Polygyny and Fertility in the United Arab Emirates at the End of the 20th Century

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Abstract

Most studies of polygyny, especially those conducted in African societies where polygyny is most prevalent, report that female fertility is negatively associated with polygyny. This paper examines the polygyny-fertility relationship among married women in an oil-rich country, the United Arab Emirates (UAE) and finds the opposite relationship.

The data are drawn from a nationally representative sample conducted in 1998-1999 of UAE national women. Whether a married woman had a birth in the previous 12 months is the measure of fertility that is used to compare the fertility of polygynous and monogamous wives. Polygynous wives are shown to be more likely than monogamous wives to have had a child in the past 12 months, even after controlling for husband's age, woman's residence, co-residence status, employment status, and other variables.

Given this positive polygyny-fertility relationship, we then discuss whether this form of marriage might become the basis of a UAE policy to increase the fertility of UAE women, an important consideration given that UAE nationals comprise only 20 per cent of the UAE population.

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Introduction

Polygyny, a form of marriage in which a man is simultaneously married to more than one wife, is widely practiced in Africa, in some lowland South American societies, and in the Middle East. The proportion of polygynists varies widely around the world. Among Muslim Arabs, contrary to popular belief, polygyny is not that widespread and is, in fact, relatively low by "world standards" (Chamie, 1986; Tabutin and Schoumaker, 2005). On average no more than 12 per cent of marriages in Arab societies are polygynous, and in some instances its prevalence is between 3 and 5 per cent in North Africa, Palestine, and Syria (Tabutin and Schoumaker, 2005). It is substantially higher, around 8 to 19 per cent, in the countries of the Arabian Peninsula. Conversely, the levels of polygyny among non-Arabs range between 20 and 50 per cent in some sub-Saharan nations (Timaeus and Reynar, 1998).

In this study, we examine the relationship between polygyny and fertility among currently married women in the United Arab Emirates (UAE) at the end of the 20th century. We use data from the "United Arab Emirates National Family Survey of the Characteristics of Native Households." These are data from a survey conducted in the UAE in 1998-1999 by the UAE Central Department of Statistics in the Ministry of

Planning. The survey was restricted to Emarati women and is a nationally representative sample of over 4,000 households in 209 primary sampling units. The 4,245 ever married women in the sample were aged 15-49 and were personally interviewed in their homes. The data we use in our analysis are restricted to only those 3,400 women who are currently married, of whom 12 per cent are in polygynous marriages.

In the next section we discuss the social context of the study site, the society of the United Arab Emirates. Since most analyses of polygyny and fertility have been conducted in African countries, our discussion of the social context of the UAE will help set the stage for our quantitative analyses that follow later. We then review some of the basic literature on polygyny and fertility. This is followed by a discussion of the sample and the data and method we use, and then the presentation of our results. Our analyses of the UAE survey data will show that the often demonstrated proposition that polygyny tends to depress fertility is not operable in the UAE.

Demographic and Social Context of the UAE

The United Arab Emirates is a country of 4.5 million people in the Gulf area of Western Asia. Figures 1 and 2 are maps, first, of the Asian region, and then of the UAE; these may be used to locate the UAE geographically. Regarding basic demographic information about the UAE, the country's birth and death rates in 2008 are 25/1,000 and 6/1,000, resulting in an annual rate of natural increase of 1.3 per cent. The country has a very low infant mortality rate of 7/1,000 and a total fertility rate of 2.0, just below replacement levels (Population Reference Bureau, 2008). However, unlike virtually all countries of the world, except for Qatar, the majority of the UAE population, indeed over 80 per cent, is comprised of non-citizens of the UAE, mainly comprised of persons not

born in the UAE. In our study we focus on the fertility of only the UAE citizens, and we refer to them as Emaratis.

The citizen and non-citizen populations of the UAE are very different from one another, aside from the fact that the non-citizen population is four times larger than the citizen population. Figure 3 is an age-sex population pyramid of the total population of the UAE in 2005. This is the combined population, combining both citizens (Emaratis) and non-citizens (non-Emaratis). This is a hugely unbalanced population with tremendously large numbers of young men as a result of high levels of immigration. Figure 4 is an age-sex population pyramid of the citizen (Emarati) population of the UAE. This population has a much more balanced age and sex distribution than does the total UAE.

The UAE is an oil rich Arab Gulf Muslim country and has undergone rapid socioeconomic development in the last few decades, resulting in important changes in sociodemographic patterns. The normative system in the UAE is structured around the family and is linked to traditional and religious teachings that consider family formation to be the basic function of the society. The family is the unit in which reproduction is authorized and is expected to occur through marriage. Marriage and establishing a family are treated as essential and sacred. Marriage without children is considered to be an incomplete state (Alnuaimi, 2001). In the past, the main and the most important role of women was to bear and raise children. Today, this role is still central, but has been modified somewhat given the increasing participation of women in higher education and in the paid labor force.

