

Influence of Area of Residence on Contraception Use of Different Socio-Economic Characteristics Women in Georgia

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Summary

Aim: The aim of our study was to determine area of residence (urban, rural) influence on overall contraception usage, including modern and traditional contraceptive methods in different groups of women distinctive by socio-economic characteristics: age, level of education, women material status, wealth tercile, number of living children and ethnicity.

Methodology: By secondary analysis of data of “Women Reproductive Health Survey 2010 in Georgia”, with alternative statistical approaches and recoded variables association of predictor variables area of residence with dependent variables: use of modern or traditional methods of contraception were examined in selected women (n=2234, who currently used contraceptive methods) split into groups by age, level of education, ethnicity, wealth tercile, women material status and number of living children. Descriptive statistics methods and multivariate logistic regression analysis were done.

Results: Modern contraceptive methods were used by 1436 (64.3%) women in urban areas and by 798 (35.7%) women in rural areas. Women living in urban areas (n=1053) of 20-44 years, with higher level of education ($p<0.01$), lower wealth terciles ($p<0.05$), with low material status ($p<0.01$), along with 1, 2, 3 living children ($p<0.01$), with Georgian and Armenian ethnicity ($p<0.001$) compared to women living in rural areas (n=1181) were more likely to use modern methods of contraception. With no differences regarding the lowest level of education, the highest economic condition, 4 and more children, Azeri and others and 15-19 years age between women living in urban and rural areas.

Conclusions: It is very important, that healthcare providers take into the consideration identified in our study socio-economic factors, associated with low usage of modern contraception in rural areas and intensify informing and educated this target groups. This will increase use of high effective contraception and reduce the number of unintended pregnancies and induced abortion.

Key words: Use of contraception, residence, Georgia

Problems statement:

Use of contraception, especially modern and effective methods of contraception is significant determinant of unplanned pregnancy rate, which is often terminated by induced abortion or unwanted birth. This may affect sexual, reproductive and general health status of woman; result in serious mental and physical problems for her as well as her family (Barber, 1999). According to Women Reproductive Health Survey 2010 in Georgia unintended pregnancies constituted 36% of all pregnancies. Total induced abortion rate was 1.6 abortions per women. Contraception was currently used by 32% of all 15-44 years women and 53 % of married women, including 35% using modern methods in Georgia [Ross, 2010]. Since previous years use of contraception has been increased due to increased use of modern contraception from 20% in 1999 to 35% 2010, which reduced the number of unplanned pregnancies and induced abortions [Serbanescu, 2005; Serbanescu, 2001]. Given trends can be explained by healthcare system reorganization and by the programs conducted by international organizations (United Nations Population Fund (UNFPA), United States Agency for International Development (USAID), United Nations Children’s Fund (UNICEF)) since 2000, leading to improvement of sexual/reproductive health indicators, including usage of modern methods of contraception in Georgia (“UNFPA Georgia”, 2016, “USAID”, 2014, Ross, 2012). However, these indicators are unfavorable, as

the rate of unintended pregnancies and induced abortion are still high. Subsequent analysis of 1999 and 2005 Reproductive Health Surveys findings showed that non-use of contraception was the major determinant of the rate of induced abortions, and use of modern contraception significantly reduced the number of unplanned pregnancies (Serbanescu, 2010).

As surveys, conducted in other countries in the world, showed women socio-economic characteristics: area of residence, age, level of education, ethnicity, number of living children, women economic condition with other factors have influenced on contraception use, it is very interesting to examine these factors influence on use of methods of contraception, particularly of use of modern, effective contraception in Georgia (Daniels, 2014, Mekonnen, 2011, Palamuleni, 2013).

In Georgia there are compact settlements of population of different religion and ethnicity. Population in urban and rural areas has different views and tradition, different accessibility to education, including been informed about modern methods of contraception (Ethnoses in Georgia, 2008).

In order to identify high-risk women and provide implementation of appropriate preventive measures through increase of informing and knowledge of population and increase of accessibility, it is essential for health care system

providers and physicians to know the risk factors associated with non use of modern contraceptive methods for instance, the area of residence. Because of the changes in their effects could lead to an improvement in the contraceptive use over time (Ulrich, 2001).

Based on all above mentioned **objective** of our study was to determine predictor variables- area of residence (urban, rural) influence on dependent variables - overall contraception usage, including modern and traditional contraceptive methods use in different groups of women distinctive by socio-economic characteristics: age, level of education, women material status, wealth tercile, number of living children and ethnicity.

