offer the use of donor gametes in men and women with no gonads or dysfunctional gonads, and surrogacy as a solution for women with a damaged uterus or without a uterus (Bello et al., 2014). Although couples make their own decisions about reproduction, the characteristics of their communities and the country's regulations related to reproduction technologies can be effective in their decisions. Socio-cultural status and religions are more effective in these regulations than ethical and moral values, and ARTs can be prohibited in countries, even without being open to discussion (Sabatello, 2015). For example, a fatwa issued in the United Arab Emirates, Qatar, Kuwait, and Saudi Arabia has prohibited all ARTs. This prohibition of third-party reproduction affects 90% of 1.6 billion Muslims across the world (Chamsi-Pasha and Albar, 2015). Although organ donation is legal in Turkey, oocyte/sperm donation and surrogacy are not legal (Official Gazette September 30, 2014). Besides, the number of studies examining opinions on this subject is unfortunately limited in our country (Şenol et al., 2019; Akyüz et al., 2014). Moreover, the impact of altruism, which is frequently mentioned in

the international literature in relation to the concepts of gamete donation (Hogan et al., 2021), sperm donation (O'Reilly et al., 2017), and surrogacy (Walker and Van Zyl, 2017), still remains unclear. From an altruistic perspective, those who have a positive view on the subject tend to help others by giving them the opportunity to have children, feel responsible (Flatscher-Thöni et al., 2020) and see it as an alternative way to start a family (Vesali et al., 2018) and emphasize the importance of sociability and social support (Lamba and Jadva, 2018; Imrie, Jadva, and Golombok, 2019). All these results indicate that the charitableness, responsibility, family, and sociability sub-dimensions of altruism may be effective in the inclusion of third parties in assisted reproductive techniques. Specifically, the strong emphasis on altruism by existing donation-related policy guidelines and laws in Europe (Pennings, 2015) guided us in determining the subject of our study. Several arguments have been put forward to demand altruistic motivation in organ donation. One of these arguments concerns the desire to avoid the commodification and commercialization of the human body, and another one concerns respect for the human body. Making donations for the right reason, that is, to help others, is a moral action. In this case, self-interest is considered unethical. All these arguments suggest that Altruism and its sub-dimensions, which are significant sources of motivation for organ donation, may also be effective in general views about gamete donation and surrogacy. Therefore, it is crucial to determine the opinions of university students of reproductive age in Turkey about gamete donation and surrogacy, to determine whether these views differ according to gender and the faculty they are studying, and to determine whether their views on illegal gamete donation and the legalization of surrogacy in our country vary according to their levels of altruism. For these purposes:

1. What is the rate of participants who have positive opinions about gamete donation and surrogacy?
2. Is there a difference between the views of the participants on the legal aspect of gamete donation and surrogacy according to their faculty and gender?
3. Is there a difference between the altruism scale sub-dimension and total scores of those who think that gamete donation and surrogacy should or should not be allowed legally? Answers to their questions were sought.

MATERIAL and METHODS

Purpose and Type of the Study

It was conducted as a descriptive and cross-sectional study. In Turkey, whose population is predominantly Muslim and where gamete donation and surrogacy are not legal, few studies have so far been conducted to examine university students' views on these practices. For this reason, it is crucial to determine whether the altruism levels of university students who are at reproductive age in Turkey create a difference in their views on gamete donation and the legalization of surrogacy.

Sampling and Participant

The target population of the study consists of 21509 students studying at the Faculty of Education, Faculty of Arts and Sciences, Faculty of Health Sciences, Faculty of Theology, Faculty of Law in a university in Istanbul in the 2016-2017 academic year. The target population of the study consists of sections where permission can be obtained for the study. 4851 participants were reached. 351 students did not want to participate. Therefore, 4500 participants were provided forms and asked to fill in self-report. Then, incomplete/blank forms were sorted out. Using the convenience sampling, which is one of the non-probability sampling methods, a total of 3979 student samples were formed.

Inclusion criteria were being 18 years or older, being at the school during the data collection period, agreeing to participate in the study, and being able to read and understand Turkish. Considering the possibility that the participants might have wrong or missing information, brief information was given orally and in writing about gamete donation, surrogacy, and the research. The information included simply understandable and objective literature information in a way through which everyone could understand the concepts of surrogacy and gamete donation. In other words, it was important for the participants to know the

concepts studied properly within the verbal and written information about the research in order to ensure the healthy results of the research. The information was on the front page of the questionnaire given to the students. After the descriptive information on the title page was read aloud by the researcher, the participants were asked to read the information at the beginning of the page again and then answer the questionnaire questions. Oral information was provided collectively. Written information was provided on the individual questionnaire. Afterward, the self-report forms were filled out by the participants.

