

## Awareness Regarding Preconception Care among Reproductive Age Women in a Community

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### ABSTRACT

**Introduction:** Preconception Care is critical component between planning pregnancy to conception. It aims at successful pregnancy and its outcome. It focuses on health promotion, risk factor assessment and intervention. The objective of this study was to find out the awareness regarding preconception care among reproductive age women in a community.

**Methods:** A descriptive cross-sectional study was conducted among 85 women of reproductive age in ward no 4 of Tokha municipality, samples were selected using the non-probability convenience sampling technique. A self-developed, semi structured interview schedule was used for data collection by in person interview method. Data was analyzed by using SPSS version 16. Descriptive statistics frequency, mean, mode, median, range, percentage, and standard deviation were used to describe socio-demographic variables and level of awareness and inferential statistics Chi-square and fisher exact test were used to measure the association between level of awareness and selected variables.

**Results:** The findings revealed that nearly half (44.7%) respondents had adequate awareness, 43.5% had moderate awareness, and 11.8% had low awareness regarding preconception care. The level of awareness was associated with husbands' education level and history of abortion.

**Conclusion:** Less than half women of reproductive age have adequate awareness regarding preconception care with more awareness on risk factor assessment and less awareness on the area of intervention and management therefore it would be preferable to implement formal and informal education and awareness programs on many aspects of preconception care in the community to promote awareness.

**Keywords:** Awareness, preconception care, reproductive age, women.

### INTRODUCTION

Preconception care is needed for all women of reproductive age who are capable of becoming pregnant whether they are planning to conceive or not.<sup>1</sup> Key components of preconception care are health promotion, risk factor assessment and interventions.<sup>2</sup>

The preconception care package must effectively address long-term health conditions like mental health issues, metabolic disorders, and various

chronic medical conditions including obesity, counselling cessation of smoking, alcohol intake, and addressing drug misuse. Furthermore, it also promotes healthy behaviours related to nutrition like folic acid supplementation and prevention of sexually transmitted infections.<sup>3</sup>

In 2020, globally almost 800 women died every day from preventable causes related to pregnancy and childbirth. Almost 95% of all maternal deaths occurred in low- and lower-middle-income

countries. Sub-Saharan Africa alone accounted for approximately 70%, while southern Asia accounted for about 16% of global maternal death. Hypertensive disorder accounted for 14% and abortion for 7.9% maternal death globally which can be prevented by preconception care.<sup>4</sup>

In United States only 29.7% of women take daily folic acid supplements, more than 25% use tobacco, 24.9% are overweight just before pregnancy, 42.9% report that their most recent pregnancy was unintended.<sup>5</sup> In Australia 80.4% women have high knowledge of preconception care there are gaps related to awareness on sedentary lifestyle and adverse outcome of pre pregnancy obesity.<sup>6</sup>

In Nepal, in Kaski district 64.5% women had average and 20% had poor knowledge on preconception care.<sup>7</sup> In Biratnagar 71.8% women had moderate and 11.8% had inadequate knowledge on preconception care.<sup>8</sup> In Dang, majority of respondents 84.58% had average level of knowledge where highest knowledge was in the reproductive health risk factors while lowest level was health promotional behaviours.<sup>9</sup> In Chitwan 51% women had inadequate level of knowledge regarding preconception care, Birgunj 20% women had inadequate knowledge. Moreover, the study stated that preconception care is found associated with improved outcomes like to prevent unplanned pregnancies, gestational complication like macrosomia, eclampsia etc.<sup>10</sup>

## METHODS

A descriptive cross sectional research design was used to find out the awareness regarding preconception care among reproductive age women in community. This study was conducted in Tokha municipality ward no. 4 Kathmandu. Non-probability convenience sampling technique was used by in-person interview technique using self-developed semi structured interview schedule. The sample size was calculated using Cochran, 1977 formula. The total sample size was 85.

