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Women's Health in Iran; A Review

Negin Hadi ^{1*}, Zahra Hajjari ²

¹ Department of Community Medicine, Neurosciences Research Center, Research Center for Psychiatry and Behavioral Sciences, Shiraz University of Medical Sciences, Shiraz, IR Iran

² Shiraz University of Medical Sciences, Shiraz, IR Iran

* Corresponding Author: Negin Hadi, Community Medicine Department, Shiraz University of Medical Sciences, Shiraz, IR Iran, Tel: +98-711 2354431, Fax: +98-711 2354431, E-mail: hadin@sums.ac.ir

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Abstract

Women have a significant part in a society's development, therefore health services must be in agreement with their needs. Half of Iran's population is made up of women and their health needs should be prioritized.

To review previous researches, articles were found in PUBMED, IRANMEDEX and MAGIRAN. Studies investigating a female health problem in any age period based on abstract were chosen and after critical appraisal 57 were included in this review. No studies inquired specific female health problems during childhood. Out of 57 articles included, 6 were about adolescent's health, 24 studies in reproductive ages, 4 investigating menopause issues and 12 articles on elder hood topics.

There exist many areas in female's health that are not considered properly based on this review. It is suggested to provide budget, regulations and specialists in order to discover women's health problems in each age period separately.

Introduction

Approximately half of world's population is composed of women. Women play an important role in determining health and survival of family as the

basic unit of society. Therefore women's health is not only of importance because of their own needs, but also it deserves attention due to their contributions to health of societies. As a re-

sult, a woman needs to be knowledgeable, skillful and healthy in order to dedicate more, not only to her family but also to a whole nation.

Being a woman impacts significantly on health status as it is influenced by complex biological, social, and cultural factors. Undesirably, women tend to be more poor and illiterate due to economic and political factors which give rise to their low status in society. Consequently, women have less access to social wealth and more importantly to health care as a basic need (1).

Women's status has improved dramatically in many parts of world, caused by international efforts such as adopting CEDAW (2) and its follow-up by UN and MDG's (3); however there are yet discriminations against them in many developing countries regardless of social and health status.

Biological and social factors affect women throughout their lives, not only in the old ages. Women's health needs can be discussed considering their life course, respectively: childhood, adolescence, adulthood, reproductive age and older age (4).

Childhood female problems can be divided into immunization coverage, under-nutrition, female genital mutilation, abuse and maltreatment. The health of adults tomorrow, critically

depends on health of children today (5). (15.45% of Iran population is made up of female children aged 0-10 years)

Female adolescents experience the puberty onset and may be involved in high-risk behaviors resulting in STI's, unwanted pregnancy and mental ill-health. Poor diet and physical inactivity are also important factors that may affect health in older ages. (21.81% of Iran's population is girls aged 10-19 years old)

In adulthood, including reproductive ages, women are exposed to pregnancy and childbearing problems due to lack of information, lack of contraception, infertility and low access to appropriate health care. Cervical cancer and sexually transmitted diseases such as HIV/AIDS, combined with domestic violence and depression, endanger health of women in this life period. (55.62% of Iran's population consists of women aged 20-59)

In postmenopausal years, diseases caused by exposure in previous years of life, such as cardiovascular diseases, breast cancer and osteoporosis, increase the disabilities and decrease the quality of life of women in the latest years of their life. Women, who tend to be providing health care for others,

would need health care then. (7.12% of Iran's population)

Logically, it is important to obtain all the women's health needs and find appropriate interventions for them. In order to be successful in this area, a complete knowledge of women's status in the region and what has been done should be acquired. In this review, the latest female demographic statistics in Iran will be mentioned briefly, and then the scientific researches in the previous decade with regard to Iranian women's health issues will be reviewed. Therefore the aim of this review is to declare future needs of research in women's health research in Iran.

Search Method

All the studies considering a female's health issue in Iran were identified by searching electronic databases such as PUBMED, IRANMEDEX and MARGIRAN.

The keywords used for search were: women, health, Iran

All qualitative and quantitative studies published from 2002-2012 investigating any female health issues in Iran were selected if included an appropriate sample and presented valid results. When the articles' full texts were not available, the abstracts were used.

57 articles were reviewed which the preferred language for inclusion was English, but when inaccessible, 4 articles in Farsi were also included.