Data Collection Tools

Personal Information Form: It contained questions aimed at determining participants' certain socio-demographic characteristics such as age, gender, as well as multiple-choice and open-ended questions about gamete donation and surrogacy developed by the researchers based on literature review (Kostić et al., 2021; Ameh et al., 2020; Arieas,2020; Flatscher-Thöni et al., 2020; Şenol et al., 2019; Ogunbode and Obajimi, 2020 In the questionnaire, closed-ended expressions such as "I support/do not support gamete donation (sperm/oocyte), and my acquaintance who wants to be a surrogate mother" was used. Then, these choices were divided into sub-choices by estimating the students' answers to these expressions in line with the literature. Considering that they can give different answers, the last choices are left open-ended: For instance, it has been prepared in the following ways: "I support because a) It is her own decision. b) It is good to help a couple who want to have a child. c) If other, please explain briefly…/ I do not support because a) I do not find it true by faith, b) She may regret it in the future, c) If other, please explain very briefly." Thus, different views and reasons were questioned. In the questionnaire, no analysis was performed since there was no one who marked the option "c) other." The answers added to the open-ended "I do not support c) other" options are the fear of being stigmatized and excluded by the society, the lack of love, lack of interest, and concerns about the psychology of the baby to be born, seeing it as an escape from the responsibility of being a parent and not being suitable for Turkish customs.

Altruism Inventory: It was developed by London and Bower (1968) to measure the altruism levels of individuals. It was adapted to Turkish by Akbaba (1994). The inventory has 20 items. The sub-dimensions and items of the scale are as follows: Family: Items 1, 2, 3, 4, and 5; Sociality: Items 6, 7, 8, 9, and 10; Charitableness: Items 11, 12, 13, 14, and 15, and Responsibility: Items 16, 17, 18, 19, and 20. The items are five-point Likert-type. The participant is asked to mark the number that best expresses himself/herself for each item in the scale. It is rated from 1 to 5. 1 means very little, 5 means a lot (London and Bower, 1968; Akbaba, 1994). The highest and lowest scores to be obtained from each sub-dimension are 25 and 5, respectively. The highest and lowest scores to be obtained from the whole inventory are 100 and 20, respectively. Higher scores indicate higher levels of altruism, and vice versa (Akbaba, 1994). Cronbach's alpha internal consistency coefficient of the Turkish version of the inventory was calculated as 0.85 (Akbaba, 2001). In this study, Cronbach's alpha internal consistency coefficient was calculated as 0.76.

Statistical Analysis

In this study, power analysis was performed to determine the sample size after the study using the "G Power 3.1.9.2" program. The comparison of the participants' support and not support of legal surrogacy and the altruism inventory scores was analyzed with the Mann–Whitney U-test. Accordingly, alpha error value was calculated as 0.05 and power was calculated as 0.97. Analysis of the study data was performed using SPSS version 20 for Windows (SPSS Inc., Chicago, IL, USA). In order to evaluate the participants' introductory (age, gender, faculty, class, marital status), gamete donation, surrogacy knowledge status and opinions (such as supporting donor and legal situation in Turkey), percentage, median, standard deviation, etc. descriptive statistics were used. The Chi-square test was performed to compare the opinions of the participants about the legal situation in Turkey regarding gamete donation and surrogacy by gender, and the Fisher exact test was performed to compare them according to the faculties they studied. The

Kolmogorov–Smirnov test was performed to assess whether the altruism inventory sub-dimensions and total score means were normally distributed. The Mann–Whitney U-test, which is a non-parametric test, was performed because the scores did not conform to the normal distribution. The results were considered statistically significant when p values were < 0.05.

Ethical Approval

All participants were informed about the study, and their written and verbal consents were obtained. Ethics committee approval was obtained for the study (Marmara University Ethics Committee protocol code: 70737436-050.06.04). In the survey study, the requirements of the Helsinki Agreement were followed.

RESULTS

Table 1 presents the socio-demographic characteristics of the participants, whether they are familiar with gamete donation, and if they are, their sources of information. The mean age of the participants was 20.67±1.84 (Min-max: 18-35). Of the participants, 65% were female, 33% studied at the Faculty of Health Sciences, 35.6% were second-year students, 98.6% were single, and 80.3% were familiar with the donation practice. Of those who were familiar with it, 86.7% obtained this information from the Internet, television, and newspapers. Also, 87.9% were familiar with the surrogacy practice, 90.4% of whom obtained this information from the Internet, television, and newspapers.

