

ARAŞTIRMA / RESEARCH

Views of Turkish people on oocyte and sperm donation

Türk insanının oosit ve sperm bağışı hakkındaki görüşleri

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Öz

Abstract

Purpose: The aim of the study is to determine the views of the Turkish people on oocyte/sperm donation.

Materials and Methods: Following informed consent, a questionnaire was given to women and their spouses who presented to obstetrics and gynecology outpatient clinics of a university hospital. The data collection form consists of 35 questions about the demographics of the participants and their thoughts about oocyte / sperm donation. A total of 428 women, including 323 women and 105 men, agreed to participate in the sampling study.

Results Sixty-four-point three percent of the women and 71.4% of males found use of donated oocytes/sperms in infertile couples unacceptable. Sixty-three-point one percent of the participants said that both couples receiving, and those donating oocytes/sperms should get counseling. Twenty-one point-five percent of the participants approved of infertile couples' receiving oocytes/sperms donated by their relatives (e.g. sister) and friends and 31,8% agreed about getting them from strangers. Eighty-eight-point seven percent of the primary school graduates, 73.4% of the university graduates and postgraduates, 76.7% of the employed participants, 86.2% of the participants with an income lower than their expenses and 85.1% of the participants with live children reported to unaccept donated sperms if their spouses had a problem preventing them from having a child.

Conclusion: More than half of the participants declared that it was not appropriate to have children through infertile-donated oocyte/sperm. **Keywords:** oocyt, sperm, donation, gametľ

Amaç: Bu çalışmanın amacı, Türk halkının–oosit / sperm bağışı hakkındaki görüşlerini belirlemektir.

Gereç ve Yöntem: Tanımlayıcı kesitsel tipteki bu çalışma bir üniversite hastanesinin kadın hastalıkları ve doğum polikliniğine, kadınlar ve eşlerine veri toplama formu uygulanarak yürütüldü. Veri toplama formu katılımcıların demografik özelliklerine ve oosit/sperm bağışı hakkındaki düşüncelerine ilişkin 35 sorudan oluşmaktadır. Örnekleme çalışmaya katılmayı kabul eden 323'ü kadın, 105'i erkek toplam 428 kişi dahil edildi.

Bulgular: Kadınların %64.3'ü, erkeklerin %71.4'ü infertile çiftlerde bağışlanmış oosit/sperm kullanımını uygun bulmadığını belirtti. Katılımcıların %63.0'ü, oositler/sperm bağışçılarının ve bağışı kabul edenlerin danışmanlık alması gerektiğini söyledi. Uygun bulan kişilerin %21.5'i akraba (örneğin kızkardeşi) ve arkadaş tarafından yapılan oosit/sperm bağışını uygun bulurken, %31.8'i İlkokul vabancılardan almavı uygun bulmaktadır. mezunlarının %88.7'si, üniversite ve üzeri düzeyde mezunların %73.4'ü, çalışanların %76.7'si, gelirleri giderlerinden daha düşük olanların%86.2'si ve yaşayan çocuğu olanların %77,1'i eşlerinde çocuk sahibi olmayı engelleyen bir problem varlığında bağışlanan oosit/sperm yoluyla çocuk sahibi olmayı kabul etmeyeceklerini belirttiler.

Sonuç: Katılımcıların yarıdan fazlası, infertilitede bağışlanmış oosit/sperm yoluyla çocuk sahibi olmasını uygun bulmadığını beyan etmiştir.

Anahtar kelimeler: oosit, sperm, donasyon, gametİ

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INTRODUCTION

With an increase in assisted reproduction techniques (ART) in the last ten years, debates over ethics, practices and politics regarding parenthood and human reproduction have increased¹. Viewpoints about gamete donation vary with socio-cultural features, and beliefs and opinions about oocytes/sperm donationare not expressed at all. Although couples make their own decisions about reproduction, characteristics of societies and relevant regulations about reproduction technology can be effective in these decisions. Socio-cultural status and religions are more effective in drafting these regulations than ethical and moral values, and assisted reproduction techniques can be banned regardless of education and openness to discuss the issue in a society².