Methodology

Secondary analysis of database of 2010 Reproductive Health Survey was performed. Cross-sectional study, using stratified multistage sampling method was conducted from October 2010 through February 2011, with approval of the ethics committee of National Center for disease Control of Georgia. After obtaining informed consent, 6292 women regardless of marital status, living in Georgia during the survey period (excluding separatist regions of Abkhazia and South Ossetia), were interviewed at their homes. Inclusion criterion was age of 15 and 44 year. For our study, inclusion criterion was, women who were currently used modern or traditional methods of contraception. In addition of this for each statistical analysis inclusion criteria were different and were included women with the same characteristics, in which field were they examined. Women were categorized into groups according to age: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 years, Level of education: Incomplete secondary, secondary, technicum, diploma/postgraduate, ethnicity: Georgian, Azeri, Armenian and other, women material status: Can hardly satisfy their needs, can somehow satisfy their needs, can easily satisfy their needs, wealth tercile: low, middle, low and number of living children: 0,1,2,3,4 and more. Anyone outside these groups was excluded from the analysis.

The survey helped to obtain the data about basic characteristics and health indicators of population. Based on the responses received through the survey dependent variable has been selected: Currently use of contraception. Women were categorized into those using a modern method of contraception and those using a traditional method of contraception. Modern methods of contraception included use of the pill, intra-uterine device (IUD), condom plus IUD, condom plus traditional method of contraception, spermicides, or injectables, while traditional methods of contraception included use of calendar/rhythm method, withdrawal and calendar plus withdrawal.

In our study the factors potentially associated with use of contraception, identified as predictor variables was area of residence: which was categorized into those living in urban areas and those living in rural areas.

Data were analyzed using the statistical software SPSS version 17. Descriptive statistics and multinomial logistic regression were used. Multinomial logistic regression was done to calculate odds ratios (ORs) for use of each method of contraception for area of residence separately in selected groups of women splitting by age, level of education, ethnicity, material status, wealth tercile, number of living children.

Results

Average age of women involved in the survey was 29.5 (SD=8.1; range=15-44). 2234 respondents reported to currently use modern or traditional methods of contraception with mean age 32.33 (SD=6.37). Majority were ethnically Georgian women. 40.6% had university/post-graduate education; 1181 (52.9%) women lived in rural areas (Table 1). Modern contraceptive methods were used by 1436 (64.3%) women in urban areas and by 798 (35.7%) women in rural areas. After conducting Multinomial logistic regression in different groups of selected women, statistical analysis showed that women living in urban areas compared to women living in rural areas were more likely to use modern methods of contraception or regarding use of modern and traditional methods of contraception in urban and rural areas as significant difference was not found (Table 2).

Women of 20-24, 25-29, 30-34, 35-39, 40-44 age groups living in urban areas were more likely to use modern contraceptive methods ($p<0.05$). Exception was 15-19 years age group, which did not show statistically significant difference regarding modern and traditional methods use in urban and rural areas ($p<0.05$).

Regarding education it was established, that in groups of women with the lower levels of education modern contraceptive methods use was associated with living in urban areas ($p<0.01$), while women with the highest level of education did not show statistically significant difference by usage of modern methods of contraception regarding residence ($p>0.05$).

Statistical analysis, conducted in selected groups split by ethnicity showed that only women of Georgian and Armenian ethnicity living in urban areas were more likely to use modern methods of contraception compared to women with same ethnicity living in rural areas. Azeri and women with other ethnicity were not differently used contraceptive methods regarding residence.

Women with the highest wealth tercile and women who can easily satisfy their needs were equally used modern contraception in urban and rural areas. On the contrary, women in low and middle tercile and who can hardly or somehow satisfy their needs were more likely to use modern contraception in urban areas ($p<0.05$).

Table 1. Background characteristics of study sample (Total n=2234)

