

Who Desire Children in Japan? – Changing in Age and Parity Composition

October 15, 2007

Miho IWASASWA¹

Fusami MITA¹

1: National Institute of Population and Social Security Research, Tokyo

Abstract

Japan's total fertility rate was 1.32 in 2006 and it is still low level among developed countries. However, the main cause of this low fertility is not an increase in the prevalence of women who do not intend to have any children but rather the postponement of childbearing. In this paper, we focus on the consequence of longtime trends in postponement of childbearing. We identified women who desired at least one (additional) child using responses to a question about fertility intentions in the Japanese National Fertility Surveys, and described changes in the size and composition of this group. It might be possible that infertility is increasing due to aging of women having a desire for childbearing. However, there has been little research on infertility at national level and little is known about size and trend in infertility women or couples in Japan. We used responses to a question about experience of visiting a clinic to seek help in having a child and anxiety about infertility in the JNFS, and estimated the number of married women with experience as one of proxies for infertility women. The number of reproductive age women desiring a child increased 17% between 1982 and 2005 - from 9.78 million to 11.47 million. Most of increase was attributed to never married women without children. Over the same period, this population aged with the proportion at least 35 years old increasing dramatically from 5% to 15%, and average age of this group rising from 25.1 to 27.6. We use data from the JNFS to estimate the number of women in Japan who are receiving examinations or medical care related to fertility. These estimates show that 1.2 % of married women of reproductive age were receiving examinations or medical care at the survey time in 2005.

Introduction and methods

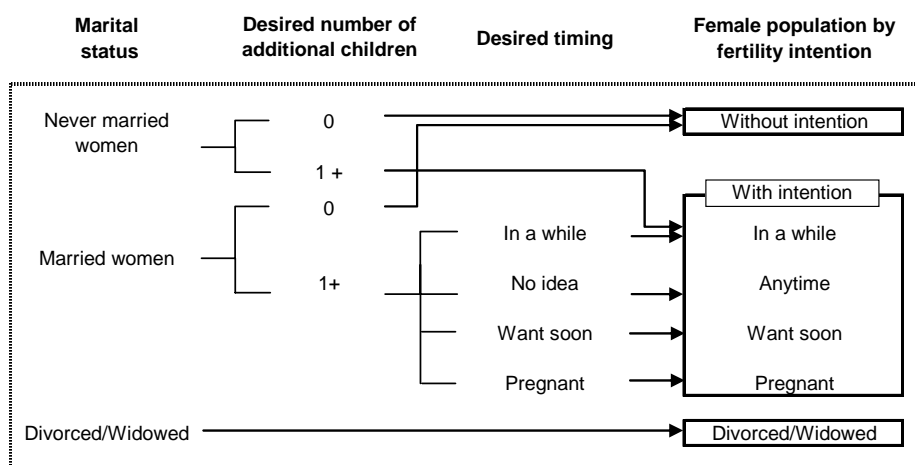
Japan's total fertility rate which has been declining since the mid 1970s, was 1.32 in 2006 and it is still low level among developed countries. However, the main cause of this low fertility is not an increase in the prevalence of women who do not intend to have any children but rather the postponement of childbearing. In this paper, we focus on the consequence of longtime trends in postponement of childbearing. We identified women who desired at least one (additional) child using responses to a question about fertility intentions in national representative surveys, and described changes in the size and composition of this group as a consequence of delayed childbearing. Knowledge about the change in characteristics of women desiring additional children would be useful to prospect fertility trends in the near future and it might be also helpful when we evaluate various policies related to facilitating childrearing.

Data we used were Japanese National Fertility Surveys conducted by the National Institute of Population and Social Security Research every five year. Each survey has about ten thousand reproductive-age female samples.

Female population was identified by the desired number and the desired timing of additional children as shown in Figure 1. To obtain the number of women in Japan, we use weight variable based on female population from each census in Japan.

It might be possible that infertility is increasing due to aging of women having a desire for childbearing. However, since there has been little research on infertility at national level and the definition of infertility has not been consistent in various fields, little is known about size and trends in infertility women or couples. In this paper, we used responses to a question about experience of visiting a clinic to seek help in having a child and anxiety about infertility in the JNFS, and estimated the number of married women with experience as one of proxies for infertility women.

Figure 1: Structure of female population in terms of fertility intention



Results

Size and composition of women who desire children

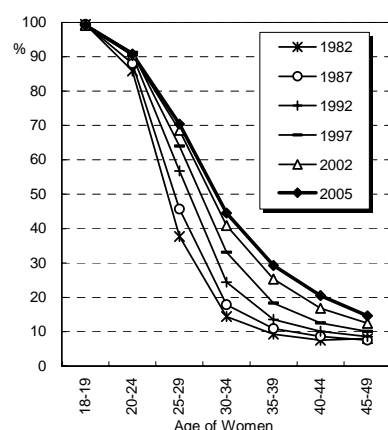
The number of reproductive age women desiring a child increased 17% between 1982 and 2005 - from 9.78 million to 11.47 million. Most of increase was attributed to never married women without children. Over the same period, this population aged with the proportion at least 35 years old increasing dramatically from 5% to 15%, and average age of this group rising from 25.1 to 27.6. We will also examine changes in the composition by other characteristics such as education attainment and current employment status of women.

