Knowledge and utilization of preconception care among women in selected community of Kathmandu

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Abstract

Introduction: Preconception care is a critical component of maternal and child health care services to reduce adverse outcomes of pregnancy and to improve desired health outcomes for women, new-born, and children by focusing on health promotion, screening, and interventions. This study aimed to find out the knowledge and utilization of preconception care among women.

Method: A cross-sectional design was carried out among women. Non-probability purposive sampling technique was adopted to select married women of reproductive age in Tokha municipality-10, Kathmandu. Data was collected using face-to-face structured interview. Descriptive and inferential statistics were used to analyze the data. Association among variables was measured by Kruskal–Wallis H test.

Result: More than half of the 200 women surveyed, 133 (66.5%) had average level of knowledge and 61 (30.5%) adequate and 6 (3%) inadequate level of knowledge regarding preconception care. Similarly, 196 (98%) had low utilization and 4 (2%) had high utilization level. There was statistically significant association between educational level of respondents with the level of knowledge (p=0.05) and their husband's educational level (p=0.00). There was no significant association with age, type of family, occupation, monthly family income, number of pregnancy, history of abortion/still birth and age at first pregnancy.

Conclusion: This study shows more than half of respondents had an average level of knowledge about preconception care whereas only 2% had high level of utilization of care.

Keywords: knowledge on preconception care, preconception care, women

Introduction

Preconception care is "any intervention provided to women and couples of childbearing age, regardless of pregnancy status or desire, before pregnancy, to improve health outcomes for women, new-borns and children".[1]

The growing fetus depends entirely on its mother's healthy body.[2,3] Preconception care has now been identified as a key area of health care, integral part of antenatal care and a prophylactic strategy to improve the couple's health to facilitate a healthy pregnancy, fertility preservation and identifying and treating any biomedical, behavioural and social risks.[3,4,5]

Preconception care is different for every person, depending on his or her unique needs and health; the health care professional will suggest a course of treatment or follow-up care as needed.[6,7] It should ideally begin at least 4-6 months prior to attempted conception as it takes 3 months for eggs and 4 months for sperm to mature, approximately 100 days before conception.[8]

Care utilization averts 44% maternal mortality.[9] By Increasing antenatal care seeking by 39%, neonatal mortality is reduced by 17% and women are 20% more likely to increase breastfeeding.[1]

The study aims to find out the knowledge and utilization of preconception care among women in selected community of Kathmandu valley of Nepal.

Method

Descriptive cross-sectional research design was undertaken from June 2017 to April 2018 based on quantitative approach among 200 married women of reproductive age in Tokha municipality Ward No. 10 residing for 1 year or more, and who were pregnant or having child/children under one year of age. The minimum sample size was calculated by using Cochrane's formula. Sample was collected by non-probability, purposive sampling technique. A structured face to face interview schedule was used to collect data.

The face and content validity of the instrument was established through review of literature and by seeking guidance from research advisor. Reliability of tool was maintained by consistency of meaning and fluency in pre-test. Only those who were willing to participate at the time of data collection were included.

Ethical approval for the research was obtained from Lalitpur Nursing Campus research committee, and Institutional Review Board, Tribhuvan University Institute of Medicine, Maharajgunj. Permission to conduct research in Tokha was obtained from the administrative officer of Tokha municipality Ward No. 10. Respondents were explained about the objective of the study; anonymity and confidentiality were ensured, and informed consent was taken before interview.

Data was checked for completeness after collection. Thereafter, collected data was edited, coded, categorized and then entered into SPSS 16 for analysis. Analysis was done by using descriptive statistics, i.e. frequency, percentage, mean, median, range, standard deviation (SD) and for inferential statistics Kruskal–Wallis H test was used according to the nature of data.

Result

Among 200 respondents, more than one third (35.5%) of respondents belonged to the age group of 25-29 years. One third (33%) of the respondents were Newar, Gurung, Thakuri or Magar. Nearly half of the respondents (52%) were from nuclear family. All the respondents were literate and majority of them (65.5%) had completed higher secondary level of education, 97.5% of the respondent's husbands had completed at least higher secondary level education. Majority of the

respondents (41%) were house wife. The monthly family income of 78.5% of the respondents ranged between Nepalese Rs. 30,001-40,000. Regarding obstetric history majority of the respondents (58.5%) had two or more pregnancies. Only 10% of respondents had history of abortion/stillbirth. First time pregnancy below 20 years of age was 19.5%, Table 1.

