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Trend and Patterns of Childlessness in Iran

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ABSTRACT

Short postponement of entry to motherhood has occurred from 1990 onwards in Iran. There is some evidence of an increase in childlessness due to delay of childbearing. Using data from the 2000 Iran Demographic and Health Survey (IDHS) and the 1991-2003 survey of Socio-Economic Characteristics of Household in Iran (SECHI), this paper estimates the level and trend of childlessness across time in Iran. Our results show that childlessness in five-year age-groups between ages 15 and 39 increased during 1991-2003. In contracts, the proportion of childlessness in the last years of the reproductive life which can considered as permanent childlessness has reduced from 3.8 per cent to 2.2 per cent. This pattern resembles that of infertility within 5 years of marriage. Increased proportion of women with zero parity in Iran seems to be due to tempo effects resulted from short postponement of first birth. Most of childless women do not remain childless and most of them progress to motherhood ultimately. Reduction in lifetime childlessness may be due to more access to the assisted reproductive technologies in the country. The IDHS data allowed us to distinguish between voluntary and involuntary childlessness. Among ever-married women aged 15-49 voluntary and involuntary childlessness were 8.5 and 2.0 per cent, respectively. Provincial estimates show that most provinces with a low level of socio- economic development experienced the highest involuntary childlessness as compared with other provinces.

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INTRODUCTION

In the context of low fertility, childlessness has become an important area of demographic research and has drawn the attention of many demographers and other social scientists. Childlessness is both due to social and economic constraints and a consequence of endemic health problems. Most childlessness arises not only from an individual's or couple's sterility, but also as a social phenomenon and a means of adaptation to social and economic change (Kreager and Schröder-Butterfill, 2005: 20).

In the past, childlessness was mainly involuntary occurring within a large family system, and thus, there was no reason for concern. While contemporary childlessness is mostly voluntary and it is occurring in the context of a small family system (Morgan, 1991). Therefore, childlessness warrants attention as it can be a potential factor to low levels of fertility in recent decades (Merlo and Rowland, 2000). Prevalence of childlessness is also an important indication of changing norms and value systems in a given society. Iran experienced a dramatic fertility decline during the late 1980s and 1990s and reached replacement-level fertility in 2000 (Abbasi-Shavazi *et al* 2009a). Consistent with this trend, little increase in age specific childlessness rate was emerging at the end of the 1990s. According to the 2006 census, 17.8 percent of married women aged 10 to 49 years old, and 8.1 per cent of married women aged 25-49 years were childlessness, while only 2.9 per cent of women aged 45-19 were childless.

Despite rapid changes in fertility behavior, little is known about childlessness in Iran. A review of the literature on childlessness reveals that almost all research projects have been based on involuntary childlessness or infertility, and no specific research has been undertaken to study voluntary childlessness in Iran. Thus this paper aims to study level and patterns of childlessness in Iran.

DATA AND METHOD

The results of this paper are drawn from the Household Socio-Economic Characteristics Survey (HSECS) and the Iran Demographic and Health Survey. The use of the SECHI data allowed us to measure incidence of the childlessness across time. The childlessness rates in this paper are computed based on 'Zero Parity' among ever-married women as given in the SECHI.

One main limitation of SECHI data is that voluntary childlessness and involuntary childlessness cannot be distinguished. Lake of information on contraceptive use and

women's' intention to remain childless makes it difficult to interpret childlessness. The Iran Demographic and Health Survey provide valuable information that are relevant to the analysis of childlessness. The IDHS covered around 4000 households in each province (2000 households in rural and 2000 households in urban areas). Five principal measures for childlessness are used in the analysis: childlessness, voluntary - and involuntary childlessness, completed (life time) childlessness and primary infertility. Childlessness includes all 'Zero Parity' ever- married women ages 15-49. Voluntary childlessness includes both childless women who are using contraception and women whose ideal is to not have children. Involuntary childlessness consists of childless women who have not used contraception and main reasons for not using contraception are infertility, hysterectomy and illness.

Completed childlessness or lifetime childlessness is another term used in the childlessness literature. This rate is derived from women in the last years of the reproductive lives. In the present analysis, 'completed childlessness' is considered as all 'Zero Parity ever-married women ages 40-44 or 45-49. .

