New results regarding trends in Iranian women's health and a comparison with WHO data

E. Barooti[1], N. Sadeghi[2], M. Karimi-Zarchi[3], H.R. Soltani[4]

[1]Functional Gynecology Department, Shahid Beheshti University MC, Tehran; [2]Health Care Ministry, Tehran
[3]Gynecology Oncology Department, Shahid Sadoughi University of Medical Science, Yazd
[4]Ali ben Abiltaleb Medical School, Islamic Azad University Branch Yazd (Iran)

Summary

Half of the world's population consists of women, who play important roles in cultural formation and education, maintain and promote households and their health, and consequently affect the community. In a general sense, women's health may be an important cornerstone for the formation of a healthy community. In developing countries, 67% of women work in the agriculture sector and produce 55% of the food products throughout the world. In East Asian countries, which have the highest level of cloth and furniture export, 74% of workers are women. Due to these considerations, we assessed women's health indicators in Iran. We reviewed health information from national health reports, including two national health surveys conducted in 1991 and 2009 with a sample size of 1/1,000 of the Iranian population, the 2000 Iran Demographic and Health Survey, and all published indices that were calculated in 2006 or later. The most important finding was that the maternal mortality rate decreased from 54 per 100,000 live births in 1991 to 37.4 per 100,000 live births in 1997. It decreased further to 24.7 per 100,000 live births in 2006. The Millennium Development Goal is 18-22 per 100,000 live births in 2015.

Key words: Uterine artery embolization; Fibroids; Adhesions; Hysterectomy.

Introduction

The health of half of the population is guaranteed as long as we have healthy women. Healthy women provide a suitable foundation for educating and raising children, and peace among men could guarantee the health of the other half of the population. When women control the health of their family members, two elements of the community, namely men and children, who both constitute human and social capital in their countries, are enabled to provide services and improve themselves. Furthermore, women's own effectiveness in social and economic arenas is considerable. On the basis of official statistics, two-thirds of the world's work is performed by women [1].

Sociologists, economists, and scientists from different fields believe that if we pay attention to the talents of women, who engage in all types of formal and informal work, women can be viewed as among the most valuable forms of social capital in their countries. Other groups of specialists believe that women and families are the foundation of evolution and progress. Women not only allow generations to survive but also play roles in progress and strive alongside men to improve their communities [2].

Based on this perspective, we assessed women's health indicators in Iran. We reviewed health information from national health reports, including two national health surveys conducted in 1991 and 2009 with a sample size of 1/1,000 of the Iranian population, the 2000 Iran Demographic and Health Survey (DHS), and all published indices that were calculated in 2006 or later [3].

Data from the National Health and Disease Surveys of 1991, 1999, and 2000 and the 2009 World Health Statistics from the World Health Organization (WHO) were used. The population sample of the national health surveys included 1/1,000 of the total Iranian population, chosen by random cluster sampling. Each cluster consisted of eight families. The urban population sample comprised 1,097 clusters (9,276 families), and the rural population sample comprised 1,009 clusters (5,719 families). A total of 7,137 subjects were interviewed [4].

The principal objective of this study was to determine population and health indicators using the 2009 World Health Statistics from WHO, the DHS of 2000, and the latest indices published in Iran [2]. The specific objectives were to determine baseline household welfare and to assess fertility and contraceptive-use indicators. The sample size for each province (28 provinces plus Tehran, the capital city) was set at 2,000 urban and 2,000 rural households. The actual number of households eventually accessed was 128,957 including 707,108 persons. The sampling method was single-stage cluster sampling (clusters of equal size). Each cluster consisted of ten ordinary residential households. Variables included safe motherhood, reproductive health, family planning, education, nutritional risk factors, menopausal indicators, and socioeconomic statistics.

Health workforce, infrastructure, and essential medicine

Today, 97% of births are attended by skilled health personnel, meaning that these deliveries are performed by physicians and trained midwives (WHO, 2009). Mothers' access to healthcare services during pregnancy, delivery, and subsequent periods can prevent maternal and neonatal mortality [1, 4].

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Improvement in healthcare services is necessary for all communities wherever and whenever women need them. Examples of these services include establishing delivery care units and rural midwife training, increasing the literacy rate in women, and improving and increasing access to healthcare. According to WHO documents, the number of community health workers in Iran during 2000–2007 was 25,242, representing a density of 4/10,000 population. The number of other health service providers was 128,160, for a density of 18/10,000 population. During 2000-2007, the number of physicians was 61,870, for a density of 9/10,000 population; the number of nursing and midwifery personnel was 98,020, a density of 16/10,000 population; and the number of dentistry personnel was 13,210, a density of 2/10,000 population. According to WHO documents, during 2000-2008, there were 17 hospital beds per 10,000 population, which has since nearly doubled [4].

