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Patterns of marriage and reproductive practices: is there any relationship?

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ABSTRACT

Today, a transition from traditional to modern marriages can be observed in many countries. This shift in patterns of marriage has evidently affected childbearing and reproductive practices. This study aimed to examine the relationship between patterns of marriage and reproductive practices in Iran. Hence, 880 married women, aged 15–49 years old, living in the North of Iran were selected using a multi-stage cluster sampling strategy and their patterns of marriage and reproductive practices were cross-sectionally studied. The results revealed that there were no significant differences in the reproductive practices by three main patterns of marriage in Babol, Iran. The study also indicated that there were no significant differences in reproductive practices in three patterns of marriage after controlling for socio-economic variables. It seems that apart from the patterns of marriage, other influencing factors are the determinants of fertility in women, and the policy-makers of Iran need to pay attention to these determinants before making any decisions in this area.

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KEYWORDS

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Introduction

Nowadays, the individual’s role in choosing a partner in Iran has increased and the patterns of marriage have changed from traditional ones (mostly arranged and selected by the parents), to ones mostly based on the romantic love and relationship processes (Abbasi-Shavazi & Sadeghi, 2006; Choe, Thapa, & Mishra, 2005; Choe, Westley, & Retherford, 2002; Entezari, 2011; Ghimire & Axinn, 2013; Mensch, Singh, & Casterline, 2005; Moultrie, Sayi, & Timæus, 2012; Retherford, Ogawa, & Sakamoto, 1996; Taghizadeh et al., 2015). Marriage and family formation is one of the most important social contexts and events, as well as playing a key role in shaping the reproductive and sexual attitudes, schemas, discourses and practices (Abbasi-Shavazi & Askari-Nadoushan, 2005). Hence, the reproductive practice based on incentives and attitudes related to the decision-making process can be considered as an action that comes about in a socio-cultural setting. These practices not only take place in childbearing, but also cover all aspects of human reproduction including sexuality, marriage, interest in having children and attitudes toward incentives for family planning (Mahmoudian, 2000).

According to Withers (2010), the reproductive practice is a complex phenomenon involving both biological effects and individual decisions that are affected both by socio-economic status (SES) and cultural beliefs. Fertility has declined in the developing countries since 1950s, when better and more modern methods of contraception, including a variety of pills, intrauterine device, newer methods of sterilization and abortion legalization, were developed and made available. Some scholars believe that women’s education and entry into the workplace have contributed to the overall decline in world fertility (Calwell, Caldwell, & McDonald, 2002). Likewise, the fertility rate in the Islamic Republic of Iran has declined over the past three decades (Abbasi-Shavazi & McDonald, 2006; Abbasi-Shavazi, McDonald, & Hosseini-Chavoshi, 2009; Hosseini & Begi, 2012; Mirzaie, 2005; Mohammad, Farahani, Mehdi, & Farahani, 2002) and numerous...
studies have reported that the fertility rate in Iran is presently about 1.8 (Abbasi-Shavazi, Morgan, Hossein-Chavoshi, & McDonald, 2009).

Rapid population growth results in serious socio-cultural, economic and ecological problems. For instance, high unemployment rate, insufficiency of food and other vital natural resources, lack of housing, stress and conflict that eventually lead to severe psychosomatic health problems are the consequences of the rapid population growth (Hosseini & Begi, 2012). On the other hand, a decline in fertility leads to a transition in the age structure of the population and as a consequence to low economic growth (Hosseini & Begi, 2012). As a number of studies have detailed, the reduced population growth in the context of Iran is closely connected to changes in various aspects of everyday life and family structure in the country including the economic, socio-cultural, political aspects and some traditional aspects of the family formation. Moreover, all of these changes have brought about changes in patterns of marriage and ultimately in the reproductive and sexual ideals and desires, attitudes, discourses and practice of Iranian people (Abbasi-Shavazi & Hosseini, 2009; Hosseini, 2012; Hosseini & Begi, 2012; Mahmoodi, Mohammadpur, & Rezaei, 2015).

