

## İNFERİLİTE SIKLIĞI VE İNFERTİL ÇİFTLERDE TEDAVİ HİZMETİ KULLANIMI MANİSA

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**Özet:** Türkiye'nin Batı bölgesinde yer alan orta ölçekli bir kent merkezinde yaşayan Türk kadınlarında infertilite sıklığını tanımlamak ve infertil çiftlerde tedavi hizmeti kullanımını belirlemektir. Araştırma kesitsel tiptedir. Araştırma verileri Manisa Nüfus ve Sağlık Araştırması (MNSA) kapsamında 01.02.2009-01.06.2009 tarihleri arasında kent merkezinde toplanmıştır. Araştırma grubundaki 807 hanede yaşayan 510 (15-49 yaş) evli kadın örneklemini oluşturmaktadır. Çalışmada araştırmacılar tarafından hazırlanan kadınların sosyo-demografik özelliklerini ve infertilite ile ilgili durumlarını sorgulayan iki form kullanılmıştır. Araştırmanın verileri, bir anket kullanılarak örneğe çıkan hanelerde yüz yüze görüşme tekniği ile toplanmıştır. Veriler SPSS for 15,0 Windows istatistik paket programında değerlendirilmiştir. Tanımlayıcı istatistikler yüzde dağılımları ve ki kare testi ile değerlendirilmiştir. Çalışmaya alınan kadınların %0.8'i 18 yaş ve altı, %34.4'ü 19-29, %35.8'i 30-39 ve %29.0'ı 40-49 yaş grubundadır. Kadınların yaş dağılımı 33.8±8.1 (14-49). Kadınların %3.5'inin gebe kalamadığı, %0.0'ının gebe kalabilen ancak canlı doğum yapamadığı belirlenmiştir. Araştırmaya alınan kadınlarda infertilite sıklığı süre iki yıl alınarak %4.5 olarak belirlenmiştir. Süre bir yıl olduğunda bu oran %5.0 olarak değişmektedir. Çalışmada primer infertilite %2.0 ve sekonder infertilite %2.5 olarak belirlenmiştir. Kadınların %30.4'ü tedavi için herhangi bir kuruma başvurmamıştır ve %13.0'ı geleneksel yöntem kullanmıştır.

**Anahtar Kelimeler:** İnfertilite, kadın, prevalans

## PREVALENCE OF INFERTILITY AND USE OF TREATMENT SERVICES FOR MARRIED INFERTILE SPOUSES MANISA

**Abstract:** The aim of the study is to define prevalence of infertility in Turkish women inhabiting a middle-scale urban center. The study is of cross section type. Data of the study was collected from centrum within the context of Manisa Population and Health Research (MNSA) between 01.02.2009 and 01.06.2009. Data was collected for 2979 individuals of households, married women of 15-49 years of age (n=510). Data of the study was collected using questionnaires for face to face interviews with household individuals and assessed with SPSS for 15.0 Windows for statistical software. Descriptive statistics were percentaged. Difference between rates of health service uses for infertile females and cases of infertility obtained for different groups were evaluated by chi square and Fisher's tests. Of the women included in the study, 0.8% are under 18 age, 34.4% 19-29 age, 35.8% 30-39 age and 29.0%,40-49 age. Age range of 33.8± 8.1% (14-49). It was found that 3.5 % of them failed to conceive and 1.0 % cannot give live birth even when they have conceived. Prevalence of infertility in the women included in the study is 4.5 % with primary and secondary infertilities being 2.0 % and 2.5 % respectively.30.4% of the women did not resort to any health institutions and 13.0% chose a traditional method of treatment for infertility. It follow from the results of the study that infertility has been a public health problem for 4.5% of married women in Turkey.