The WHO statistics with respect to the healthcare workforce, infrastructure, and essential medicine in the Southeast Asia region during the same reference period were 132,612 health workers, a density of 1/10,000 population, and 2,002,575 for a density of 12/10,000 population. Physicians numbered 849,324, for a density of 5/10,000 population, and 1,955,203, a density of 12/10,000. Dentistry personnel in our region. Numbered 92,759 for a density of one per 10,000; and the density of hospital beds per 10,000 population was 12. During 1976 to 1986 we had 2,993 physicians, of whom 25.19% were women and 74.81% were men. The number of women general practitioners increased from 754 during 1976-1986 to 13,305 in 2006. The same dataset indicated that women professors numbered 597 (12% of all professors), and this population increased during 1996-2006 to 4,210 (40% of all professors). The median public availability of selected generic medicines from 2000 to 2007 was 92.7%, and private availability was 92.8% [4, 5].

In 2000, 61% of deliveries were performed by physicians, and 35% (of all births or of physician-attended births) resulted in childbirth by cesarean section. Other than increasing the number of educated midwives, women surgeons and gynecologists, and women's access to all of these trained people and family physicians, the most important factor in decreasing the rate of maternal and neonatal mortality is increasing the growth of literacy in women. At the country level, antenatal care coverage in 2000 was 79%, and the index for at least four prenatal visits was 94% in 2008 [4].

The maternal mortality rate in Iran decreased from 54 per 100,000 live births in 1991 to 37.4 per 100,000 live births in 1997. It further decreased to 24.7 in 2006. According to the Millennium Development Goals, the target is to reach 18-22 per 100,000 live births in 2015. Meanwhile, according to WHO statistics, the maternal mortality rate per 100,000 live births was 140 in Iran, 450 in Southeast Asia, and 400 globally; the median country value was 130. The adult female mortality rate decreased from 208/10,000 in 1990 to 100 in 2007 [4]. The female infant mortality rate (probability of dying between birth and age 1 year per 1,000 live births) decreased from 46 in 1990 to 25 in 2007. The mortality rate for females under five years of age (probability of dying by age 5 per 1,000 live births) decreased from 69 in 1990 to 33 in 2007 [4, 5].

Health service coverage

We currently have 94% antenatal care coverage, and 97% of births are attended by skilled health care personnel (WHO, 2009). Maternal tetanus killed an estimated 150,000 to 300,000 women during the 1990s. Tetanus toxin vaccines can prevent infections and save lives of mothers and infants alike. The number of neonates protected against neonatal tetanus at birth increased from 71% in 1990 to 83% in 2007 (WHO, 2009). The contraceptive prevalence in 2000 to 2006 was 73.8% (WHO, 2009). According to the DHS, approximately 45.2% of mothers in 2000 had unplanned pregnancies, and 22.5% of all pregnancies were unwanted pregnancies. Approximately 7.5% of women have unmet needs in family planning. A 1% stillbirth and 5.6% abortion rate have been reported. We had access to no official WHO documents regarding these indices from 2000 to 2006. Of the total population, the tuberculosis detection rate under the directly observed treatment, short course (DOTS) in 1995 was 42%, increased to 58% in 2000, and further increased to 68% in 2007. The tuberculosis treatment success rate under DOTS in 2000 was 85%, and in 2006 it was 83% [4, 5]. We have no official WHO documents regarding antiretroviral therapy coverage in pregnant women, but the antiretroviral therapy coverage rate in people with advanced HIV infection in 2007 was 5%. In the southeast region in 2007, antiretroviral therapy coverage in pregnant women was 24% and in people with advanced HIV infection it was 25% [4, 5].

Reproductive health indicators, marital status, and prevalence of contraception usage are shown in Table 1.