			Use of modern methods of contraception N (%)	Use of traditional meth- ods of contraception N (%)	Total N (%)
Age	15-19	Urban	6(30.0)	2 (28.6)	8 (29.6)
		Rural	14 (70.0)	5 (71.4)	19 (70.4)
	20-24	Urban	107 (55.7)	22 (27.2)	129 (47.3)
		Rural	85 (44.3)	59 (72.8)	144 (52.7)
	25-29	Urban	174 (51.9)	45(33.1)	219(46.5)
		Rural	161(48.1)	91 (66.9)	252 (53.5)
	30-34	Urban	196 (53.8)	80 (36.0)	276 (47.1)
		Rural	168 (46.2)	142 (64.0)	310(52.9)
	35-39	Urban	177 (56.9)	71 (36.8)	248 (49.2)
		Rural	134 (43.1)	122 (63.2)	256 (50.8)
	40-44	Urban	110 (51.4)	63 (39.6)	173 (46.4)
		Rural	104 (48.6)	96 (60.4)	200 (53.6)
Education	Incomplete sec- ondary	Urban	51 (25.2)	30 (17.8)	81 (21.8)
		Rural	151 (74.8)	139(82.2)	290 (78.2)
	Secondary	Urban	114 (40.6)	56 (26.2)	170 (34.3)
		Rural	167 (59.4)	158 (73.8)	325 (65.7)
	Technicum	Urban	148 (50.0)	58 (34.9)	206 (44.6)
		Rural	148 (50.0)	108 (65.1)	256 (56.4)
	Diploma/ Postgraduate	Urban	457 (69.6)	139 (55.8)	596 (65.8)
		Rural	200 (30.4)	110 (44.2)	310 (34.2)
Ethnicity	Other	Urban	23 (63.5)	7 (46.7)	30 (51.7)
		Rural	20 (46.5)	8 (53.3)	28 (48.3)
	Armenian	Urban	28 (60.9)	16 (18.6)	44 (33.3)
		Rural	18 (39.1)	70 (81.4)	88 (66.7)
	Azeri	Urban	8 (15.4)	7 (15.2)	15 (15.3)
		Rural	44 (84.6)	39 (84.8)	83 (84.7)
	Georgian	Urban	711 (54.9)	253 (38.9)	964 (49.5)
		Rural	584 (45.1)	398 (61.1)	982 (50.5)
Material status	Can hardly sat- isfy their needs	Urban	111 (35.8)	67 (24.0)	170 (30.2)
		Rural	199 (64.2)	212 (76.0)	411 (69.8)
	Can somehow satisfy their needs	Urban	587 (57.2)	199 (40.0)	796 (51.5)
		Rural	440 (42.8)	299 (60.0)	739 (48.5)
	Can easily satis- fy their needs	Urban	721 (72.7)	17 (81.0)	89 (74.2)
		Rural	27 (27.3)	4 (19.0)	31 (25.8)
Wealth tercile	High	Urban	528 (95.35)	170 (97.1)	698 (95.9)
		Rural	25 (4.5)	5 (2.9)	30 (4.1)
	Middle	Urban	200 (39.2)	92 (29.8)	292 (35.7)
		Rural	310 (60.8)	217 (70.2)	527 (64.3)
	Low	Urban	42 (11.3)	21 (6.7)	63 (9.2)
		Rural	331 (88.7)	293 (93.3)	924 (90.8)
Number of living chil- dren	0	Urban	20 (76.9)	2 (40.0)	22 (71.0)
		Rural	6 (20.1)	3 (60.0)	9 (29.0)
	1	Urban	228 (60.6)	75 (46.6)	303 (56.4)
		Rural	148 (39.4)	86 (59.4)	234(43.6)
	2	Urban	436 (54.0)	166 (35.1)	602 (47.0)
		Rural	371 (46.0)	307 (64.9)	677 (53.0)
	3	Urban	77 (40.1)	31 (23.5)	108 (33.3)
		Rural	115 (59.9)	101 (76.5)	216 (66.7)
	4	Urban	9 (25.7)	9 (33.3)	18 (29.0)
		Rural	26 (74.3)	18(66.7)	44 (61.0)

Table 2. OR of use of modern and traditional contraceptive methods by urban and rural areas

	OR95%CI	
Age	15-19	ns
	20-24	3.376 (1.916-5.948)***
	25-29	2.186 (1.441-3.315)***
	30-34	2.071 (1.470-2.918)***
	35-39	2.270 (1.570-3.282)***
	40-44	1.612 (1.063-2.443)*
Education	Incomplete secondary	ns
	Secondary	1.926 (1.308-2.836)**
	Technicum	1.862 (1.258-2.756)**
	Diploma/Postgraduate	1.808 (1.339-2.442)***
Ethnicity	Other	ns
	Armenian	6.806 (3.047-15.199)***
	Azeri	ns
	Georgian	1.915 (1.581-2.320)***
Material status	Can hardly satisfy their needs	1.765 (1.232-2.529)**
	Can somehow satisfy their needs	2.004 (1.612-2.492)***
	Can easily satisfy their needs	ns
Wealth tercile	High	ns
	Middle	1.522 (1.125-2.058)**
	Low	1.770 (1.025-3.059)*
Number of living children	0	ns
	1	1.766 (1.217-2.564)**
	2	2.173 (1.720-2.747)***
	3	2.181 (1.329-3.580)**
	4	ns

The reference category is use of traditional methods of contraception.