Awareness was measured in terms of the following score. Each right answer was scored 1, wrong answer and don't know was scored as 0. The awareness level was classified as adequate,

average and inadequate. Validity of instrument was enhanced by extensively reviewing the literature, consulting with peers, research advisor and subject experts. The instrument was developed in English and then translated into Nepali language. Pretesting of instrument was carried out among 10% of sample size who were residing in Tokha municipality ward no. 4 for at least six months or more. Ethical approval was obtained from the Institutional Review Committee of Institute of Medicine Ref no 451(6-11) E2. After receiving formal permission from Tokha municipality ward no 4, data collection procedure commenced from 28<sup>th</sup> April 2024 to 11<sup>th</sup> May 2024. Informed verbal and written consent were obtained from each participant before data collection. Respondents were informed that it would take around 20-30 minutes for data collection and they would be free to withdraw at any time if they don't want to continue. Data were collected by researcher herself using in person interview technique from 10 am to 4 pm depending upon the availability of the samples and from five to six respondents per day during data collection period. Households were approached by researcher herself. One sample was taken from one household until required sample size met.

Privacy was maintained. Written consent was taken from each respondent. Confidentiality was maintained by ensuring the respondents. Dignity of the respondents was secured by respecting their right to take part in research and discontinue from research at any time. To maintain anonymity, code number was used. The filled-up questionnaires were kept safely and the data were used for study purpose only. All the collected data were checked for its completeness, consistency and accuracy of the information. The collected data was reviewed, organized and coded. The coded data was entered and analyzed by using SPSS software version 16. Data was analyzed by using descriptive and inferential statistics. Findings of the study were presented in tabular form.

## RESULTS

**Table 1: Socio-demographic and Obstetric Characteristics of the Respondents (n=85)**

Characteristics	Number	Percentage
<b>Age (in completed years)</b>		
<20	6	7.1
20-35	65	76.5
>35	14	16.5
<b>Mean age ±SD= 28.3 ± 6.6, range=18-45</b>		
<b>Marital Status</b>		
Married	49	57.6
Unmarried	36	42.4
<b>Occupation</b>		
Home maker	35	41.2
Students	22	25.9
Service holder	21	24.7
Business	7	8.2
<b>Educational Status</b>		
Can read and write	15	17.6
Basic level (1-8)	10	11.8
Secondary level (9-12)	34	40.0
Bachelor level and above	26	30.6
<b>Educational Status of Respondent's Husband (n=49)</b>		
Can read and write	5	5.9
Basic level (1-8)	6	7.1
Secondary level (9-12)	21	24.7
Bachelor level and above	17	20.0
<b>History of Abortion (n=37)</b>		
No	28	75.7
Yes	9	24.3
<b>History of Complication on Child (n=9)</b>		
Premature birth	5	55.6
Low birth weight	3	33.3
Birth defect	1	11.1

\* Multiple response

Majority of the respondents (76.5%) belong to age group 20-35 and 41.2% were house-maker and 57.6% were married. Likewise, 40% respondents had completed secondary level education. Among married nearly quarter (24.3%) had history of miscarriage. Similarly, premature birth was the highest complication (55.6%) (Table 1).

Sixty percent of the respondents knew correct meaning of preconception period and most of them (82.4%) mentioned that component of preconception care is health promotion. Almost all of them (91.8%) stated that preconception care is important to prevent complication during pregnancy (Table 2).

**Table 2 : Awareness on Meaning of preconception period, Components and Importance of Preconception care (n=85)**

Variables	Number	Percentage
<b>Correct meaning of Preconception period</b>	51	60.0
<b>Components of Preconception Care *</b>		
Health promotion	70	82.4
Detect present health condition	67	78.8
Risk assessment	64	75.3
Intervention and Management of risk factors	52	61.2
<b>Importance of Preconception Care *</b>		
Prevent complications during pregnancy	78	91.8
Promote health of both mother and child	74	87.1
Prevent congenital birth defects	73	85.9
Prepare couple for pregnancy by improving health	70	82.4
Prevent stillbirths, preterm birth and low birth weight	69	81.2
Reduce maternal and child mortality	61	71.8
Prevent vertical transmission of HIV/STIs	54	63.5
Prevent complication during delivery	49	57.6
Prevent unintended pregnancies	44	51.8

**Table 3: Respondents' Awareness on Health Promotional Activities (n=85)**

Variables	Number	Percentage
Health promotional activities*		
Take regular balanced diet	82	96.5
Avoid smoking	81	95.3
Avoid alcohol intake	81	95.3
Avoid use of over-counter drug	75	88.2
Consult with health personnel	71	83.5
Avoid stress	69	81.2
Perform regular exercise	65	76.5
Intake of Iodized Salt	59	69.4
Maintain normal body weight	55	64.7
Intake of Folic Acid	54	63.5
Adopt safer sex practice	46	54.1
Daily 30 minutes of moderate exercise	35	41.2

\* Multiple responses

Almost all (96.5%) answered taking regular balanced diet is health promotional activity. Similarly avoiding smoking and alcohol intake was stated by almost all (95.3%) of respondents. more than half (60%) correctly answered the importance of folic acid to prevent congenital birth defect. Notably only 21.2% knew that folic acid should be started three months before pregnancy. Concerning recommended exercise during preconception period less than half (41.2%) respondents correctly (Table 3).