The overall level of illiteracy in the UAE has fallen from over 40 per cent in 1975 to 20 per cent in 1995, to 9 per cent in 2005 (Ministry of Planning, 2005). According to the 1995 United Nations Development Report, the United Arab Emirates has the highest level of female literacy in the Arab World (Sabban, 2002). Also according to the UAE Ministry of Planning, 12 per cent of Emarati women in 2005 were in the paid labor force, compared to 5 per cent in 1995, 2 per cent in 1985, and 1 per cent in 1975. More than half of the employed Emarati women working outside the home (53 per cent) were in professional work, mainly as teachers in girl's schools (Ministry of Planning, 2005). The unemployment rate is estimated to be twice that of men, i.e., 20% for women versus 8% for men (Tanmia, 2005).

Non-marriage is considered to be a major social problem in the UAE. Men and women expect a woman to be both a wife and a mother. A woman should combine these two key roles with her role in the labor force, if she is employed outside the home. Labor force participation is not seen as an alternative to the woman's roles as wife and mother.

Divorce is also considered to be a social problem. However, despite the fact that Islam and the UAE culture both discourage divorce, the divorce rate has indeed been increasing. There is a growing general belief among some in the UAE that women's education and work, as well as the adoption of Western values, are among the many reasons for the rise in divorce in the UAE. It is thought that with increasing levels of education and labor force participation, women attain a degree of autonomy and become less dependent on men. Women who are divorced carry a stigma, and their chances of remarriage are low.

Polygyny in the Arab Muslim societies has declined in recent years (Chamie, 1986; Farques, 1997; Tabutin and Schoumaker, 2005), but has increased slightly in the Arab Gulf societies (see Table 1). Chamie (1986) has argued that the increasing trends in the proportions of women in polygynous marriages among Arab Gulf Muslims does not necessarily result from differences in age structure, residence (urban/rural), or educational attainment. Instead, he has noted that polygyny may be a transitional phenomenon occurring in some of these oil-producing societies because, despite their great economic transformations, the societies are still relatively traditional. As the social development of these countries becomes more consistent with their economic development, polygyny is likely to decline (Chamie, 1986).

Some have argued that this escalated trend in polygyny in the Gulf countries in past decades was due in large part to the increasing wealth of men. Studies have shown that the intensity of polygyny is greater among wealthy men, not only because they are more likely to take additional wives, but also because their wives are less likely to divorce them (Timmaeus and Reynar, 1998; Ohadike, 1968). And as we have already noted, divorce in the UAE and in the other Gulf countries is disdained, and divorced women are stigmatized and less likely than single women to be able to marry. Therefore, being wives of polygynists is more socially and economically acceptable than being divorced.

Although polygyny has increased slightly in the UAE and in other Gulf countries in recent years, some feel it may decline in future years. However, there is a new phenomenon in the UAE and in other Gulf societies that might counter the expected polygyny decline. We refer to the increasing numbers of women who remain single into

their twenties and thirties. Women who have achieved high levels of education, and accordingly have remained single into their twenties or later, might well have acquired a strong preference for monogamous marriage. But their older age and their increased levels of education could well make them less attractive as prospective wives for single men. Thus they may be unable to realize their preference for a monogamous marriage and hence accept a proposal from a polygynist (Timmaeus and Reynar, 1998). Moreover, since young single women tend to be more attractive brides than divorcees, widows, and women who remain single until older ages, these young single women are more likely to become higher-order wives than first partners, especially when they see their older sisters approaching their thirties while still single. Hence the fear of becoming a spinster might well motivate younger single women to accept marriage proposals from polygynists.

Literature Review, Hypothesis, and Rationale

According to Anderton and Emigh, (1989), there are three principle models in the literature about the relationship between polygyny and fertility. The ***Sexual Competition Model*** is a biological explanation of why there are fertility differences between polygynous and monogamous wives. It states that polygynous women have lower fertility than monogamous women because of the presumed reduction in coital frequency of each woman. This occurs because the husband must divide his time among all his wives, presumably increasing sexual competition and decreasing the risk of pregnancy for each wife (Muhsam, 1956). Also the addition of another wife may involve the establishment of a separate place of residence for the new wife, sometimes at a great distance from the others, further reducing the frequency of sexual intercourse of the more distant wife (Bean and Mineau, 1986; Muhsam, 1956).