Participants' views about gamete donation and surrogacy are given in Table 2. Of the participants, 55.5% stated that they would support their acquaintances if they wanted to donate oocytes, and 62.3% of them stated that they would support them because it was 'their own decision.' On the other hand, of those who stated that they would not support, 60.1% said it 'conflicted with their religious beliefs.' 53.2% of all the participants stated that they would support their acquaintances if they wanted to donate sperm. %63.5 of these participants stated that they would support them because it was 'their own decision.' On the other hand, of those who stated that they would not support, 61.1% said it 'conflicted with their religious beliefs.' 48.5% of all the participants stated that they would support their acquaintances if they wanted to become a surrogate mother. 59.1% of these participants stated that they would support them because it was 'their own decision.' On the other hand, of those who stated that they would not support, 51.8% said it 'conflicted with their religious beliefs.' Regarding the participants' views about the legal status of oocyte donation, sperm donation, and surrogacy in Turkey, 58%, 55.7%, and 55.1% were in favor of the legality of oocyte donation, sperm donation, and surrogacy, respectively. A majority of the supporters of oocyte donation, sperm donation, and surrogacy (67.6%, 69.0%, and 70.7%, respectively) said that it must be legal because 'couples and donors do it of their own free will.' On the other hand, a majority of the opponents of oocyte donation, sperm donation, and surrogacy (61.8%, 60.7%, and 64.3%, respectively) said that it must not be legal as 'it conflicted with their religious beliefs'.

Table 3 Comparison of the participants with different views on the legal dimension of gamete donation and surrogacy according to their gender and the faculties where they study. Regarding the distribution of their views by gender, a majority of male students were supporters of oocyte donation, sperm donation, and surrogacy (66.4%, 64.3%, and 65.2%, respectively). Besides, a statistically highly significant difference (p<0.001) was found between male and female supporters (53.4%, and 51.1%, and 49.7, respectively). Regarding the distribution of their views by faculty, one noteworthy finding is that none of the students of the Faculty of Theology were in favor of the legality of oocyte donation, sperm donation, or surrogacy. Also, the highest support rate was among the students of the Faculty of Health Sciences (39.9%, %%40.1%, and 40.0%, respectively), and the difference between both faculties was statistically highly significant (p<0.001).

Table 4 presents a comparison of participants' views about the legal status of gamete donation and surrogacy in Turkey with their scores from the Altruism Inventory and its sub-dimensions. When compared with the altruism scale of their views on legal permissions for oocyte donation in Turkey; The

median scores of family, sociability and charitableness sub-dimensions of the altruism scale of those who supported legal permission for oocyte donation were higher than those who did not support, and the difference between them was statistically significant ($p<0.05$). Those who support legal permission for sperm donation have higher sociability and charitableness scores, which are sub-dimensions of altruism, than those who do not, and the difference between them is statistically significant ($p<0.05$). The sub-dimensions of altruism, charitableness, responsibility, sociality and scale total scores of those who supported legal surrogacy were found to be higher than those who did not, and the difference between them was found to be statistically significant ($p<0.05$).

Table 1. Demographic characteristics of the participants (n= 3979)

Characteristics	**x ± SD**	**Min-max**
Age (year)	20.67 ± 1.84	18-35
	n	**%**
Gender		
Female	2585	65.0
Male	1394	35.0
Faculties		
Law	630	15.8
Education	687	17.3
Health Sciences	1314	33.0
Theology	625	15.7
Arts and Sciences	723	18.2
Year in School		
Freshman	406	10.2
Sophomore	1416	35.6
Junior	1377	34.6
Senior	780	19.6
Marital Status		
Married	56	1.4
Single	3929	98.6
Whether they are familiar with the donation practice		
Yes	3195	80.3
No	784	19.7
Source of information about donation		
Internet, TV, Newspapers	2773	86.7
Family/friends	227	7.1
Healthcare professionals	195	6.2
Whether they are familiar with the surrogacy practice		
Yes	3496	87.9
No	483	12.1
Source of information about surrogacy		
Internet, TV, Newspapers	3161	90.4
Family/friends	167	4.8
Healthcare professionals	168	4.8

Table 2. Participants' views about gamete donation and surrogacy (n= 3979)

