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Trends of contraception use among married reproductive age women: Tehran lipid and glucose cohort study 2002–2011

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ABSTRACT

Objectives: This study aimed to examine the trends of contraception use among married reproductive age women in Tehran Lipid and Glucose study between 2002 and 2011.

Methods: This analysis investigated a proportion of women users and non-users of family planning, using data from 10 year population-based Tehran Lipid Glucose Study from surveys conducted in 2002, 2005, 2008, and 2011.

Methods: Of the 6813, 6993, 7077, and 6789 women in the four phases mentioned, 34.1%, 33.9%, 33.5% and 35% of participants in each phase preferred to use contraception. Number of participants studied were 2506 women in 2002, 2529 women in 2005, 2594 women in 2008 and 2525 women in 2011.

Results: Types of methods and patterns of change in contraception differed across time. The percentage of women using traditional methods increased significantly from 25.7% in 2002 to 34.6% in 2011 (p value for trend = 0.001). Accordingly, modern contraception use showed a reverse trend. From 2002 to 2011, 61.4%, 61%, 57.7%, and 51% of married women reported currently using various modern contraceptives, respectively (p value for trend = 0.001). The proportion of users relying on condoms showed a significant increase during this decade, being 10.9% in 2002, 15.2% in 2005, 20% in 2008 and 21.9% in 2011. The prevalence of non-users for contraception was generally low; 12.7%, 8.2%, 8% and 14.3%, respectively from 2002 to 2011, but increased significantly across time (p = 0.005)

Conclusion: Relying on less effective contraceptive methods has increased rapidly among women in the Tehran Lipid and Glucose cohort study, a trend that could be a warning to policy makers about the possibility of higher unsafe abortion and maternal mortality/morbidity rates in the near future.

Introduction

Family planning (FP) methods chosen by women have an enormous impact on their health as well as their overall life span [1,2]. In particular, they influence the quality of parenthood and the ability to contribute to their community [3,4]. It is believed that modern contraception improves the autonomy of women in modern societies, substantially influences women's empowerment, and decreases poverty and maternal and childhood mortality [5,6]. In this respect, contraception usage for birth control has risen internationally especially among developing countries over the past decade [7,8].

During the past decades, Iranian women have experienced the largest and fastest fertility decline worldwide. The 1986 National Census reported a 3.2% annual population growth rate and a 40% increase in population since 1976 [9]. After initiating the birth-rate reduction policy in 1988, the fertility rate fell from seven births per woman in 1979 to 1.8 births in 2011, and the population growth rate decreased from 3.2% in 1986 to 1.29% in 2011 [6]; these trends were the result of socio-political changes such as the development of rural health houses, declining maternal and child mortality, family planning programs and population-based policies, improvement in the women's educational level and lifestyle, and the support of religious leaders, women empowerment and more equality in gender issues and decision-making [10–13].

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However, despite Iran's successful antinatalist policies, serious concerns have recently arisen that Iran has overpassed its goal, leading to a total fertility rate (TFR) lower than the replacement fertility level [14]. In recent years however, this has led to changes in Iran's population policies to improve fertility levels.

However, assessing prevalence and trends in contraceptive use in such a situation is crucial to inform and make health-care providers aware of the impact of their decisions regarding contraception usage. Also, it may help increase our understanding regarding family planning challenges, and achievements, and gaps based on trends in the past few years.

In the present study, we aimed to assess a 10 year trend in contraception use among women participants of the in Tehran Lipid and Glucose Study.

Material

Sample and setting

We used the data from Tehran Lipid and Glucose Study (TLGS), is an ongoing prospective population-based study in Tehran, initiated in 1998, with the aim of determining the prevalence of non-communicable disease risk factors [15]. All participants were evaluated at baseline and again at 3 years intervals. In TLGS study, 15,005 people, aged ≥3 years, were selected from a geographically defined population using multistage cluster sampling and enrolled for to the study after obtaining written informed consent. In each follow-up visit, demographic and lifestyle characteristics, different non-communicable diseases risk factors and also medical and reproductive/obstetrics histories, including data about current and previous contraceptive methods used were collected by trained staff during face-to-face interviews.

