The Fertility Behavior of Polygynous and Monogamous Wives in an Arab Muslim

Society: The United Arab Emirates at the End of the 20th Century

Wadha Saeed Alnuaimi

Department of Sociology
United Arab Emirates University
Al Ain, United Arab Emirates
&
Department of Sociology
Texas A&M University
College Station, Texas 77843

and

Dudley L. Poston, Jr.

Department of Sociology
Texas A&M University
College Station, Texas 77843

<u>Introduction</u>

Polygeny, 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 widespread and is, in fact, relatively low by "world standards" (Chamie, 1989; Tabutin et al., 2005). Usually 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, Iran and Syria; it is substantially higher, around 9 per cent, in the Arabian Peninsula (Tabutin et

al., 2005). Conversely, the levels of polygyny among non-Arabs are between 20 and 50 per cent in some sub-Saharan nations (Timaeus and Reynar, 1998).

In this paper, we examine the relationship between polygyny and female fertility among currently married women in the United Arab Emirates (UAE) during the 1998-1999 period. We use newly available 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 Central Department of Statistics in the Ministry of Planning of the United Arab Emirates, but only made available in 2008 for demographic analysis. The demographic analysis in this paper is the first empirical study using these data conducted by scholars outside the UAE government. The survey was restricted to Emarati women, i.e., UAE citizens, and is a nationally representative sample of approximately 4,000 households in 209 primary sampling units. The sample is comprised of 4,245 ever married women aged 15-49 who were personally interviewed in their homes. The data we use in this paper are restricted to only those 3,500+ women who are currently married, of whom 12 percent 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. We follow our discussion of the UAE society with a review of some of the basic literature on polygyny and fertility. This is followed by a discussion of the sample and the data we use in our analyses, 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. Figure 1 contains three maps, namely, the world, the Asian region, and 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 percent. The country has a very low infant mortality rate of 7/1,000 and a total fertility rate of 2.0, just below replacement fertility levels (Population Reference Bureau, 2008). However, unlike virtually all countries of the world, except for Qatar, the majority, indeed over 80 percent, of the UAE population is comprised of non-citizens of the UAE; these non-citizens mainly include persons not born in the UAE. In our paper we focus on the fertility of only the UAE citizens.

The citizen and non-citizen populations of the UAE are very different from one another, in addition to the non-citizen population being four times larger than the citizen population. Figure 2 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. Figure 3 is an age-sex population pyramid of the citizen (Emarati) population of the UAE. This is a much more balanced population than that of the total UAE. In our paper we are studying the fertility patterns of women in the childbearing ages from the citizen (Emarati) population.

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 as a 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 crucial, but has been modified somewhat given the increasing participation of women in higher education and in the paid labor force.

The overall percentage illiteracy rate in the UAE has fallen from 44 per cent in 1975, to 20 percent in 1995, to 9.3 per cent in 2005 (Ministry of Planning, 2005). According to the 1995 UN 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 are in the paid labor force, compared to 5.4 per cent in 1995, two per cent in 1985, and one per cent in 1975. More than half of the employed Emarati women working outside the home (53 per cent) are found in professional work, mainly as teachers in girl's schools (Ministry of Planning, 2005).

These increases in levels of education and labor force participation have led to an increased age at first marriage. Only thirty-three years ago in the UAE, the age at first marriage for women was 18 years. By the end of the 1990s it had increased to 23.1

(Tabutin et al, 2005). This increase in the age at first marriage of women has led to a reduction in the difference in mean age between spouses at marriage; it was 7.9 years in 1975, and 2.5 in 1998 (Tabutin et al, 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 is expected to 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. 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. However, women who are divorced carry a stigma, but men do not.

Polygyny in the Arab Muslim societies has declined in recent years (Chamie, 1985; Farques, 1997; Tabutin et al., 2005), but has increased slightly in the Arab Gulf societies. Chamie (1985) 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) composition, or educational attainment. Instead, he argues, that polygyny may be a transitional phenomenon occurring in some of these oil-producing societies because, despite the 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, 1985).