Demographic and socioeconomic health factors

As fertility declines, income rises. Increasing population age and education, especially of women, also have major impacts on the use of healthcare and on health status. Literacy improves women's ability to reduce fertility risks, avoid sexually transmitted diseases, and promote safe pregnancy and childbirth. Furthermore, education is a key factor in improving the overall well being of the family, facilitating the participation of women in the labor market, and improving their preparation for leadership roles in community and national life. The illiteracy rate in women in the 15-49-year age group decreased from 30.8% in 1991 to 23.4% in 1999. The annual growth rate decreased from 2.1% during 1987-1997 to 1.1% during 1997-2007. The median age in 2007 was 24 years. The total fertility rate (per woman) in 1990 was five; it decreased to 2.2 in 2000 and further decreased to 2.0 in 2007. The adolescent fertility rate (per 1,000 women) during 2000-2007 was 25. The adult liter-

Table 1. — *Trends in reproductive health, marital status and contraception prevalence rates in Iranian women: 1991-2000. Some data in 2007 based on IMES.*

Case	1991	2000	2007
Reproductive health intentions			
Age at first pregnancy (years)	20	22	
Interval between marriage and the first pregnancy (months)	9.6	18	
Family spacing between 2 living children (months)	33.1	47.8	
Number of living children	4.1	3.2	
Conception by age 18 or under (%)	6	4.1	
Conception by age 40-49 years (%)	3	1.1	
Pregnancy rates (%)	10.2	5.2	
Population growth rate per year	1.47	1.2	
Total fertility rate (%)	4.9	2	
Cesarean section rate (%)	N/A	35	40/60
Antenatal injection of tetanus toxoids	N/A	79.6	
Marital status of women 15-49 years			
Mean age at first marriage (years)			
Urban	19.2	20.8	
Rural	18.2	19.7	
Percent of married women	70.3	64.4	
Percent of single women	23.3	26.3	

Table 2. — *Percentage of contraceptive methods used by Iranian women.*

Percent of divorced women	0.8	0.8	
Percent of first marriage at age of 18 or under	2	1.3	
Use of contraceptive methods by married women ages 15-49, currently using	–	73/8	78/9
Unwanted pregnancy(mother & father)	25/1	24/1	18/6
Unmet need	–	7/5	5/9
Traditional (withdrawal) methods	17.87	17.8	19/2
Oral contraceptive pills	26.9	18.4	19/3
IUD	6.9	8.5	8/1
Condom (husband of women 15-49 years)	7.8	5.9	9/2
Female sterilization	6.35	8.5	9/3
Injectables/implants	3.17	3	2/6
Vasectomy	< 1	2.7	3

Table 3. — *Maternal health indicators for 2007. Percentage of women receiving services in some countries WHO 2009.*

Regions/country	Total fertility rates	*Contraception use* Any method	Modern method*	Unmet need for family planning	Maternal mortality ratio per 100,000 live births	Antenatal care coverage % at least 4 visits	Skilled attendants at birth
Africa	5.1	24.4		24.4	900	45	46
Gabon	3.1	32.7	12	28	520	63	86
Turkey	2.1	71	55	6.0	44	54	83
South-East Asia	2.7	57.2		12.4	420	42	48
Egypt	2.9	59.2	54	10.3	130	65	79
Jordan	3.1	55.8	38	11	62	94	99
Asia							
Bangladesh	2.9	58.1	44	11.3	570	21	18
India	2.8	56.3	43	12.8	450	37	47
Iran	2.0	73.8	56	N/A	140	94	97
Eastern Mediterranean	3.4	43			420	45	59
Colombia	2.2	78.2	63	5.8	130	83	96
European region	1.6				27	N/A	96
Armenia	1.4	53.1	20	13.3	76	71	98
Ukraine	1.2	N/A	38	N/A	18	75	99

acy rate during 1990-1999 increased from 73.1% to 84.7%. The net percentage of females enrolled in primary school increased from 81% in 1999 to 100% in 2007 [1, 3]. From 1976 to 2004, the employment growth rate was 44% in men and +0.31% in women. In recent years, the number of employers in the government system increased to 63.6% in 2005. Approximately 2.4% of women work as governmental employees compared with 8.5% of men; 54% of women are housekeepers, but only 10% of women who work outside the home earn their own income [1, 3].

Risk factors

Access to improved drinking-water sources in the total population (urban and rural) increased from 92% in 1990 to 94% in 2006. Furthermore, access to improved sanitation is now approximately 83% [4].

The number of infants who exclusively breastfed for the first six months of life during 2000-2008 was 44.1% (WHO, 2009). The number of female adults aged ≥ 15 years who were obese during 2000-2007 was 19.2% (WHO, 2009). During 2000-2008, the mean height of girls at the age of 18 years was 158.1 cm, and their mean weight was 54.1 kg. Approximately 12% of 15-39-year-old women in urban and 6.9% in rural areas were obese; in the 40-69-year-old age group, obesity reached 27.9% in urban and 15.6% in rural areas. The prevalence of current tobacco use in female adults ≥15 years of age in 2005 was 5.5%, and that in female adolescents (13-15 years of age) during 2000-2008 was 19.5% [4]. Approximately 98.3% of women reported smoking no cigarettes in a survey in 1999 compared with 96.6% in a previous survey. However, this total may have been underestimated. The age at first cigarette smoking in 2000 was older than 25 years, and most women consumed fewer than ten cigarettes a day. An official report of the prevalence of addiction is not available [4, 5].

