

## PATTERN OF FERTILITY IN BASRAH-SOUTHERN IRAQ

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## ABSTRACT

The results reported in this paper are part of a comprehensive cross-sectional study carried out in Basrah governorate-Southern Iraq to quantify specific aspects of fertility. The study covered 2670 ever married women aged 15-60 years. The studied women were interviewed regarding demographic characteristics and detailed history of their pregnancy experience. The results showed that the crude birth rate was 36.4 per 1000 population, the general fertility rate was 139.3 per 1000 women, the average number of pregnancies per woman was 4.3 and the average number of live births was 3.4 per woman. About 37.9% of women had at least one lost pregnancy (abortion or still birth) and pregnancy wastage accounted for 14.1% of all reported pregnancies. The total fertility rate was 6.4 per woman and showed some degree of decline over the last two decades. About 70% ( $R^2=0.70$ ) of fertility variation among women could be explained by variables related to envisaged ideal family size, duration of use of family planning methods, pregnancy wastage, number of women siblings, duration of couple separation, education of woman father, education of woman and education of husband.

## INTRODUCTION

Throughout the last four decades, data from different sources indicated a high level of fertility in Iraq and Basrah. In a study carried out on female school teachers in Basrah,<sup>[1]</sup> it was found that married women on average had 2.6 living children, the average age at marriage was 22.2 years, and ideal family size women inspired was 4 children per woman completing the reproductive age. Use of family planning methods was very prevalent among them (83.4%). In another population-based household survey in Basrah, it was reported that the population was very young and highly fertile with children under the age of 15 years formed 47% of the total population studied.<sup>[2]</sup> In a study carried out on married women aged 15-50 years in Southern Iraq,<sup>[3]</sup> it was found that the average age at marriage was 18.2 years and a woman had on average 4 live births in Thi-Qar and 4.4 in Basrah. Al-Khafajie et al<sup>[4]</sup> reported results of a household based study on rural population in Basrah. They found that children aged under the age of 15 years accounted for 49% of the studied population, crude birth rate was 49.1 per 1000 population and the total fertility rate was 8.0 per woman regardless of marital status. The general fertility rate was 238 per 1000 women aged 15-49 years. Standardized marital fertility rate was 344 per 1000 married women. Figures reported for Iraq during the 1970s were: Crude birth rate at 41.6-42.6 per 1000 populations and total fertility rate at 7.6 per woman.<sup>[4,5]</sup> Recent studies suggested some degree of decline in fertility indicators.

Al-Taha 2000<sup>[6]</sup> reported a crude birth rate in the district of Abul-Khasib in Basrah at 35 per 1000 population. In a series of population based households surveys carried out in different parts of Basrah governorate, reported crude birth rates for different areas ranged between 27.7 to 34.7 per 1000 population.<sup>[7]</sup> Similarly, the national figure for total fertility rate for the period 2000-2005 for Iraq was 4.8 per woman<sup>[8]</sup> but a higher figure (6.7) was given for women aged 40-49 years.<sup>[9]</sup> Regardless of the inconsistent results by various studies, the figures for fertility during the 1990s and early years of the 21<sup>st</sup> century indicate a clear decline in fertility indicators in Iraq and in Basrah. The reasons behind such decline are not clear and not well studied but overall socioeconomic development especially wide spread of education opportunities, availability of family planning methods and socioeconomic crises associated with wars and economic embargo could explain part of the decline. The present study focuses on the level of fertility in terms of selected measurements of fertility in Basrah governorate and attempts to analyze possible determinants of variation across time and population groups.

*Specifically, the study has the following two objectives:*

- To measure the level and time trend of fertility in Basrah governorate.
- To analyze variation in fertility in relation to selected possible determinants. These include Sociodemographic variables, use of family planning methods, pregnancy wastage and women parents characteristics.

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**MATERIALS & METHODS**

The results presented in this paper are part of a cross-sectional study carried out in Basrah governorate over a two-year period and consisted of two parts.

*Part One:* Health centre-based study in which 20 of the 80 primary health care centres, which were operational in Basrah during 2004 were randomly selected and 100 women were selected and interviewed from the attendants of each centre; two inclusion criteria were used:

- a. *The woman is aged 15-60 years.*
- b. *The woman is currently married or has ever married.*

*Part Two:* Household based study in which a cluster of 20 houses was selected from the catchment's area of each sampled primary health care centre. All women aged 15-60 years who were ever married and normally living at the house at the time of study were included in this part.