Characteristics	n	%
Whether they would support their acquaintances if they wanted to donate oocyte		
Yes [a]	2207	55.5
No [b]	1772	44.5
The reason why they would support their acquaintances if they wanted to donate oocytes [a]		
Their own decision	1374	62.3
Helping another couple to have a child	833	37.7
The reason why they would not support their acquaintances if they wanted to donate oocytes [b]		
Conflicts with my religious beliefs	1066	60.1
The risk of future regret	418	23.5
Other (the fear of being stigmatized and excluded by the society, the lack of love, lack of interest, and concerns about the psychology of the baby to be born, seeing it as an escape from the responsibility of being a parent and not being suitable for Turkish customs)	288	16.4
Whether they would support their acquaintances if they wanted to donate sperm		
Yes [c]	2118	53.2
No [d]	1861	46.8
The reason why they would support their acquaint [c]		
Their own decision	1347	63.5
Helping another couple to have a child	771	36.5
The reason why they would not support their acquaintances if they wanted to donate sperm [d]		
Conflicts with my religious beliefs	1137	61.1
The risk of future regret	314	16.8
Other (the fear of being stigmatized and excluded by the society, the lack of love, lack of interest, and concerns about the psychology of the baby to be born, seeing it as an escape from the responsibility of being a parent and not being suitable for Turkish customs**)**	410	22.1
Whether they would support their acquaintances if they wanted to become a surrogate mother		
Yes [e]	1929	48.5
No [f]	2050	51.5
The reason why they would support their acquaintances if they wanted to become a surrogate mother [e]		
Their own decision	1140	59.1
Helping another couple to have a child	789	40.9
The reason why they would not support their acquaintances if they wanted to become a surrogate mother [f]		
Conflicts with my religious beliefs	1062	51.8
The risk of future regret	382	18.6
Other (the fear of being stigmatized and excluded by the society, the lack of love, lack of interest, and concerns about the psychology of the baby to be born, seeing it as an escape from the responsibility of being a parent and not being suitable for Turkish customs)	606	29.6
Oocyte donation in Turkey		
It must be legally permitted [g]	2306	58.0
It must not be legally permitted [h]	1673	42.0
Oocyte donation in Turkey must be legally permitted because [g]		
Couples and donors do it of their own free will	1559	67.6
It is an opportunity for infertile couples to have a child	747	32.4
Oocyte donation in Turkey must not be legally permitted because [h]		
Consanguine marriages may occur	298	17.8
It conflicts with my religious beliefs	1034	61.8
It conflicts with the Turkish family structure	341	20.4
Sperm donation in Turkey		
It must be legally permitted [i]	2216	55.7
It must not be legally permitted [j]	1763	44.3
Sperm donation in Turkey must be legally permitted because [i]		
Couples and donors do it of their own free will	1529	69.0
It is an opportunity for infertile couples to have a child	687	31.0
Sperm donation in Turkey must not be legally permitted because [j]		
Consanguine marriages may occur	273	15.5
It conflicts with my religious beliefs	1070	60.7
It conflicts with the Turkish family structure	420	23.8
Surrogacy in Turkey		
It must be legally permitted [k]	2193	55.1
It must not be legally permitted [l]	1786	44.9
Surrogacy in Turkey must be legally permitted because [k]		
Couples and donors do it of their own free will	1551	70.7
It is an opportunity for infertile couples to have a child	642	29.3
Surrogacy in Turkey must not be legally permitted because [l]		
Consanguine marriages may occur	239	13.4
It conflicts with my religious beliefs	1148	64.3
It conflicts with the Turkish family structure	399	22.3

[a] The reason for supporting the acquaintance who wants to donate oocyte
[b] The reason for not supporting the acquaintance who wants to donate oocyte
[c] The reason for supporting the acquaintance who wants to donate sperm
[d] The reason for not supporting someone who wants to donate sperm
[e] The reason for supporting the acquaintance who wants to be a surrogate mother
[f] The reason for not supporting the acquaintance who wants to be a surrogate mother
[g] The reason for supporting legal authorization of oocyte donation in Turkey
[h] The reason for not supporting legal authorization of oocyte donation in Turkey
[i] The reason for supporting legal authorization of sperm donation in Turkey
[j] The reason for not supporting legal authorization of sperm donation in Turkey
[k] The reason for supporting legal authorization of surrogacy in Turkey
[l] The reason for not supporting legal authorization of surrogacy in Turkey

Table 3. Comparison of the participants with different views on the legal dimension of gamete donation and surrogacy according to their gender and the faculties where they study.