Most of the respondents (66.5%) had an average level of knowledge, 30.5% had an adequate level of knowledge, whereas 3% had inadequate level of knowledge on preconception care. Highest level of knowledge was found in the area of intervention/management (mean±SD 87.42±10.26) and assessment/investigation (mean±SD 82±12.23). Lowest level of knowledge was found in the area of health promotion measures (mean±SD 57.22±11.20). Women's knowledge on general concept, health promotion and utilization of preconception care was high, Table 2, 3, and 4. But, utilization score of preconception care in majority of women (98%) was below average, Table 5.

Table 1. Demographics women participants in survey for knowledge and utilization of preconception care, N=200		
Characteristics	Frequency	Percent
Age (in years)		
15-19	13	6.5
20-24	61	30.5
25-29	71	35.5
30-34 and above	55	27.5
Ethnicity		
Newar, Gurung,Thakuri, Magar	66	33.0
Brahmin, Chettri	63	31.5
Dalit	24	12.0
Janjatis/Muslim/Madhesi	47	23.5
Type of family		
Nuclear	104	52.0
Joint /extended	96	48.0
Education status of respondents		
Below secondary level	69	34.5
Above secondary level	131	65.5
Education status of husband		
Below secondary level	5	2.5
Above secondary level	195	97.5
Occupation / Employment		
Unemployed*	82	41
Employed*	118	59
Monthly family income		
Rs. 10,000-30,000	43	21.5
Rs. 30,001-40,000 /above	157	78.5
Number of pregnancy		
One	83	41.5
Two or more	117	58.5
History of abortion/stillbirth		
Yes	20	10
Age at first pregnancy		
Below 20 years	39	19.5

Note: Unemployed* (House maker/house wife), Employed* (Service/job holder)

Table 2. Women's knowledge on general concept of preconception care, N=200

Variables	Number	Percent
Meaning of preconception care [a]		
Health promotion	189	94.5
Risk assessment	175	87.5
Intervention	164	82.0
Detect present health condition	152	76.0
Genetic counselling	62	31.0
Important of preconception care [a]		
Safe pregnancy, delivery and healthy new-borns	196	98.4
Improving health	167	83.9
Promote healthy life pattern	165	82.9
Reduce abnormalities	81	40.7
Preconception care needed		
For both spouse [b]	177	88.5
Preconception care period		
Between plan to onset of pregnancy [b]	162	81.0

Note: [a] multiple responses and [b] correct answer

Table 3. Respondents' knowledge on health promotion measures, N=200

Variables	Number	Percent
Health promotion measures are: [a]		
Proper balance diet	200	100.0
Intake of iodized salt	200	100.0
Avoid substance, drugs	198	99.0
Weight monitor	195	97.5
Moderate exercise / no heavy work	195	97.5
Avoid medicine without prescription	194	97.0
Avoid occupational, household exposure to toxic chemicals, ray, insecticides, pesticides	170	85.0
Screening for anaemia, calcium, vitamin deficiency	130	65.0
Deworming	76	28.5
Take Inj. Hepatitis B	57	28.5
Prophylaxis for filariasis, typhoid, malaria, cholera etc.(in vulnerable area)	55	27.5
Stop hormone pills 3 months prior to conception	42	21.0
HIV counselling and test	39	19.5
Folic acid prior to 3 months of pregnancy	22	11.0
Take Inj. German measles	13	6.5
Take Inj. Japanese encephalitis	12	6.0

Table 4. Overall knowledge and utilization level of preconception care, N=200

Level	Number	Percent
Knowledge		
Adequate (> 70%)	61	30.5
Average (50-70%)	133	66.5
Inadequate (<50%)	6	3
Utilization		
Low(10 or below average score)	196	98
High (above 10 or average score)	4	2
Total	200	100

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Table 5. Respondents' utilization of preconception care N=200