Laws and regulations for gamete donation, offered as part of ART change from country to country. Depending on treatment options, confidentiality of the donor and characteristics of the recipient, various problems may arise. Even in Scandinavian countries, which have many cultural features in common, laws and practices about gamete donation are quite different3. In all Scandinavian countries except for Norway, laws permit oocyte and sperm donation. Embryo donation is only allowed in Finland. Oocyte donation has been legally accepted in Sweden since 20034. Oocyte donation can be a good treatment option incancer treatment, premature ovarian failure, peri- and postmenopausal women, carriers of severe X-linked diseases, inefficient oocytes and/or unqualified embryo and failures in previous interventions and/or more than one failures. However, lack of awareness and misconceptions about sperm donation have negative effects5. In addition, due to cultural beliefs and norms considering sperms as keys for transmission of ancestry and kinship, sperm donation is not considered as sexually and morally acceptable6.However, in Kuwait, a Muslim country, it is legal to freeze sperms. Oocyte donation is legal in Malesia, Turkish Republic of Northern Cyprus and Greece7.

Involvement of a third person in reproduction treatment and oocyte, sperm and embryo donation are totally rejected by Islam⁸.In Sunni Muslim countries, several fatwas and bioethical decisions have been issued⁹. For instance, a fatwa prohibiting ART was issued in Kuwait, Qatar, Saudi Arabia and the United Arab Emirates¹⁰. This prohibition of a help from a third person was adopted by Sunni Muslims, representing 90% of 1.6 billion Muslims worldwide. Sunni and Shia Muslims differ in their opinions about ART8. Most of the Muslims is Sunni in the world, but Shia in Iran (about 90%)¹¹. There are considerable differences in use of donor gametes in assisted reproduction between Sunni and Shia Muslim authorities9. At the end of 1990's, the leader of Iran Islamic Republic issued a fatwa permitting donation from a third person including oocyte donation^{9,10}. Therefore, Iran is the only country where use of donor gametes and embryos has been accepted by religious authorities and managed by laws¹².

Although organ donation is legalized, oocyte/sperm donation is not permitted in Turkey. When more embryos are obtained than needed in in vitro fertilization (IVF), the embryos are frozen for five years after informed consent is taken from couples. When duration of storage is more than one year, the couples have to confirm in a written way that their consent persists. When both couples want, one them of dies, they get divorced or the period of storage ends, embryos are disposed by a commission, which writes an official report about it. Couples who will be administered ART are only given cells which belong to themselves. It is definitely illegal to use a donor, obtain an embryo from a donor, use embryos derived from oocytes and sperms of ART candidates in other ART candidates and use embryos derived from noncandidates of ART in candidates. Detection of pregnancies arising after the above practices in health centers causes the centers to be penalized¹³. Few studies from Turkey have focused on opinions about oocyte/sperm donation. Therefore, the present study was performed to determine what people in Turkey think about it.

MATERIALS AND METHODS

This is a cross-sectional descritive study performed to determine opinions of individuals about oocyte/sperm donation. The study population comprised of all the women presenting to obstetrics and gynecology outpatient clinics of auniversity hospital and their spouses between May- October 2014. The study sample included 428 individuals accepting to participate in the study, of whom 323 were female and 105 were male. Before starting the study, a detailed report including the aim, the methods and the data collection tools was submitted to the ethical committee of a university. After ethical approval was obtained, a written permission was obtained from the administrations of the two university hospitals where the study was conducted. After detailed information was given to the participants, both oral and written consent was obtained from them. The questionnaire was administered to the participants by two researchers. Data collection from each participant took 20 minutes. The aim of the study and publication of the obtained data for scientific purposes without using participants' names were explained to the participants and their verbal consent was taken in accordance with the Declaration of Helsinki.