**Table 4 : Awareness on Health Management During Preconception Period (n=85)**

Variables	Number	Percentage
Maintain blood pressure with in normal level*	72	84.7
Control blood sugar level in diabetic women	69	81.2
Control thyroid hormone level	69	81.2
Correction of nutritional deficiency	66	77.6
Treatment and management of any mental problem	54	63.5
Treatment and management of sexually transmitted disease	47	55.3

\* Multiple response

High level of awareness was noted among participants regarding physical health

management during the preconception period, particularly in maintaining normal blood pressure (84.7%), and controlling blood sugar (81.2%) and thyroid hormone levels (81.2%) (Table 4).

**Table 5 : Respondents' Level of Awareness Regarding Preconception Care (n=85)**

Variables	Number	Percentage
Adequate (>70%)	38	44.7
Average (50-70%)	37	43.5
Inadequate (<50)	10	11.8

Mean  $\pm$ SD=61.4 $\pm$ 13.1, Median=61.0, Mode=57, range=54, min=33, max=87

Below half (44.7%) of the respondents have adequate level of awareness regarding preconception care and 43.5% have average level whereas 11.8% of respondents have inadequate level awareness. The mean awareness score is 61.4 with standard deviation 13.1 (Table 5).

There is statistically significant association between respondent's level of awareness on preconception care with educational status of husband ( $p=0.035$ ) and history of abortion ( $p=0.022$ ) (Table 6).

**Table 6 : Association between Level of Awareness on Preconception Care with Selected Variables (n=85)**

Variables	Level of Awareness			Chi-square	p value
	Adequate No. (%)	Average No. (%)	Inadequate No. (%)		
<b>Age in years</b>				0.26	0.987
<28	18(43.9)	18(43.9)	5(12.2)		
≥28	20(45.5)	19(43.2)	5(11.4)		
<b>Educational Status</b>				3.913	0.141
<Secondary	8(32.0)	15(60.0)	2(8.0)		
≥Secondary	30(50.0)	22(36.7)	8(13.3)		
<b>Marital status</b>				1.760	0.415
Married	24(49.0)	21(42.9)	4(8.2)		
Unmarried	14(38.9)	16(44.4)	6(16.7)		
<b>Educational Status of Husband (n=49)</b>					0.035*
<Secondary	2(18.2)	7(63.6)	2(18.2)		
≥Secondary	22(57.9)	14(36.8)	2(5.3)		
<b>Number of Pregnancy(n=37)</b>					0.239*
One	8(66.7)	4(33.3)	-		
≥ two	9(36.0)	14(56.0)	2(8.0)		
<b>History of Abortion (n=37)</b>					0.022*
Yes	1(11.1)	8(88.9)	-		
No	16(57.1)	10(35.7)	2(7.1)		
<b>History of Complication on Child (n=37)</b>					0.169*
Yes (Birth defect/Low birth weight/Prematurity)	2(22.2)	7(77.8)	-		
No any	15(53.6)	11(39.3)	2(7.1)		
<b>Age at First Pregnancy (n=37)</b>					0.379*
<20	4(30.8)	8(61.5)	1(7.7)		
20-35	13(54.2)	10(41.7)	1(4.2)		

\*Fisher exact test is computed for p-value, Significance level ≤ 0.05

## DISCUSSION

In this study, below half (44.7%) of respondents had adequate level of awareness, 43.5% had average level and 11.8% of respondents had inadequate level awareness on preconception care. These findings were consistent with a study conducted in Saudi Arabia which reported 43% had good knowledge, 48.2% had fair and 8.8% had poor knowledge on preconception care<sup>11</sup> and contradicted with study conducted at National Medical College Teaching Hospital in Birgunj where only 10.91% respondents had adequate, 69.09% had average and 20% had inadequate.<sup>10</sup> It may be due to difference in educational status

of respondent as there 45.45% of them were not able to read and write.