Primary infertility is the final measure estimated in this paper. However, we use demographic but not clinical definition of infertility. , According to Sciarra (1994 in Larsen 2004), medical definition of infertility considers as couples of reproductive age who are having sexual intercourse without contraception and are unable to establish a pregnancy within one year. Demographic definition of infertility include sexually active women who are not using a contraception but are unable to have a live birth for five or more years. Variations in the definitions of primary infertility occur in (a) the reference period used to establish infertility, and (b) in the classification of women who have experienced pregnancy but not a live birth.

The survivor function that is derived from life tables is also used to calculate the percentage of women who remain childless. Survivorship functions of childlessness are calculated by such variables as age at marriage, educational attainment, place of resident, and employment status.

RESULT

Table 1 indicates age-specific childlessness rate that is percentage of women with zero parity by age group during 1991 and 2003. As can be observed, in 1991 around 57 per cent of women aged 15-19 did not have any child. This figures increased to 72.3 per cent in

2003. Percentage of women with zero parity in age group 25-29 increased from around 7.0 to 12.0 during the same period.

Table 1. Age-specific childlessness rate among ever-married women aged 15-49, Iran 1991-2003

Age group	1991	1993	1994	1995	2002	2003
15-19	57.3	61.8	64.9	72.1	67	72.3
20-24	26.1	26.8	28	28.3	31.4	35.6
25-29	6.7	8.0	10.3	9.1	11.0	12.0
30-34	2.9	2.9	3.1	3.2	3.8	5.1
35-39	2.5	2.4	2.4	2.5	3.5	3.4
40-44	3.6	3.9	3.8	3.2	2.1	2.1
45-49	3.8	4.7	4.3	4.2	2.2	2.2

Source: Statistical Centre of Iran (1991-2003), the Survey of Socio-Economic Characteristics of Household.

The estimate of childlessness within 5 years of marriage is shown in Table 2. In age group 15-19 the proportion childless within 5 years of marriage increased from 14.3 in 1991 to 27.3 in 2003. The figures for age group 25-29 are 2.1 and 5.0 However, percentage of childlessness in age group 45-49 declined from 3.8 to 2.1 during the period.

Table 2. Childlessness among ever-married women aged 15-49 within 5 year of marriage in Iran, 1991 and 2003

Age group	1991	2003
15-19	14.0	27.3
20-24	3.6	6.0
25-29	2.1	5.1
30-34	2.2	3.6
35-39	1.4	2.9
40-44	2.2	1.6
45-49	3.8	2.1
Total	**1.8**	**2.5**

Source: Statistical Centre of Iran. (1991-2003), Survey of Socio-Economic Characteristics of Household in Iran.

From Table 1 and 2, it can be observed that childlessness increased from - age groups 15-19 to 35-39. This increase can be attributed to postponement of first birth within marriage. There is a strong association between marriage postponement and being a student and women's tendencies for higher education (Abbasi Shavazi and Razeghi, 2011). Life-time childlessness for the last two age groups (40-44 and 45-49) declined during the period. . This may have been due to the increased access to Assister Reproductive Technologies There are

many infertility clinics in most provinces of Iran (around 50 IVF clinics) which is considered as one of the highest numbers of clinics in the Middle East (Abbasi-Shavazi *et al.* 2008).

CHILDLESSNESS MEASURES

As noted earlier, we were unable to distinguish between voluntary childlessness and involuntary childlessness IDHS was utilised to estimate childlessness measures. Five measures (childlessness, voluntary childlessness and involuntary childlessness, life time childlessness and primary infertility) were used in the analysis on childlessness. Figure 1 demonstrates the distribution of different categories of Childlessness among ever-married women aged 15-49. Following Tanturri and Mencarini's findings in Italy (2008) the figure shows various pathways to distinguish between voluntary childlessness and involuntary childlessness.

From 90,141 ever-married women, 86.8 per cent (78,817 women) experienced first birth and 13.2 per cent (11,324 women) were childless. With respect to reasons of not using contraception, 2.2 per cent of women stated that their main reason for not using contraceptive methods was pregnancy.