*** (p<0.001), ** (p<0.01), * (p<0.05), ns p>0.05 not significant

Modern contraception were more likely used in urban areas compared to women living in rural areas by women having 1,2,3 living children (p<0.01), while having 0 or more then 4 child did not show statistical significant difference.

Discussion

Our Study shows, that like other countries, socio-economic and demographic characteristics of women have influence on contraceptives, particularly modern contraceptive methods use (Achana, 2015, Khan, 2012, Oddens, 1997). Particularly, living area could have an impact on contraception use. As the women living in urban areas have more opportunity to be more informing and acquiring more knowledge about modern contraceptive methods, have more accessi-

bility to healthcare facilities and pharmacies. As it was established in our study women living in urban areas more frequently used modern methods of contraception, except several groups showed equally usage of modern and traditional methods of contraception.

In lower age group (15-19 year) women living in urban areas and living in rural areas did not differently used modern methods of contraception. This finding could be explained by the behavior regarding pregnancy intention in Georgia. Due to tradition of each countries women attitude to pregnancy planning is different regarding age. For example, in India newly married women may be willing to postpone their first pregnancy but they may be constrained to take specific action because of the family and social

pressure to prove their fertility (Khaurasia, 2014). Young Europeans may not feel the same social pressure to get married and have children as did their parents and grandparents. Europe's low fertility has also been linked to the so-called "contraceptive revolution" (Worku, 2014).

In Georgia young women begin sexual life mainly after marriage and want to become pregnant and have a child very soon. Therefore most of pregnancies in younger age are intended and consequently there is a less demands of use of contraception (Daniels, 2014). Like this, frequently woman with 0 living child, wanted to get pregnant, had no needs to prevent pregnancy and less used contraception, therefore statistical analysis did not show difference regarding residence of modern and traditional contraception use in this group. Contrary, women with 4 and more children are strongly motivated to prevent unintended pregnancies. So, villagers used modern methods of contraception equally high to citizens. In Georgia fertility rate is low 2.0 births per woman, in our data analysis women with 4 or more living children included only a few cases, this might affect results of statistical analysis.

According to surveys, conducted in many other countries level of education has a significant influence on contraception use [Bbaale, 2011, Font-Ribera, 2008, Nur, 2012, Saleem, 2005, Yago, 2014, Yousef, 2002]. In our study level of education has a clear impact on modern contraception use by women. Women with higher level of education (incomplete secondary, secondary and „technicum“) statistically significantly were more likely to use modern contraception in urban areas. But examining women with the lowest level of education revealed that educated women living in rural areas equally to women living in urban areas used modern methods of contraception. Thus, impact on modern contraception use in rural areas has only high level of education. Intension to avoid unwilling pregnancy motivates her to search for and use safe and highly effective methods of contraception. They have high probability to acquire knowledge about sexual health, providing them with more autonomy and ability to make a decision regardless area of residence.

High accessibility to healthcare services and high mobility explains equally use of modern contraceptive methods in urban and rural areas by women in the highest wealth tercile and who can easily satisfy their need. While women in low and middle tercile and who can hardly or somehow satisfy their needs frequently are without these opportunities.

Armenian women living in rural places have a high risk of not using modern contraception, they traditionally use withdrawal (Armenian demographic and health survey, 2010). This fact demands attention of healthcare providers to intensify work with this population.

Conclusions

Thus, our study ascertained that women living in urban areas compared to women living in rural areas were more likely to use modern methods of contraception. Women of almost all age groups, lower level of education, lower wealth terciles and low material status, with 1,2, 3 living children, Georgian and Armenian ethnicity were more likely to use modern methods of contraception in urban areas. Thus, women living in rural areas are in high risk of low use of modern contraception. It is important, that health care providers will take into consideration factors identified in our study and intensify work with those target groups in rural areas: women of 15-19 years, lower level of education, lower economic condition, with 1,2, 3 living children, Georgian and Armenian ethnicity, by the improvement of the knowledge about contraception, especially its modern methods, increasing accessibility to these methods and their use, help women to make well informed decision about high effective contraceptive choice. That, in turn, will reduce the number of unintended pregnancies and associated induced abortions with direct participation of health care providers.

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