

FACTOR INFLUENCING CONTRACEPTIVE BEHAVIOR AMONG WOMEN SEEKING INDUCED ABORTION IN URBAN AND RURAL REGION, NEPAL

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ABSTRACT: This cross sectional descriptive study aimed to describe factors influencing contraceptive behavior among women aged 15-49 years, seeking induced abortion in the rural and the urban regions of Nepal. A total of 385 women (92.1% completion rate), 195 from the urban region and 190 from the rural region were analyzed. The results showed that the overall contraception use was 69.4% in the urban region and 54.3% in the rural region. Women in the urban region were nearly twice as (crude OR 1.76, 95% CI 1.16-2.67) or more likely to use contraception than women in the rural region. In the rural region, women with one previous induced abortion, high perception and who lived near facilities providing contraceptive were more likely to use contraception. Women who lived in the urban region for a longer duration and with higher knowledge were more likely to use contraception. On the other hand, women with more than two induced abortions and spouse as primary source of contraceptive information were less likely to use contraception. In rural region, more focus should be placed on empowering women and developing their autonomy and confidence. More satellite centers should be opened to cover women living in remote regions. While in the urban region, more focus should be put on education about and promotion of better and reliable contraception. Overall more intensive post abortion counseling about the proper and effective use of contraceptive method such as IUD, which are controlled more by women, should be provided.

Keywords: abortion, rural region, urban region, contraceptive behavior

INTRODUCTION

Abortion is one of the most sensitive as well as an important aspect of health issues of women. In Nepal, abortion has been legal since 2004. It can be obtained by women on demand up to 12 weeks of pregnancy [1]. The service is provided throughout the country by certified governmental as well as non-governmental health organizations. Abortion rate in 2010 was around 12 abortions per 1000 women in reproductive age group and is more in urban region than in rural [2].

Recently much has been studied and written about factors influencing abortion behavior in Nepal, but not much have been focused on the factors influencing their contraceptive behavior. Contraceptive behavior is defined as the uses or non-use of any method of contraception practiced by the women or spouse which led to the pregnancy they seek to abort. Nepal has around 80 % population living in the rural region with 20 % of population living in urban region [3].

Contraceptive prevalence in Nepal in 2010 was

around 59% in urban region but just around 48% in rural regions [2]. Not much has been studied about the difference in factors influencing contraceptive behavior in women in these different regions. This is important to know, in order to help address the issues differently in these different regions in order to improve the contraceptive behavior efficiently. This paper describes the relationship of a broad range of characteristics of women in urban region and rural region; socio-demographic factors, knowledge, attitude and perception of women and the environmental factors which influence their contraceptive behavior.

METHODS

Data

Data were collected from a total sample of 418 women, 209 from each region, aged 15-49 years, seeking abortion in health facilities (both private and public) providing legal and safe abortion services. Two stage cluster sampling method was used. First, from total of 5 development regions in the country, 2 regions were randomly selected, and then from these each developmental region, health facilities were divided into two strata, one

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containing health facilities in rural region and other containing health facilities in urban region. And from each of these strata, randomly 3 health centers were selected with a total of 6 from rural region and 6 in urban region. All the women who came for abortion in these health centers were taken for the study without any randomization because of limitation of time and patient load. After excluding for missing data, total of 385 women (92.1% completion rate), 190 from rural region and 195 from urban region were analyzed.

Self-administered questionnaires were used as the tool for research. These questionnaires were first pretested in 40 women seeking abortion in health facilities. The results showed that the questionnaire was reliable; Kuder Richardson 20 for knowledge was 0.80, Cronbach's alpha for perception was 0.86 and for attitude was 0.82.

The questionnaire had 4 parts:

1. Information about socio-demographic factors (14 questions)
2. Contraceptive behavior (use or non-use of contraception) (2 questions)
3. Internal Factors
 - a. Knowledge (19 questions)
 - b. Attitude (19 questions)
 - c. Perception (8 questions)
4. External factors
 - a. Accessibility (5 questions)
 - b. Cues to actions (3 questions)

The study was reviewed and approved by Mahidol University, Social Science Institutional Review Board for compliance with International Guideline of Human Research Protection (COA.No.2012/107.2303). After gaining permission to conduct the study from the Family Health Division, Ministry of Health and Population of Nepal, in charge of each health facilities, informed written consent were obtained from women seeking abortions or the guardian if respondents were minor.