Data collection tools

Data were obtained through a questionnaire developed by the researchers in light of the relevant literature^{14,15}. The questionnaire was piloted on ten women to determine whether the items in the questionnaire were understandable. Since results of piloting showed no problems with the items, no revisions were made in the questionnaire. It was composed of 25 questions about demographic features (age, marital status and education etc.) and opinions about oocyte/sperm donation. After the women and their spouses in the study population were informed about the study, those accepting to participate were included in the study. The questions in the questionnaire were read and the participants were requested to answer them.

Statistical analysis

Statistical analysis of obtained data was made with Statistical Package Program for Social Sciences. Statistical significance was set at p<0.05. Descriptive statistics (frequency, percentage, mean and standard deviation) were used to describe the main variables in the sample. Chi-square test was utilized to compare opinions about oocyte/sperm donation between the participants in terms of their characteristics.

RESULTS

The mean age of the participants was 32.72 ± 8.3 years (range:18-59 years). Of all the participants, 75.5% were female, 24.5% were male and 67.3% had at

least one live child. Thirty-three-point two percent of the participants were primary school graduates, 43.0% were university graduates, 62.1% had a paid job and 69.0% had an income equal to their expenses (Table 1).

	n	(%)
Gender		
Female	323	75.5
Male	105	24.5
Education		
Primary school	142	33.2
High School	102	23.8
University	184	43.0
Employment Status		
Unemployed	162	37.9
Employed	266	62.1
Income		
Income lower than expenses	116	27.1
Income equal to expenses	274	69.0
Income higher than expenses	38	8.9
Children		
Having children	288	67.3

140

32.7

Not having children

Table 1. Descriptive characteristics of sample (n:428).

Sixty-four-point three percent of the women found use of donated oocytes/sperms in infertile couples unacceptable. Forty-one-point six percent of the women reported that it was acceptable from the Islamic point of view. Eighty-eight-point eight percent of the women commented that environmental factors play a role as important as genetics. Seventy-point one percent of the women said that they could love their babies from donated oocytes and sperms as much as their babies genetically belonging to them. Eighty-point eight percent of the participants believed that couples receiving donated oocytes/sperms should know the name, the address and the telephone number of the donors. Sixty-point five percent of the participants disagreed that donors can seek and ask for the babies from their own oocytes/sperms and that the babies belong to them. Sixty-three-point one percent of the participants said that both couples receiving, and those donating oocytes/sperms should get counseling. Nearly similar rates of the participants thought that use of donated oocytes/sperms should be allowed in the presence of a chronic disease in a family member, a disabled child and a genetically transmitted disease and increased age of couples. However, 54.7% of the participants thought it should not be permitted under any conditions (Table 2).

	n	(%)			
Donated oocytes and sperms can be used in treatment of infertile couples.					
Acceptable	153	35.7			
Unacceptable	275	64.3			
Conception can be achieved through donated oocytes/sperms in a Muslim woman.					
Acceptable	65	15.2			
Unacceptable	178	41.6			
Donot know	185	43.2			
The environment and environmental factors play a role as important as genetics in development of personality.					
Agree	380	88.8			
Disagree	48	11.2			
Parents can love their babies from donated oocytes/sperms as much	as their babies who genetica	lly belong to them.			
Agree	300	70.1			
Disagree	128	29.9			
Couples receiving donated oocytes/sperms should know the name, t	the address and the telephone	e number of the donors.			
Agree	82	19.2			
Disagree	346	80.8			
Donors can look for and demand babies from their oocytes/sperms.					
Agree because the babies belong to them.	65	15.2			
Disagree because the babies do not belong to them.	259	60.5			
I am not sure.	104	24.3			
Couples receiving and donating oocytes/sperms should get psychological	ogical counseling.				
Agree. It is necessary for both.	270	63.1			
Disagree. It is not necessary.	100	23.4			
It is only necessary for donors.	12	2.8			
It is only necessary for receivers.	46	10.7			
Using donated oocytes/sperms should be allowed in the following situations.					
Presence of a chronic disease in a family member	100	23.4			
Advanced ages of parents	114	26.6			
Presence of a disabled child in the family	55	12.9			
Presence of a genetic disease in the family	99	22.9			
It should not be allowed under any circumstances.	234	54.7			