**Keywords:** Infertility, women, prevalence



## Introduction:

Infertility is an important public health problem that concerns millions of women and men all over the world, which could cause physiological and psychological problems and has been regarded as a serious problem of reproduction health since 1980's (DENSON, 2006:380-386; ÖZKAN & BAYSAL, 2006:44-46)

Infertility is defined as failure of women to conceive in spite of regular (at least two times a week) intercourse without using any contraceptive methods for at least one year. The World Health Organization (WHO) however defines infertility as a failure to conceive for up to two years. Primary infertility is described as inability to have conceived before and secondary infertility is defined as failure to conceive despite intercourse without contraception following a history of delivery resulting in a live baby (KUMAR, 2007: 456-457)

The International Classification of Disease, 10<sup>th</sup> revision (ICD-10) defines infertility broadly as the inability to achieve a pregnancy or as sterility, excluding the condition of relative infertility, which is a term used for women who habitually abort (section N96). The specific ICD 10 coding for infertility is included under section N97 (Female infertility) and N 46 (Male infertility) (World Health Organization. Research in Human Reproduction. Biennial Report 1988- 1989)

The UK National Institute for Clinical Excellence (NICE) describes infertility as the inability to conceive after 2 years of unprotected intercourse (NICE, 2010). According to this definition, it is estimated that 8–10% of couples in the UK or 8–12% worldwide experience some form of

infertility (ZARGAR, WANI, MASOODI, 1997: 27-33). These figures, however, disguise a widely varying prevalence both between and within countries. In a major survey of sub-Saharan countries, the national average for prevalence ranged from 12.5 to 16% (LARSEN, 2000:285-291). Inhorn has described areas of central and southern Africa as 'the infertility belt' with prevalences as high as 32% in Namibi (INHORN, 2003: 1837–1851). Other Southern African countries (Botswana, Zimbabwe, Lesotho) report a prevalence of 15–22%, significantly higher than the rates of 8–13% found in three Eastern African countries and Egypt (KUMAR, 2007: 456-457). Other studies suggest that the rate in Nigeria is also very high at 20–30% (OKONOFUA, 1996: 957-962). In addition to the higher prevalence of overall infertility in developing countries, there are significant differences in the primary and secondary infertility rates. Secondary infertility is much more common in resource poor countries, especially in Africa and Latin America and among middle and high income couples (World Health Organization. Research in Human Reproduction. Biennial Report 1988- 1989).

Prevalence of infertility varies based on cultural and social differences in communities. Particularly spouses do consider having babies who are from the social strata where women do not have paid or unpaid jobs due to traditional family structure. Moreover there are quite numerous men and women who marry just for having children in country side where child is considered an important status and power of labour in farming and breeding processes (DOMAR ET. AL., 2000: 832-837). Likewise, infertility is of a great importance in communities such as ours

in which it is regarded as privilege and prestige to have children. However, studies conducted on prevalence of infertility in Turkey have not attracted due attention yet.

Causes of infertility can be put in two broad groups. The first group includes anatomic, genetic, hormonal and immunological problems. These have been described as the ‘core’ causes of infertility. The core group is responsible for about 5% of the prevalence and this rate is similar throughout the world (who, 2002). The second group includes causes that are preventable and their rates therefore differ widely in the world. The preventable causes are largely infection-related and iatrogenic. The type and mode of infection varies from country to country depending on the social factors, health infrastructure, healthcare practices and environmental factors.6 Iatrogenic causes of infertility constitute approximately 5% of all causes in Western Europe compared to 15.5% in Africa (ABOULGHAIR, 2005; 1174-1176).

### Materials and Methods:

The aim of the study is to define prevalence of infertility in Turkish women inhabiting a middle-scale urban center, Manisa in the western section of Turkey and determine level of services benefited by infertile spouses.

The study is of cross section type. Data of the study was collected from centrum within the context of Manisa Population and Health Research (MNSA) between 01.02.2009 and 01.06.2009. As a sample choice, “size-rate” pile sample choice method was used, with mininum sample size of the study being 3073 people supposing that every household could have at least three people. One aimed to achieve

100 piles with 10 households in each.100 piles were randomly chosen as main pile from among household recorded in information system of family physician process, visited and interviewed with, followed by the fifth house on the left nearest to the main household gate chosen as the major pile.