Some have argued that this escalated trend in polygyny in 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). As we have already noted, divorce in the UAE and in the other Gulf countries is considered to be shameful and is disdained, and divorced women are stigmatized and are less likely than single women to be able to marry. Therefore, being wives of polygynists is more socially and economically acceptable than being divorced women.

Although polygyny has increased slightly in the UAE and in other Gulf countries in recent years, there are good reasons to expect it to 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 a high level of education, and remained single into their twenties or later to do so, might well have acquired a strong preference for a 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 most young single women tend to be more attractive brides than divorcees, widows, and women who remain single until an older age, 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. We turn now to a review of some of the relevant literature on polygyny and fertility.

Literature Review

There are three principle theories about the relationship between polygyny and fertility, and each results in a different association. 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 for the more distant wife (Bean and Mineau, 1986; Muhsam, 1956).

There are numerous analyses in the literature showing 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, Aziz and Chowdhury 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 this fertility differential. In their study of Senegal, Garonne and Van de Walle (1989) argue 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, to a lesser extent, to lower coital frequency. Also, an important consideration is the separate residence status of many women in polygynous unions. Thus, polygynists' wives spend more time separated from their husbands, which tends to lower their fertility.

The second basic theory 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, will reduce the fertility of other wives, irrespective of marriage order, and will also presumably reduce the fertility of the less preferred wives relative to that of their monogamous counterparts (Muhsam, 1956; Anderton and Emigh, 1989). In general, younger wives are sexually preferred. This model is more concerned with fertility differences among different kinds of polygynous wives, but also posits that on average most polygynous wives will have fewer children than monogamous wives.

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 to satisfy their desire for a large number of progeny (Muhsam, 1956; Chojnacka, 1980; Ukaegbu, 1977). However, the fertility of more recent wives could well be affected by a declining demand for children as the stock of progeny by earlier wives saturates both the demand for children and the ability to provide

for offspring (Anderton and Emigh, 1989). But the end result is that on average the polygynous wives will have more children than monogamous wives.

In the paper we are now writing, which will be completed by the time of the conference, we will develop in more detail this literature on polygyny and fertility.

Given the above literature review of the relationship between polygyny and fertility, and the factors that affect this relationship, the main questions we address in this paper concern the direction of the relationship between polygyny and fertility in the UAE and the factors that determine this expected relationship. We propose to examine the polygyny-fertility relationship and determine its factors in a new social context in an oil rich country.

In the paper we are now writing, we expect to find in the UAE that woman in polygynous unions will have slightly higher fertility than woman in monogamous unions. We also expect to find that as the age difference between spouses increases, the fertility of women will decrease. Moreover, we believe we will find that the fertility of a polygynous wife will decrease with the number of wives in the union. In the models we will estimate we will use such variables as duration of marriage, age of husband, education, employment, and co-residence with other wife (or wives) to study the relationship between polygyny and fertility. We turn now to an examination of the data.

Data

The main data source for the analyses we undertake in this paper is the National Family Survey for the Characteristics of the Native Households conducted in 1998-1999 by the Central Department of Statistics in the Ministry of Planning of the UAE. 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 census enumeration areas in the urban sector. The sampling frame for the survey was the set of the citizen household listings obtained in the 1995 population census, which were stratified into 6 size categories defined by the number of citizen households (after excluding enumeration areas with less than 5 or 10 households in both urban and rural areas respectively). The sample is proportionately distributed among the seven emirates comprising the UAE as well as by urban and rural residence.

The survey was designed to provide national-level estimates for the 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 both urban and rural areas and for the different Emirates.

In our paper we use data from the individual questionnaire, namely, *The Eligible Women Questionnaire,* representing only ever married women aged 15-49. Of these ever married women, we only include the currently married women who were once married. Thus, women who are unmarried (divorcees and widows) and those who are separated from their husbands are excluded.