Involuntary childlessness includes 2.0 per cent of women who had infertility, hysterectomy and illness. Around 8.5 per cent of women are voluntary childlessness; 6.2 per cent of them do not use contraception. The main reasons of nonuse were separation of husband, fear of side effects, the opposition of husband and other relatives or opposition of women themselves to family planning programs. Around 2.2 percent of women are considered as voluntary childlessness who are using contraceptive and 0.1 percent do not want any children.

Figure 1, Distribution of different categories of Childlessness among ever-married women aged 15-49, the 2000 IDHS

Ever married women aged 15-49 100%

Women who have children 86.8%

Widowed and divorce (0.5%)

Childless women (total childlessness) 13.2%

Non use of contraceptive 10.5%

Use of contraceptive 2.2%

Pregnancy 2.2%

Infertility, hysterectomy illness 2.0%

Don't want any children 0.1%

No intercourse with husband, spouse to contraceptive, fear of contraceptive effect, high cost … 6.2%

Involuntary childlessness 2.0%
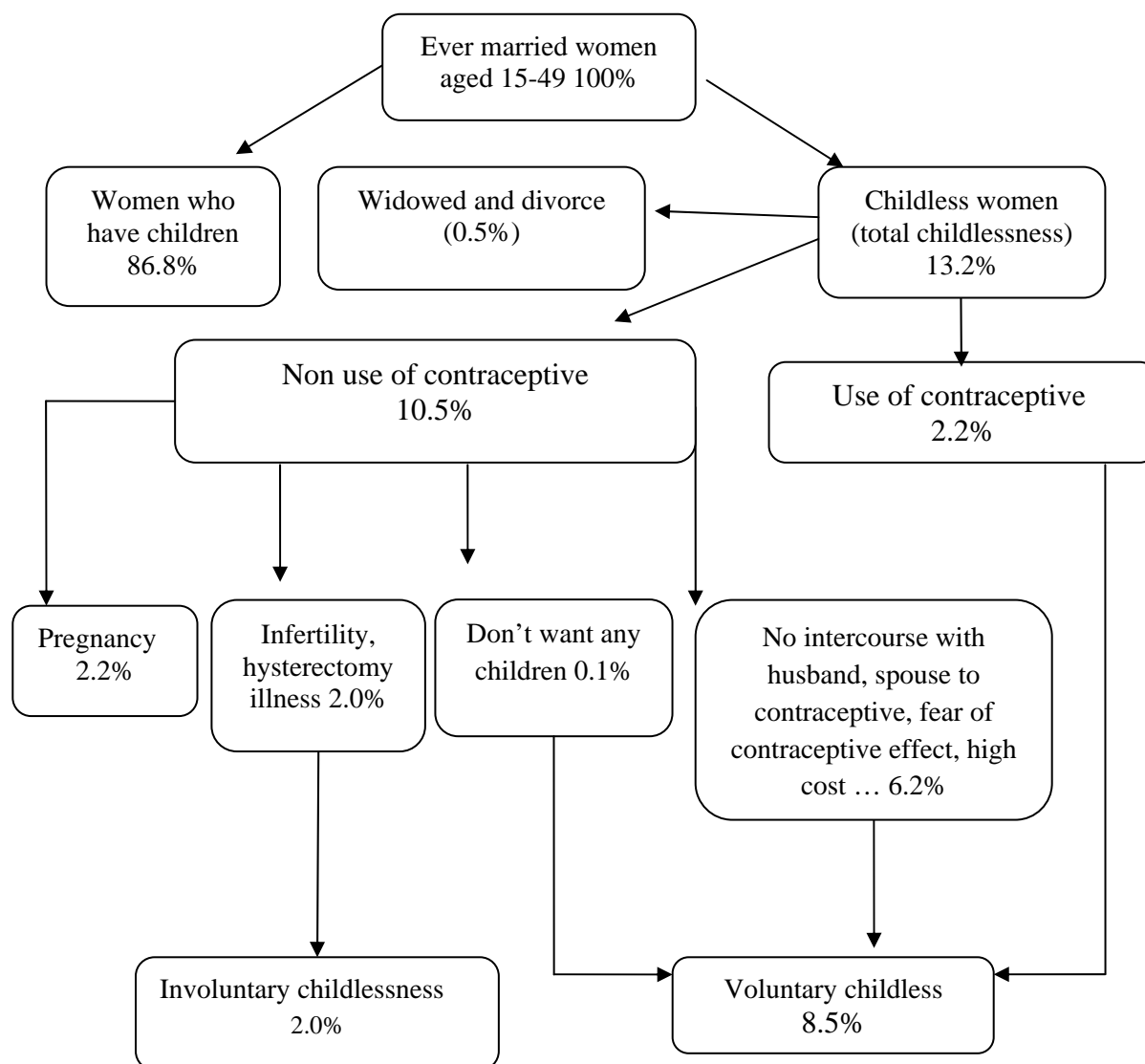
Voluntary childless 8.5%