Contraceptive Methods

There are broadly two types of contraception; traditional and modern. Traditional methods include rhythm and withdrawal techniques, whereas modern methods include female and male sterilization, daily hormonal pills, Intra uterine devices (IUD such as Copper T), sub dermal implants (Norplant), male condoms, injectable progesterone (Depo-Provera), and emergency contraceptive pills. Each contraceptive method entails different probabilities of becoming pregnant, and women's methods of choice often differs by their socioeconomic,

demographic, knowledge, attitude and perception and environmental factors like availability.

STATISTICAL ANALYSIS

Frequency, percentage were used to describe the results. Pearson chi-square test and/or Fisher's exact test was used to explore the association of independent variables with contraception behavior (use/nonuse of contraception). Multiple logistic regression was used to study the strength of association, between statistically significant variables with results expressed as adjusted odds ratio (aOR). Variables with probability *p value* <0.05 from the chi-square analysis were put in the regression modeling process along with those variables which were significantly associated in either one of the regions (rural or urban) were also put in the final multivariate model of both the regions.

RESULTS

Socio-demographic characteristics

Table 1, shows the percentage distribution of women aged 15-49, seeking abortion in rural and urban region by their socio-demographic characteristics. As the table indicates, most of the women in both the regions were aged between 20-30 years. Identifying with education level of women, women with no education were nearly twice as more in rural region (31.5%) than in urban region (16.8%). But, women with higher education were twice as more in urban region (16.9%) than in rural region (7.7%). Spouse's education level followed the similar pattern as women's education. Employment status or with duration of residence of women were not different among women seeking abortion in either of the region. Identifying to total of children, most women seeking abortion had 1-2 children. Women with more than 2 children seeking abortion were slightly higher in rural area (26.8%) than in urban region (21.4%). Among women who had children, most of them had a daughter (43.9%) or a son (55.8%). Those who didn't have a daughter were more in urban region, whereas those who had two or more daughters were more in rural region. Similarly, those who did not have a son were also higher in number seeking abortions in both the regions (33.2% rural 21.4% urban). Two third of women didn't have previous abortions and were nearly equally found in both the regions. While, among women with 2 or more previous abortions were twice as more in urban region (7.1%) than in rural region (4.2%).

Table 1 Total number with percent distribution of women aged 15-49 years in rural and urban region seeking abortion, by their socio-demographic characteristics

Characteristics	Total %	Rural %	Urban %
Age group			
<20	10.9	10.0	11.7
20-30	65.3	69.0	61.7
>30	23.8	21.1	26.5
Total (N)	385	190	195
Women's education			
No education	24.1	31.5	16.8
Primary	30.4	36.5	24.4
Lower secondary	17.3	14.4	20.1
Secondary	15.9	9.9	21.8
Higher education	12.3	7.7	16.9
Total (N)	385	190	195
Husband's education			
No education	14.9	16.4	13.4
Primary	17.9	28.7	6.7
Lower secondary	24.8	29.2	20.1
Secondary	20.3	13.4	27.4
Higher education	22.1	12.3	32.3
Total (N)	385	190	195
Employment status			
Yes	40.2	40.0	40.3
No	59.8	60.0	59.7
Total (N)	385	190	195
Duration of stay			
>10 years	26.1	25.8	26.4
3-10 years	45.3	44.9	45.6
<3 years	28.6	29.2	28.0
Total (N)	385	190	195
Previous abortion			
No	70.7	71.6	69.9
1	23.6	24.2	23.0
≥2	5.7	4.2	7.1
Total (N)	385	190	195
Total no. of children			
No	22.0	17.9	26.0
1-2	53.9	55.3	52.5
>2	24.1	26.8	21.4
Total (N)	385	190	195
<u>Among women with children</u>			
No. of daughter			
No	20.3	17.9	22.8
1	43.9	42.3	45.5
2 or more	35.9	39.7	31.7
Total (N)	301	156	145
No. of son			
No	27.6	33.2	21.4
1	55.8	50.9	61.2
2 or more	16.6	15.9	17.4
Total (N)	301	156	145

Contraception Behavior

The overall use of contraception was higher in women in urban region (69.4%) compared to that of rural region (56.3%). Women in urban region were nearly twice as more likely to use contraception

(crude OR 1.76, 95% CI 1.16-2.67). Even though most used modern contraception, majority of them were using condoms (around 70 %).

As indicated in Table 2, in the rural region, spouse's education ($p=0.044$), employment ($p=0.001$), number of previous induced abortions ($p=0.001$), number of children ($p=0.001$) and number of daughter ($p=0.007$) were significantly associated with contraceptive use. Whereas in the urban region, women's education ($p=0.007$), employment ($p=0.001$), duration of stay ($p=0.031$), previous induced abortion ($p=0.001$), number of children ($p=0.004$) and number of daughter (0.006) were significantly associated with contraception use.

