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Novel restricted access to vasectomy in Iran: addressing changing trends in vasectomy clients' characteristics over 16 years in northwestern Iran

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Abstract

Objectives: This study is designed to evaluate the popularity of vasectomy in Iran. The study was conducted to calculate the frequency of vasectomy over time, to compare vasectomy users' characteristics with the general population and whether these characteristics have changed over time.

Study Design: A cross-sectional study of 7864 men undergoing vasectomy in a 16-year period was conducted in Urmia, Iran. Comparative statistics described differences between vasectomy users and nonusers. The data were analyzed separately in two 8-year periods, 1996–2003 and 2004–2011. The time period did not involve 2012, the year which vasectomy became outlawed in the whole country.

Results: During the study period, the contraceptive prevalence rate of vasectomy increased from 0.1% to 3.35%. Vasectomy users were predominantly older, better educated, had more children and more urban residents than the general male population ($p < 0.001$). Over time, men who underwent vasectomy tended to be younger, have well-educated wife and rural resident ($p < 0.05$).

Conclusions: This study highlighted a dramatic rise in the use of vasectomy between 1996 and 2011 in Iran. While the characteristics of vasectomy users versus general population were different, especially in age, education, resident area, number and sex of their children, there were significant changes from two 8-year study time periods.

Keywords: Vasectomy; Client's characteristics; Trends; Contraceptive prevalence rate; Iran

1. Introduction

The national family planning (FP) program of Iran as a Muslim country has been a success in recent years. The FP program of Iran has gone through four stages over the past 50 years: (a) The first FP program was implemented in 1966 but with minimal changes in fertility [1]; (b) The second stage started with the Islamic Revolution (1979) and brought on fertility increasing incentives which caused a postrevolution "baby boom" [1]; (c) The third stage started in 1989 which launched a nationwide free-of-charge FP program. Consequently, total fertility rate decreased sharply from 5.5 in 1988 to less than 1.47 in 2011 [2]. (d) Since 2012, the policy reversed once again from an anti- to a pronatalist population policy. Furthermore, doing vasectomy is a criminal act at least in public sector.

Due to permanency and near to 100% efficacy, vasectomy is the most effective contraception method to prevent pregnancy [3]. Worldwide, less than 2.4% of men rely on vasectomy for contraception [4]. Overall, the prevalence of vasectomy is higher in developed countries. Regions with higher vasectomy prevalence are North America (13.7%) and Oceania (9.8%) in 2012; at the same time, the lowest prevalence is seen in Africa (0.0%) and Asia (2.2%) [5].

Globally, the prevalence of vasectomy in Muslim countries is generally negligible, with the exception of Iran — with a vasectomy prevalence of 2.7% [4,6]. Vasectomy promotion program in Iran developed through two phases: first was the early start-up and decentralization phase in 1996–2003 where vasectomy services were introduced starting at major urban areas and a second maturation phase 2004–2011 where vasectomy promotion campaign expanded through the whole country.

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Studies suggest that the decision to use a contraceptive method is the result of different factors including demographic, religious, socioeconomic and cultural factors [7], spreading of information regarding the vasectomy procedure [8] and targeted health promotion via counseling on the method [9]. Evaluation of levels and trends in vasectomy acceptance in developing countries, especially those with Muslim populations, is crucial to inform the decisions of healthcare providers, program planners and those in charge of resource allocation.

Despite the increased popularity of vasectomy in Iran relative to other Muslim countries, we lack information on the characteristics and changing trends of sociodemographic characteristics of men choosing vasectomy. This study has three objectives: First was to evaluate the change in frequency of the method over time, second was to report demographic information on vasectomy users and the third was to compare characteristics with the general population and its changes over time.

2. Materials and methods

2.1. Study setting

West Azerbaijan is a mountainous province situated in northwest Iran with a total population of approximately 3 million. It has higher fertility and lower levels of socioeconomic development than other provinces in Iran. The province is populated mainly by two large ethnic groups namely Turks (Shiites Muslims) and Kurds (Sunni Muslims). Regional No-Scalpel Vasectomy Training Center (RNSVTC) of Urmia University of Medical Sciences was the only international vasectomy training center in Iran. Data for vasectomy procedures are drawn from the RNSVTC which was the only governmental center delivering vasectomy at the whole of Urmia district and also private clinics and hospitals. As a predetermined institutional responsibility, data on vasectomy services provided by both public and private sectors of the district have been stored in the RNSVTC.

2.2. Study design

A cross-sectional study was conducted using all records of the vasectomy clients enrolled in the RNSVTC for a 16-year period (January 1, 1996 to December 31, 2011). A total of 7864 vasectomy clients attended during the research time period; of these, only 48 users (0.6%) had the procedure in other public or private clinics. The present analysis considered all records with a retrieval rate of 100%. As a routine of the center, each vasectomy client together with his wife participated in FP counselling to obtain informed choice. The providers asked couples to complete an informed consent form for the vasectomy procedure and a structured self-administered questionnaire which was stored for future analysis. The questionnaire gathered data on couples' demographic profile and reproductive characteristics.

2.3. Analysis

The study was conducted to answer three questions; #1: what is the frequency of vasectomy over time? #2: What are the characteristics of vasectomy users compared to the general population? #3: What are the vasectomy users' changes from the earlier to the later period of time?

This study targeted 20–54-year-old men and reproductive-age married women in Urmia, Iran. Data related to the number and characteristics of the vasectomized men for the years 2006 to 2011 were obtained from the RNSVTC record review which stored data on services provided by both public and private sectors. Data from three representative Iranian National Population and Housing Censuses conducted in 1996, 2006 and 2011 were the source of the number and characteristics of general population [10]. Total annual male and female populations for 1996, 2006 and 2011 were collected directly from national censuses. To estimate the population size for each year between these surveys, mean population growth rates were used. Then, the estimated mean population of each 8-year period was considered as the reference population of that time period. These data were also used to compute the contraceptive prevalence rate (CPR) of vasectomy during 16 years individually. The CPR of vasectomy is the proportion of women of reproductive age whose partner is using vasectomy at a given year. The numerator would have the total number of vasectomy users from record of current research, and the denominator is the number of all women of reproductive age using data extracted from the national censuses [10].

Before comparing the vasectomy user's characteristics over time, comparative statistics described differences between vasectomy users and nonusers. To do this comparison, we stratified census data of men aged 20–64 into the same variable categories as we used for the study population. We used National Census data for comparison data on age distribution, place of residence, education and sex composition of children [10]. Contraceptive uses were from the 2010 Multiple Indicator Demographic and Health Survey [6]. Differences with the general population were tested using two-sample test of the equality of proportions (Z test). To compare the two time periods for differences between vasectomy users' characteristics to nonvasectomy controls, chi-square test was used. Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) Version 20. The value of $p < 0.05$ was considered statistically significant.

2.4. Ethical consideration

All couples gave informed consent prior to participation in the FP counselling. Survey content, consent forms, study procedures and using deidentified data were reviewed and