Table 3 shows the percentage of voluntary and involuntary childlessness women aged 15-49 by age group derived from the IDHS. These values calculated based on Figure 1. Percentage of total childlessness ranges between 2.2 in last years of reproductive live and 55.3 percent in 15-19. Lifetime childlessness for age groups40-44 and 45-49 years is 2.2 and 2.3 per cent, respectively. It is clear that involuntary childlessness has decreased, and there has been an increase in voluntary childlessness particularly in young age group. This increase is the outcome of postponement.

Table 3. Percentage of childlessness women age 15-49 by age group, the 2000 IDHS

Age group	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Voluntary	54.8	23.1	6.1	2.1	0.6	0.2	0.1	8.5
Involuntary	0.5	1.8	2.4	2.5	2.0	2.1	2.1	2.0
total	55.3	24.9	8.5	4.0	2.6	2.3	2.2	10.2

Survival of the Childlessness

Using life table techniques we calculated percentage of women who failed to give birth within 5 years and 10 years of their marriage by some of their characteristics. The results are shown in Table 4. The results from this method are similar to previous model that are presented in Figure 1.The findings reveal that 13 per cent of the women failed to give birth within 5 years of their marriage. They are mainly experiencing a delay to first birth than not to have children. Only 0.02 percent of the females remain childless within 13 years of their marriage. These women probably were infertile and did not progress to their first child during their reproductive live.

Table 4. The survivor function of childlessness by year of marriage (in year) for specified covariates, IDHS, 2000

Covariates	Childless		N
	5 years	10 years	
Overall	0.13	0.04	90141
Women's education			
Illiterate	0.17	0.05	29694
Primary	0.12	0.04	30522
Secondary	0.09	0.03	12668
High school	0.08	0.03	13574
University	0.10	0.04	3683
Region			
Urban	0.12	0.04	46425
Rural	0.14	0.04	43716
Employment			
Employed	0.13	0.04	17828
Unemployed	0.13	0.04	72313
Age at marriage			
>14	0.24	0.06	16726
15-17	0.12	0.03	31237
18-20	0.09	0.03	24792
21-23	0.08	0.03	10430
24-28	0.10	0.05	5756
29>	0.18	0.12	1200

Various childlessness patterns emerged by age at marriage; for those marrying very early, before 14 and 15-17 years, about 24 per cent and 12 per cent, respectively, remained childless in five years of marriage as compared with 8 percent of women who married at age 21-23. Although age at marriage of Iranian women is rising (Abbasi-Shavazi, Hosseini-Chavoshi, and McDonald, 2007), women still marry relatively early as compared with many other low fertility countries in Southeast Asia (Abbasi Shavazi *et al* 2009b). According to the IDHS early marriages (marriage before age 18) are common among women in Iran as more than half of Iranian women marry before age 18. Women who married before age 18 experience notable first birth postponement than other women. The results also show a higher level of childlessness for women who married after age 29. It may be concluded that those who delayed marriage to above 29 years may be affected by infertility. It is expected to find a more probability of childlessness for women with higher educational attainment. The comparison of childlessness based on education attainment shows that 10 per cent of women with university education as compared with 17 per cent of women being illiterate remained childless within five year of marriage.

Around 14 percent and 12 percent of women in rural and urban area, respectively, remained childlessness within the five year of marriage. Women who lived in rural areas are slightly more likely to remain childless than those loving in urban residents.The pattern of childlessness among those who are employed is exactly the same as women who are unemployed.