Some studies recognize that the role and autonomy of women in family decision-making and intra-household resources allocation has improved because of the change in the patterns of marriage from traditional to modern ones although their fertility has declined as a consequence (Abbasi-Shavazi & Askari-Nadoushan, 2005; Dauletova, Karp, & Absattarova, 2012). Conversely, a number of studies show that women who believe in marriage for continuity and strength of the relationship, quickly want to have children and have more children after marriage (Fricke & Teachman, 1993; Rashid, 2006). Some studies, ultimately, failed to confirm any linkage between the patterns of marriage (traditional, modern and even post-modern) and reproductive practices (Ogawa, 2003; Weinreb, 2008).

Since marriage patterns may affect the reproductive practices, which are central to the sexual and reproductive health, an examination of these practices by monitoring the changing patterns of marriage might be valuable for meeting the reproductive and sexual health needs of women (Taghizadeh et al., 2015). Hence, knowing reproductive practices of women in traditional, modern and even post-modern patterns of marriage is considered very important in making and implementing policy in all demographic, economic, political, socio-cultural and educational domains.

With this in mind, this study aimed to determine and compare Iranian women’s reproductive practices over different patterns of marriage.

Materials and methods

Setting
Iran is one of the most ethno-culturally diverse societies in the world and the cultural mosaic of people living in Iran today forms a unique society. The largest ethnic groups of Iran are Persian, Azerbaijani’s Turks, Kurds, Arabs, Baluchis, Lors, Mazandaran, Turkmen, Qashqai, Talys and Gilaki. The north of Iran, in particular Mazandaran province, is the homeland for Mazandaran people. The population of Mazandaran is about three million and the prevailing religion among this ethnic group is Shiite Islam (Borjjan & Borjjan, 2008; Taghizadeh et al., 2015). Babol, with a population of 512,944 in 2014, is one of the oldest and most important cities in the North of Iran, and women living in Babol are considered representative of Mazandaran women.

Sample size

From the population of 166,183 women of reproductive age (15–49 years) living in Babol, 850 women were selected as the sample size for this study. To achieve this goal, a pilot study was carried out by recruiting 80 women, about 10% of the required sample size. Using an estimate variance (the variability), estimate obtained from the pilot study, the exact number of sample was determined using the following formula.

\[
n = \frac{Z^2 \cdot \frac{1}{10}, S^2}{d^2}
\]

In this study, the number of children was considered as the main reproductive practice or behaviour. According to the results of the pilot study, the number of children ranged from 1 to 6 (range =5) and the mean ± SD was 2.90 ± 0.88.

Since \(d\) is the degree of precision, the margin of error that is acceptable and should be in the range of 10–25% from SD. Our basis for accuracy in this study was 0.06. In addition to the calculated sample size (n = 821), and in order to improve the representativeness of the sample and to manage the potential issues and challenges of the under-sized study, about 60 additional women were recruited: all phases of the
data analysis were carried out with data and evidence of 880 women.

\[
\begin{align*}
n &= \frac{(1.96 \times 1.96) \times (0.88 \times 0.88)}{(0.06 \times 0.06)} \\
&= \frac{(3.84) \times (0.77)}{(0.0036)} = 821
\end{align*}
\]

Sampling strategy

This cross-sectional population-based study was designed to examine the reproductive practices of women and some of their socio-demographic characteristics using the questionnaire of ‘women’s reproductive practices’. The questionnaire was developed by the research team of this study by reviewing and upgrading ‘The Iran Fertility Transition Survey Questionnaire’, previously developed and used by one of the authors of this paper (Abbasi-Shavazi, McDonald, & Hossein Chavoshi, 2004). To determine the patterns of marriage, the researchers designed a number of items or questions regarding the socio-cultural context of Iran by consulting with a panel of Iranian experts, attended by 11 experts from different academic disciplines and backgrounds including Health Education, Demographics, Nursing, Reproductive Health, MSc Psychology, Reproductive Health, Psychology, Political Economy of Health, two Sociology disciplines and Midwifery. Then, the psychometric properties of the upgraded instrument were evaluated in the setting of the study, namely in Babol, Mazandaran Province.