Iranian women; demographic facts

In the latest national census, total population of Iran in year 2007 was 70,495,782 from which 34,629,420 are female (49.12%). It is estimated that one third of the female population lives in rural areas. Sex ratio is 104, meaning that for each 100 women, there are 104 men.

statistics	1997	2007
Average age of female population	23.2	27.95 (6)
Age at first marriage	22.4	23.3
Literacy rate	81.1%	96.7% (7)
Maternal mortality rate	37.4 per 100,000	24.7 per 100,000

Based on a study done by Barooti (et.al) one of the most important improvements in Iranian women's health was the decrease in maternal mortality

rate, 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 Mil-

lennium Development Goal is 18-22 per 100,000 live births in 2015 (8).

based on a report by Wafa news agency, 11% of Iranian women constitute the labor force while 80% are housewives (9).

Childhood

Based on the data found, no study has specifically investigated girls' issues in childhood time. The reason may be that causes of disease and death are similar for boys and girls during infancy and childhood. The difference may exist in social status of a female child. Girls are more likely to suffer from sexual violence or neglect (4).

Healthy life expectancy (HALE) at birth for females was estimated to be 62.79 years (10).

Studies in the past decade about Iranian child's health, consists of oral health care, mental health, physical health, dietary patterns and environmental health.

Studies by M. Vahdaninia (11) and F.Jafari (12) both reported prevalence of low birth weight to be 5.2% and its correlation with mother's education, unskilled worker fathers, short birth intervals, mothers height, maternal age and smoking mothers.

In an investigation, Saeid-Moallemi et.al found that female child oral self-

care is highly related to her mother's oral health knowledge (13).

In another study, Ghasemi (14) has shown that children exposed to domestic violence differed significantly from unexposed children with respect to somatic symptoms and hostility.

A.Rabbani et.al showed in their research that prevalence of vitamin D insufficiency in female students was five times more than their male counterparts (15).

The prevalence of underweight in Iranian female children is reported to be 5.7% in the CASPIAN study (16).

Since there has been no particular study about female children's health, a summary of studies investigating children's health is given in table 1.

Adolescents

Adolescence is considered as a healthy period while the generation is exposed to many risks, specifically because they are subject to social, physical and emotional changes.

For girls, onset of puberty can be the most obvious change. While in a study Razzaghy et.al (17) determined age of puberty in Iranian girls, Delara et.al studied the effect of premenstrual disorders on quality of life of Iranian adolescents (18). A study by N. Hadi presented that female adolescents knowledge regarding reproductive health was

related to school level, age, mother's education and residence location (19).

A Karimi presented in a qualitative study that female adolescents claimed that healthy food is inaccessible (20).

S.Parvizi et.al analyzed importance of family situation in health of adolescents in a qualitative study (21).

The prevalence of self-reported cigarette smoking in Iranian girls was 10.1%, mostly in high school, assessed by Kelishadi et.al. (22). More information is given in table 2.

Adulthood

In many cultures, entering the adulthood means marriage and childbearing. However it is important to consider not only maternal health of women in adulthood, but also other aspects of women's health such as mental, environmental and social health. Therefore women's health as adults can be divided into reproductive and non-reproductive health. However both man and woman take part in making a baby, but woman has to face all the health risks associated with sex, pregnancy and maternity.

Due to Islamic rules in Iran, all the statistics and data found are regarding married women.

1. sexual health:

Defined by WHO, "Sexual health is a state of physical, mental and social

well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence." 5 articles were found, investigating sexual dysfunction, infection and contraceptive methods.

3 studies inquired information about female sexual dysfunction (23),(24), (25).

2 studies found prevalence of reproductive morbidities among Iranian women(26), (27). The prevalence rate of Chlamydia infection was 8% in women attending routine pap smears in a big city of Iran (28).

2. maternal health:

Studies about maternal and pregnancy health may be discussed based on stages of pregnancy. Based on the findings of demographic and health survey (DHS) conducted in entire country of Iran, 11.6% of all married women, including 114000 household, have an unmet need for family planning (29). However studies from different cities show differences in unmet need and unwanted pregnancy (30), (31). Not only unwanted pregnancy may affect on future life of mother and child, but also it is reported by Iranfar et.al that unwanted pregnancy is a risk factor for

postpartum depression (32). Findings of DHS showed that in year 2000, total abortion rate in the whole country is 0.26 abortions per married women. Unsafe abortion caused 5.2% of maternal deaths in Iran (33).

