



The Indicators of Reproductive Behavior in Young Families as a Criterion of the Social and Economic Level of the Society in Kazakhstan

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Abstract

Background: In Kazakhstan, as in many other countries, a transformation of the traditional stereotypes of reproductive behavior, and change the types of family relationships is occurred. It is caused by social status changes, by the transformation of women's valuable orientations and social-role attitudes. The objective of this study was to identify the indicators of reproductive units and the motives for having children in the family.

Methods: Designed questionnaires were used to study the regulation of fertility in young families, and women's views about the ideal, desired, and expected number of children per family. The survey covered 1017 respondents aged less than 39 years.

Results: Expected number of children in the family depends on living conditions. The average expected number of children per family increases with improvement of living conditions and with increases in income. Statistically significant differences in the average expected number of children in families with a satisfactory and good income compared to poor income ($P < 0.001$). Revealed the predominance of the expected, desired and ideal number of children among women of Asian ethnic group and on the desired and ideal number of children the differences were statistically significant ($P < 0.05$). By mathematical formula that based on a poll can be calculated probability of birth of each child in the family.

Conclusion: Reproductive attitudes of Astana women depend on age, educational level, income, professional employment, marital status, and ethnicity. The findings confirm the hypothesis that family plans are largely exposed to specific conditions of life.

Keyword: Reproductive behavior, Ideal, Children, Family, Kazakhstan

Introduction

In recent years, thanks to the reforms conducted in Kazakhstan, there have been some positive developments, manifested in increasing fertility, reducing maternal and infant mortality, reducing the number of abortions (1-3).

Current demographic situation in Kazakhstan is characterized by a number of problems. In Kazakhstan, as in many other countries, a transfor-

mation of the traditional stereotypes of reproductive behavior, change the types of family relationships is occurred. Creating a family is postponed to a later age, fewer children in the family, and the dilemma of child or a career" is increasingly resolved in favor of women's careers. These trends negatively affect the birth rate, against the backdrop of the gradual aging of the population and

can lead to worsening demographic situation and jeopardize economic and political independence of the Kazakh nation in the future. Such a situation is largely due to the changed over the past decade of the social situation of women, the transformation of its value orientations and social-role attitudes, resulting in the function of reproduction is increasingly fades into the background as well as its implementation often leads to a decrease in both the personal and social status women. The aim of the study was to determine indicators of reproductive units (women's views about the expected, desired and ideal number of children), and the motives for having children in the family.

Materials & Methods

The study was conducted in the city of Astana, Kazakhstan, in 2011.

«Questionnaire survey of women about the ideal, desired, and expected number of children per family» was developed by our research team for the study of ideal, desired, and expected number of children per family. Research tools included questions, which are indicators of reproductive sociological orientations of the respondents. With

the help of the questionnaire 1017 respondents aged less than 39 years were interviewed. Age of respondents in this case was chosen according to recommendations of Russian authors (4). Selection of the required number of respondents was conducted randomly in the form of a single-stage area sampling, and was contained the anonymous nature in compliance with confidentiality and ethics. The statistical significance of differences in the mean values of the study variables was tested by one-way ANOVA. Associations were quantified by calculating Spearman's correlation coefficients.

Results

We attempted to find the relationship between the expected number of children and women's education (Table 1). Given that the number of respondents with primary education was small, we have analyzed a group of women with secondary, vocational and higher education. Essentially no significant differences between these groups on average expected number of children were found ($P > 0.05$). The greatest value of the average expected number of children found in women with higher education (1.91).

Table 1: Expected number of children depending on the level of women's education

Education	Expected number of children						Bcepo	Average expected number of children
	0	1	2	3	4	5 & >		
Primary	-	50.0	25.0	25.0	-	-	100.0	1.75*
Secondary	16.1	23.8	33.3	16,7	4.8	5.4	100.0	1.86±0.10
Vocational	13.4	27.5	38.9	14,8	4.0	2.0	100.0	1.94±0.09
Higher	9.2	20.5	45.1	19,2	4.5	1.7	100.0	1.91±0.04
Total	10.9	22.2	42.2	18.0	4.4	2.3	100.0	1.91±0.03

Note: *- because of the small number of observations, error of the mean in the group with primary education is not calculated.