The tool was a questionnaire form of two sections; the first section covered questions intended to provide demographic data at the level of the family, the second covered questions to every ever-married woman regarding details of her fertility experience covering all pregnancies she had regardless of their fate (abortion, still births or live births) Data were fed on computer system and analyzed using the Statistical Package for Social Science (SPSS version-11)

**RESULTS**

**Pattern of fertility:**

*Summary of fertility measurements (Tables-1,2)* give summary measurements of fertility. The crude birth rate was 36.4 per 1000 population, the general fertility rate was 139.3 per 1000 women in the reproductive age and the marital specific fertility rate was 202.0 per 1000 married women in the reproductive age. The total fertility is presented in three forms. Based on cross-sectional estimate of the current total fertility (3.4 per woman), on the total completed fertility for women aged 45-60 years (6.2 per woman) and on previous generation of woman (7.1per woman). On average and based on cross sectional data, a woman had 4.2 pregnancies,

3.4 live births, 3.3 living children, 0.1 still births and 0.5 abortions. About 37.9% of the women had at least one wasted pregnancy and pregnancy wastage formed 14.1% of all pregnancies by the studied women. When women were separated into those aged 15-44 years (still reproductive) and those who completed their reproduction (45-60 years), the first had on average 2.9 live births and the second had 6.4 live births.

**Table 1. Summary of measurements of fertility in Basrah**

Measurement	Value
Crude birth rate	36.4
General fertility rate	139.3
Marital specific fertility rate per 1000 women	202.0
Total fertility rate:	
Based on age-specific rate	3.4 ± 2.8
Based on completed fertility	6.2 ± 2.9
Based on estimates from previous generation	7.1 ± 2.8

**Table 2. Summary of reproductive measurements for the studied women**

Measurement	No.	Mean ± SD
a. Pregnancies	11207	4.2 ± 3.1
b. Live births	9117	3.4 ± 2.8
c. Living children	8848	3.3 ± 2.7
d. Still births	247	0.1 ± 0.4
e. Abortions	1334	0.5 ± 0.9
f. Pregnancy wastage	1581	0.6 ± 1.1
g. Percentage of women with at least one wasted pregnancy		37.9%
h. Pregnancy wastage as % out of total pregnancies		14.1%
i. Average No. of LB per woman 15-44 years*		2.9 ± 2.4
j. Average No. of LB per woman 45-60 years**		6.4 ± 3.0
k. Average No. of Living children for women 45-60 years**		6.2 ± 2.9
l. Average No. of brothers and sisters per woman***		7.1 ± 2.8

\* Number of women is 2307

\*\* Number of women is 363

\*\*\* Number of women equals the number of studied women = 2670  
LB=Live Birth

**Determinants of fertility**

**Table-3**, shows the results of a stepwise multiple regression analysis to predict the number of live births per women. Variables which showed significant effect on fertility were envisaged ideal family size, duration of use of family planning methods, pregnancy wastage, number of women siblings, duration of couple separation, education of woman father, education of woman and education of husband. These eight variables were able to explain 70% ( $R^2=0.70$ ) of variation in fertility. Variables which failed to predict fertility were education of woman mother and age at marriage

**Table 3. Results of stepwise multiple regression analysis to predict number of live births for ever married women aged 15-60 years**

Independent variable	Beta	R <sup>2</sup>	P-value
<b>1. Significant predictors:</b>			
Envisaged ideal family size	0.388	18.58	0.000
Duration of use of FPM	0.253	19.20	0.000
Pregnancy wastage	0.150	12.02	0.000
No. of women siblings	0.216	8.78	0.000
Duration of couple separation	0.050	4.35	0.000
Education of woman father	-0.107	3.91	0.000
Education of husband	0.191	5.76	0.000
Education of woman	-0.168	5.14	0.050
<b>2. Insignificant predictors:</b>			
Education of woman mother			
Age at marriage			
<b>Total explained variability (R<sup>2</sup>)</b>	<b>0.70</b>		

FPM=Family planning methods

**DISCUSSION**

**Significance of the subject of fertility**

As stated earlier, the study aimed at estimating fertility in Basrah governorate and its determinants. It was essentially intended to provide detailed estimation of current state of fertility and factors that affect its variation with an attempt to explore areas and avenues for desirable modification in behaviour of people in favour of better health and better use of family planning methods. The pattern and determinants were thoroughly analyzed within a context encompassing the reproductive behaviour, use

of family planning methods, pregnancy outcome and other socioeconomic and sociodemographic variables. The significance of the study of determinants of reproductive behaviour of women is very clear. One important aspect is to evaluate the actual use of family planning methods and their impact in shaping fertility at population level. The use of family planning methods is very crucial to control or at least regulate population growth, influence health and promote development.<sup>[10]</sup>