There are numerous analyses in the literature reporting this negative relationship between polygyny and fertility (Musham, 1956; Ivins, 1956; Dorjahn, 1958;Van de Walle, 1965; Henin, 1969; Page, 1975; Ukaegbu, 1977; Brown, 1981; Farooq, 1985; Bhatia, 1985; Shaikh et al., 1987;Garenne and Van de Walle, 1989; Hern, 1992; Josephson, 2002; Lardoux and Van de Walle, 2003). Several factors have been shown to account for the fertility differential. In their study of Senegal, Garonne and Van de Walle (1989) argued that husband's age and co-residence status have important effects on this difference. Thus, the fertility of older husbands, especially those aged over 50, seems to be lower due to both lower fecundability and, less so, to lower coital frequency. Also, an important consideration is the separate residence status of many women in polygynous unions. Thus, polygynists' wives usually spend more time separated from their husbands, which tends to lower their fertility.

The second basic model is the ***Favoritism Model***. This model provides more of a sociological explanation of fertility differentials than the previous model. It argues that favoritism toward certain wives, or certain types of wives, reduces the fertility of other wives, irrespective of marriage order; it could also presumably reduce the fertility of the less preferred wives relative to that of their monogamous counterparts (Muhsam, 1956; Garenne and Van de Walle, 1989). In general, younger wives who are higher-order wives in the union are sexually preferred. Therefore, they tend to have more children than lower-order wives (Lardoux and Van de Walle, 2003). This model is more concerned with fertility differences among different kinds of polygynous wives. But it does posit that on average, polygynous wives will have fewer children than monogamous wives.

In their study of rural Senegal, Lardoux and Van de Walle (2003) showed that after controlling for age and number of wives in the union, wives of higher rank tended to have higher fertility than wives of lower rank. They interpreted this finding as evidence of "favouritism" by the husband, resulting in a higher frequency of intercourse with the latest arrivals of the wives. Muhsam (1956) also found that second wives had higher fertility than first wives, though not consistently in all age groups. His explanation was that the lower frequency of sexual intercourse may affect both the first and second wives, but the first wife more than the second.

The third model, the ***Male Demand for Progeny Model,*** states that, on average, polygynous wives should have more children than monogamous wives. It argues that men marry additional wives mainly to satisfy their desire for a large number of progeny (Muhsam, 1956; Chojnacka, 1980; Ukaegbu, 1981). Thus, one of the main reasons for men to have multiple marriages is to have many children (Blance and Gage, 2000). However, the fertility of more recent wives may be affected by a declining demand for children as the stock of progeny of the earlier wives saturates both the demand for children and the ability to provide for offspring (Anderton and Emigh, 1989). Thus, many studies have shown that higher-order wives tend to have fewer children than lower-order wives (Ukaegbu, 1977; Smith and Kunz, 1976; Sween and Clignet, 1978; Bean and Mineau, 1986; Anderton and Emigh, 1989; Josephson, 2002).

Ukaegbu (1977) has explained this fertility differential by the age disparity between the polygynists and their wives. Polygyny reduces fertility through the intermediary of a comparatively wider age differential between polygynists and their wives. Anderson and Emigh (1989) have indicated that the fertility of earlier wives is

largely determined and affects the continuing fertility of the more recent wives. In other words, the fertility of all wives will decline, not as additional wives are taken, but as the stock of children born to all wives reaches some limit of demand or of capacity to provide for offspring.

Regardless of who will have more children, the lower-order wives or the higher-order wives, the end result is that on average polygynous wives will have more children than monogamous wives (Sembajwe, 1979; Arowolo, 1981; Sueyoshi and Ohtsuka, 2003).

Given the above review of the relationship between polygyny and fertility, and the factors that affect this relationship, the main question we address in our analysis deals with the direction of the relationship between polygyny and fertility in the UAE. What determines this relationship? Unlike the results of analyses of the relationship between polygyny and fertility in many African societies and in some other societies and among the Mormons, showing a negative association, we expect to find the relationship to be positive among Emarati women. Our expectation is based on several reasons, usually not the case in societies where the relationship has been shown to be negative.

First, Emarati men are financially better-off than many men in the other societies and can provide the financial costs of having more than one wife, including housing and outlays for each wife and her children. Second, polygynist Emarati men also tend to have less education that their monogamous counterparts. Our data for instance show that the husbands of polygynous wives on average have less years of education (5.0 years) than the husbands of monogamous wives (8.8 years.), and this by itself might well affect the fertility of their wives. Third, unlike some women in other societies where intercourse

during pregnancy and the postpartum period is frequently forbidden by customs and taboos, Emarati women do not have such taboos. Postpartum sexual abstinence for Emarati women does not usually exceed 40 days from the birth of a child; this may be compared, for example, to that of Ibadan (Nigerian) women who have a mean period of postnatal abstinence of around 22 months (Ware, 1975). Fourth, the overall duration of breastfeeding for Emarati women is, to a great extent, shorter than that of women in other societies, such as some African societies in which the duration of breastfeeding may last as long as three years. The mean duration of breastfeeding for UAE women is 8.1 months: 6.7 for employed women and 8.3 for unemployed women (Musaiger, 1992; 1995). Fifth, unlike polygynists in other societies, over 83 per cent of Emarati polygynists are married to no more than two wives. Emarati polygynists can thus better divide the time among their wives and, presumably, increase sexual competition, and increase the risk of pregnancy for each wife. Moreover, even if the wives do not live in the same residence, which according to the coital frequency model should decrease the fertility of each woman, the spatial distance between the homes of each wife is usually not an issue in the UAE, both with modern transportation and the fact that wives in separate residences tend to live within close proximity to one another even if they have separate residences.