Table 2 shows the expected number of children depending on their living conditions. Characterized by the following pattern: the average expected number of children per family is increasing in line with the improvement of housing condi-

tions (respectively 1.65, 1.80 and 2.01). Income was found to affect the lifestyle, and reproductive behavior of the family (Table 3). The criteria used subjective assessment of family income.

Table 2: Expected number of children depending on conditions

Housing	Expected number of children						Total	Average expected number of children
	0	1	2	3	4	5 & >		
Unsatisfactory	14.9	31.1	36.5	12.2	2.7	2.7	100.0	1.65±0.13
Satisfying	12.2	25.2	42.5	12.7	5.1	2.2	100.0	1.80±0.05
Good	8.0	19.8	43.4	22.8	4.1	1.9	100.0	2.01±0.05
Total	10.2	22.9	42.5	17.9	4.4	2.1	100.0	1.91±0.03

Table 3: Expected number of children depending on family income

Family income	Expected number of children						Total	Average expected number of children	Sigma
	0	1	2	3	4	5 and >			
Unsatisfactory	22.2	33.3	25.4	14.3	1.6	3.2	100.0	1.49±0.14	1.21
Satisfying	12.6	22.5	44.6	13.7	4.7	1.8	100.0	1.81±0.05*	1.09
Good	8.2	18.3	43.1	23.3	5.0	2.2	100.0	2.05±0.05*	1.06
Total	11.0	21.1	42.7	18.5	4.7	2.1	100.0	1.91±0.03	1.06

Note: * - statistically significant differences in values compared with the unsatisfactory income ($P < 0.001$).

These tables reveal the following pattern: with increasing family income, the percentage of families in which children are not expected is reduced (from 22.2% to 8.2%). At the same time, the average expected number of children rises dynamically with the increase in income. Thus, when unsatisfactory households' income average expected number of children was equal to 1.49, subject to satisfactory – 1.81 and for good – 2.05. In this case noted, statistically significant differences in the average expected number of children in fami-

lies with a satisfactory way and with a good income compared to poor-income countries ($P < 0.001$).

Women's views about the expected, desired, and ideal number of children in the context of the age groups are presented in Fig. 1.

Calculated by Spearman rank correlation coefficients revealed the following values of this coefficient (in order of sequence): $\rho = 0.40$, $\rho = 1.0$, $\rho = 1.0$.

Table 4: Views of women of different age groups about the value of family

Age of women	Average expected number of children	The average desired number of children	The average ideal number of children	Average ideal to the average expected number of children (%)
Under 24 years	1.86	2.28	2.53	136
25-29 years	1.95	2.43	3.33	171
30-34 years	1.98	2.60	2.67	135
35-39 years	2.08	2.69	2.93	141

The results show that the average expected number of children increases progressively with age (from 1.86 to 2.08), which is obvious. Desired numbers of children have also steadily increases with age (from 2.28 to 2.69). At the same time the

ideal number of children observed in the age group 25-29 years (3.33).

In the already mentioned study conducted in Russia in 2000, the average desired and the expected average number of children mentioned by women

was found to be respectively 2.18 and 0.90, considerably less than similar figures in our study. At the same time, our findings are broadly consistent with the Russian in the sense that the highest ideal number of children were in the age group 25-29 years. The average desired number of children in all age groups was lower than ideal. In this case, in the age group with highest fertility rate (20-24 years) averages of ideal, desired, and expected number of children were not the greatest. Individual plans of women of different ages differed only slightly and statistically significant differences observed ($P > 0.05$).

Thus, in each age women's group clearly there is a tendency to increase the arithmetic average of the following areas: the average expected number of children, the average desired number, and, finally, the average ideal number of children.