Other issues related with pregnancy, which went under investigation are vitamin D deficiency (34), anemia (35) and low back pain (36) during pregnancy.

4 studies are carried out about methods of delivery among Iranian women. 2 RCT's on water birth and relaxation (37), (38) and other 2 studying impact of hypnosis (39) or massage therapy (40) on labor pain relief. Extended information is given in table 3.

3. Non-reproductive health

As it was mentioned before, there is an urgent need to investigate other women's health problem rather than sexual health. Mental, physical and nutritional status of women impacts not only their own health but their children and family. Due to social circumstances, many of women's non-reproductive health issues, such as physical activity, smoking, cardiovascular diseases and dietary patterns are being neglected.

Findings of a study in Isfahan reported that 6.7% of women in sample were smokers based on their serum cotinine

level while only 1.3% reported to be current smokers (41).

A. Noorbala et.al reported that in their sample of Iranian women aged over 15 years, 25.9% were likely to suffer a mental disorder (42).

In a comparative study it was shown that Iranian women experience higher rates of obesity and hypertension than American women (43). the prevalence of Iron deficiency, anemia and Iron deficiency anemia were respectively 35.6%, 25.8% and 13.5% in a sample of Iranian women aged 18-35 (44).

3 studies presented data on rate of violence in different cities of Iran (45), (46), (47).

No studies investigated amount of physical activity among Iranian women. More information is given in table 4 on the mentioned studies.

Menopause

As a result of reduction in female hormonal production by the ovaries, women move from a reproductive period to non-reproductive years. This transition is normally is a natural consequence of aging. However, for some women, the accompanying signs and effects that can occur during the menopause transition years can significantly disrupt their daily activities and well-being. Based on results of a study on women living in Tehran, the capital

city, the mean age of natural menopause onset was 47.71 (SE = 0.11) years (48). Overall, 4 studies were found to have investigated menopause in Iranian women (49),(50) ,(51).

Elder hood

As women tend to live longer than men, ways should be found to enhance and extend their lives. To do so, preventing risk factors for older diseases and chronic illnesses is the first step. Then providing health care services to manage elder people, specifically women, is the next priority, however it cannot be accomplished without public health planning.

The major causes of disability in older women are respectively: cardiovascular disease, especially because it remains unrecognized in women, chronic obstructive pulmonary disease (COPD) and cancers of breast, cervix and colon. The cancers however happen at an earlier age, but affect this period of time.

No studies were found, investigating cardiovascular disease or COPD in Iranian older women. Breast cancer with lower age-standardized incidence rate (ASR) 16.2 per 100 000 person-

years, in contrast to more developed countries (52). Based on a study by Mehrabi et al (53) the 3rd common site of cancer among a sample of Iranians was breast (10.2%). Totally 10 articles were found to have studied breast cancer screening, prevalence and complications among Iranian women (54), (55), (56), (57), (58), (59), (60), (61). N. Hadi et.al presented that knowledge of women about cervical cancer was correlated with age of marriage, education and number of children (28).

The burden of osteoporosis appears to cause loss of 17270 years (DALY's) in Iranian women.(62)

M Tajvar et al studied quality of life of elderly living in Iran, both men and women and found out that they suffer from relatively poor health-related quality of life (63).