After a pilot study to determine the exact sample size in each village and neighbourhood, interviewers attending urban and rural clinics obtained the written informed consent from all eligible women who completed the questionnaire. The number of samples in each cluster was achieved using the probability proportional to size (PPS) strategy. A total of 880 married women, aged 15–49 years old living in four geographic areas of six districts of Babol city, were recruited using a multi-stage cluster sampling method. Inclusion criteria were as follows: (i) being married women of reproductive age and having at least one child; (ii) no diseases or deficiencies such as primary and secondary infertility; (iii) no evidence of disease that can cause problems with fertility and (iv) no severe mental health disability or psychiatric disorders which could cause inability to respond to the questionnaire. The exclusion minimal criterion of the study was the lack of response to a maximum 10% of the questions. After completing the questionnaires, data were analysed using IBM SPSS software for windows, v.21 (IBM Corp., Armonk, NY).

Results

In this study, the data on the variables of the patterns of marriage, reproductive practices and the socio-demographic information were gathered from 880 married women in the reproductive age from the city of Babol in North of Iran. Based on the initial classification of the panel of experts, eight patterns of marriage were proposed. However, after sampling, and based on the definition of traditional and modern marriage in the literature (Ghimire, Axinn, Yabiku, & Thornton, 2006; Xiaoh & Whyte, 1990) and three items (selected by their spouses or parents; friends/peers; and cooperation and consent before marriage and during marriage), the research team combined these eight patterns into three: (i) the traditional; (ii) the mixed and (iii) the modern. As a result, the pattern of mixed marriage had the highest frequency (77.2%) and modern marriage (11.1%) similar to the traditional marriage (11.7%).

An evaluation of the socio-demographic characteristics showed that the place of birth, current location, employment status before the first pregnancy, current employment status and living with family (first 2 years of the marriage) were not significantly different between the three groups. The Kruskal–Wallis test showed that educational level (<0.05), husband’s education (<0.05) and SES (<0.001) were significantly different across the three patterns of marriage. Using the Mann–Whitney U test, it was found that the educational level of women and her husband and SES of women with traditional marriage were lower than women with the other two patterns. The modern and mixed marriages were the same with regard to these characteristics (Table 1). In addition, marriage duration was investigated in the three patterns of marriage and the contingency table and chi-square statistic showed no significant difference among the three groups (Table 2).

Finally, the analysis of variance (ANOVA) and chi-square statistic revealed that there was no significant difference in the reproductive practices including the number of children, the number of pregnancies, current pregnancy, experience of child death, the number of girls and boys, history and number of abortion, and history of unwanted pregnancy by three patterns of marriage (Table 3).

Discussion

In this study, the role of marriage pattern on reproductive practices was examined. Today, family attitudes are changed with regard to marriage patterns,
and traditional marriage is being replaced by modern marriage. Some scholars believe that as a consequence reproductive practices are different (Ghimire & Axinn, 2013; Ogunjuyigbe & Adeyemi, 2003).

Previous studies have shown that people in a traditional style of marriage, get married and have children and ultimately have higher levels of fertility because they are more prone to pregnancy from marriage until menopause. Likewise, because of the early and teen marriages, women are more likely to drop out of school and as a result, their educational level will be lower. In contrast, women who are involved in the selection of their partner usually prefer men with higher education (Smith, Emran, & Maret, 2009) and due to greater awareness and increased use of contraceptives, increased decision-making power in the family, especially the availability of job opportunities before and after marriage and as a consequence have fewer children and lower fertility levels (Moeeni, Pourreza, Torabi, Heydari, & Mahmoudi, 2014; Ogunjuyigbe & Adeyemi, 2003).

The findings of this study demonstrated that the type of marriage was not significantly associated with the reproductive practices of women residing in Babol. This is different from the results of those studies in the literature that have shown that fertility in the traditional pattern of marriage is higher than the modern pattern of marriage (Feyisetan & Bankole, 1991; Ghimire & Axinn, 2013). Likewise, it is not certainly in agreement with some other studies in the literature with different results (Dauletova et al., 2012; Ogunjuyigbe & Adeyemi, 2003; Rashid, 2006).