Our fertility measure refers to the occurrence of a birth during the last 12 months prior to the survey date. It is a dichotomous variable measuring whether a woman has had a birth in the last 12 months (yes = 1). In the paper we are now writing, we will also include analyses of fertility using an alternate fertility measure, the number of children

ever born (CEB). The analyses of CEB are not contained in this presentation, but will be included in the final paper that will be completed by the time of the IUSSP conference.

In the present paper, we estimate equations predicting the log odds of a woman having a baby in the last 12 months using logistic regression models. Our key independent variable is a dummy variable, whether or not the woman is in a polygynous marriage (yes = 1). Other independent variables we use in the equations we include duration of marriage, age of husband, education, employment, and co-residence with other wife (or wives). We believe that a complex relationship such as the one between fertility and marriage type requires multivariate statistical analyses to sort out the net effect of polygyny on the reproductive behavior of women (Bhatia, 1985). We turn now to some of the findings of our paper.

Findings

The survey data we use in this paper ask women two questions regarding their type of marriage. The first is "When you married your current husband, did he have another wife or wives in addition to you?" The second question is "Does your husband currently have another wife or wives in addition to you?"

Based on these two questions, we define women in polygynous unions in two different ways: women who answered yes to the first question; and women who answered yes to the second question. We will thus estimate our fertility models using two different kinds of polygyny independent variables, a different one in each equation. The polygyny variable is the main independent variable to be used in our equations. One version of the main independent variable is a dummy variable scored 1 if the woman married a

polygynist at the time of her marriage, and 0 if not. The second version of our key independent variable is also a dummy variable scored 1 if the woman is currently married to a polygynist, and 0 if not. In our sample of UAE women, 465 or 13 per cent of the women married polygynists. And 429 of the women, or 12 per cent of them, are currently married to polygynists.

As already noted the dependent variable of fertility in our analyses is based on the question asked of all women if they had a birth in the 12 months preceding the date of the survey. Although as noted above, in the complete paper we will also undertake fertility analyses using an alternate measure, the number of children ever born. Of the women in our sample, 25 per cent of them reported having a birth in the last 12 months.

Table 1 presents the results of several progressively more comprehensive logistic regression models predicting the log odds of currently once married women having had a birth in the past 12 months. Model 1 includes only the polygyny dummy variable, scored 1 if the woman is currently in a polygynous marriage, and 0 if she is currently in a monogamous marriage. The logit coefficient is not statistically significant. There is no difference between polygynous and monogamous women in the log 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 and is statistically significant. Polygynous wives are more likely than monogamous wives to have had a birth in the past 12 months. If we exponentiate the logit coefficient of 0.49 in Model 2,

that is $e^{0.49}$, we obtain an odds ratio of 1.63. This means that the odds of polygynous wives having had a birth in the past 12 months are 63 per cent greater than the odds of monogamous wives, controlling for the age of the husband.

Model 3 adds another independent variable to the logit regression equation, namely, whether the wife is co-residing with the other wife (or other wives). Over 40 percent of the polygynous wives in our sample co-reside with other wives. This variable is added as a control. Even after adding the co-residence variable, the polygyny variable maintains its positive effect and statistical significance, with a logit coefficient of 0.42 and a resulting odds ratio of 1.52. Polygynous wives have odds of having a birth in the past 12 months that are 52 percent greater than the odds of monogamous wives, controlling for both the husband's age and whether the wife co-resides with one or more other wives.

In Model 4, we add two socioeconomic variables to the equation, namely, whether the wife is employed outside the home, and whether the family lives in an urban area. Once again, and very importantly, the positive and statistically significant effect of the polygyny variable is sustained. Its logit coefficient in Model 4 is 0.41, with an odds ratio of 1.51. Polygynous wives have odds of having had a baby born to them in the past 12 months that are 51 per cent greater than the respective odds of monogamous wives, controlling for husband's age, whether the wife co-resides with another wife or wives, whether the wife works outside the home, and whether the couple resides in an urban area.