Table 1: Size and composition of women who desire children

Size and composition	1982	1987	1992	1997	2002	2005
Population with fertility intention (million)	9.78	9.83	10.86	10.88	11.28	11.47
Proportion of women with fertility intention(%)	34.8 %	34.9	38.0	38.3	42.1	43.9
Age of women						
18 - 19	150	161	167	132	120	116
20 - 24	362	368	406	381	323	309
25 - 29	281	273	302	331	333	311
30 - 34	137	121	151	175	228	245
35 - 39	34	49	47	50	88	113
40 - 44	10	7	10	12	26	37
45 - 49	5	4	3	6	9	16
Parity						
0 (Never married)	625	693	731	756	789	808
0 (First married)	128	95	126	119	116	117
1 (First married)	177	151	152	153	159	153
2 (First married)	78	82	60	42	43	46
3 + (First married)	6	8	5	5	5	5
Number of additional intended children						
3 +	253	239	250	238	206	215
2	458	480	562	591	619	643
1	267	264	274	259	303	290
Total number of children desired^a	1,941	1,940	2,148	2,155	2,159	2,220
Desired timing of the additional child						
Pregnant	-	-	76	44	42	48
Want soon	-	-	117	106	117	132
No idea	-	-	47	51	67	63
In a while	-	-	836	875	898	900
Average age of women who desire children	25.1	25.0	25.1	25.8	27.0	27.6
Proportion at least 35 years old among women with fertility intention(%)	4.9	6.1	5.5	6.3	10.9	14.5

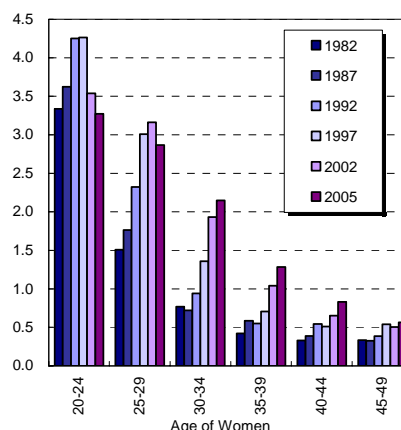
Note: Estimates among 18-49 aged women based on the Japanese National Fertility Surveys in the respective year.
 a Sum of the number of women who desire children weighted by the number of their additional children (3 substitute for 3+).

Figure 2 Trends in proportion of childless by age group



Note: Based on the cohort age-specific first birth rates from Vital Statistics.

Figure 3 Trends in childless female population by age group (millions)



Note: Estimates based on the proportions in Figure 2 and female population in Census and population estimates.

Size and composition of women who are receiving infertility services

Because female fecundity declines with age, this aging of the population of women desiring additional children will presumably result in an increase in infertility. Focusing on women who report visiting a clinic to seek help in having a child, we use data from the JNFS to estimate the number of women in Japan who are receiving examinations or medical care related to fertility. These estimates show that 180 thousand women (95% confidence interval, 139 - 220) were receiving examinations or medical care at the survey time in 2005 (Table 2). This is 1.2 % of married women of reproductive age. Among this population, 120 thousand women are childless, while another 50 thousand with one child are facing so-called secondary infertility.

Table 2: Estimated number of women in Japan who are receiving examinations or medical care related to fertility