Characteristics	Female (n:2585)		Male (n: 1394)		Total (n:3979)		
	n	%	n	%	n	%	χ^2/*p* value
Oocyte donation in Turkey							
It must be legally permitted	1381	53.4	925	66.4	2306	58.0	62.157
It must not be legally permitted	1204	46.6	469	33.6	1673	42.0	0.000
Sperm donation in Turkey							
It must be legally permitted	1320	51.1	896	64.3	2216	55.7	64.060
It must not be legally permitted	1265	48.9	498	35.7	1763	44.3	0.000
Surrogacy in Turkey							
It must be legally permitted	1284	49.7	909	65.2	2193	55.1	88.370
It must not be legally permitted	1301	50.3	485	34.8	1786	44.9	0.000
Oocyte Donation	**It must be legally permitted (n:2306)**		**It must not be legally permitted (n:1673)**		**Total (n:3979)**		
	n	**%**	**n**	**%**	**n**	**%**	**p value**
Faculties							
Law	450	19.5	180	10.8	630	15.8	(0.000)*
Education	444	19.3	243	14.5	687	17.3	
Health Sciences	921	39.9	393	23.5	1314	33.0	
Theology	0	0.0	625	37.4	625	15.7	
Arts and Sciences	491	21.3	232	13.9	723	18.2	
Sperm Donation	**It must be legally permitted (n:2216)**		**It must not be legally permitted (n:1763)**		**Total (n:3979)**		
	n	**%**	**n**	**%**	**n**	**%**	**p value**
Faculties							
Law	426	19.2	204	11.6	630	15.8	(0.000)*
Education	428	19.3	259	14.7	687	17.3	
Health Sciences	888	40.1	426	24.2	1314	33.0	
Theology	0	0.0	625	35.5	625	15.7	
Arts and Sciences	474	21.4	249	14.1	723	18.2	
Surrogacy	**It must be legally permitted (n:2193)**		**It must not be legally permitted (n:1786)**		**Total (n:3979)**		
	n	**%**	**n**	**%**	**n**	**%**	**p value**
Faculties							
Law	441	20.1	189	10.6	630	15.8	(0.000)*
Education	420	19.2	267	14.9	687	17.3	
Health Sciences	879	40.0	435	24.5	1314	33.0	
Theology	0	0.0	625	35.0	625	15.7	
Arts and Sciences	453	20.7	270	15.1	723	18.2	

* Fisher extract test was used because the expected frequency in one eye was less than 5. Analyses were performed with the fisher extract test in the R-Project program, accompanied by the Bootstrap technique. Analysis results were obtained for Bootstrap at B=5000 steps.

Table 4. Comparison of participants' views about the legal status of gamete donation and surrogacy in Turkey with their scores from the Altruism Inventory and its sub-dimensions

Scale	Supporter of oocyte donation (n:2306)	Opponent of oocyte donation (n:1673)	z	P†
	Med (Q1-Q3)*	Med (Q1-Q3)*		
Family	19(17-21)	19(17-21)	-3.465	0.002
Sociality	16(13-18)	15(13-17)	-4.745	0.000
Charitableness	16(14-18)	16(13-18)	-3.001	0.003
Responsibility	17(16-19)	17(16-19)	-0.452	0.651
Total score	68(62-72)	68(61-72)	1.274	0.203

*25th and 75th percentile, †Mann–Whitney U-test.

Table 4. Comparison of participants' views about the legal status of gamete donation and surrogacy in Turkey with their scores from the Altruism Inventory and its sub-dimensions (**continued**)

Scale	Supporter of sperm donation (n:2216)	Opponent of sperm donation (n:1763)	z	P†
	Med (Q1-Q3)*	Med (Q1-Q3)*		
Family	19(17-21)	19(17-21)	-1.158	0.247
Sociality	15(13-18)	15(13-17)	-2.075	0.038
Charitableness	16(14-18)	16(14-18)	-2.933	0.003
Responsibility	17(16-19)	17(16-19)	-1.503	0.133
Total score	68(62-72)	68(62-72)	-0.293	0.770
Scale	**Supporter of surrogacy (n:2193)**	**Opponent of surrogacy (n:1786)**	**z**	**P†**
	Med (Q1-Q3)*	Med (Q1-Q3)*		
Family	19(17-21)	19(17-21)	-0.221	0.825
Sociality	16(13-18)	15(13-17)	-4.950	0.000
Charitableness	16(14-18)	16(14-18)	-2.376	0.004
Responsibility	17(16-19)	17(16-19)	-1.956	0.045
Total score	68(63-72)	68(61-72)	-2.947	0.003

*25th and 75th percentile, †Mann–Whitney U-test.

DISCUSSION

More than half of the participants declared that they would support their acquaintances who want to donate gametes and that gamete donation should be allowed in Turkey. Although more than half of the participants stated that they would not support their acquaintances who want to be surrogate mothers, surprisingly, they thought surrogacy should be legally allowed in Turkey. Those who stated that gamete donation and surrogacy should be allowed mostly considered it as the individual's own free decision, while those who thought that it should not be allowed stated that it conflicted with their religious beliefs (Table 2). In a study conducted by Şenol et al. (2019) in Turkey, 35.7% of the participants found the treatment of infertile couples with oocyte or sperm donation acceptable. The study of Mustafa et al. (2018) in Jordan, where the majority is Muslim, as in Turkey, indicated that most students had a negative attitude towards surrogacy. The main reason for the negative attitude towards surrogacy has been reported as religious thoughts. Pennigs and Proovost (2019) reported that in Belgium, where legislation allows gamete donation, (Fertility and Sterility, 2007) even though the majority of women had a positive attitude towards sperm donation, only one in three women would support their partner's sperm donation. The argument of this study that 'personal opinions and emotions may lead to different perspectives' may also be valid in our findings. Similar to our study, the study of Areias (2020) on the attitude and motivation towards sperm donation in Portugal, where gamete donation is legally allowed, (Fertility and Sterility, 2007) showed that participants who attach more importance to religious values were less motivated to help someone have a child and less willing to donate to all types of recipients. In line with our findings, in Ogunbode and Obajimi's (2020) study on students in Nigeria, more than half of the participants (54.9%) view gamete donation positively. The reason for opposing views is health risks and moral concerns. In this study, similar to our findings, the rate of positive views on surrogacy was low (18.9%). The reason for rejecting surrogacy is mostly the belief that God will give a baby, that is, the factor of belief (Bello et al., 2014). In Serbia, where anonymous egg donation is unrestricted, Kostic et al. (2021) reported in their study that students generally had a positive attitude towards egg donation. In the study conducted by Parandavar et al. (2014) in Iran, 28.2% of the participants negatively opposed egg donation and saw it as a religiously forbidden issue.