Identifying with education (lower = no education, primary and lower secondary and higher = secondary, higher secondary, higher education), higher or lower educated women had similar use of contraception in the rural region, whereas contraception use with higher education was more (71%) in the urban region. Use of contraception was more (60.6%) in women in rural region with spouse with lower education, whereas in urban region use was higher (70.4%) with spouse having higher education. Employed women used contraception more in both the regions, but non-use of contraception was seen very high (61.4%) with unemployed women in the rural region. Longer the duration a woman lives in her region; more was the contraception use, especially in the urban region. Use of contraception was seen more in both the region in women with one previous induced abortion (80% in rural and 84% in urban region), but contraception use was markedly less in women with more than two previous induced abortion, especially in the urban region (28.5%). Women with more than two children in both the regions had the highest numbers of contraception users (76% in rural and 83% in urban region), while non-use (54.2%) of contraception was still higher than use (45.7%) in women with (1-2) children in the rural region. Use of contraception in women with no daughter child (42.8%) and with one daughter child (46.9%) were both low in the rural region, whereas contraception use in women with one daughter child was only low (48.4%) in the urban region. Factors like age and number of son were not significantly associated with contraception use in this study.

As indicated in Table 3, in the rural region, knowledge ($p=0.001$) and perception ($p=0.009$) are significantly associated with contraception use, whereas in the urban region, knowledge (0.001), attitude ($p=0.002$) and perception ($p=0.001$) are all significantly associated with contraception use.

Table 2 Percent distribution of contraceptive behavior of women seeking induced abortion by their socio-demographic factors

Characteristic	Rural region				Urban region			
	Total N	Use %	Non-use %	<i>p-value</i>	Total N	Use %	Non-use %	<i>p-value</i>
Women's education								
Higher	40	57.5	42.5	0.89	83	71.5	20.4	0.007
Lower	150	56.3	43.6		112	61.9	38.0	
Husband's education								
Higher	44	43.1	56.8	0.044	98	70.4	29.5	0.479
Lower	126	60.6	39.3		67	65.1	34.8	
Employment								
Yes	76	82.8	17.1	0.001	79	82.2	17.7	0.001
No	114	28.6	61.4		116	60.6	39.3	
Duration of stay								
>10 years	48	63.0	36.9	0.43	51	80.3	19.6	0.031
3-10 years	80	56.2	43.7		98	71.5	28.4	
< 3 years	62	50	50		46	57.4	42.5	
Previous abortion(induced)								
No	136	48.5	51.4	0.001	137	68.6	31.3	0.001
1	46	80.4	19.5		44	84.4	15.5	
2 or more	8	50.0	50.0		14	28.5	71.4	
No. of children								
No	34	58.8	41.1	0.001	50	78.4	21.5	0.004
1-2	105	45.7	54.2		103	59.2	40.7	
> 2	51	76.4	23.5		42	83.3	16.6	
<i><u>Women with children</u></i>								
No. of son								
No	52	50.0	50.0	0.564	31	74.1	25.8	0.053
1	79	59.4	40.5		89	58.4	41.5	
2 or more	25	56.0	44.0		25	84.0	16.0	
No. of daughter								
No	28	42.8	57.1	0.007	33	48.4	51.5	0.006
1	66	46.9	53.0		66	63.6	36.3	
2 or more	62	70.9	29.0		46	82.6	17.3	

Table 3 Percent distribution of contraceptive behavior of women seeking induced abortion by their knowledge, attitude and perception of contraceptive use

Factor	Rural region				Urban region			
	Total N	Use %	Non-use %	p-value	Total N	Use %	Non-use %	p-value
Knowledge								
Good	15	53.3	46.7	0.001	60	75.0	25.0	0.001
Fair	137	64.2	35.8		115	73.0	27.0	
poor	38	28.9	71.1		20	33.3	66.7	
Attitude								
Negative	128	53.1	46.9	0.203	91	57.1	42.9	0.002
Positive	62	62.9	37.1		104	80.0	20.0	
Perception								
High	70	68.6	31.4	0.009	116	80.3	19.7	0.001
Low	120	49.2	50.8		79	53.2	46.8	

As indicated in Table 4, in the rural region, distance of the health centers was only significantly associated with contraception use ($p=0.002$), whereas in the urban region, distance ($p=0.049$), mode of transportation ($p=0.002$), primary source of information ($p=0.006$) and source of influence ($p=0.049$) were significantly associated with contraception use. Only 46% of women in the rural region who lived 2 km or

far from the health facilities used contraception. Contraception use was more (83.5%) where vehicle was available in urban region. Friends were mostly the primary source to provide information about contraception to women in the both region. But friends and spouse were the most important source of influence to use contraception in the rural region, whereas it was mainly spouse in the urban region.