Appendices

Table 1. Childhood Health

Citation	Study title	Results
Mohebbi et al 2006	Early childhood caries and dental plaque among 1-3-year-olds in Tehran, Iran	The results reveal serious problems in the dental state and oral cleanliness of 1- to 3-year-olds in Tehran, indicating a lack of proper oral health care for children in this age group.
Saeid-Moallemi et al 2007	Oral health behavior of Iranian mothers and their 9-year-old children.	Children's brushing frequency correlated with mothers' brushing frequency ($r = 0.2$; $P < 0.01$). High maternal oral self-care levels were associated with lower dental treatment values in children ($P < 0.01$).
Soori 2004	Measuring Health-Related Quality of Life Among Primary School Children in Ahwaz, Iran	Significant differences: between the HRQL of children and mothers' job and child's birth order ($P < 0.01$). However, no significant differences: by child's sex, child's age, and mothers' educational attainment.
Dianat et al 2011	School Bag Weight & the Occurrence of Shoulder, Hand/Wrist/ Low Back Symptoms among Iranian Elementary Schoolchildren	86% of the children reported some kind of musculoskeletal symptoms. Occurrence of shoulder, wrists/hands, low back pain among schoolchildren was 70%, 18.5% and 8.7%, respectively. Girls > Boys
Mousavi et al 2010	Childhood cancer in Iran	The incidence rate of childhood cancer in Iran was 48 to 112 and 51 to 144 per million among girls and boys in multi geographical settings, respectively. The most common cancer in children from 0 to 14 years old were leukemia (incidence rate = 8 to 62/million), lymphoma (3 to 23), and central nervous system tumors (3 to 22).
Mansourian et al 2010	Air pollution & hospitalization for respiratory diseases among children in Isfahan, Iran	PM10 and sulfur dioxide (SO ₂) concentrations had statistically significant positive association with number of respiratory admissions of children.
Nazari et al 2011	Correlations between children's television advertising exposure & their food preference	Finding showed > 80% of TV ads related to food products. The most frequent advertised food products were fat and salty snacks & different types of beverages & juices. A negative & high correlation between mothers' educational level & students influence by TV ads for brand preference & choices, food purchases and intake.

Table 2. Adolescent's Health

citation	Study title	Results
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Razzaghy et al 2006	Age of puberty in Iranian girls living in Tehran	Median age of first menarche for girls living in the capital city, Tehran, was 12.68 years (11.27–15.96). In the same study mean age at breast bud stage (B2) was 10.10 and pubic hair stage (P2) was 9.83.
Delara et al 2012	Health related quality of life among adolescents with premenstrual disorders: a cross sectional study	Based on the findings, 37.2% of adolescent schoolgirls met the diagnostic criteria and they show significant differences in physical and social functioning, compared to the control group
Rabbani et al 2010	Assessment of Pubertal Development in Iranian Girls	The mean age at breast bud stage B2 was 10.10, pubic hair stage (P2) was 9.83 and menarche age was 12.55.
Karimi et al 2010	Iranian Female Adolescent's Views on Unhealthy Snacks Consumption: A Qualitative Study	Major factors identified by the respondents were taste, peer pressure, parental influence, easy access to unhealthy snacks, limited availability of healthy snacks, appeal of snacks, habit, high price of healthy snacks, and media advertisements.
Parvizy et al 2009	A qualitative study on adolescence, health and family	Data were analyzed using qualitative content analysis. Analysis revealed three categories of family based risk factors for adolescents health: a widening generation gap, effective parenting and family financial situation
Kelishadi et al 2006	smoking behaviors and its influencing factors in a national-representative sample of Iranian adolescents: CASPIAN study.	The prevalence of self-reported cigarette smoking in Iranian girls was 10.1%, mostly in high school. The mean age of first attempt, with no gender difference, was reported to be 13.2, in family parties (37.1%) or traditional teahouse (27.4%). Having a smoking sister significantly increased the likelihood of smoking in female adolescents (OR = 4.5, 95%CI).

Table 3. Reproductive Health

citation	Study title	Results
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F R Ramezani et al 2011	Reproductive morbidity among Iranian women; issues often inappropriately addressed in health seeking behaviors	Reproductive tract infection (RTIs), pelvic organ prolapse (POP) and menstrual dysfunction were the 3 main groups of morbidities with prevalence of 37.6%, 41.4% & 30.1%, respectively.
M.Vahdaninia et al 2009	Help-seeking behaviors for female sexual dysfunction: a cross sectional study from Iran	51% had experienced at least one FSD problem. 35.8% of women with FSD sought no professional help & reason for that was identified as: 'time constraints' and believing that it 'did not occur to me' (39.1 and 28.5% respectively).
M Ziaei-rad et al 2010	Sexual dysfunctions in patients with diabetes: a study from Iran	Diabetes significantly impairs the sexual performance of women with diabetes. 88% of diabetic women reported Sexual dysfunction
M Safarinejad 2006	Female sexual dysfunction in a population-based study in Iran: prevalence and associated risk factors	31.5% reported FSD. Prevalence increased with age, 26% in women 20–39 years to 39% in those >45 years $P > 0.001$. 37% reported orgasmic disorders, 35% desire disorders & 30% arousal disorders
J Yazdi et al 2006	Comparative Assessment of Chlamydia trachomatis Infection in Iranian Women with Cervicitis: A Cross-Sectional Study	15.5% samples were diagnosed as Chlamydia positive, The prevalence was the highest (25%) among women aged 25 to 29 yr and 35 to 39 yr
M Abbasi-Shavazi 2004	Un intended Pregnancies in the Islamic Republic of Iran: Levels and Correlates	Despite the success of the family planning program implemented since 1989 in Iran, the analysis of data from a large nationally representative sample of women showed that a significant proportion of pregnancies were unintended.
H Taghinejad 2010	Comparison between massage and music therapies to relieve the severity of labor pain	A significant difference was observed between the two groups in terms of pain severity after intervention ($P = 0.01$). Agonizing, or most severe, labor pain was significantly relieved after massage therapy
S chaichian Et al 2009	Experience of Water Birth Delivery in Iran	Women in the control group required oxytocin, antispasmodics, opiates, & analgesics more frequently than those in the experimental group ($P < 0.001$). Meanwhile, the active phase and the third stage of labor were shorter experimental group by 72 & 1.3 minutes, respec-