Data was collected for 2979 individuals of households, married women of 15-49 years of age and 239 children of 5 and below years of age within the context of the study in which data of married women of 15-49 yr was used to assess utility of treatment service by infertile females as well as prevalence of infertility.(n=510).

The study also included two forms used to question socio-demographic aspects and infertility-related positions of the women by the authors (1-30). Data of the study was collected using questionnaires for face to face interviews with household individuals and assessed with SPSS for 15.0 Windows for statistical software. Descriptive statistics were percentaged. Difference between rates of health service uses for infertile females and cases of infertility obtained for different groups were evaluated by chi square and Fisher’s tests.

### Results:

**Table 1. Prevalence of infertility**

	N	%
<b>Primary infertility only *</b>	10	2.0
Never pregnant	8	1.6
Became pregnant	2	0.4
<b>Secondary infertility only **</b>	13	2.5
Not pregnant	10	2.0
Became pregnant	3	1.0



Voluntary infertility	43	8.4
Self-reported infecundity***	24	4.7
No fertility problems	420	82.4
Total	510	100.0

\* Primary infertility: Percentage of women who have been married for the past two years, who have ever had sexual intercourse, who have not used contraception during the past five years, and who have not had any births. \*\* Secondary infertility: Percentage of women with no births in the past two years but who have had a birth at some time, among women who have been married for the past five years and did not use contraception during that period. \*\*\* Self-reported infecundity: Percentage of women who report

having had a hysterectomy, or say they have gone through menopause, or report not having had a menstrual period in the past two years, or have never had a menstrual period.

510 married women were included in the study to define prevalence of fertility in Turkish women living in a middle-scale urban center, Manisa in western part of Turkey and determine level of treatment service given for infertile spouses. Women included in the study in age groups are as follows; 0.8% are 18 age and below, 34.4% 19-29 age, 35.8% 30-39 age and 29.0% 40-49 age with a range of 33.8± 8.1% (14-49 age). 17.1% of women have no formal education, 49.5% primary school

**Table 2. Sociodemographic characteristics and infertility**

Characteristics	infertility		Total(%)
	No (%)	Yes(%)	
Age*			
<18	100.0	0.0	100.0
19-29	94.8	5.2	100.0
30-39	96.1	3.9	100.0
40-49	95.2	4.8	100.0
Education *			
Women have no formal education	91.9	8.1	100.0
Primary school 1st step	96.4	3.6	100.0
Finished 2 st step of primary school	94.0	6.0	100.0
High school and university	96.6	3.4	100.0
Social security *			
SGK(Social Security Institution),	96.3	3.7	100.0
Green Card (for those without any social security)	93.3	6.7	100.0
No social security	98.9	11.1	100.0
Settlement **			
Urban	96.9	3.1	100.0
Countryside	92.7	7.3	100.0
Total (%)	95.5	4.5	100.0

\*P> 0.05; \*\*P<0.05

**Table 3. Cause and Treatment of Infertility Related to Certain Features (Self-reported)**

	N	%
Doctor applicants		
Yes	16	69.6
No	7	30.4
Cause of infertility		
Women from	8	32.8
Male from	2	8.7
Both men and women from	1	4.3
To know	12	52.2
Receiving Treatment		
Insemination	4	17.4
IVF treatment	1	4.3
To know	11	47.8
Not doctor applicant	7	30.4
Using the traditional method		
Yes	3	13.0
No	20	87.0
Total	23	100.0

**Table 4. Treatment of Infertility and Sociodemographic characteristics**

Characteristics	Treatment		Total (%)
	Yes (%)	No (%)	
Age*			
19-29	55.6	44.4	100.0
30-39	100.0	0.0	100.0
40-49	57.1	42.9	100.0
Education *			
Women have no formal education	71.4	28.6	100.0
Primary school 1st step	66.7	33.3	100.0
Finished 2 st step of primary school	66.7	33.3	100.0
High school and university	75.0	25.0	100.0