Table 2. Opinions of the participants about sperm/oocyte donation (n:428)

Seventy-three-point one percent of the participants found the genetic connection between mothers and their children important and sixty-eight-point two percent of the participants found the genetic connection between fathers and their children important. Forty-one-point eight percent of the participants thought that physical appearance of their children should be similar to that of their parents and 46.8% of the participants thought behavior and personality of children should be similar to those of their parents. Twenty-one pointfive percent of the participants approved of infertile couples' receiving oocytes/sperms donated by their relatives (e.g. sister) and friends and 31.8% agreed about getting them from strangers. Seventy-sixpoint four percent of the participants found it appropriate to donate extra embryos following IVF treatment to infertile individuals.

Twenty-two-point seven percent of the participants commented that if they had a child through donated oocytes/sperms, they could explain it to the child and 9.8% said they could give the child the name and the address of the donor. However, 86.7% believed that if they had a baby through donated oocytes/sperms, they would not tell it to the child (Table 3).

Twenty-point one percent of the females and 17.1% of the males reported that they wanted to have a baby with donated sperms/oocytes if their spouses had a condition preventing them from having a child. Eighty-eight-point seven percent of the primary school graduates, 73.4% of the university graduates and postgraduates, 76.7% of the employed participants, 86.2% of the participants with an income lower than their expenses and 85.1% of the participants with live children reported to accept donated sperms if their spouses had a problem preventing them from having a child. A significantly higher rate of the participants without children, employed participants, university graduates and

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postgraduates accepted oocyte/sperm donation (p<0.05). As the education level increased so did the

rate of acceptance of having a child through donated oocytes/sperms (Table 4).

Table 3. Opinions of	participants about	acceptance of dona	ited oocytes/sperms	if they became in	ifertile (n: 428).
	. .			2	

	n	(%)				
Do you think there should be a genetic connection between mothers and their children?						
Yes	313	73.1				
No	52	12.1				
I am not sure.	63	14.7				
Do you think there should be a genetic connection between fathers and their children?						
Yes	292	68.2				
No	63	14.7				
I am not sure.	73	17.1				
Do you think children should look like their fathers?						
Yes	179	41.8				
No	154	36.0				
I am not sure.	95	22.2				
Do you think behavior and personal characteristics of children should be similar to those of their parents?						
Yes	208	46.8				
No	131	30.6				
I am not sure.	89	20.8				
Do you think infertile couples should receive oocytes/sperms from people they are in close contact (sisters and close friends etc.)?						
Yes	92	21.5				
No	336	78.5				
Do you think infertile couples should receive oocytes/sperms from people they do not know?						
Yes	136	31.8				
No	292	68.2				
Do you think extra embryos after in vitro fertilization treatment should be	donated to infertile individuals	?				
Yes	101	23.6				
No	327	76.4				
Do you think a child from a donated oocyte/sperm should be informed at	pout it?					
Yes	97	22.7				
No	331	77.3				
Do you think the name and the address of a donor should be given to a child from the donated oocytes/sperms?						
Yes	42	9.8				
No	386	90.2				
Do you think an oocyte/sperm donor should be informed about the birth of a child from the oocyte/sperm she/he donated?						
Yes	57	13.3				
No	371	86.7				

Table 4. Factors affecting fertilization through donated oocytes/sperms in case of a condition preventing pregnancy (n=428)

		Accepting to have a child through donated sperms			2		
		Yes		No		χ²	р
		n	%	n	%		
Gender	Female	65	20.1	258	79.9	0.450	0.300
	Male	18	17.1	87	82.9		
Education	Primary education	16	11.3	126	88.7	12.363	0.002
	High school	18	17.6	84	82.4		
	University and postgraduate	49	26.6	135	73.4		
	education						
Employment	Unemployed	21	13.0	141	87.0	6.893	0.005
	Employed	62	23.3	204	76.7		
Income	Income lower than expenses	16	13.8	100	86.2	3.841	0.147
	Income equal to expenses	57	20.8	217	79.2		
	Income higher than	10	26.3	28	73.7		
	expenses						
Live children	Yes	43	14.9	245	85.1	11.214	0.001
	No	40	28.6	100	71.4		