We are still in the process of estimating additional regression models to test our hypothesized positive relationship between polygyny and fertility. The results we have

reported above in Table 1 provide you with a good idea of how we have and will proceed. We will have completed our analyses well before the date of the IUSSP conference.

Specifically, we will expand Table 1 to include a few more models, by adding still more variables to the equation, such as contraceptive use, the duration of the marriage, the woman's age at menarche, and the age difference between the wife and husband. Our preliminary analyses to date indicate that even in the light of these additional control variables, the polygyny variable maintains its positive and statistically significant association with fertility.

After expanding Table 1, as above, we will replicate the models in Table 1, but alter the polygyny variable. In Table 1 the polygyny variable is whether the women is currently in a polygynous union (scored 1 if currently in a polygynous union, and 0 if currently in a monogamous union). As noted above, we also have data in the UAE survey on a second polygyny question, whether when the woman married her present husband, he already had one or more wives in addition to her. So we will re-estimate all the models in Table 1, but will alter the polygyny variable.

In still another set of models, we will alter the fertility variable, from whether the women had a birth in the past 12 months (yes or no), to the number of children she has had ever born to her (CEB). In these models we will use a count regression method, either a Poisson regression or a negative binomial method. In our CEB analyses, we will undertake one set of analyses using the "currently polygynous" variable as the main independent variable; and we will estimate another set of CEB models using the alternate polygyny variable, whether the woman married into a polygynous union.

The tests reported above and the ones we propose to undertake will enable us to test in different and assorted ways our hypothesized positive relationship between polygyny and fertility.

Discussion

After undertaking all the above tests, as in Table 1 and the proposed three additional tables, we will be better able to appraise the polygyny and fertility relationship. We will have conducted many different tests of the hypothesis with data on currently once married polygynous and monogamous wives in the UAE, an oil-rich country. There are few, if any, previous analyses of the polygyny and fertility relationship in oil-rich countries that are still characterized by relatively traditional norms and mores regarding marriage and the roles of women.

One issue we will address in the "Discussion" section of our paper is whether our demonstrated positive association between polygyny and fertility in the UAE could become the basis of population policy. Given the fact that Emaratis, i.e., UAE citizens, only comprise 20 percent of the population of the UAE, government officials are seeking ways to raise the fertility of UAE citizens. It could well be the case that given our findings of a positive association between polygyny and fertility, this form of marriage might well become the basis of UAE policy to increase the fertility of UAE women. This implication of our research, and others, will be discussed in more detail in this final section of our paper.

References

Alnuaimi, Wadha. 2001. *"This is the Price We Pay: A Study of Divorce in the U.A.E. from Divorced Women's Perspective*." Kalamazoo, Michigan: Western Michigan University, Unpublished Master Thesis.

Anderton, D. L. and R. J. Emigh. 1989. "Polygynous Fertility: Sexual Competition Versus Progeny." *American Journal of Sociology* 94:832-855.

Bean, L. L. and G. P. Mineau. 1986. "The Polygyny-Fertility Hypothesis: A Re-evaluation." *Population Studies* 40:67-81.

Bhatia, J. C. 1985. "Polygamy-Fertility Inter-relationships: The Case of Ghana." *Journal of Family Welfare* 31:46-55.

Brown, J. E. 1981. "Polygyny and Family Planning in sub-Saharan Africa." *Studies in Family Planning* 12:322-326.

Chamie, J. 1986. "Polygyny Among Arabs." *Population Studies* 40:55-66.

Chojnacka, H. 1980. "Polygyny and the Rate of Population Growth." *Population Studies* 34:91-107.

Fargues, P. 1997. "The Decline of Arab Fertility." *Population* 44:47-175.