Indicators of reproductive behavior also studied by us and with subject to ethnic differences (Table 5). The results obtained show the predominance of the expected, desired and ideal number of children among women of Asian ethnic group in comparison to European, and on the desired and ideal number of children the differences were statistically significant ($P < 0.05$).

Table 5: Opinions about the expected, desired, and ideal number of children among women of different ethnic groups

Number of children in the family	Ethnic group		Statistical significance of differences
	Asian	European	
Expected	2.05±0.07	1.79±0.12	$P > 0.05$
Desired	2.73±0.07	2.44±0.12	$P < 0.05$
Ideal	2.87±0.07	2.51±0.13	$P < 0.05$

In addition, indicators of reproductive attitudes are studied in the context of the form of marriage (the official, civilian). Revealed that, except for a slight predominance of the expected number of children women aged 20-24 years who are in civil

relationships over the same period of a women in registered marriages, in most age groups, the expected, desired and ideal number of children were statistically more significant in women in registered marriages ($P < 0.05$) (Table 6).

Table 6: Opinions about the expected, desired, and ideal number of children among women of different age groups, in the official and civil marriage

Age groups	Maniage	Number of children		
		Expected	Desired	Ideal
20-24 years	official	1.84±0.09	2.29±0.08	2.67±0.07*
	civil	1.87±0.09	2.26±0.09	2.42±0.09
25-29 years	official	1.98±0.07*	2.52±0.07*	3.44±0.06*
	civil	1.44±0.11	2.35±0.16	2.84±0.17
30-34 years	official	2.00±0.08	2.63±0.08	2.93±0.07*
	civil	1.79±0.20	2,59±0.19	2.50±0.20
35-39 years	official	2.29±0.08*	2.81±0.08*	2.99±0.09*
	civil	1.38±0.12	2.31±0.19	2.63±0.18

Note: * - differences are statistically significant

The study of the expected number of children has the peculiarity that all the women interviewed by the end of reproductive activity implement their

plans. In this case, the final distribution of the number of expected children can be considered as they completed fertility (Table 7).

Table 7: Distribution of women with having and expected number of children (in the abs.)

The existing number of children	Expected number of children						Total, m_n
	0 m_0	1 m_1	2 m_2	3 m_3	4 m_4	5 m_5	
0	33 n_{00}	54 n_{01}	68 n_{02}	29 n_{03}	3 n_{04}	6 n_{05}	193 n_{0m}
1	-	144 n_{11}	199 n_{12}	48 n_{13}	11 n_{14}	3 n_{15}	405 n_{1m}
2	-	-	220 n_{22}	70 n_{23}	15 n_{24}	9 n_{25}	314 n_{2m}
3	-	-	-	67 n_{33}	11 n_{34}	6 n_{35}	84 n_{3m}
4	-	-	-	-	18 n_{44}	3 n_{45}	21 n_{4m}
Total	33 n_{n0}	198 n_{n1}	487 n_{n2}	214 n_{n3}	58 n_{n4}	27 n_{n5}	1017 n_{nm} (N)

Based on tabular data, you can get the probability of birth of each subsequent child. Thus, the probability to give birth to their first child have all but 33 women who remained childless, that is, it is 0.97 (1017-33) / 1017. Probability of birth of her second child, calculated on the same principle, will be equal for all who have given birth two or more children, all who have had at least one child. This value in our study was 0.81. At first glance, it may seem surprising that the latest in a series of calculated value (0.32) is greater than the previous (0.28), but we should not forget that the figure of 0.32 represents the chance of birth of the fifth and subsequent children together. We developed a mathematical formula that, based on a poll can expect the probability of birth of each subsequent child in the family, as follows:

$$P_m = \frac{\sum_{i=m}^{m_n} n_{ni}}{N - \sum_{i=0}^{m-2} n_{ni}}$$

ΓΔΕ:

- P_m - probability of birth m- of child
- m - number of expected children
- N - sum total
- n_{ni} - sum of the columns
- n_{om_i} - sum by row

Thus, we have determined the probability of birth of each child. The data are shown in Table 8.