As seen in the results of the studies, 3rd party use in ART is generally influenced by religious views. However, our study results are inconsistent with the results of studies conducted in Turkey and in Jordan,

which is also mostly Muslim. The fact that our study was carried out in Istanbul, the largest metropolitan city in the country, as well as the short written and verbal information provided to the students about the subject beforehand, thereby minimizing the answers that would originate possibly from wrong information may account for our different results. In addition, rather than asking direct questions as in most studies such as "Do you support gamete donation, surrogacy, or would you want to be a donor or recipient?", directing more indirect questions to decipher the general attitude of the society towards this issue without directly including the participants themselves such as "Would you support someone you know, do you think legal permission should be granted in our country?" may have also been effective in the answers given. The fact that the supporters stated that they would support them because it was their own free decision also confirms our predictions. In those who do not support gamete donation or surrogacy, religious views come to the fore, as in similar studies.

According to the research findings, male students are more positive than female students (Table 3). Flatscher-Thöni et al. (2020) stated that non-donor women view their oocytes as “part of themselves,” “the foundation of future life,” or “part of their body” more strongly than any other female or male donor group. Mustafa et al. (2018) reported that female students (80.5%) were more opposed to surrogacy than male students (97.6%). Pennings and Provoost (2019) reported that only one out of three women could accept their partner's sperm donation in their study with female students. The study results support our findings. These results support our research findings.

Based on the department of education, none of the students from the Faculty of Theology reported that they support surrogacy and gamete donation. In all three cases, the students of the Faculty of Health Sciences (39.9%; 40.1%; 40.0%) had the highest support rate ($p<0.001$) (Table 3). In Sweden, where gamete donation and free surrogacy are prohibited, Armuand et al. (2020) found that most pediatric healthcare professionals (81.7%) were either positive or neutral about allowing single women to donate sperm. Bhatanglikar and Sharman (2019) reported that almost all of the students (94%) see surrogacy as a positive step for infertile couples in their study on medical students in India, where gamete donation is free (Fertility and Sterility, 2007). On the other hand, Ameh et al. (2020) reported that religious opinion (37.7%) is essential in a negative attitude towards the donation. Mustafa et al. (2018) stated that belief (70%) is the main factor in students against surrogacy in Jordan compared to social values and education. Similarly, Ogunbode and Obajimi (2020) also reported that the belief factor is essential in the negative opinions of the students about donation. Our results are in line with the results of similar studies. It has been suggested that health science students had a more positive view of the issue. In contrast, theology students emphasized the faith dimension and displayed a negative attitude because of their training.

As can be observed in all these study results and our findings, although people are free to make their own decisions about reproduction, the socio-cultural, religious, moral, and social values they live in, the education they receive, gender affect their perspectives on controversial issues such as donation and surrogacy. Therefore, it is not surprising that our study results have similar and different aspects to the current study results in the literature due to the socio-cultural, religious, moral, and social values in which the study was carried out. In Turkey, the median scores of family, sociability, and charitableness sub-dimensions of the altruism scale were found to be higher for those who supported legal permission for oocyte donation. The median scores of sociability and charitableness sub-dimensions of altruism were higher for those who supported legal permission for sperm donation. The median scores of the sum of the altruism scale and the sub-dimensions of sociability, charitableness and responsibility were higher in those who supported legal permission to surrogacy.

The argument put forward for doing good in the concept of donation is that well-being will increase with the number of donations. The more organs donated, the more lives saved. The more gametes donated, the happier the parents, and predictably the happier children will be (Pennings, 2015). The significance of the charitableness sub-dimension in

our results showed parallelism with this argument. But if the only dimension to consider was doing good, anything that would persuade people to donate would have to be accepted, including money. Therefore, it should be kept in mind that other values, besides happiness, should play a role in the donation. (Pennings, 2015). Among the dominant factors that clinicians can focus on in donation, Purewal emphasized the importance of providing social support to a potential donor from their own ethnic group for multi-ethnic fundraising initiatives. Having a positive or negative view of surrogacy and gamete donation may be related to the social dimension.