Farooq, G. M. 1985. "Household Fertility Decision-Making in Nigeria." Pp. 312-50 in *Fertility in Developing Countries: An En Economic Perspective on Research and Policy Issues*, edited by G. Farooq and G. Simmons: New York: ST. Martin's.

Garenne, M. and E. Van de Walle. 1989. "Polygyny and Fertility Among the Sereer of Senegal." *Population Studies* 43:267-283.

Hern, W. M. 1992. "Polygyny and Fertility among the Shipibo of the Peruvian Amazon." *Population Studies* 46:53-64.

Ivins, S. S. 1956. "Notes on Mormon Polygamy." *Western Humanities Review* 10:229-239.

Josephson, S. C. 2002. "Does Polygyny Reduce Fertility?" *American Journal of Human Biology* 14:222-232.

Lardoux, S. and E. van de Walle. 2003. "Polygyny and Fertility in Rural Senegal." *Population English Edition*:717-744.

Ministry of Planning (United Arab Emirates). 2005. *"UAE in Figures 2005."*

Muhsam, H. V. 1956. "The Fertility of Polygamous Marriages." *Pop. Stud* 10:3-16.

Ohadike, P. O. 1968. "A Demographic Note on Marriage, Family and Family Growth in Lagos, Nigeria." Pp. 379-392 in *The population of Tropical Africa* edited by J. Caldwell and C. Okonjo: New York: Columbia University Press.

Page, Hilary. 1975. "Fertility Levels Patterns and Trends." Pp. 29-57 in *Population Growth and Socioeconomic Change in West Africa*, edited by J. Caldwell e. al. New York: Columbia University Press.

Population Reference Bureau. 2008. *"2008 World Population Data Sheet."* Washington, DC: Population Reference Bureau.

Sabban, R. 2002. "United Arab Emirates: Migrant Women in the United Arab Emirates: The Case of Female Domestic Workers." GENPROM Working Paper NO.10.

Shaikh, K., K. M. Aziz, and A. I. Chowdhury. 1987. "Differentials of Fertility between Polygynous and Monogamous Marriages in Rural Bangladesh." *Journal of Biosocial Science* 19:49-56.

Tabutin, D. and B. Schoumaker. 2005. "The Demography of the Arab World and the Middle East from the 1950s to the 2000s." *Population English Edition*:505-615.

Timæus, I. M. and A. Reynar. 1998. "Polygynists and Their Wives in Sub-Saharan Africa: An Analysis of Five Demographic and Health Surveys." *Population Studies* 52:145-162.

Ukaegbu, A. O. 1977. "Fertility of Women in Polygynous Unions in Rural Eastern Nigeria." *Journal of Marriage and the Family* 39:397-404.

Van de Walle, Etienne. 1965. "The Relation of Marriage to Fertility in African Demographic Inquiries." *Demography* 2:302-308.

Table 1

Logistic Regression Models of
the Effect of Currently Being in a Polygynous Union, versus Currently Being in a Monogamous Union,
On the Log Odds of Having a Child in the Last 12 Months:
3,574 Emarati Women, 1999

Independent Variable	Model 1	Model 2	Model 3	Model 4
Polygynous Union (yes=1)	-0.19	0.49*	0.42*	0.41*
Age of Husband		-0.06*	-0.06*	-0.06*
Co-residence (yes=1)			0.19	0.17
Work outside home (yes=1)				- 0.12
Reside in urban area (yes=1)				-0.07
Constant	-1.08*	1.09*	1.09*	1.17*
Final log likelihood	-2005.6	-1873.7	-1873.4	-1871.8