Data and Methods

The data source for the analyses we undertake here is the "United Arab Emirates National Family Survey of the Characteristics of Native Households" conducted in 1998-1999 by the UAE Central Department of Statistics. The sample was a two-stage, stratified, cluster probability, self-weighting, nationally representative sample of

approximately 4,000 households in 209 primary sampling unites (PSUs). The PSUs are defined as villages in the rural sector and as census enumeration areas in the urban sector. The sampling frame was the complete list of citizen household units obtained in the 1995 population census, which were then stratified into 6 size categories (after excluding enumeration areas with less than 5 households in urban areas, and less than 10 households in rural areas). The sample is proportionately distributed among the seven emirates comprising the UAE and by urban and rural residence.

The survey was designed to provide national-level estimates for UAE citizen households and to generate data on patterns and determinants of marriage and divorce, spinsterhood, fertility, family planning, child mortality, school dropouts and family stability (especially parental care and juvenile delinquency) in the urban and rural areas of the different Emirates.

In our study we use data from the individual questionnaire, namely, *The Eligible Women Questionnaire,* representing only ever married women aged 15-49. We further restrict the ever married women to the currently married who are once married. Thus, women who are not married (divorcees and widows) and those who are separated from their husbands are excluded.

Our fertility measure is whether the woman had a birth during the 12 months prior to the survey date. It is a dichotomous variable coded 1 if yes. We estimate logistic regression equations predicting the log odds of a woman having a baby in the last 12 months. Our key independent variable is a dummy variable, whether or not the woman is in a polygynous marriage, coded 1 if yes. The survey question is "Does your husband currently have another wife, that is, other than you?" We classify polygynous wives as

those who answer this question in the affirmative. In our data, 401 (around 12 per cent) of all married Emarati women are currently married to polygynists. We turn now to the results of our analysis.

Results

In our sample of UAE women, 25 per cent of them reported having a birth in the last 12 months (see Table 2). With regard to the various control variables we include in the analysis, the mean age of husbands is 39.6 years, with polygynists about 11 years older than their monogamist counterparts. The age at first marriage variable shows that Emarati women, on average, marry at age 18.2, and this is similar for monogamous and polygynous wives. Age at menarche is the age in years when the woman experienced her first menstrual cycle. It is thought to signal the time when a female becomes capable of reproduction. For Emarati women, the age at menarche is, on average, 13.0, with a very slight difference between polygynous and monogamous wives.

Most Emarati women have agreed to marry their husbands, that is, they have agreed to marry the men who have proposed the marriage, or the men who have been assigned or arranged for them to marry. The "Marriage acceptance" variable shows that among all Emarati women 97.9 per cent, on average, have agreed to marry their husbands, with a somewhat larger percentage for monogamous wives than for polygynous wives. It is important to mention here that traditionally, an Emarati woman usually has the right to accept or reject the marriage proposal submitted to her father (or to an entrusted representative, in the case of her father's death), but it is usually not acceptable for her to propose her marriage mate.

The data in Table 2 also show that Emarati woman have on average 8 years of education, with monogamous wives having a much higher mean than polygynous wives. Also, on average, more than 14 per cent of Emarati women are working at a paid job, and this varies from 15 per cent for between monogamous wives to 9 per cent for polygynous wives. In contract, Emarati husbands have a mean of 8 years of education, with monogamous wives' husbands having a much higher mean than polygynous wives' husbands. Moreover, on average, 86 per cent of the Emarati women are urban residents; and around 59 per cent of Emarati women have used a birth control method, with a higher percentage for monogamous wives than for polygynous wives.

The "co-residence with another wife (or wives)" variable controls for whether the polygynous wife is living with another wife (or wives) in the same residence (yes=1). About 40 per cent of polygynous wives report that they are living with another wife (or wives) in the same residence.

Table 3 presents the results of progressively more comprehensive logistic regression models predicting the log odds of currently once married women having had a birth in the past 12 months. We have exponentiated the logit coefficients, so they are expressed as odds ratios. Model 1 includes only the polygyny dummy variable, scored 1 if the woman is currently in a polygynous marriage. The polygyny variable is not statistically significant. There is no difference between polygynous and monogamous women in the odds of having a birth in the past 12 months.