Social security *			
SGK(Social Security Institution),	60.0	40.0	100.0
Green Card (for those without any social security)	80.0	20.0	100.0
No social security	100.0	0.0	100.0
Settlement **			
Urban	60.0	40.0	100.0
Countryside	76.9	23.1	100.0
Total (%)	69.6	30.4	100.0

\*P>0.05

1st step, 9.9% finished 2st step of primary school and 23.5% graduated from high school and university. 64.8% of females in the study inhabit urban centers. Considering their level of social security, 79.7% have SGK (Social Security Institution), 14.9% Green Card (for those without any social security) and 5.4% no social security at all.

Prevalence of infertility in females in the group was found to be 4.5%, 3.5% of whom failed to conceive and 1.0% had ability to conceive but failed to give birth. The study showed primary infertility to be 2.0% and secondary to be 2.5% (Table-1).

Comparison of some socio-demographic characteristics with infertility in females in the study found no statistically significant difference in age, education and social security ( $p>0.05$ ). Comparison of those inhabiting countryside with those in urban centers and of those marrying their relatives with those do not found statistically significant differences ( $p<0.05$ ) (Table 2).

30.4% of females proven to have been infertile stated that they did not resort to any health institution. 13.0% was found to have used traditional methods for so-called infertility treatment. When

they were asked about traditional methods, most of the women applied to hodjas, religious clerkes as moral support for infertility-related problems. When they were questioned on reasons for infertility, 32.8% referred to female-related problems 8.7% to male-related 4.3% to both female and male related problems and 52.2% did not know whether problems came from male or female (Table-3).

Comparison of treatment processes of those included in the study and found to be infertile with some socio-demographic parameters is shown in table 4. Infertile women did not indicate any statistically significant differences in comparison of their treatment with age, education social security and with where they live. ( $p>0.05$ ) (Table-4).

### Discussion:

Infertility is a problem that concerns 8-10 % of women at reproduction age, leads to important personal and family-related problems and whose prevalence and reasons change from region to region) (World Health Organization. Research in Human Reproduction. Biennial Report 1988- 1989; DOMAR et. Al., 2000: 832-837). Infertility has



been of greater interest as a problem of reproduction health over the last two decades.

Factors thought to have caused infertility and incidence vary in developed and developing regions. Considering incidence of infertility in emerging nations, Philippov et.al (1998) found in married women of 18-45 year range in Russia that incidence of infertility was 16.7% (primary infertility 3.8%; secondary infertility 12.9%) (PHILIPPOV et al., 1998: 183-187). Bhattacharya found 13.4% incidence of infertility (primary: 9.8% ; secondary 7.0%) (BHATTACHARYA et. Al., 2009: 3096-3107). Royal Commission in Canada discovered 8.5% in incidence of infertility 15-44 age group of married women (Royal Commission On New Reproductive Technologies, 1993). Stephen and Chandra found 7.4% in the U.S.A.<sup>22</sup> Buckett 17.3% in U.K.(Primary 10.6%; Secondary 6.7%) (STEPHEN & CHANDRA, 2006:516-523). Templeton found 14% (Primary 7.3% ; Secondary 5.2% ) in Scotland (TEMPLETON et. al., 1990: 148-152). Oakley et.al discovered 4.3% (2.4 never conceived; 1.4% able to conceive but failed to give birth) in U.K. ( OAKLEY et al., 2008: 447-450).