χ2=Pearson Chi-Square

DISCUSSION

Although couples can make their own decisions about reproduction, socio-cultural, religious, ethical and moral values affect the decision to use assisted reproduction techniques. In some societies, use of these techniques is strictly prohibited by laws without considering social values and education levels. Therefore, it is necessary to examine and document attitudes of the societies towards such debatable issues so that objections to relevant laws can arise and appropriate changes can be made. In the present study, opinions of Turkish people about oocyte/sperm donation were evaluated. More than half of the participants agreed that infertile can be treated donated individuals with oocytes/sperms. However, about half of the participants did not approve of this treatment in terms of religious rules. In similar studies in Turkey, 23.3% of the participants accepted that infertile women could receive oocytes from other women¹⁵. In a study on fertile women, 82.76% of the women had a positive attitude towards oocyte donation¹⁴. In a study in Iran, about one third of the participants reported that oocyte and embryo donations were acceptable in terms of their religions and 69.7% and 71.3% of the participants supported oocyte and donations for infertility treatment embrvo respectively¹⁶. Gamete, sperm and oocyte donations are prohibited in various Catholic European countries, South America and Sunni Muslim countries for religious reasons. According to Judaism, oocytes can only be donated by single women. Roman Catholic, East Orthodox and Protestant churches prohibit oocyte donation. From Sunni Islam point of view, oocyte donation is considered as a sin like adultery and it isprohibited. Oocyte donation is not mentioned in Hinduism and Buddhism at all¹⁷.Several fatwas were announced, and bioethical decisions were made in Sunni Muslim countries in 1980 to declare that sperm, oocyte and embryo donations are unacceptable9. Islamic principles can be considered effective in making the above decision in Turkey, where most of the population is Sunni Muslims.In the current study, the participants said that personality was not only determined by the environment but also genes. In a study the participants reported that the environment was more important than genetic characteristics14. In a study, more than half of the participants emphasized that the role of environmental characteristics was more significant than genes¹⁶.

In the present study, 29.9% of the participants said that they could not love their children through donated oocytes/sperms as much as those from their own oocytes/sperms. Likewise, in a study, 20% of fertile women 24.7% of infertile women reported that they would not feel as they were real parents if they had children through donated oocytes¹⁸. In addition, in a study 10.2% of the females and 19% of the males also commented that it was not possible for parents to love their children through donated oocytes as much as their children from their own oocytes14. However, in a study from Iran, most of the participants reported to love and care for their children from donated oocytes/sperms as much as their children from their own oocytes/sperms¹⁶.It can be suggested that attitudes to the issue might have been affected by religious and cultural factors.

Most of the participants in the present study thought that recipients of oocytes/sperms have the right to know the name, address and the telephone of oocyte/sperm donors. However, in a study, more than 80% of the participants believed that doctors and their patients should keep oocyte/embryo donation related information secret16. In many countries, no laws have been drafted about oocyte donation. Nevertheless, laws about oocyte/sperm donation are important to ensure rights of donors, to regulate the relations between oocyte donors and recipients and to protect rights of children to be born¹⁷. Children from donated oocytes/sperms should have the right to learn the names and the recent addresses of the donors when they are 18 years old19.

In the United Kingdom, gamete donors do not have to take legal responsibility of children from their donated gametes¹⁹. In the present study, over half of the participants agreed that donors did not have the right to look for and demand children from their donated gametes. Similarly, in a study, 49.0% of the females and 45.0% of the males said the donors did not have that right and that children from their donated oocytes/sperms did not belong to them14. However, in a study, about 60% of the participants donors had the right to find their children and claim for the right to have their children¹⁶.In the present study, 63.1% of the participants were aware that both recipients and donors of oocytes/sperms needed psychological counseling. In a study, 80% of the participants emphasized the need for counseling in both donors and recipients16.In most societies,

the cause of an inability to have children is directly associated with infertility of women and even couples can get divorced due to female infertility. Psychological as well as physiological problems experienced by infertile individuals should not be neglected and counseling should be part of health care services for assisted reproduction techniques²⁰.