Model 2 adds a second variable to the equation, the age of the husband; we expect that this variable should have a negative effect on the likelihood of the wife having a recent birth; the older the husband, the less the likelihood. Most importantly, in the

equation in Model 2, the polygyny variable now becomes positive, as predicted, and is statistically significant. The odds ratio of 1.62 means that the odds of polygynous wives having had a birth in the past 12 months are 62 per cent greater than those of monogamous wives, controlling for the age of the husband.

Model 3 adds another independent variable, namely, woman's age at first marriage. Even after adding woman's age at first marriage, the polygyny variable maintains its positive effect and statistical significance, with an odds ratio of 1.60. Polygynous wives have odds of having a birth in the past 12 months that are 60 per cent greater than the odds of monogamous wives, controlling for both husband's age and wife's age at first marriage.

In Model 4, we added four socioeconomic variables to the equation, namely, wife's completed education, whether the wife is employed outside the home, whether the family lives in an urban area, and the husband's completed education. Once again, and very importantly, the positive and statistically significant effect of the polygyny variable is sustained. Its odds ratio is 1.56, meaning that polygynous wives have odds of having had a baby born to them in the past 12 months that are 56 per cent greater than the respective odds of monogamous wives, controlling for husband's age, his education, wife's education, her age at marriage, whether she employed outside the home, and whether the couple resides in an urban area.

When we add a biological variable to the equation in Model 5, that is, age at menarche (in years), the magnitude of the polygyny variable does not change much. Its odds ratio is 1.6, meaning that polygynous wives have odds of having had a baby born to them in the past 12 months that are 60 per cent greater than the respective odds of

monogamous wives, controlling for husband's age, his education, wife's education, her age at marriage, whether she works outside the home, her age at menarche, and whether the couple resides in an urban area.

In Model 6, we added the woman's acceptance of marriage, that is, whether she agreed to marry her husband. The magnitude of the effect of the polygyny variable hardly changes from its value in Model 5. In Model 7, we added one more independent variable that is expected to have an influential effect on woman's fertility, that is, whether a woman has ever used any birth control method in the past; this is a dummy variable, coded 1 if yes. Again, the polygyny variable maintains its positive effect and statistical significance, with an odds ratio that does not change much its value in Model 6.

Model 8 is the final model and it includes all the previous independent variables along with controls for the whether a woman co-resides with another wife (or wives). Co-residence status is shown to have a significant effect on the fertility of polygynous women (Garenne and Van de Walle, 1989). Around 39 per cent of women in our sample do co-reside with another wife (or wives). The results in Model 8 show that even when controlling for whether a woman co-resides with another wife (or wives), the effect and statistical significance of the polygyny variable is sustained. Its odds ratio is 1.53, meaning that polygynous wives have odds of having had a baby born to them in the past 12 months that are 53 per cent greater than the odds of monogamous wives, holding the other variables constant.

The final column of Table 3 presents the semi-standardized log odds coefficients for all eleven independent variables in Model 8. These semi-standardized log odds coefficients enable us to compare the magnitude of the partial slope of each of the eleven

variable on the dependent variable because each slope is now expressed in standard deviation units. The standardizing of the slopes allows us to see how much influence each variable has on woman's likelihood of having a birth in the last 12 months. Husband's age has the largest relative influence on the woman's likelihood of having a birth in the last 12 months. The second largest influence on the woman's likelihood of having a birth in the last 12 months is polygyny. Of all eleven predictors of fertility, the polygyny variable is the second most influential.

Discussion

After undertaking the above tests, as reported in Table 3, we are better able to appraise the polygyny and fertility relationship. We have conducted many different tests of the hypothesis with data on currently once married polygynous and monogamous wives in the UAE. This study is the first, to our knowledge, that examines the effect of polygyny on fertility in an oil-rich country, which is still characterized by relatively traditional norms and mores regarding marriage and the roles of women.

The results confirm our hypothesis of a positive effect of polygyny on fertility among Emarati women. One may explain the positive association between polygyny and fertility by referring to the demand for progeny model, which states that men marry additional wives mainly to satisfy their desire for a large number of progeny (Muhsam, 1956; Chojnacka, 1980; Ukaegbu, 1981). Thus, one of the main reasons for men to have multiple marriages is to have more children (Blance and Gage, 2000).

Let us now discuss some of the implications of our research on polygyny and fertility. In our analysis, we were able to examine the polygyny effect on fertility in a new social setting, in the United Arab Emirates. This is new because our analysis is the first

study, to our knowledge, of polygyny and fertility in an oil rich Gulf country. Most prior studies have been undertaken in African societies, in some lowland South American societies, in certain Mormon communities, in some non-Arab Muslim societies, and in some Arab non-Gulf Muslim societies. Our study is also new because the social setting is very different than that of other studies. Most of the polygyny-fertility studies reported in the literature were conducted in African countries where very different economic, social, and cultural factors play a role in determining the relationship. In fact, one of the main objectives of our analysis was to see if examining the polygyny-fertility relationship in a different social setting might result in a different relationship than that found in the African countries, and to explore the mechanisms through which polygyny affects fertility.