Age/ # of Children	The 12th JNFS(2002)						The 13th JNFS(2005)						(Million)
	Female population	Married	Married				Female population	Married	Married				Single
			Have had exam. or medical care	Receiving exam. or medical care	Have had anxiety	Being anxious			Have had exam. or medical care	Receiving exam. or medical care	Have had anxiety	Being anxious	
Total	26.77	15.30	1.89	0.18	2.01	0.39	26.12	14.53	1.91	0.18	1.80	0.32	0.32
95% interval	-	-	2.01	0.22	2.14	0.45	-	-	2.04	0.22	1.92	0.37	0.37
			1.77	0.14	1.89	0.33			1.79	0.14	1.68	0.27	0.26
Age													
18-19	1.48	0.03	0.00	0.00	0.00	0.00	1.34	0.02	0.00	0.00	0.00	0.00	0.02
20-24	3.91	0.43	0.02	0.00	0.07	0.03	3.61	0.37	0.02	0.01	0.06	0.02	0.06
25-29	4.65	1.94	0.21	0.05	0.37	0.10	4.09	1.57	0.17	0.04	0.21	0.06	0.10
30-34	4.70	3.14	0.41	0.07	0.62	0.15	4.84	3.04	0.39	0.08	0.51	0.14	0.07
35-39	4.10	3.19	0.53	0.05	0.47	0.09	4.35	3.21	0.49	0.04	0.46	0.06	0.04
40-44	3.88	3.18	0.42	0.01	0.25	0.01	4.03	3.17	0.49	0.02	0.32	0.03	0.01
45-49	4.06	3.39	0.31	0.00	0.24	0.01	3.87	3.15	0.35	0.00	0.24	0.01	0.01
# of Children childless	1.85	1.85	0.45	0.13	0.42	0.25	1.82	1.82	0.43	0.12	0.36	0.19	-
one	2.98	2.98	0.50	0.03	0.57	0.11	2.95	2.95	0.56	0.05	0.51	0.07	-
two	6.18	6.18	0.59	0.01	0.66	0.01	5.96	5.96	0.59	0.00	0.63	0.01	-
three +	3.11	3.11	0.21	0.00	0.26	0.00	2.73	2.73	0.23	0.00	0.19	0.00	-
Remarriage	1.18	1.18	0.14	0.01	0.10	0.03	1.07	1.07	0.10	0.01	0.11	0.05	-
Single	11.46	0.00	-	-	-	-	11.59	0.00	-	-	-	-	0.32

Note: Sample size of those whose marital status are known are 12,413 for the 2002 survey and 10,974 for the 2005 survey.

References

- Billari, Francesco C.(2005) "Partnership, Childbearing and Parenting: Trends of the 1990s." Pp.63-94 in M. Macura, A. L. MacDonald and W. Haug (eds.), *The New Demographic Regime: Population Challenges and Policy Responses*. New York and Geneva: United Nations.
- Billari, Francesco C., Hans-Peter Kohler, Gunnar Andersson, and Hans Lundstrom(2007) "Approaching the Limit: Long-term Trends in Late and Very Late Fertility," *Population and Development Review*, Vol.33(1), pp.149-170
- Chen, Renbao. and S.Philip Morgan(1991) "Recent Trends in the Timing of First Births in the United States," *Demography*, Vol.28, pp.513-33.
- Federation CECOS, D.Schwartz, J.M.Mayaux (1982) "Female Fecundity as a Function of Age: Results of Artificial Insemination in 2193 Nulliparous Women with Azoospermic Husbands," *The New England Journal of Medicine*, Vol.306(7), pp.404-406.
- Ford, W.C.L., Kate North, Hazel Taylor, Alexandra Farrow, M. G. R. Hull, Jean Golding and the ALSPAC Study Team(2000) "Increasing Paternal Age is Associated with Delayed Conception in a Large Population of Fertile Couples: Evidence for Declining Fecundity in Older Men," *Human Reproduction*, Vol.15(8), pp. 1703-1708.
- Henry, Louis (1961) "Some Data on Natural Fertility," *Eugenics Quarterly*, Vol.8(2),pp.81-91.
- Iwasawa,Miho(2002)"Estimation of Unintended Fertility in Japan," Paper presented at the annual meeting of the Population Association of America, Atlanta, GA, May 9-11.
- Kohler, Hans-Peter, Francesco C. Billari, and Jose Antonio Ortega (2002) "The Emergence of Lowest-low Fertility in Europe during the 1990s," *Population and Development Review*, Vol.28(4), pp.641-680.
- Lee, Ronald. D. and Joshua R. Goldstein (2003) "Rescaling the Life Cycle: Longevity and Proportionality," Pp.183-207 in James R. Carey and Shripad Tuljapurkar (eds.), *Life Span: Evolutionary, Ecological, and Demographic Perspectives*, Supplement to *Population and Development Review*, Vol. 29, 2003. New York: Population Council.
- Leridon, Henri (2005) "A New Estimate of Permanent Sterility by Age: Sterility Defined as the Inability to Conceive." Paper presented at the annual meeting of the Population Association of America, Philadelphia, PA, March 31-April 2.
- Martin, Steven P.(2000) "Diverging Fertility Among U.S. Women Who Delay Childbearing Past Age 30," *Demography*, Vol.37(4), pp.523-533.
- Menken Jane, James Trussell, and Ulla Larsen(1986) "Age and Infertility," *Science*, Vol.233, pp.1389-1394.
- Menken Jane and Ulla Larsen(1986) "Fertility Rates and Aging." Pp. 147-166 in Luigi Mastroianni, Jr. and C. Alvin Paulsen (eds.), *Aging, Reproduction and the Climacteric*. New York: Plenum Press.
- Prioux, F. (2005) "Late Fertility in Europe: Some Comparative and Historical Data," *Revue. d'Épidémiologie et de Santé Publique(Epidemiology and Public Health)*, Vol.53, pp.2S3-2S11.
- Sobotka, Tomáš, M. A. Hansen, T. K. Jensen, A. T. Pedersen, Wolfgang Lutz, and N. E. Skakkebaek (2007) "Will fertility among Danish women remain stable due to assisted reproduction? Assessing the role of ART in sustaining cohort fertility rates." Paper presented at 2007 Annual Meeting of the Population Association of America, New York, 30 March.
- Stephen, Elizabeth Hervey and Anjani Chandra(2000) "Use of Infertility Services in the United States: 1995," *Family Planning Perspectives*, Vol.32(3), pp.132-137.
- Toulemon, L. (2005) "Who are the Late Mothers," *Revue d'Épidémiologie et de Santé Publique(Epidemiology and Public Health)*, Vol.53, pp.2S13-2S24.
- Weinstein, Maxine, James Wood, and Chang Ming-Cheng (1993) "Age Patterns of Fecundability," Pp.209-227 in R.Gray, H. Leridon, and A. Spira (eds), *Biomedical and Demographic Determinants of Reproduction*. Oxford: Clarendon Press.