Table 8: Probability of birth of each child in the family

	The child in succession				
	First	Second	Third	Fourth	Fifth and more
The probability of birth	0.97	0.80	0.38	0.28	0.32

Discussion

The most specific characteristic of the respondent's reproductive systems gives an indicator of

«desired» number of children (in other words, "How many children, including, those that already are, you would like to have if you had all the necessary conditions for this?"). «Desired» number of children - this is their number that the individual

would prefer to have in his family, based on his own inclinations, without considering the specific circumstances of life and personal biography (5). It should be noted that this indicator gives a more precise characterization of reproductive preferences of respondents, compared with the ideal and expected number of children.

However, the greatest specificity is characterized by the indicator "expected" number of children. This indicator gives the most accurate representation of the reproductive intentions of women. "Expected" number of children - the number of children that the respondent intends to have in his family by the end of the reproductive period. In addition, although in real life, "expected" number of children does not always coincide with the actual, women's fertility is largely determined by their reproductive plans, family and individual. In general, these plans are relatively stable throughout the reproductive period of life.

One of the factors, affecting on fertility is the population's educational level. Level of education has a great importance for the understanding of trends and forecasting of reproductive behavior. It is known that with increasing population's educational level, especially women, birth rates are falling (6).

Study of differentiation of family's intentions with regard to childbearing supports the hypothesis that family plans are very susceptible to the specific situation of families in terms of representative installations. In the individual plans, the whole spectrum of life situations is reflected. Therefore, despite the apparent unity, the individual intentions of women differ.

The level of family income, without a doubt, affects not only the formation of values of personality, but also forms the structure of family needs and identifies opportunities to meet them.

It is known that reproductive intentions of people can change with the change of generations. This suggests that there is correlation between ideal, desired and expected number of children with age. The resulting dynamics of the standard deviation in the direction of decreasing with increasing family income corresponds to the dynamics study in Moscow, Russia.

Yet there is reason to believe that the living conditions of the family changed faster than the notion of demographic ideals. Child in the family is perceived primarily as a spiritual value, although there are families in which both are now considered a child with a physical position, with the possibility of "return" from it.

It should be noted that the opinions and views of young married women on the number of children in the family were examined in the study in several directions. First, find out the number of children that the persons interviewed felt perfect, and secondly, the so-called retrospective number of children.

The number of children said to be ideal (desirable), generally relatively close, as shown, to retrospective number of children, i.e., to the number of children that woman would like to have, which based on their experience of life under the condition that she could start her life again. The ideal number of children, as it represents itself the persons interviewed, regardless of the actual conditions of their lives, slightly higher than the retrospective number of children.

The main factors in this regard are the level of development of productive forces and the degree of industrialization. Results of special studies of women's fertility show an inverse relationship of women's employment in the production and fertility. Another factor adversely affecting the desire to have more children - is increasing the age at marriage in relation to higher levels of education.

Last but not least important are socio-psychological factors, public opinion about the number of children per family. Regardless of what those views were formed under the influence of a complex of many factors, at some point they have a strong impact on the planning of family size. Public opinion regarding the optimal number of children has considerable socio-hygienic and demographic interests. This can be done only through an in-depth questionnaire survey containing information on the impact of social conditions, consumer protection, etc (6-11).

Overall, our study demonstrates that reproductive attitudes of Astana women depend on age, educa-

tional level, income, professional employment, marital status, and ethnicity.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

Acknowledgments

Reproductive attitudes of Astana women depend on age, educational level, the income, professional employment, marital status, and ethnicity. Thus, these data indicate the presence of differentiating family's intentions in respect of procreation, thus confirming the hypothesis that family plans are largely exposed to the specific conditions of life. The authors declare that there is no conflict of interests. This study was supported by Kazakhstan National Research Center for Maternal and Child Health. The authors declare that there is no conflict of interests.

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