Unlike virtually all countries of the world, except for Qatar, the majority of the population of the United Arab Emirates is comprised of non-citizens. An important question, thus, is whether polygyny might become a component in a UAE population policy to increase the fertility of UAE nationals. Would increasing the prevalence of polygyny among the nationals produce more children? Should polygyny be one of the elements of a UAE population policy to help deal with the demographic problem facing the UAE today?

This particular issue is beyond the immediate scope of our study, but our findings do show some relevance for using polygyny as a mean for increasing UAE nationals' fertility. We have shown here that polygyny is the second most important factor influencing Emarati women's fertility. However, the argument that polygyny could well influence the population growth rate by producing more children might not be

particularly well-grounded because as Chojnacka (1980) has argued, "the major demographic consequence of polygyny is reflected in the very young nuptiality pattern for women which directly affects the rate of population growth" (Chojnacka, 1980: 106). In other words, what affects population growth might not be the polygyny prevalence by itself, but the fact that women in polygynous marriages marry at younger ages and therefore produce more children.

Therefore, a more prudent UAE population policy aiming at increasing fertility in order to increase the population numbers of nationals might focus on encouraging both women and men to marry at younger ages, and on easing the incompatibility between women's work, as well as her desire to pursue her education, and her intended number of children. These institutional responses are seen by many demographers as ways to increase fertility in low fertility populations (Morgan, 2003).

If the UAE government plans to adopt a national population policy through increasing fertility, it needs to focus on direct means, not only on the indirect means that may or may not have been effective in increasing its nationals' population size. In fact, until now there has been no clear fertility policy in the UAE or in any of the other Gulf countries. The monthly allowance, maternity leave, marriage funds, and other means that the UAE government has adopted do not, indeed, aim in the first place at increasing the population of UAE nationals. Instead, they aim at easing the living expenses and at providing better heath care for children and their mothers. And with increasing levels of female education and labor force participation, it will be very hard to increase the fertility of the nationals. In fact, many Emarati women postpone marriage, and therefore having children, until they finish their education, a time when marriage chances are diminished.

Also, even when women marry by the time they finish their education, the postponement of marriage, and therefore of births, brings the risk that women will not have all the children they intend to have. One reason is the high level of infecundity at older ages. Another is that the competing demand may interact with being "too old" in a social sense, for rearing children (Morgan, 2003).

These and other factors add a challenge to any population policy that the UAE government may be thinking to establish, especially when we know that the nationals' fertility rate has fallen from 7.2 in 1985 to 4.6 in 2004 (Morris, 2005). The UAE Human Resources Report (Tanmia, 2005: 11) has also noted that "the most outstanding development in demographic characteristics of the UAE population is the sharp and constant decline in the gross fertility rate; from 1985 to 2004, it dropped by 57% for the UAE population." In fact, the fertility rate is expected to fall further in the future, leading to a slower population growth among nationals.

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Table 1. Prevalence of Polygynous Marriages in the Gulf Countries

Population	Polygynous Marriage %	Reference
Arabian Gulf Countries		
UAE[a] 1975	6.0	Chamie (1986)
UAE 1999	13.4	1999 National Family survey
UAE 2000	14.4	2000 GFHS[b]
Kuwait[a] 1965	6.7	Chamie (1986)
Kuwait[a] 1970	8.8	Chamie (1986)
Kuwait[a] 1975	11.7	Chamie (1986)
Kuwait 2000	9.0	2000 GFHS[b]
Bahrain[a]1981	5.4	Chamie (1986)
Bahrain 2000	8.0	2000 GFHS[b]
Qatar 2000	8.0	2000 GFHS[b]
Oman 2000	11.0	2000 GFHS[b]
Saudi Arabia 2000	19.0	2000 GFHS[b]

[a] The Prevalence rate was calculated based on male subjects
[b] 2000 Gulf Family Health Surveys(Mohammed 2003)