Table 4 Percent distribution of contraceptive behavior of women seeking induced abortion by external factors like availability, source and information and influence

Factor	Rural region				Urban region			
	Total N	Use %	Non-use %	<i>p-value</i>	Total N	Use %	Non-use %	<i>p-value</i>
Distance								
≥ 2 km	90	46.0	54.0	0.002	70	65.3	34.6	0.049
<2 km	100	67.7	32.2		124	78.5	21.4	
Mode of transportation								
Walking	130	56.9	43.0	0.65	127	62.9	37.0	0.002
Vehicle	48	53.4	46.5		67	83.5	16.4	
Primary source of information								
Friend	96	60.4	39.5	0.22	67	68.6	31.3	0.006
Spouse	15	66.6	33.3		32	46.8	53.1	
Mass media	30	60.0	40.0		62	83.8	16.1	
Other (family / health worker)	49	60.0	40.0		34	72.4	27.5	
Same source								
Yes	81	45.6	54.3	0.054	74	67.5	32.4	0.62
No / Not sure	109	64.2	35.7		120	71.6	28.3	
Primary source of influence								
Friend	65	72.0	25.0	0.57	41	76.1	23.8	0.049
Spouse	67	65.5	34.4		109	46.6	53.3	
Others (family / health worker/ mass media)	58	60.0	40.0		45	75.0	25.0	

Multivariate analyses

As illustrated in Table 5, in the rural region, women with one previous abortion, with high perceived control over their contraceptive behavior and its methods and who live near the facilities where contraceptives devices are available had more odds or using contraception. While in the urban region, women who had been living there for a longer time and who had higher knowledge about contraception and its methods had more odds of using contraception. But women who had 2 or more previous abortion and those women who heard about contraception primarily from husband had lesser odds of using contraception. While comparing between rural and urban region, women who had been living in urban region for a longer duration were 2.6 times more likely to use contraception (aOR 2.60). Women who had at least aborted ones before were equally likely (aOR 3.31 in rural region and aOR 3.17 in urban region) to use contraception in both the regions. But women with two or more previous abortions were less likely to use contraception in urban region (aOR 0.09). Women with higher knowledge about contraception and its methods were more likely to use contraception in urban region (aOR 4.8). Women with high perceived control over their contraceptive behavior, used contraception more in both the regions, but unlike knowledge, perception was nearly significantly

associated in rural region (aOR 6.7). Women who lived near the facilities providing contraceptive methods used contraception more in rural region (aOR 4.4), whereas in urban region distance didn't significantly affect in its use. Women whose primary source of information about contraceptive methods was husband used less contraception in urban region (aOR 0.13).

Though not significantly associated, women with higher education were more likely to use contraception, but women with spouse having higher education on the other hand were less likely to use it. As expected, women with more than 2 children were more likely to use contraception whereas women with 2 or more daughter were less likely to use it. Women were more likely to use contraception where vehicles were available to reach to facilities providing contraception which was more seen in rural region than in urban.

DISCUSSION

Factors influencing contraception resulted in unintended pregnancy, which in turn lead to abortion, varied widely among women living in rural and urban region. Even though the patterns of contraceptive use among abortion patients may or may not mirror the use patterns of all women at risk of unintended pregnancy, it can still be helpful in developing better understanding of these influencing factors never the less.