**The study design**

The study covered women aged 15-60 years who were ever married to understand the current state of fertility for women who are now in the reproductive age (using cross-sectional data) or just passed that age (using data on completed reproduction). Such widened scope of age facilitates some degree of analysis of the dynamics of fertility across young generations and older generation with respective to reproductive age. Actually, the study of women aged 15-44 years who are still in the reproductive age helps the estimation of current level of fertility. The inclusion of those aged 45-60 facilitates the estimation of fertility of older generation and to give direct estimation of total fertility rate. The inquiry about the reproductive performance of women mothers added a third dimension to the study of fertility among even older women. These three, though overlapping in some aspects, provide insight into the changes of fertility across time. The combination of health centre-based and household-based samples added to the statistical efficiency of the study through the provision of larger sample size.<sup>[11]</sup> It also improved the representativeness of the sample but only within the sampled clusters. It can not be claimed that the samples studied completely represent the population of Basrah but they are, in the view of the investigators provide good proxy measure of the fertility in Basrah. Attendants might have different characteristics from those not attending at any time; the addition of women from households in the catchment's population is expected to improve representativeness of the total samples studied. To the best of information, no woman is expected to have been sampled twice (within the health centre-based and the household-based samples) and all

women were interviewed in similar manner. Information and/or classification bias should be kept to a negligible level.<sup>[12]</sup> Despite all these precautions; bias at different stages of the study was unlikely to have been omitted completely. Problems of recall, over and under reporting, social factors between the interviewer and respondents due to different education, conceptualization, and perception of the significance of events studied might introduce some errors.<sup>[13]</sup> Regardless of all these in advance precautions taken to minimize bias and errors, it is to be admitted that the measurement of fertility in Basrah and the reproductive behaviour of women is complex and unlikely to be completely measured and understood from a single study. The reality of life is beyond any one to measure, we attempt just to measure proxy indicators.<sup>[13]</sup> To sum up, the present study has the merits of being the most comprehensive than any previous study in Basrah on fertility and practical in methods, tools and indicators.

### ***Pattern of fertility***

There are wide variations in the level or pattern of fertility across the world and in different ethnic and cultural groups as in the Arab countries.<sup>[14,15]</sup> In many developing countries including Iraq, fertility, though declining, is still high and represents a major contribution to the continuing high rate of population growth.<sup>[16]</sup> Enormous efforts were made to understand the changing pattern of fertility and the determinants of such changes within anthropological, economic, social, cultural as well as reproductive and health contexts<sup>[17,18]</sup>. All these efforts aimed at formulating theories and models to explain reproductive behaviour. In reality and despite the tangible success, human behaviour including reproductive behaviour is not yet well understood. Therefore, it is stressed here that the present study is not exceptional to the body of scientific efforts. The reproductive behaviour of people in Basrah seems very complicated but good insight is made about it as indicated in the results of the present study supported by previous works on the same issue. Based on the results in this study, fertility in Basrah is still high in comparison to most of countries in the World and in the Eastern Mediterranean Region. A

total fertility rate of 6.4 per woman completing her reproductive age is one of the highest at global and regional levels.<sup>[16,17]</sup> However, evidence of decline in total fertility in Basrah is recognized when figures from the present study are compared to figures from previous studies<sup>[4,9]</sup> and when figures for different generations in the present study are compared with each other. When we compare the total fertility rate of the women who completed their reproductive age with the total fertility rate of their mothers (*as a previous generation*), an estimated reduction in total fertility rate is about 9.9% (Table-2). When the total fertility rate in the present study is compared to the total fertility rate reported in 1980 in Basrah,<sup>[4]</sup> the estimated reduction is about 20% or one in five. Furthermore, the currently estimated total fertility rate at 6.4 in Basrah is also lower than the national figure quoted for Iraq, which were 6.7 per woman completing the reproductive age.<sup>[9]</sup> The variation in fertility, measured as the average number of live births per woman was significantly related to a number of exposure, conception, pregnancy and sociodemographic variables.

### ***Determinants of fertility***

When multivariate analysis was carried out, education of the studied women, their fathers and their husbands were consistent determinants of fertility. Mostly a better education level was associated with lower fertility. Husband education in the multivariate analysis had positive effect on fertility for no apparent reason. Regardless of all these points, an overall tendency for fertility is to decline with time and this tendency, though sluggish in nature, is generally in agreement with many other studies in different parts of the world.<sup>[19-23]</sup> Fertility pattern in Basrah is still determined mainly by cultural, social and to less extent reproductive variables. Further decline in indicators of fertility is expected in the coming decades particularly when university education becomes more universal for people and women in particular.

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