When it comes to prevalence of infertility in developing countries, Geelhoed found 11.8% in 15-49 age group married women in Ghana (GEELHOED et. al. 2002: 137-142). Mohammad 2.8% and 3.4% in Iran in 2004 (MOHAMMAD & ARDALAN, 2009: 213-216). Kumar found 14.2% in married women of 15.49 age group in India kumar, 2007: 456-457). According to a demographic and Health Research found by the W.H.O. 1994-2000 prevalence of infertility of 2.9% (conceived but lost baby 1.6% and failed to

conceive 1.3%), in Kenya (1998) 6.6% (conceived but lost baby 4.2%; failed to conceive 2.4%) in Niger.5.8% (conceived and lost baby 3.1%; failed to conceive 2.7%) in Egypt.10.0% (conceive but lost baby 6.0%; failed to conceive 4.0%) in Bangladesh. 4.1% (conceived but lost baby 2.1 %; failed to conceive 2.0%) in Kazakhstan.7.1% (conceived but lost infant %3.7; failed to conceive 3.4%) in Brasil. 6.0% (conceive but lost infant 3.2%; failed to conceive 2.8%) in Turkey (who, 2004). The results we obtained from the study are similar to those of developing nations. The current prevalence of infertility is 4.5% in women included in the study. 3.5% of the females failed to conceive and 1.0% managed to conceive but failed to give live birth. Primary infertility was 2.08 % and secondary infertility 2.5%.The related consequences from the study seem similar to those of developing countries.

Incidence of and reasons for infertility are variable.40-45 % of infertility cases is related to females and 30-35% to males, with the rest being associated with both sexes or with obscure etiologies (SIMON & LAUFER, 1993: 26-28). A study on infertility involving modern and traditional practices by infertile spouses in Turkey found that reasons for it were 30.3%, 23.4%, 8.3% and 29.0% in females, males, both sexes and unknown respectively (GUNAY et. al., 2005: 105-110). 250 married spouses were included in a study concerning infertility in India to define the related reasons in which infertility was found to be associated with males, females, both sexes and unknown in 22.4%, 57.6%, 5.2% and 14.8% respectively (ZARGAR, 1997: 27-33). When the women were asked about reasons for infertility, 32.8% pointed to female-related,8.7% to men-related and 52.2%



to neither. Comparison of the results from our study with universal literature data showed more similar reasons for woman-related than those for man-related infertility. However, it is interesting to note that 56% said they did not know who could be responsible for infertility, the reason for which could be that Turkish community is mainly male-dominant and patriarchal and infertility is regarded as a phenomenon likely to affect men's dominant status in society.

It was reported that 69.6% of the women included in the study and said to have been infertile had previously resorted to physicians for treatment of infertility while 30.4% had not done so. 13.0% of them used a traditional method for infertility to be treated. When asked about what ever it was, most using the so-called method said that they had applied to hodjas as a moral or religious support from them. The study by Gunay explained 92.5% of infertile women resorted to a physician and 91.1% was conservatively or surgically treated.<sup>31</sup>

Frequencies of treatment benefit were found to be 76.3%, 42%, 69.4%, 57% and 40% by Philippov et.al in Russia, Step and Chandra in the U.S.A., Templeton et al in the U.K., Che and Cleland in China and Sundby et al in Gambia respectively (PHILIPPOV et al., 1998: 183-187; STEPHEN & CHANDRA, 2006:516-523; TEMPLETON, et al., 1990: 148-52; CH&, CLELAND, 2002: 643-648). A study on traditional method used by spouses for infertility found that 60.7% of women resorted to any traditional method, 27.0% visited hodjas, 38.5% consulted to traditional mid-wives-physicians, 30.6% visited sacred tombs and 17.5% sacrificed sheep or goat to God for

infertility to be eliminated. Results of the study are consistent with the related literature. The study found no statistically significant difference between application for treatment and socio-demographic features, the reason for which could be explained by the fact that application for therapy was under the influence of socio-cultural structure and habits and therefore benefit from health services was similarly affected by knowledge, attitude and behavior processes. It follows from comparison of socio-demographic characteristics with infertility phenomenon that infertility emerges more frequently in those inhabiting countryside and those who marry their close relatives. The W.H.O. reports that marriage with close relatives remains important and increases likelihood of hereditary disease, enabling negative health consequences to be ignored.<sup>33</sup> However, the related literature fails to include any reliable data to show a relationship between such in-family/close relative marriage and infertility.

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