### Table 1. Socio-economic status, education and husband's education of married women (15–49 years) in three patterns of marriage in Babol, Iran.

<table>
<thead>
<tr>
<th>Socio-demographic variables</th>
<th>Patterns of marriage</th>
<th>N</th>
<th>Mean rank</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Traditional</td>
<td>103</td>
<td>365.50</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>678</td>
<td>448.21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern</td>
<td>98</td>
<td>461.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>879</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband's education</td>
<td>Traditional</td>
<td>102</td>
<td>365.32</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>677</td>
<td>447.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern</td>
<td>98</td>
<td>454.51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>877</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>Traditional</td>
<td>103</td>
<td>359.36</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>677</td>
<td>450.24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Modern</td>
<td>98</td>
<td>449.54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>878</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 2. Contingency table of the duration of marriage by patterns of marriage.

<table>
<thead>
<tr>
<th>Marriage pattern</th>
<th>Traditional (%)</th>
<th>Mixed (%)</th>
<th>Modern (%)</th>
<th>Total (%)</th>
<th>df</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>29 (3.3)</td>
<td>221 (25.1)</td>
<td>39 (4.4)</td>
<td>289 (32.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10–19</td>
<td>32 (3.6)</td>
<td>242 (27.3)</td>
<td>32 (3.6)</td>
<td>306 (34.8)</td>
<td>6</td>
<td>0.25</td>
</tr>
<tr>
<td>20–30</td>
<td>32 (3.6)</td>
<td>181 (20.6)</td>
<td>21 (2.4)</td>
<td>234 (26.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;30</td>
<td>10 (1.1)</td>
<td>35 (4.0)</td>
<td>6 (0.7)</td>
<td>51 (5.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103 (11.7)</td>
<td>679 (77.2)</td>
<td>98 (11.1)</td>
<td>880 (100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Reproductive practice in traditional, mixed and modern patterns of marriage.

<table>
<thead>
<tr>
<th>Patterns of marriage</th>
<th>Traditional (mean ± SD)</th>
<th>Mixed (mean ± SD)</th>
<th>Modern (mean ± SD)</th>
<th>Total (mean ± SD)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>1.59 ± 0.87</td>
<td>1.29 ± 0.90</td>
<td>1.17 ± 0.76</td>
<td>1.09 ± 0.89</td>
<td>0.09</td>
</tr>
<tr>
<td>Number of pregnancies</td>
<td>2.33 ± 1.20</td>
<td>2.29 ± 1.16</td>
<td>2.29 ± 1.16</td>
<td>2.28 ± 1.16</td>
<td>0.36</td>
</tr>
<tr>
<td>Number of daughters</td>
<td>0.88 ± 0.98</td>
<td>1.01 ± 0.85</td>
<td>0.90 ± 0.82</td>
<td>0.98 ± 0.86</td>
<td>0.24</td>
</tr>
<tr>
<td>Number of sons</td>
<td>1.06 ± 0.89</td>
<td>0.91 ± 0.78</td>
<td>0.82 ± 0.75</td>
<td>0.92 ± 0.79</td>
<td>0.08</td>
</tr>
<tr>
<td>Currently pregnant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5 (0.6)</td>
<td>41 (4.7)</td>
<td>6 (0.7)</td>
<td>52 (5.9)</td>
<td>0.88</td>
</tr>
<tr>
<td>No</td>
<td>98 (11.2)</td>
<td>838 (72.7)</td>
<td>90 (10.3)</td>
<td>828 (94.1)</td>
<td></td>
</tr>
<tr>
<td>Infant mortality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (0.5)</td>
<td>28 (3.2)</td>
<td>2 (0.2)</td>
<td>34 (3.9)</td>
<td>0.62</td>
</tr>
<tr>
<td>No</td>
<td>99 (11.3)</td>
<td>651 (74.1)</td>
<td>94 (10.7)</td>
<td>844 (96.1)</td>
<td></td>
</tr>
<tr>
<td>History of abortion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>27 (3.1)</td>
<td>144 (16.4)</td>
<td>25 (2.8)</td>
<td>196 (22.3)</td>
<td>0.34</td>
</tr>
<tr>
<td>No</td>
<td>76 (8.7)</td>
<td>535 (60.9)</td>
<td>71 (8.1)</td>
<td>682 (77.7)</td>
<td></td>
</tr>
<tr>
<td>History of unwanted pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24 (2.7)</td>
<td>133 (15.1)</td>
<td>18 (2.1)</td>
<td>175 (19.9)</td>
<td>0.64</td>
</tr>
<tr>
<td>No</td>
<td>79 (2.1)</td>
<td>546 (62.2)</td>
<td>78 (8.9)</td>
<td>703 (80.1)</td>
<td></td>
</tr>
</tbody>
</table>
findings of this study, as well as the studies of Ogunjuigbe & Adeyemi (2003) and Smith et al. (2009) endorsed that women, who had the traditional marriage, have lower educational levels than women in modern marriage.