Concerning awareness aspects of respondents regarding preconception care, the study illustrates that highest knowledge was in the area of health assessment and investigation with 71.12% and mean score±SD of 17.78±4.335 followed by health promotional 70.0% and mean score±SD of 21.00±5.127 and lowest in the area of intervention and management of risk factors 65.61% with mean score±SD of 11.81±3.493. This finding was consistent with the study conducted in Dang, Nepal<sup>9</sup>. In this study, 82.4% respondents answered health promotion as component of preconception care and 60%

knew the correct meaning of preconception period. These findings were supported by a study in which majority (94.5%) responded health promotion as component of preconception care, 81.0% mentioned correct time of preconception period.<sup>12</sup> In Current study Majority (91.8%) said prevent complication during pregnancy as importance of preconception care which is contradict by a study in Bheerkot Municipality, Syanja District of Nepal in which only 60.9% answered to prevent pregnancy complications.<sup>13</sup>

Regarding health promotional activities this study shows that almost all (96.5%) know regular balanced diet. Similarly avoiding smoking and alcohol intake was said by majority (95.3%) of respondents which is consistent with the study done in Biratnagar in which 99.1% identified there should be good nutrition before conception and 95.5% responded smoking cessation.<sup>8</sup>

Likewise, regarding folic acid supplementation in current study more than half (60%) correctly answered the importance of folic acid to prevent congenital birth defect which is supported by study in Saudi Arabia in which majority (85.2%) responded to prevent congenital abnormalities and neural tube defect to baby.<sup>11</sup> Furthermore, in current study 21.2% knew that folic acid should be started three months before pregnancy which is supported by study in Biratnagar where only 9.1% respondents answer correctly.<sup>8</sup> Concerning recommended exercise during preconception period, current study found that 41.2% respondents answer correctly which contradicts the study in which 95.3% were aware.<sup>14</sup> This may be due to difference in study population as those were nursing students.

In present study, 97.6% respondent answered risk of high blood pressure and diabetes is effect due to obesity and least (49.4%) said congenital birth defect. These results were similar to a cross-sectional study in Abu Dhabi, UAE which revealed that women's awareness of pregnancy-related complications due to obesity was 80.3% for diabetes and least (3.4%) knew birth defect.<sup>15</sup>

Current study found 82.4% of respondents knew that abortion is due to intake of alcohol and

smoking during preconception period. This result is similar to a descriptive cross-sectional study in Tulsipur municipality of Dang District.<sup>9</sup> In this study, 96.5% respondents said investigation of blood group, 94.1% responded screening for non-communicable disease and 81.2% answered test for HIV/AIDS were necessary prior to conception. This result was inconsistent with a study in Syangja where most of the respondents (83.3%) answered same.<sup>13</sup>

In current study, only 35.3% answered exposure to risk condition which is higher than the study among undergraduate student in Banepa where 79.1% of respondents knew that chance of having toxoplasmosis is increased from contamination to cat faeces.<sup>16</sup> This study illustrates that majority (83.5%) of the respondents knew history of genetic disorder in family followed by history of previous child with birth defect (68.2%) and two or more recurrent miscarriages (55.3%), history of previous child with mental retardation (52.9%) and women aged 35 years and above (45.9%) are candidates for genetic testing and counseling. These results were contradicted by study in Turkey where women had a low level of knowledge regarding prenatal genetic screening where mean knowledge score was  $3.43 \pm 3.21$  of a possible score of 10.<sup>17</sup>

This study found that level of awareness has significant association with educational status of husband and previous abortion which is supported by a study in Ethiopia that illustrated woman whose husbands attended secondary and above education had higher knowledge scores.<sup>18</sup>

Limitation of the study is that inferential statistics is applied in small sample size with limit the inferences.

## CONCLUSION

This study concludes that nearly half women of reproductive age women have adequate awareness regarding preconception care, there is more awareness on risk factor assessment and investigation and less awareness on the area of intervention and management. The level of awareness is associated with husband's

education level and history of abortion. Therefore, it is recommended that, as the health professionals play a significant role in establishing awareness, it would be preferable to implement formal and informal education and awareness program on many aspects of preconception care in the community to promote knowledge among people.

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