		tively ($P < 0.004$, and $P < 0.04$)
Iranfar et al 2005	Is unintended pregnancy a risk factor for depression in Iranian women?	Of the women with unintended pregnancy, 43% attempted abortion. Depression at 37 weeks' gestation was slightly higher in the unintended than the intended pregnancy group (53.4% versus 41.0%; relative risk = 1.3) & depression 10 days postpartum was much higher in the unintended group (48.7% versus 25.6%; relative risk = 1.9)
M Abbasi et al 2010	The Effect of Hypnosis on Pain Relief During Labor & Childbirth in Iranian Pregnant Women	A sense of relief & consolation, self-confidence, satisfaction, lack of suffering labor pain, a decrease in fear of natural childbirth, lack of tiredness, & lack of anxiety. Increased concentration on the uterus & cervical muscle, awareness of all the stages of labor
A Kazemi et al 2009	High Prevalence of Vitamin D Deficiency among Pregnant Women and their Newborns in an Iranian Population	Mean maternal serum 25(OH) D was 19.4 ± 3.9 nmol/L, & cord blood 25 (OH)D was 16.7 ± 2.9 nmol/L. Hypovitaminosis D was detected in 86% of the women and in 75% of the newborns during winter and 46% of the mothers and 35% of the newborns during summer.
A Mahmoudian 2005	The Effect of Simultaneous Administration of Zinc Sulfate & Ferrous Sulfate in the Treatment of Anemic Pregnant Women	Increase in serum hemoglobin just after 12 weeks of treatment was 2.22 ± 0.77 and 1.5 ± 0.66 (gr/dl) in intervention & control group respectively, ($P < 0.001$). Serum hemoglobin differences in the 2 groups 8 weeks later when iron alone was administered to both groups were 2.24 ± 0.77 and 1.49 ± 0.66 (gr/dl)

		respectively . (P < 001)
N Ansari et al 2010	Low back pain during pregnancy in Iranian women: Prevalence and risk factors	The prevalence of LBP during pregnancy was found to be 57.3%, which is similar to most other countries. Pain onset was most frequently reported in the third trimester of pregnancy (40.7%) and was often reported to be in the low back area (71.2%). Almost half of the patients reported their pain as being moderate (44.1%).
F Bastani et al 2006	Does Relaxation Education in Anxious Primigravid Iranian Women Influence Adverse Pregnancy Outcomes?: A Randomized Controlled Trial	Significant reductions in low birth weight, cesarean section, and/or instrumental extraction were found in the experimental group compared with the control group. No significant differences were found in the rate of preterm birth.

Table 4. Non-Reproductive Health

citation	Study title	results
N Sarrafzadegan et al 2004	Tobacco use among Iranian men, women & adolescents	The prevalence of self-reported smoking among Iranian men and women > 19 years was 18.7% & 1.3%, respectively, compared to 21.2% and 6.7% based on serum cotinine level. Nearly 10.6% and 14.6% of claimed nonsmoker girls and boys were classified as current smokers by serum cotinine level.
A Ghazizadeh 2005	Domestic violence: a cross sectional study in an Iranian city	Of the respondents, 15% had been assaulted by their husbands at least once in the previous year and 38% at some time during the marriage. Economic problems were the most frequent cause of domestic quarrels. There was a significant association between husbands' educational level and violence against wives
K Hesami et al 2009	Domestic Violence Before and during Pregnancy among Pregnant Women	The findings indicated that the prevalence of domestic violence during pregnancy was relatively low (%68.7), compared with the prevalence of domestic violence before pregnancy (%86.4) (P < 0.001). Abuse before pregnancy was a strong indicator of abuse during pregnancy.