In the present study, nearly half of participants reported that oocyte/sperm donation could be permitted if there was a familial history of chronic diseases, genetically transmitted diseases, a child with a mental/physical disability and old age of parents while slightly higher than the half of the participants said oocyte/sperm donation should not permitted under any circumstances. In other studies from Turkey, higher rates of the individuals accepted donation in abovementioned conditions, but lower rates of the participants reported donation should be allowed under no conditions¹⁴.

In the current study, two thirds of the participants underlined the genetic bond between parents and their children and noted that physical characteristics and personality traits of children should be similar to those of their parents. Physical characteristics (height, weight and eye and hair color), data and place of birth, ethnic origin, number and gender of children, marital status, medical history, name and recent address in donors of gametes are recorded²¹. Individuals having children from donated gametes know that the gametes they have received from individuals with certain characteristics including phenotype, cultural identity, medical history and personality traits will determine the identity of their children in the future²². In a study, about half of the participants preferred to have children similar to them¹⁶. In several extensive studies, couples wanting to receive oocytes/sperms were found to look for donors like themselves^{23,24, 25}.

In the current study, most of the participants found donation of remaining embryos following IVF treatment to infertile people acceptable. In addition, 21.5% of the participants agreed that infertile couples could get oocytes/sperms from people they know (sister and close friend etc.) and 31.8% of the participants agreed that infertile couples could receive oocytes/sperms from people they do not know. In a study, one sixth of the women reported to donate their oocytes to a woman they do not know²⁶ while in a study 66% of the women reported to donate their oocytes to their sisters²⁷. Embryo donation can be an alternative when there is a risk of genetically transmitted disease or uncertainty about genetic transmission of diseases in a family. Since pregnancy through frozen embryos was first announced in 1983, there have been many worries about social, moral, psychological and legal aspects of this reproduction technique. These can be attributed to the fact that donated embryos do not carry genetic features of their recipients at all²⁸. It seems that the results of the present study are consistent with those reported from other studies.

In the present study, only one fifth of the participants reported that if they had a child from donated oocytes/sperms, they would tell this to the child; however, most of the participants (86.7%) said that contact information of the donors should not be given to the children from donated oocytes/sperms. In astudy in Turkey, 60.7% of the women and 61.7% of the men pointed out that children from donated oocytes should not know this at all. It may be due to the fear that the relationship of children with their nonbiological parents can be disrupted and that children can leave them. Similarly, in another study70% of the participants commented that children from donated oocvtes/embryos should not be informed about it. In addition, more than half of the participants said that oocyte/embryo recipients should not know the names and the addresses of the donors at all. In countries where oocyte donation is made, there are regulations and guidelines about it as part of assisted reproduction techniques. They are adopted to protect health and rights of donors and to keep information about them confidential¹⁷.People avoid telling their children that they were born from donated oocytes/sperms for fear that their relationships can be disrupted²⁹.

Donation of oocytes to infertile individuals is beneficial and brings physical and psychological relaxation³⁰. In the present study, 20.1% of the female participants and 17.1% of the male participants reported that they could accept having children by using donated oocytes/sperms if their spouses had a condition preventing them from having children. In a study, 67.6% of the women did not accept donation, but 63,9% of the infertile women said they could accept it under certain circumstances (i.e. donation from a relative or a person they do not know at all¹⁸.In a study 23.3% and 3.4% of the infertile women approved of oocyte and sperm donations respectively. In the present study, significantly higher rates of the participants Cilt/Volume 44 Yıl/Year 2019

without children, the employed participants and the participants with university education degree accepted oocyte/sperm donation, but gender and income were not effective in opinions about donation¹⁵. In a study, 35.4% of the women and 32.8% of the men reported that oocyte/sperm donation was acceptable, and gender, education and employment status were not found to be effective³¹. In another study, gender was not found to affect attitudes towards donation³², while in a study Swedish women were found to have a significantly more positive attitude to oocyte donation than Swedish men²⁶. However, in a study, Turkish men had a more favorable attitude to oocyte donation than Turkish women14. Employment status has been shown to be significantly related to attitudes to sperm donation³¹. In a studygamete donation related perceptions and behavior were found to be affected by gender and personal characteristics³³.