Table 5 Adjusted odds ratio (aOR) of women using contraception

Factors	Rural region		Urban region	
	aOR (95% CI)	p-value	aOR (95% CI)	p-value
Women's education				
Lower	1		1	
Higher	3.58 (0.78 -16.5)	0.102	1.07 (0.29-3.96)	0.917
Spouse's education				
Lower	1		1	
Higher	0.40 (0.28-0.28)	0.147	0.52 (0.17-1.66)	0.272
Duration of stay				
Short	1		1	
Long	1.10 (0.48-2.53)	0.817	2.60 (1.05-6.45)	0.038
No. of children				
No	1		1	
1-2	0.44 (0.14-1.36)	0.154	0.34 (0.11-1.06)	0.063
>2	4.53 (0.81-25.3)	0.086	2.54 (0.25-25.5)	0.429
Number of Daughter				
1	1		1	
2 or more	0.59 (0.17-2.00)	0.396	0.39 (0.08-1.88)	0.242
Previous abortions				
No	1		1	
1	3.31 (1.18-9.30)	0.023	3.17 (0.83-12.1)	0.092
2 or more	2.65 (0.29-24.0)	0.387	0.09 (0.02-0.46)	0.004
Knowledge				
Lower	1		1	
Higher	3.09 (0.95-9.99)	0.060	4.81 (1.01-22.9)	0.048*
Attitude				
Negative	1		1	
Positive	0.61 (0.08-4.72)	0.637	1.62 (0.39-6.80)	0.508
Perception				
Low	1		1	
High	6.73 (0.99-45.9)	0.049	2.03 (0.42-9.78)	0.375
Distance				
Far	1		1	
Near	4.41 (1.69-11.5)	0.002	0.81 (0.28-2.38)	0.703
Mode of transportation				
Walking	1		1	
By vehicle	2.26 (0.84-6.07)	0.106	0.68 (0.22-2.06)	0.496
Information source				
Others (family / health worker)	1		1	
Husband	2.30 (0.42-12.4)	0.334	0.13 (0.03-0.63)	0.011
Friends	2.09 (0.72-6.07)	0.178	0.39 (0.10-1.51)	0.173
Mass media	0.72 (0.15-3.45)	0.684	0.71 (0.14-3.65)	0.677
Influence source				
Others (family / health worker / mass media)	1		1	
Husband	2.46 (0.84-7.26)	0.102	1.34 (0.38-4.74)	0.650
Friends	2.45 (0.84-7.16)	0.102	1.48(0.36-6.10)	0.586

Women with no or less education, spouse with less education, having 2 or more number of children, having 1 or more daughters and without previous abortion sought abortion more in rural region.

Meanwhile, women who were teenagers or aged more than 30, with higher education, spouse with higher education as well, with more than 2 previous abortions sought abortion more in urban region. Teenagers used less contraception and those who used it, used condoms or more of unreliable

methods like withdrawal methods [4]. Teenage pregnancy and abortion exerts more physical and mental trauma to young people [5]. More focused effort should be put on teenage pregnancy and its prevention, in terms of counseling and educating them about importance of proper contraception and providing them with proper skills of use of condoms.

Abortion is mostly because of unintended pregnancy. And unintended pregnancy is because

of non-use or use of unreliable contraceptive methods [6, 7]. Women in urban region used contraception more (69.4%) than women in rural region (56.3%) and also the use of modern contraception (male condom) in urban women was higher, however, it is interesting to observe that they had unintended pregnancy resulting in abortion. Therefore, further studies should be conducted to assess the effectiveness of contraception use. Education level of both men and women had a positive impact in more use of contraception [8, 9]. So, more focus should be put now on education as Nepal still has very low literacy rate around the region [3]. As women who were not working seem to use contraception less, so more programs targeting these women should be brought forward to make them aware about the need of contraception and prevention of unintended pregnancy.

Women who had more daughters used less contraception, women with no son or those who already have more than one daughter child sought more abortion especially in rural region, whereas women in urban region who had multiple repeat induced abortion still used less contraception. These might all be indirectly associated with sex selective behavior and preference for a son. Family desires for a son and if a pregnancy conceived is a female child then mothers go for abortion. Though sex selective abortion is illegal in Nepal, but it's widely under reported, but practiced [10] and is easily available [2].

Women with previous abortions, in both the regions, still used less contraception, and those who used, still were used withdrawal methods or condom. More intensive post abortion counseling is important to influence these couples to choose better contraception to prevent repeated abortions. Contraception which is more under control of women such as copper T, Norplant or Depo should be promoted to these women, so that they gain more control over their contraceptive behavior preventing repeated abortions [11]. Those women who had better knowledge about contraception and its various methods, positive attitude towards the use of contraception and its methods and high perception in terms of perceived control over their contraceptive behavior used more modern contraception [12, 13]. But knowledge was more associated with contraceptive behavior in urban region where as perception was associated more in rural region. This might be because women in urban region are better educated, more self-sufficient and can make decisions by themselves, whereas women in rural region almost depend on

their spouse and family to decide for them [4]. That's why women empowerment is of essential importance in rural regions [14]. As use of contraception was more when the health facilities were near in rural regions, pockets of contraceptive distribution centers should be made available especially in rural areas [15], where it take longer time to reach to facilities to get contraception. Women, who are influenced by husband, used more contraception, which shows indirectly the male predominance. Educating husbands and empowering women should be done especially in rural areas where the influence of husband more commonly seen [16].

CONCLUSION

This cross-sectional descriptive study indicate that overall contraception use and influencing factors are different among women seeking induced abortion in the rural and the urban region of Nepal. Tailored strategies should be devised to address this issue in each region. Education, women empowerment, increasing availability should be recommended in the rural region, whereas in urban region, intensive post abortion counseling and gender equality should be promoted.

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