Table 2: Descriptive Statistics

Variable	All Women		Monogamous Women		Polygynous Women	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Women Had a Birth in the Past 12 Months	0.252	0.434	0.256	0.437	0.222	0.416
Polygyny; yes=1	0.118	0.323				
Husband's Age	39.581	12.555	38.246	11.975	49.514	12.295
Age at 1st Marriage	18.158	3.944	18.170	3.852	18.070	4.577
Age at Menarche	13.036	1.193	13.039	1.191	13.015	1.208
Marriage Acceptance; yes=1	0.979	0.144	0.982	0.132	0.953	0.213
Women's Education (in years)	7.994	6.167	8.402	6.109	4.940	5.725
Employed Women; yes=1	0.145	0.352	0.152	0.359	.0922	0.290
Urban Residence; yes=1	0.677	0.468	0.691	0.4623	0.574	0.495
Ever Used Contraceptives; yes=1	0.591	0.492	0.597	0.491	0.541	0.499
Husband's Education (in years)	8.352	6.280	8.801	6.230	4.990	5.602
Co- residence with another wife (or wives); yes=1					.392	0.489
Total	3,402		3,001		401	

Source: National Family Survey for the Characteristics of the Native Households, 1999

Table 3. Logistic Regression Models of the Effect of Currently Being in a Polygynous Union, versus in a Monogamous Union, On the Log Odds of Having a Child in the Last 12 Months for the Emarati Married Women, 1999

Independent Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Polygynous Union (yes=1)	0.828 (0.105)	1.620* (0.227)	1.596* (0.224)	1.557* (0.220)	1.559* (0.221)	1.564* (0.221)
Age of Husband		0.941* (0.004)	0.943* (0.004)	0.945* (0.005)	0.945* (0.005)	0.945* (0.005)
Age at 1st Marriage			1.024* (0.011)	1.032* (0.013)	1.033* (0.013)	1.032* (0.013)
Woman's completed Education (in years)				1.013 (0.010)	1.013 (0.010)	1.013 (0.010)
Employed Woman Outside Home (yes=1)				0.721* (0.096)	0.721* (0.096)	0.720* (0.096)
Urban Residence (yes=1)				0.881 (0.081)	0.875 (0.080)	0.872 (0.080)
Husband's Completed Education				0.996 (0.008)	0.996 (0.008)	0.996 (0.008)
Age at Menarche (in years)					0.974 (0.034)	0.974 (0.034)
Marriage Acceptance (yes=1)						1.267 (0.423)
Ever Used Contraceptives (yes=1)						
Co-residence with another wife(or wives) (yes=1)						
Pseudo R^2	0.001	0.067	0.0684	0.0706	0.0707	0.0709
Log Likelihood	-1920.1	-1792.4	-1789.9	-1785.6	-1785.3	-1785.1

Table 3. Continued

Independent Variable	Model 7	Model 8	Semi-Standardized Odds Coefficient**	Log
Polygynous Union (yes=1)	1.562* (0.221)	1.531* (0.256)	0.137	
Age of Husband	0.945* (0.005)	0.945* (0.005)	-0.712	
Age at 1st Marriage	1.032* (0.013)	1.031* (0.128)	0.123	
Woman's completed Education (in years)	1.013 (0.010)	1.013 (0.010)	0.082	
Employed Woman Outside Home (yes=1)	0.720* (0.097)	0.721* (0.097)	-0.115	
Urban Residence (yes=1)	0.873 (0.008)	0.874 (0.080)	-0.063	
Husband's Completed Education	0.996 (0.008)	0.996 (0.008)	-0.026	
Age at Menarche (in years)	0.974 (0.034)	0.974 (0.034)	-0.032	
Marriage Acceptance (yes=1)	1.267 (0.422)	1.264 (0.422)	0.034	
Ever Used Contraceptives (yes=1)	0.982 0.084	0.983 (0.084)	-0.008	
Co-residence with other wife(or wives) (yes=1)		1.058 (0.262)	0.012	
Pseudo R^2	0.0709	0.0709		
Log Likelihood	-1785.1	-1785.0		