S Mousavi et al 2005	Wife abuse in Esfahan, Islamic Republic of Iran, 2002	Prevalence of wife abuse was 36.8%; incidence was 29.3%. Types of abuse included inattention to wife's feelings 44.8%, threatening to prevent communicating with the wife's family 38.1%, slapping 31.9% and beating 27.2%. Husband's age, use of drugs or alcohol, smoking, income and number of children were all associated with wife abuse
H Bahrami et al 2006	Obesity and hypertension in an Iranian cohort study; Iranian women experience high rates of obesity & hypertension than American women	Both overweight and obesity were more common in women than men. Age-adjusted prevalence of overweight was significantly higher in Iranian women compared to the American women (68.6% vs. 61.6%),
A Noorbala et al 2004	Mental health survey of the adult population in Iran	About a fifth of the people in the study (25.9% of the women and 14.9% of the men) were detected as likely cases. The prevalence of mental disorders was 21.3% in rural areas and 20.9% in urban areas

Results

Despite advances in health status and health system around the world, women are still disadvantaged due to their social, cultural and economic status. Based on the articles found, below health problems miss a proper attention.

Childhood: As it was mentioned before, there are health needs for a girl under 10 years old, which have not been investigated for Iranian girls. Female genital mutilation which is assumed to be practiced in some rural parts of Iran was not studied. Other missing fields for investigation in childhood are: sexual violence (non-

contact or contact abuse), causes of death and disability in female children and neglect.

Adolescence: which is a determining period of life, may always be neglected due to wrong beliefs. Sexual health of female adolescents in Iran was ignored completely in studies. Sexual education and initiation are the missing fields. In addition sexually transmitted illnesses are also being disregarded. Quantitative research on nutrition, physical activity and substance use need to be extended.

Adulthood: the health needs of women as adults are not limited, particularly because most of sexual and social events of their lives happen as adults.

From the viewpoint of sexual and reproductive health, studies regarding unmet need, abortion, STI and more importantly HIV, infertility and the stigma attached to it and cervical cancer are underestimated areas in women's health research in Iran.

From a non-reproductive point of view, mental health (depression, anxiety and suicide), substance abuse, domestic/social violence and health service access require more concentrations from public health specialists.

Elderly: No studies were found to have looked for mental, social and disabilities related to ageing in women.

Discussion

Female's health is influenced by a series of environmental, societal, cultural, demographic and economic factors. These factors affect men and women differently, because of gender inequalities and sex differences. Therefore research in women's health needs to be extended to find different sources of risk exposures in the specific society setting in order to reduce possible unpleasant consequences.

Iran as an Islamic country has particular rules and regulation which have influenced many of public health policies and programming's such as abortion, sexual education, pre-marriage sexual health services and many others. As an

example sexual matters are always ignored in scientific researches in Iran. Lack of sexual education for adolescents in school definitely will cause unwanted consequences in their health status.

It is clear that mental health of women, along their lifetime is being underestimated, while it is of importance to guarantee the mental health of a society.

Therefore there is a need to extend attention to the consequences of ignoring female's issues in this field. First of all political assistance to enforce tested public health policies in successful countries must be achieved. On the other hand responsive health care systems are to provide needs of women in health service merged with research budget and personnel to address broader range of health issues. For that reason, actions are not to be restricted to health services or public health policies only; they should be combined with cultural and educational programs for both men and women.

Of course the results of this review are prone to biases due to specific limitations. The search was limited to articles that were translated to English and published in international journals; there may be related articles in Persian language which were not included.

Moreover, there are no sources to find out possible researches as thesis in universities.

With regard to the brief review done on women's health in Iran, it is obvious that there are numerous missing areas to be studied. The results of this review, not only indicates the need for research on women's health but also the necessity of social and political changes. Therefore future research must focus on neglected fields of women's health in addition to suggestions to reform public health policies.

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