For current study, women aged 15–49 years married and sexually active, who not wanted to have children, or those with unintended pregnancy or postpartum after unintended birth, both users and non-users of family planning were examined in the four phases of TLGS in 2002, 2005, 2008 and 2011, to ascertain the trends and rates of change of contraception use over time. Table 1 provides a detailed description of study samples. Of the 6813, 6993, 7077, and 6789 women in the four phases mentioned, 34.1%, 33.9%, 33.5% and 35% of participants respectively used contraception to avoid pregnancy. The remaining women did not need contraception for following reasons: They were unmarried or widowed and not sexually active, were not in reproductive aged range (15–49 years old). Also, we excluded women with missing data. The final numbers of studied participants who needed the contraception and comprised the study were 2506 women in 2002, 2529 in 2005, 2594 in 2008 and 2525 women in 2011.

It should be noted that in 2002, participants of TLGS were randomly allocated to either the intervention or the control group. Residents in the intervention areas receive interventions that aim to improve their lifestyle (e.g., diet, smoking and exercise) through education, leaflets, brochures, school program alterations, and treating patients with NCD risk factors. However, we re-analyses the data for intervention. We divided our participants in two groups of intervention and controls. As we expected, we did not find out any statistical significant differences between two groups. The details of this analysis was presented to the supplementary file.

The ethical review board of the Research Institute for Endocrine Sciences approved the study proposal (Ethical code: 13ECRIES93/03/13).

Table 1
Details of study participants.

	2002	2005	2008	2011
Total, n	6813	6993	7077	6789
Excluded, n	4307	4464	4483	4264
Age ≥50 or ≤14	2607	2673	2822	2896
Unmarried/widowed	1672	1755	1629	1332
Missed data	28	36	32	36
Include, n	2506	2529	2594	2525

Contraceptive behaviors

Detailes on contraception histories were collected; more precisely, women were asked to report whether they had been using a contraceptive method during the past 3 months, and if so, which specific methods they had used. Women were also asked about medical, obstetrics history and pregnancy status at the time of the survey, infertility and their sexual activity in the last 2 years, to facilitate identification of women did not need contraception. Contraception methods were classified as modern method if the women or their partner used one or more of the following methods: Sterilization, intrauterine devices (IUDs), implants, injectable drugs, contraceptive pill, and male condom, or traditional method if they used rhythmic, withdrawal or periodic abstinence.

The prevalence rate of contraceptive use was defined as the percentage of married women of reproductive age (15–49) who were currently using, or whose sexual partner was currently using, at least one contraceptive method, regardless of the method used [16].

Statistical analysis

Data were analyzed using SPSS/PC version 20, with statistical significance set at $p < 0.05$. Continuous variables were expressed as mean (standard deviation), and categorical variables as percentages. Analysis of variance (ANOVA) test and chi-square test were used to determine differences in the demographic, social, and reproductive characteristics of women between phases; Bonferroni correction was used for multiple comparisons, i.e. by dividing the defined p value (0.05) with the number of comparisons made ($n = 6$), the adjusted significant p value for multiple comparisons was thus less than 0.008 ($p < 0.008$). The Cochran-Armitage test for trend was used for to test the statistical significance of linear trends in the prevalence of contraceptive usage across time.

Results

Socio-demographic characteristics of the population are presented in Table 2. Mean age of participants was 35.3 years in 2002, 35.6 in 2005, 36.1 in 2008 and 37 in 2011. Majority of women had more than one child. The percentage of these women slowly but significantly decreased from 77.1% in 2002 to 70.5% in 2011 ($p = 0.001$).

Among participants, illiteracy was rare, and most women had diplomas or academic degrees. A higher percentage of the women in 2011 had higher educational levels than others ($p = 0.001$).

In terms of occupation, the respondents were predominantly housewives; however the prevalence of employed women significantly increased across time from 12.1 (2002) to 21.1 (2011), $p = 0.001$. The prevalence of smoker's women was generally low and no differences were observed among participants across time.

Table 3 shows the prevalence percentage distribution of 15–49 years married women, by contraceptive use, according to TLGS phases. In the fourth phase of the study, from 2002 to 2011, 61.4%, 61%, 57.7%, and 51% of married women reported currently use of various modern contraceptives, respectively (p value for trend = 0.001), whereas 25.7%, 30.7%, 32.7% and 34.6% of married