Note: Numbers in parentheses are standard error

      * $p<0.05$

      **Semi-standardized log odds coefficients apply only to Model 8

Figure 1. Map of Asia

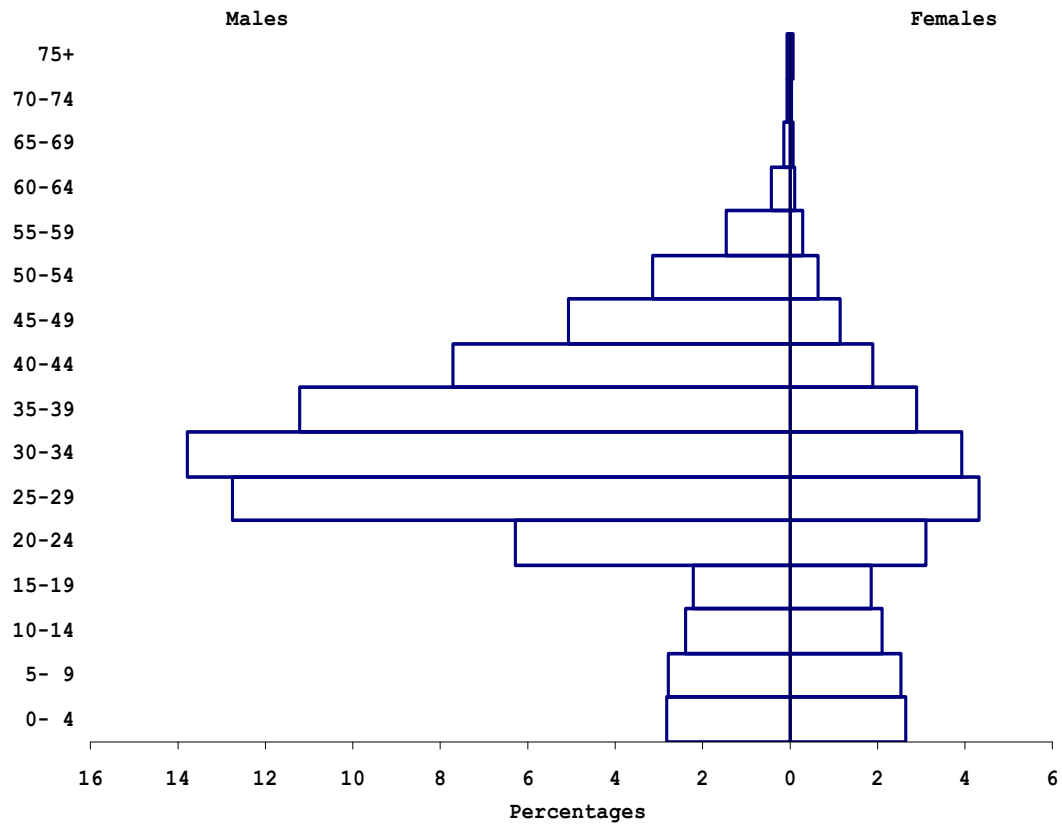**Figure 2. Map of the United Arab Emirates**

Figure 3. Age-Sex Structure of UAE Population, 2005
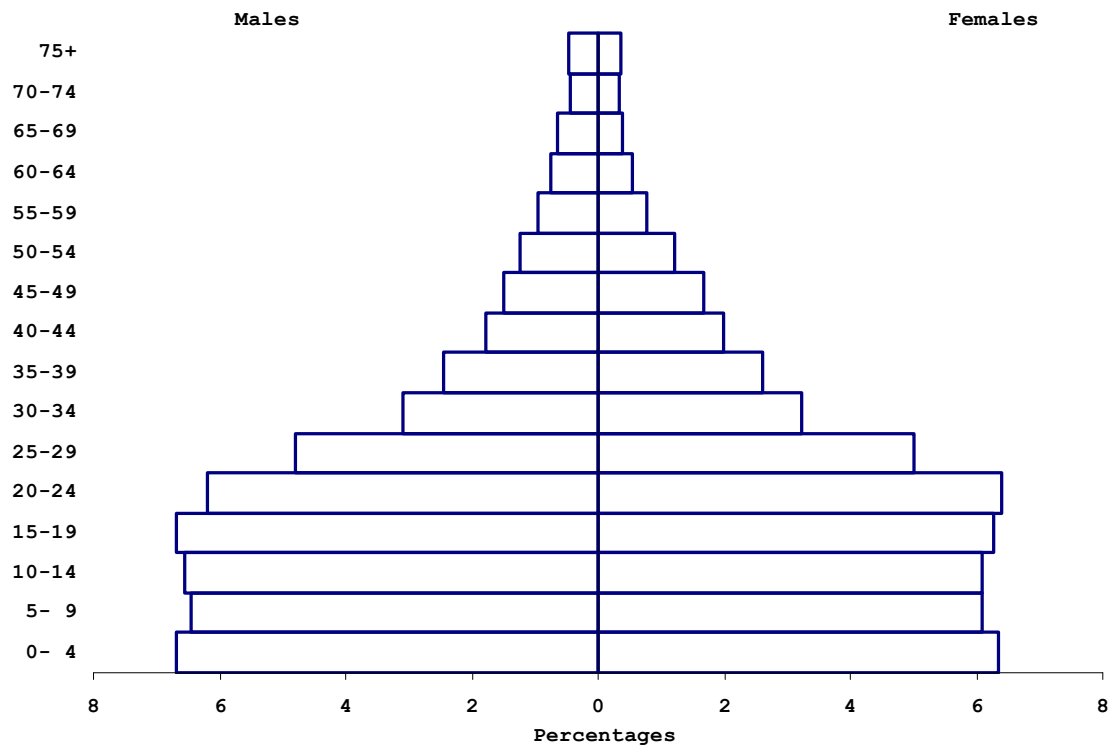
Males   Females

Figure 4. Age-Sex Structure of UAE Nationals, 2005