The average age of menopause, according to reliable statistics, is 50 years in Iran [2]. In 2000, in the 40-69-year-old age group, hypertension was seen in 20.6% of women, hypercholesterolemia of ≥ 240 mg/dl in 20.7%, obesity as measured by bone marrow indexing > 30 in 27.9% of urban and 15.6% of rural women, arthralgia or arthritis in 39.4%, low back pain in 49.2%, and kyphosis in 3.5%. Approximately 2.6% of women 60 to 96 years of age have had hip or spinal fractures in recent years. With the exception of hypertension, which was seen in 14.7% of women, and was higher in the current data, other indicators showed no significant differences between these figures and a previous study. A total of 6.8% of women at the reproductive ages of 15-39 years had intermediate to severe anemia (iron deficiency). Approximately 25.4% of women suffered from anxiety, and 24.6% were depressed; somatization, neurosis, and psychosis were seen in 10.6%, 6.2%, and 0.3% of women, respectively. One of the health-related Millennium Development Goals concerns HIV prevalence among adults aged ≥ 15 years per 100,000 population; in

Iran, the level was 163, and the regional average was 202. The cause-specific mortality rate in both sexes for HIV/AIDS in 2007 was 6/100,000 [4, 5]. HIV and AIDS are crucial factors affecting women's health. However, HIV and AIDS are seen more in males than in females, mostly due to intravenous drug use among addicts, but its impact on women cannot be ignored; they should become increasingly aware of HIV and AIDS and learn how to avoid infection. We do not have a correct estimation of the percent of females aged 15 to 24 years with a comprehensive, correct knowledge of HIV/AIDS. Four of 466,331 blood samples were reported to be positive for HIV; 31 of 413 cases (7.5%) with AIDS were females, and 178 of 3912 cases infected with HIV (4.55%) were females. The route of infection was sexual intercourse in 61% of women, but intravenous drug abuse was the main route of infection in 67% of males [2, 3].

According to the latest official data, the age at first marriage was 20.8 years in Iran [3]. Attending to the age at first marriage helps to lower the birth rate and other maternal problems. While the precise relationship of age at marriage to fertility is difficult to measure, surveys reveal a strong inverse relationship between the average age at marriage and the total fertility in a country (Table 2).

Mortality and burden of disease

Life expectancy has increased not only in Iran but also in most other countries [2]. The proportions of middle-aged and elderly people are growing. For example, according to WHO documents, life expectancy at birth in females was 65 years in 1990 and increased to 74 years in 2007. Healthy life expectancy (HALE) in 2007 was 61 years, whereas this index was 57 years and 61 years globally. Lifestyle, good health programs, and exercise can contribute to the health of women during menopause [4, 5].

Women who do not use contraception, even though they are sexually active and want to avoid pregnancy, are at risk of unwanted pregnancy. Such women are considered to have unmet needs for family planning. In Iran, we have no formal data for unsafe abortions. Abortion rates can be reduced if couples switch to more effective family planning methods. A comparison of two surveys, conducted in Iran in 1991-1999 and 2006, indicated that the number of women using contraception increased from 69% during 1991-1999 to 73.6% in 2000 and has further increased to more than 73.8% [4, 5]. In Iran, although significant progress has been made in the field of women's health, much more remains to be done, especially in the area of family health rights. This task could not be accomplished without the sociopolitical participation of women. We have over 100,000 health volunteers (urban, rural, tribes, and expert volunteers) who have covered a population of 16 million, and they voluntarily cooperate with the health system for the improvement and development of community health [2, 3]. The expert volunteers' project was established in 2004 to improve the knowledge and skills of these community networks as well as to promote a healthy population. We currently have more than 10,000 expert volunteers constituting the Health Volunteers, a group that cooperates with the public health system. Health volunteers are communicators who cooperate with donors and charitable organizations and can find resources and regional funding for creating and facilitating healthcare services to solve community health problems [4, 5].

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Address reprint requests to:
M. KARIMI-ZARCHI, M.D.
Gynecology Oncology Department
Shahid Sadoughi Hospital
University of Medical Science
Shahid Ghandi BLV
Yazd (Iran)
e-mail: drkarimi2001@yahoo.com