Another remarkable finding is that, unlike gamete donation in surrogacy, the responsibility sub-dimension and total scale scores were higher in those with positive opinions. It has been reported that surrogacy can be represented in terms of loving relationships and evaluated as a respectable care practice through the discourse of sacrifice (Eriksson, 2021). Surrogate mothers see themselves as knowledgeable and proactive equal participants in this sincere journey in becoming a family. For this reason, it is emphasized that individual responsibilities are important (Berend, 2020). Unlike gamete donation, surrogacy brings the responsibility of carrying a baby in her body for 40 weeks. Therefore, it may be for this reason that the total altruism scale and the median of the responsibility sub-dimension score were higher in those who had positive views on surrogacy.

In our study, the family sub-dimension of the altruism scale was higher in those who had a positive view on oocyte donation. "Altruism" is a keyword in oocyte donation and a symbol related to the family concept, such as femininity, motherhood, variable images, and expectations of sacrifice, and emotional engagement. Oocyte donors donate oocytes for couples to start a family. Accordingly, the fact that the family concept comes to the fore among those who express a positive opinion about oocyte donation also supports this finding.

Limitations of the Study

It is an important limitation that there are university students of a certain age, education and socio-cultural environment in the sample. The campuses of the faculties sampled from the university where the research was conducted are pretty far from each other in the Istanbul metropolitan area. Therefore, stratified sampling could not be performed. The results of the study can only be generalized to these participants. There is a need for qualitative research using in-depth interviews. The individual views of individuals from all walks of life on the subject can be evaluated, and different dimensions such as empathy, conservatism, and personality traits can be effective in these views are needed.

CONCLUSION

Explaining the current legal status of surrogacy and gamete donation in Turkey to potential future parents, informing them about the advantages and disadvantages of these two practices, and health policymakers' shaping the legal dimension of such controversial issues by taking into account the views of society members are important.

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Conflict of Interest

The authors declare no conflict of interest.

REFERENCES

Akbaba, S. (1994). Grupla psikolojik danışmanın sosyal psikolojik bir kavram olan özgecilik üzerindeki etkisi [Unpublished doctoral dissertation], Atatürk University, Erzurum.

Akbaba, S. (2001). Özgecilik ölçeğinin Türkçe'ye uyarlanması geçerlik ve güvenirlik çalışması. Atatürk Üniversitesi Erzincan Eğitim Fakültesi Dergisi, 3 (2), 85-95.

Akyüz, A., Sever, N., Karasahin, E. et al. (2014). A survey on oocyte donation: Turkish fertile and infertile women's opinions. International Journal of Fertility and Sterility, 8(3), 289. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4221516/

Ameh, N., Madugu, N. H., Odeku, T. et al. (2020). A survey of community opinion and perceptions toward gamete donation in north central Nigeria. Nigerian Journal of Medicine, 29(3), 471. DOİ: 10.4103/NJM.NJM_90_20

Areias, J. C. O. (2020). Motivations and attitudes of men towards male gamete donation: donate to whom and why?. https://repositorio-aberto.up.pt/bitstream/10216/129403/2/422626.pdf

Armuand, G., Skoog Svanberg, A., Lampic, C. et al. (2020).

Attitudes among paediatric healthcare professionals in Sweden towards sperm donation to single women: a survey study. Fertility research and practice, 6, 1-7. https://doi.org/10.1186/s40738-020-00078-z

Assisted Reproductive Treatment Applications and Assisted Reproductive Treatment Centers About regulations. Official Newspaper of Turkish Republic with the issue 29135 and dated 30 September 2014. https://www.resmigazete.gov.tr/eskiler/2014/09/20140930.htm

Bello, F. A., Akinajo, O. R., Olayemi, O. (2014). In-vitro fertilization, gamete donation and surrogacy: Perceptions of women attending an infertility clinic in Ibadan, Nigeria. African Journal of Reproductive Health, 18(2), 127-133. https://www.researchgate.net/publication/263936175_In-vitro_Fertilization_Gamete_Donation_and_Surrogacy_Perceptions_of_Women_Attending_an_Infertility_Clinic_in_Ibadan_Nigeria

Berend, Z. (2020). 'Surrogates All Make that Choice to Help': Surrogacy in the Neoliberal Reproductive Market. Italian Sociological Review, 10(3), 537A-559. https://www.proquest.com/docview/2469848368?pq-origsite=gscholarandfromopen view=true