It has been found that childlessness in Iran is partly due to tempo effects related to short postponement of motherhood. Most of childless women do not want to remain childless and progress to have their children ultimately. Previous qualitative research indicated that most women know that postponing childbearing to the later years of life increase chance of being childless. They will always want to have children not only to fulfill their personal desires but also because of religious and cultural norms and values. One of the respondents in a qualitative survey conducted by Razeghi Nasrabad (2011) expressed: 'Well, without children, you could never achieve community acceptance.

We calculate also primary infertility as another measure of childlessness and it was approximated by the two demography and medical definitions. According to Table 5, infertility rates by demographic definition are higher because it includes both cases that cannot conceive and cases that are unable to deliver a live birth. Findings from the demographic infertility measures showed that prevalence of infertility in Iran is 2.6. The

prevalence ranged from 3.9 percent in Ilam to 1.3 in Yazd. Our finding is in line with the work of Poston and Trent (1982) who hypothesized that voluntary and involuntary childlessness varied according to the level of development. The provincial estimates show that most provinces that are considered to have a low level of socio- economic development, displayed the highest infertility as compared with all other province. The highest rate of infertility belongs to such provinces as Ilam, Kohgiloye and Booir Ahmad, Sistan and Balouchestan, and Booshehr that are low developed regions.

Table 5. Provincial Levels of Infertility in Iran, IDHS, 2000

Province	Clinical Definition	Demography Definition
Total	**2.3**	**2.6**
Markazi	2.0	2.3
Gilan	2.1	2.4
Mazandaran	1.9	2.1
East Azerbaijan	2.3	2.4
West Azerbaijan	2.3	2.6
Kermanshah	2.6	2.9
Khuzestan	3.1	3.3
Fars	2.6	2.9
Kerman	1.5	1.8
Khoarsen	2.3	2.4
Esfahan	2.5	2.6
Sistan& Balouchestan	3.0	3.1
Kurdistan	3.0	3.1
Hamedan	2.6	2.7
Charrmahal Bakhtiari	2.1	2.2
Lorestan	2.3	2.5
Ilam	3.7	3.9
Kohgilooye Booir	3.1	3.4
Booshehr	2.8	3.3
Zanjan	2.1	2.3
Semnan	2.0	2.3
Yazd	1.2	1.3
Hormozgan	2.2	2.4
Tehran province	1.8	1.9
Ardebil	2.2	2.3
Qom	1.9	2.1
Ghazvin	2.2	2.4
Golestan	2.0	2.2
Tehran city	1.9	2.2

CONCLUSION

Increasing childlessness is one of the important aspects of changes in fertility behavior of women. Given the impact of childlessness on cross-sectional total fertility rate, it has attracted the attention of many researches around the world. Yet, less information is available regarding trends and patterns of childlessness in Iran. This paper aimed to estimate childlessness trends in Iran across time using main measures of childlessness.

The results showed that trends of childlessness increased by age. Delaying the first birth appears to be the most important indicators of the increase in childlessness of women aged under 40. This postponement can be associated with women's education and marriage age. These behaviors were not related to the attitudes change of women, toward childbearing. Abbasi shavazi and Razeghi (2010) and Hooseini Chavoshi et *al* (2007) have shown that although fertility behavior of women in Iran supported the ideational change towards small family size norm especially two children, there was little to no preference toward zero parity. Razeghi and Mirzaei (Forthcoming) also estimated the gap between actual and ideal fertility in three province of Iran. The findings show that the two-child family norm is the most frequent norm in three provinces. Large families with three children are the second choice and only 0.3 per cent of women expressed no children as their personal ideal family size. Our findings also show that only 2.0 percent of women remained childless in last years of the reproductive life. Indeed, childlessness within last years of reproductive life probably arises from an involuntary childlessness.

Results presented in this paper draw our attention to recent increase in voluntary childlessness in Iran which can be attributed to postponement of first birth within marriage. Continuing higher education seems to be an important factor of postponement childbearing and voluntary childlessness. . Since the longer postponements may cause higher involuntary sterility, it is important that young couple become aware of the relationship between age and fecundity and biological risks of postponing motherhood.

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