This study on the independent effect of the patterns of marriage on the reproductive practices is associated with some limitations. One of these limitations is the impact of changes in some economic, socio-cultural fields on patterns of marriage and reproductive practices (Abbasi-Shavazi & Sadeghi, 2006; Fricke & Teachman, 1993; Pallitto & O’Campo, 2004; Singh, Sedgh, Hussain, & Eilers, 2013; Sonkar, Narlawar, Inamdar, & Doibale, 2013). As a result, in assessing the effect of patterns of marriage on reproductive practices, economic, political, socio-cultural factors, which may also affect both reproductive and marriage practices should be taken into account. In this study, the socio-demographic variables such as place of birth, current location, employment status before the first pregnancy, current employment status and independently living in the first 2 years after marriage were investigated and the outcomes suggest that these variables were not significantly different across the three patterns of marriage. In this study, women with traditional marriage had lower economic status and lower level of education than women in mixed and modern patterns of marriage. This result is similar to the findings of other studies (Conger, Conger, & Martin, 2010; Jones, 2010; Santhya et al., 2010; Trail & Karney, 2012).

Another limitation of studies of this type is that marriage patterns should be considered along with marriage duration, since duration of marriage is known as an important factor in fertility practice (Ogunjuigbe & Adeyemi, 2003). In the present study, marriage duration was not significantly different between the three patterns of marriage.

The evidence of this study indicated that changes in patterns of marriage, and the transition from traditional to modern or mixed models, does not significantly alter the reproductive practices of married women in Iran. This is similar to previous research by Abbasi-Shavazi et al. (2004) who observed that reproductive practices and attitudes in all age groups were similar and there were no significant differences among different social groups including rural and urban, literate and illiterate women. Likewise, in a study in Japan, Ogawa (2003) did not observe any relationship between the type of marriage or the interval between marriage and first pregnancy, which is one of the most important variables in women’s fertility.

One of the changes that occurred after the Iranian revolution is that women’s education increased dramatically and concurrent with the government’s efforts to reduce the population, there was a substantial increase in the use of contraceptives. Studies showed that the family planning programme of the government played a significant role as well (Aghajanian & Merhyar, 1999; Mahmoudi et al., 2015). For example, the Ministry of Health and Medical Education provided unlimited resources for family planning to married couples to reinforce that a small family was the norm (Mahmoodi et al., 2015). Probably, the major reasons for differences between this study and previous studies are the encouragement that families receive in health-medical centres to use modern contraceptive methods and to have fewer children. Implementation of public education played a key role similarly for both the rural and urban populations and this resulted in the elimination of urban–rural gap in fertility and the use of modern contraceptives (Mahmoodi et al., 2015).

In conclusion, we argue that the results of this study can be useful for the newly launched population policy in Iran. The success of pronatalist policies rests on scientific and evidence-based programmes addressing the needs of young couples taking into account their socio-economic and cultural backgrounds.

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Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Authors’ contributions

All authors of the manuscript contributed to the concept and aim of the study. Principal scholar of this study, F.B., drafted the first copy of the manuscript. A. V., Z. T., A. E., A. P. and M. J. A.-S. revised and commented on the manuscript. A. V. revised and carefully checked the manuscript for important academic content. All authors approved the final version of the manuscript.

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