* p < .05

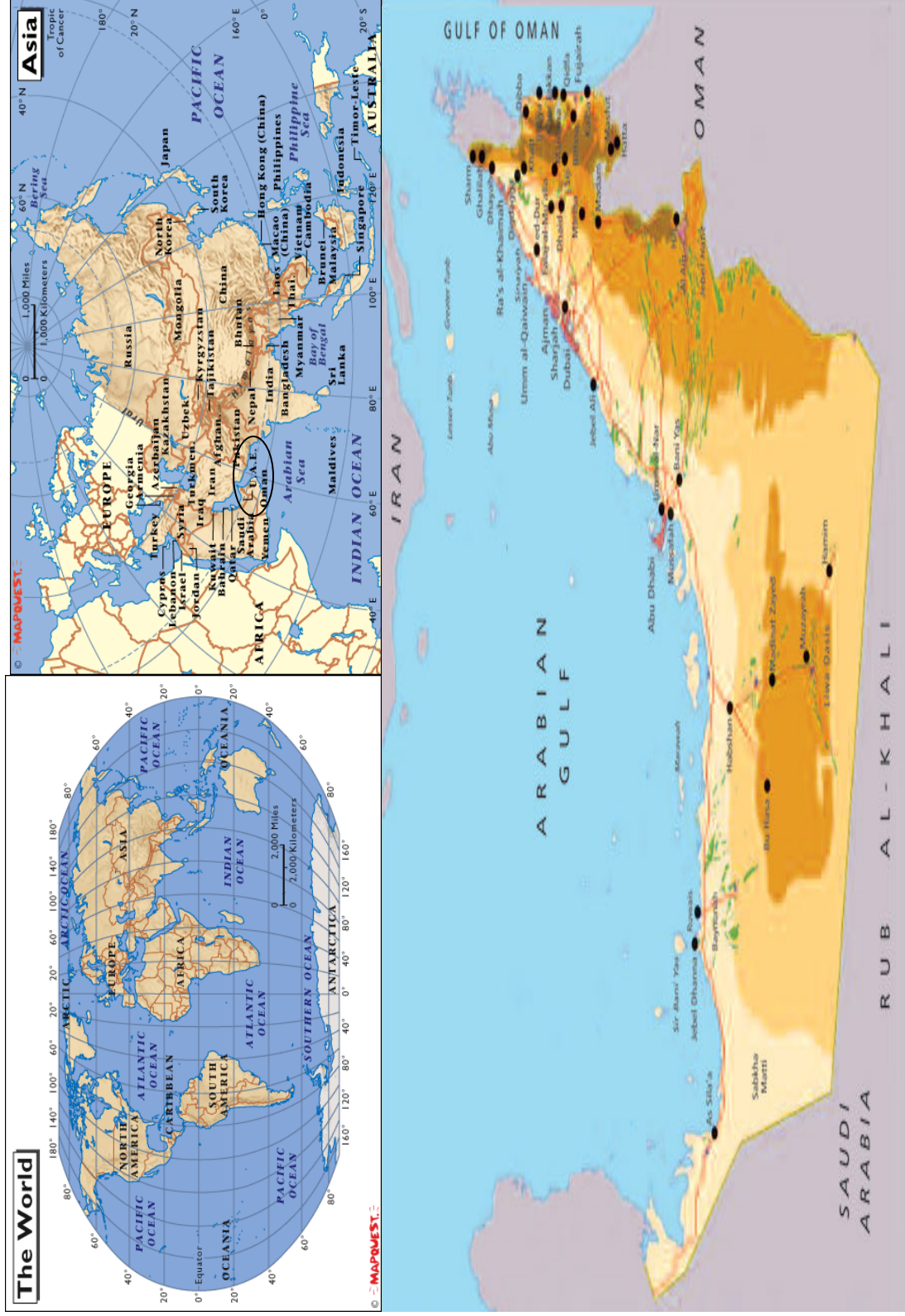# Figure 1: Maps of the World, Asia, and the UAE