Since the study was carried out only in a city located in Soulth Anatolia in Turkey, results cannot be generalized to all people. The results are restricted by the time of the study, the questionnaire developed for the purpose of this study and selfreports of the people included in the study.

In conclusion, higher rates of individuals with higher levels of education, those with an income and those without children accept oocyte/sperm donation to infertile couples. Sociocultural and religious values are effective in their opinions. Considering physical and psychological traumas which women without children are exposed to in the Turkish society, it is important to draft regulations for oocyte/sperm donationand to deal with religious and ethical issues. As well as adopting laws about oocyte/sperm donation, receiving support from religious leaders, sharing appropriate information in the media and offering appropriate counseling can help elucidate the issue.

Yazar Katkıları: Çalışma konsepti/Tasarımı: NKB, BU, SDY, MDB, SÇ; Veri toplama: SDY, MDB, DKŞ; Veri analizi ve yorumlama: NKB, BU, DKS; Yazı taslağı: NKB, DKS; İçeriğin eleştirel incelenmesi: NKB, BU, DKS; Son onay ve sorumluluk: DKS, SDY, MDB, NKB, SÇ, BU; Teknik ve malzeme desteği: NKB, SDY, DKS; Süpervizyon NKB, BU E; Fon sağlama (mevcut ise): yok. Bilgilendirilmiş Onam: Katılımcılardan yazılı onam alınmıştır.

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REFERENCES

- 1. Adams J, Light R. Scientific consensus, the law, and same sex parenting outcomes. Soc Sci Res. 2015;53:300–10.
- Sabatello M. Regulating gamete donation in the U.S.: ethical, legal and social implications. Laws. 2015;4:352–76.
- Lampic C, Svanberg AS, Sydsjö G. Attitudes towards gamete donation among IVF doctors in the Nordic countries—are they in line with national legislation? J Assist Reprod Genet. 2009;26:231-8.
- Lampic C, Sunnerud S, Skoog Svanberg A. Nurses promote openness regarding the genetic origins after gamete Donation. ActaPeadiatr. 2007;96:1500–4.
- Lampiao F. What do male students at the College of Medicine of the University of Malawi say about semen donation? TAF Prev Med Bull. 2013;12:75-8.
- Culley L, Hudson N, Rapport F. Assisted conception and South Asian communities in the UK: Public perceptions of the use of donor gametes in infertility treatment. Hum Fertil (Camb). 2013;16:48–53.
- Karabacak O, Günaydin G. Oocyte donation and the factors affecting success. TurkiyeKlinikleri J Surg Med Sci. 2007;3:72-6.
- Chamsi-Pasha H, Albar MA. Assisted reproductive technology: Islamic Sunni perspective, Hum Fertil (Camb).2015;18:107-12.
- Inhorn MC, Patrizio P, Serour G. Third party reproductive assistance around the Mediterranean: comparing Sunni Egypt, Catholic Italy and multisectarian Lebanon. Reprod Biomed Online. 2010;21:848-53.
- Serour, G.I. Islamic perspectives in human reproduction. Reprod Biomed Online. 2008;17:34-8.
- Aramesh K. Iran's experience with surrogate motherhood: an Islamic view and ethical concerns. J Med Ethics. 2009;35:320-2.
- Abbasi-Shavazi MJ, Inhorn MC, Razeghi-Nasrabad HB, Toloo G. The "Iranian ART Revolution": Infertility, Assisted Reproductive Technology, and Third-Party Donation in the Islamic Republic of Iran. Journal of Middle East Womens Studies. 2008;4:1-28.
- 13. 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. http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatK od.
- Isikoglu M. Senol Y, Berkkanoglu M, Ozgur K, Donmez L, Stones-Abbasi A. Public opinion regarding oocyte donation in Turkey: first data from

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a secular population among the Islamic World. Hum Reprod. 2006;21:318-23.