Bhatanglikar, P., Sharma, M. D. (2019). Awareness And Knowledge of Medical Students Regarding Surrogacy. Journal of Punjab Academy of Forensic Medicine and Toxicology, 19(2). DOİ: 10.5958/0974-083X.2020.00038.2

Chamsi-Pasha, H., Albar, M.A. (2015). Assisted reproductive technology: Islamic Sunni perspective, Hum Fertil (Camb).2015;18:107-12. https://doi.org/10.3109/14647273.2014.997810

Eriksson, L. (2021). Outsourcing problems or regulating altruism? Parliamentary debates on domestic and cross-border surrogacy in Finland and Norway. European Journal of Women's Studies, 13505068211009936. https://doi.org/10.1177/13505068211009936

Fertility and Sterility, (2007) Chapter 8:Donation, volume 87, issue 4, supplement 1, s28-s32. https://doi.org/10.1016/j.fertnstert.2007.01.092

Flatscher-Thöni, M., Böttcher, B., Geser, W. et al. (2020). Worlds apart or two sides of the same coin? Attitudes, meanings, and motives of potential oocyte and sperm donors in Austria. Journal of Assisted Reproduction and Genetics, 37(2), 287-296. https://doi.org/10.1007/s10815-019-01683-8

Hogan, R. G., Hammarberg, K., Wang, A. Y. et al. (2021). 'Battery hens' or 'nuggets of gold': a qualitative study on the barriers and enablers for altruistic egg donation. Human Fertility, 1-15. https://doi.org/10.1080/14647273.2021.1873430

Imrie, S., Jadva, V., Golombok, S. (2019). Psychological well-being of identity-release egg donation parents with infants. Human Reproduction, 34(11), 2219-2227. https://doi.org/10.1093/humrep/dez201

Kostić, J. O., Mitrović, M., Panić, D. (2021). Egg Donatıon: Explorıng Attıtudes Of Students Towards Donatıon. TEME, 247-263. https://doi.org/10.22190/TEME191031047O

Lamba, N., Jadva, V. (2018). Indian surrogates: their psychological well-being and experiences. In Cross-Cultural Comparisons on Surrogacy and Egg Donation (pp. 181-201). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-78670-4_9

London, P., Bower, R. K. (1968). Altruism, extraversion, and mental illness. The Journal of Social Psychology, 76(1), 19-30. https://doi.org/10.1080/00224545.1968.9919819

Mustafa, A. G., Alzoubi, K. H., Khabour, O. F. et al. (2018). Perspectives and attitudes of Jordanian medical and paramedical students toward surrogate pregnancy. International Journal of Women's Health, 10, 617. doi: 10.2147/IJWH.S184434

O'Reilly, D., Bowen, J. M., Perampaladas, K. et al. (2017). Feasibility of an altruistic sperm donation program in Canada: results from a population-based model. Reproductive Health, 14(1), 1-8. https://doi.org/10.1186/s12978-016-0275-0

Ogunbode, O. O., Obajimi, G. O. (2020). Assisted Reproductive Techniques and Gamete Donation; Knowledge, Attitude and Willingness to Participate Among Students in a Nigerian Tertiary Institution. Medical Journal of Zambia, 47(1), 8-15. https://www.ajol.info/index.php/mjz/article/view/195736

Parandavar, N., Badiyepeyma, Z., Kalani, N. et al. (2014). Survey of men's and women's attitudes to oocyte donation in Jahrom. Journal of Jahrom University of Medical Sciences, 11.

Pennings, G. (2015). Central role of altruism in the recruitment of gamete donors. Monash Bioethics Review, 33(1), 78-88. DOI 10.1007/s40592-015-0019-x

Pennings, G., Provoost, V. (2019). The attitude of female students towards sperm donation by their partner. Journal of Assisted Reproduction and Genetics, 36(7), 1431-1439. https://doi.org/10.1007/s10815-019-01491-0

Sabatello, M. (2015). Regulating gamete donation in the U.S.: ethical, legal and social implications. Laws. 4:352–76. https://doi.org/10.3390/laws4030352

Şenol, D. K., Yilmaz, S. D., Bal, M. D. et al. (2019). Views of Turkish people on oocyte and sperm donation. Cukurova Medical Journal, 44(1), 118-126. https://doi.org/10.17826/cumj.438226

Vesali, S., Karimi, E., Mohammadi, M. et al. (2018). Attitude of law and medical students to oocyte donation. International Journal of Fertility and Sterility, 12(2), 114. doi: 10.22074/ijfs.2018.5178

Walker, R., Van Zyl, L. (2017) Altruism and Generosity. In: Towards a Professional Model of Surrogate Motherhood. Palgrave Macmillan, London. https://doi.org/10.1057/978-1-137-58658-2_3