Figure 2: Age-sex Structure of Emaratis and non-Emaratis (combined), 2005
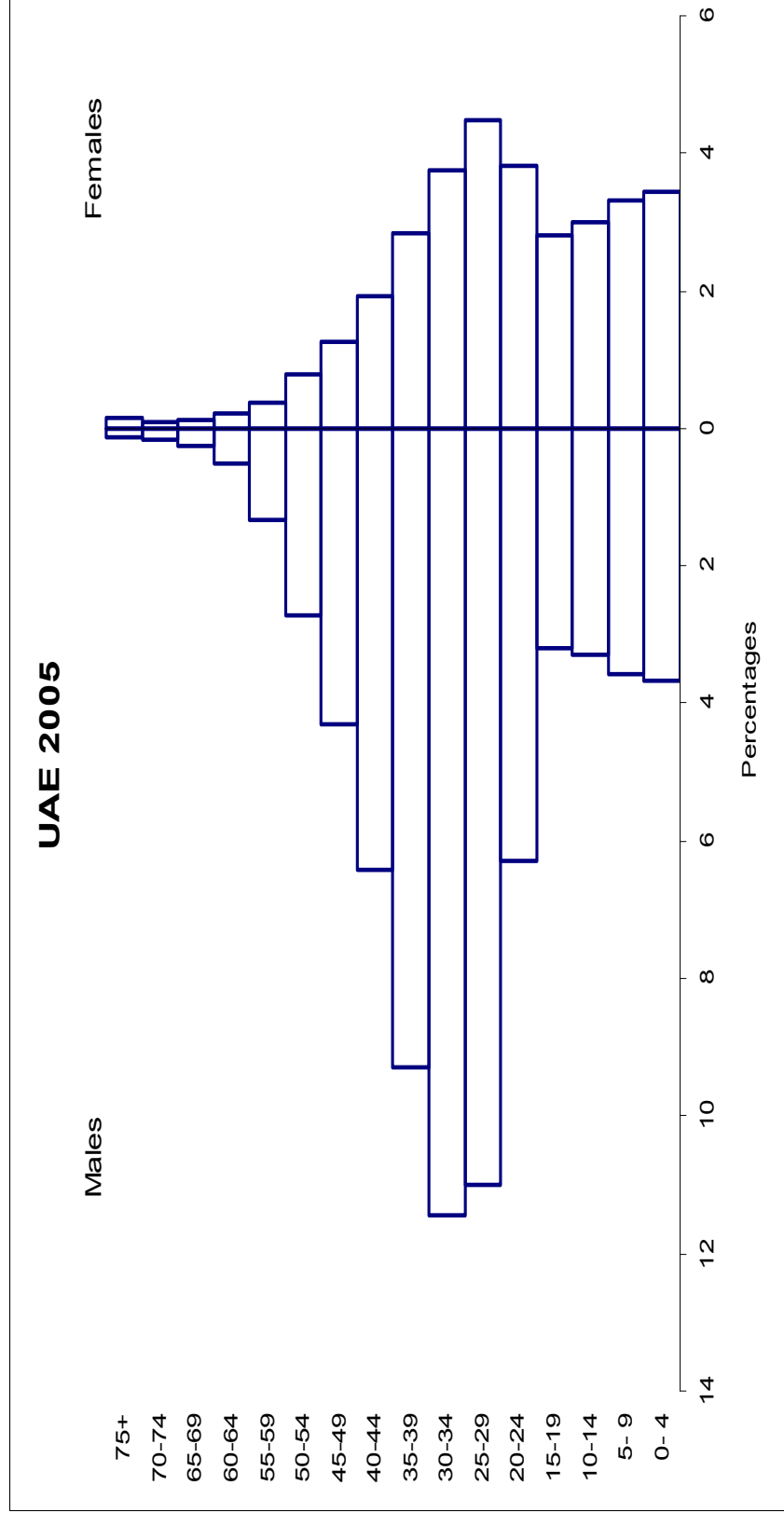

UAE 2005

Males

Females

Percentages

Figure 3: Age-sex Structure of Emaratis, 2005

UAE Nationals 2005

Males

Females

Percentages

75+
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4

8 6 4 2 0 2 4 6 8