(In Japanese)

- Iwasawa, Miho(2000) "Itosezaru Ninshin no Suryo Bunseki (Estimation of Unintended Pregnancy)," *Seizon Kagaku Kenkyu (Journal of Seizon and Life Sciences)*, Vol.11B, pp.7-21.
- National Institute of Population and Social Security Research (2007) *Nihon no Syorai Suikei Jinko (Population Projection for Japan: 2006-2055)*, Tokyo: Kosei Tokei Kyokai.
- National Institute of Population and Social Security Research (2007a) *The 13th National Fertility Survey (Kekkon to Syussan ni Kansuru Zenkoku Chosa) Dai I Hokokusyo, Waga-kuni Fufu no Kekkon-Katei to Syussyoryoku*, Chosa Kenkyu Hokoku Shiryo, No.23, Tokyo: Kosei Tokei Kyokai.
- National Institute of Population and Social Security Research (2007b) *The 13th National Fertility Survey (Kekkon to Syussan ni Kansuru Zenkoku Chosa) Dai II Hokokusyo, Waga-kuni Dokushin-so no Kekkon-Kan to Kazoku-Kan*, Chosa Kenkyu Hokoku Shiryo, No.24, Tokyo: Kosei Tokei Kyokai.
- Makino, Tsunehisa (2007) "Shoshika to funin-chiryō," Pp.151-182 in *Cho-shoshika no Miraigaku*, edited by Mainichi Shinbunsha Jinko-Mondai Chosakai, Mainichi Shinbunsha.
- Moriizumi, Rie (2004) "Kibo kodomo su(desired number of children)," Pp 92-97 in *The 12th National Fertility Survey*, edited by National Institute of Population and Social Security Research.
- Oishi, Akiko (2007) "Funin-chiryō nit suite no ichi-kosatsu: Kazoku-zokusei no shiten kara," *Keizaigaku Ronsan (Chuo University)* 47-3,4,pp.403-416.
- Sato, Ryuzaburo (2005) "Shoshika to reproductive health and rights." Pp.189-214 in *Shoshika no Seisakugaku*, edited by H.Ohbuchi and M.Atoh, Tokyo: Harashobo.
- Sato Ryuzaburo, and Miho Iwasawa (1998) "Reproductive Intention and Fertility Control Behavior of Japanese Married Couples: Analysis of the Pregnancy History," *Jinko Mondai Kenkyu (Journal of Population Problems)*,Vol.54, No.4, pp.19-45.
- Senba, Yukari (2005) "Shoshika to seisyoku gijyutsu." Pp.215-235 in *Shoshika no Seisakugaku*, edited by H.Ohbuchi and M.Atoh, Tokyo: Harashobo.
- Umezaki, Masahiro (2002) "Hinjin, Chuzetsu, Funin, Eijigoroshi." Pp. 490-495 in *Jinko Daijiten*, edited by Nihon Jinko Gakkai. Tokyo: Baifukan.
- Yamagata Zentaro, Kazuhiko Hoshi, Syuji Hirata, and Yasuhisa Takeda (2003) "Seisyoku hojyo iryou gijyuusu nit suite no ishiki-chosa 2003." *Heisei 14 nen Kosei-rodō Kagaku-Kenkyūhi-Hojyokin Kosei-rodō Kagaku Tokubetsu Kenkyū "Seisyoku hojyo iryo gijyutu ni taisuru kokumin no isiki ni kansuru kenkyū" Hokokusyo*.
- Yoshimura, Yasunori (1999) "Funinsyo no genin to kensa, chiryo" *Boshi-hoken Jyoho*, 39, pp. 41-46.