- Baykal B, Korkmaz C, Ceyhan ST, Goktolga U, Baser I. Opinions of infertile Turkish women on gamete donation and gestational surrogacy. Fertil Steril 2008;89:817-22.
- Halvaei I, Khalili MA, Ghasemi-Esmailabad S, Nabi A, Shamsi F. Zoroastrians support oocyte and embryo donation program for infertile couples. J Reprod Infertil. 2014;15:222-8.
- Shufaro Y and Schenker JG. The risks and outcome of pregnancy in an advanced maternal age in oocyte donation cycles.J Matern Fetal Neonatal Med. 2014;27:1703-9.
- Akyuz A, Sever N, Karasahin E, Guvenc G, Cek S, A. survey on oocyte donation: Turkish fertile and infertile women's opinions. Int J Fertil Steril. 2014;8:289-98.
- Human Fertilisation& Embryology Authority, Re-Register as an identifiable donor, http://www.hfea.gov.uk/1973.html (accessed Aug. 6, 2016).
- Denton J, Monach J, Pacey A. Infertility and assisted reproduction: counseling and psychosocial aspects. Hum Fertil (Camb) 2013;16:1.
- Cohen G, Coan T, Ottey M, Boyd C. Sperm donor anonymity and compensation: an experiment with American sperm donors. J Law Biosci. 2016;23:468-88.
- Wong KA. Donor conception and "passing", or; why Australian parents of donor-conceived children want donors who look like them. J Bioeth Inq. 2017;14:77-86.
- Daniels CR, Heidt-Forsythe E. Gendered eugenics and the problematic of free market reproductive technologies: Sperm and egg donation in the United States. Signs: Journal of Women in Culture and Society. 2012;37:719-47.
- 24. Inhorn MC, Birenbaum-Carmeli D. Assisted reproductive technologies and culture change. Annu

Rev Anthropol. 2008;37:177-96.

- 25. Payne JG. Reproduction in transition: Cross-border egg donation, biodesirability and new reproductive subjectivities on the European fertility market. Gender, Place & Culture. 2015;22:107–122.
- Svanberg AS, Lampie C, Bergh T, Lundkvist O. Public opinion regarding oocyte donation in Sweden. Hum Reprod. 2003;18:1107-14.
- Genuis SJ, Chang WC, Genuis SK. Public attitudes in Edmonton toward assisted reproductive technology. CMAJ. 1993;149:153-61.
- Afshar L, Bagheri A. Embryo donation in Iran: an ethical review. Dev World Bioeth. 2013;13:119-24.
- 29. Wise S, Kovacs G. Secrecy, family relationships and the welfare of children born with the assistance of donor sperm: Developments in research, law and practice. Families, policy and the law: Selected essays on contemporary issues for Australia, 2014 May. https://aifs.gov.au/publications/families-policy-andlaw/9-secrecyfamily-relationships-and welfarechildren-born.Accessed May 3, 2016.
- Purewal S, VandenAkker O. 'I feel like they were mine and I should be looking after them': an exploration of non-patient women's attitudes towards oocyte donation. J Psychosom Obstet Gynaecol. 2009;30:215-22.
- Ahmadi A, Bamdad S. Assisted reproductive technologies and the Iranian community attitude towards infertility. Hum Fertil (Camb). 2017;20:204-11.
- 32. Stobel-Richter Y, Goldschmidt S, Brahler E, Weidner K, Beutel M. Egg donation, surrogate mothering, and cloning: Attitudes of men and women in Germany based on a representative survey. Fertil Steril. 2009;92:124-30.
- Hudson N, Culley L, Frances R, Johnson M, Bharadwaj A. "Public" perceptions of gamete donation: A research review. Public Underst Sci. 2009;18: 61-77.