Variables	Number	Percent
Respondents utilization of preconception care [a]		
Proper balance diet	200	100.0
Stop eating raw meat	95	97.5
Avoid drugs without medical prescription	191	95.5
Avoid occupational /Household exposures, chemicals, paint, solvents, pesticides, insecticides	189	94.5
Avoid cat litter, faeces	179	89.5
Inject hepatitis B vaccine	44	22.0
Monitor BP	38	19
Deworming	36	18.0
Monitor weight	36	18.0
Prophylaxis for filariasis, typhoid, cholera, malaria etc. in vulnerable area	31	15.5
Check for blood sugar	28	14.0
Screening/test for chronic disease; diabetes, thyroid, dental/gum infection, heart disease	25	12.5
Blood test for hepatitis B, C, cholesterol, uric acid	22	11.0
Folic acid prior to 3 months of conception	8	4.0
Screening for anemia, calcium, vitamin level	7	3.5
Test for STI; Syphilis, Gonorrhea/Chlamydia, VDRL, TORCH,	3	1.5
HIV counselling	3	1.5
Inj. For German measles	0	0
Inj. For German measles	0	0
Inj. For Japanese Encephalitis	0	0
Genetic screening and counselling	0	0

Note: [a] multiple responses

Discussion

This study revealed that majority of women from an urban community who participated in the study had knowledge regarding preconception care, average level of 66.5%, ad average, 30.5% adequate and 3% inadequate level of knowledge. This study is supported by the findings of Gautam & Dhakal where majority (84.58%) had average and 15.42% had good level of knowledge.[10] Likewise, in another study from Nigeria, 65.3% had average knowledge and 15.42% respondents had good level of knowledge regarding preconception care.[11]

Regarding knowledge aspects of respondents, highest level of knowledge was seen in area of reproductive health risk factors management/intervention before conception, the mean percentage was 87.42. Likewise, regarding assessment/investigation, mean percentage was 82. The knowledge level was the lowest in area of health promotion measures, where the mean percentage was 57.22. This finding is contradicted by the study done in Nepal where highest level of knowledge (68.19%) was in area of identification of reproductive high risk factors, whereas 54.73% and 48% were in the area of intervention and health promotion respectively.[10]

Regarding meaning of preconception care, 94.5% of the respondents mentioned health promotion as meaning of preconception care. Majority of the respondents (98.4%) mentioned that preconception care is needed to have safe pregnancy, delivery and healthy new-borns, followed by improving health of couple and child (83.9%). Majority of the respondents (88.5%) provided correct answer that preconception care should be focused on both spouses. Majority of the respondents (81%) mentioned preconception period is between plan to onset of pregnancy (about 3 months prior to pregnancy). The result of this study is supported by a study done in Nepal where 90.3% respondents mentioned promoting health as the components/meaning of preconception care, 33.9% mentioned preconception care is

beneficial to promote the health of future children, 80.18% mentioned preconception care was needed to have safe pregnancy, 47.15% responded preconception care should be focused on both married and unmarried people and 55.94% mentioned correct answer of preconception care that is care provided to couple before conception.[10]

Regarding the utilization of preconception care, nearly all (98%) respondents had low utilization and minimum (2%) respondents had high utilization level of preconception care. This is very low as compared to the score reported by Kasim et al., in which 45.2% of women had poor preconception care practices.[12] It also contradicts with the findings of study by Bayrami et al. which revealed that 46.6% of Iranian women who intended to become pregnant, followed preconception care.[3]

In current study, all the respondents had some sorts of utilization/practice of preconception care, all took balanced diet, and avoided eating raw meat during preconception period. Most (95.5%) avoided medicine without medical prescription and 94.5% were not exposed to any type of occupational/household works, chemicals, pesticides or insecticides. Also, majority of the respondents (89.5%) were not exposed in cat litter and garden soil during preconception period, but only 8% maintained healthy weight and 4% respondents took folic acid prior to pregnancy. It is supported by findings of a study in which only 7.4% of the respondents consumed drugs without doctors' advice.[12] However, in another study 30.4% took folic acid four weeks prior to pregnancy, and maintained healthy weight through exercise 29.9%, stopped tobacco smoking 27.2%, stopped alcohol 29.9%, immunization 25.9%, reduction of stress 29.1%, and genetic counselling 25.3% of women.[11]

Several limitations must be considered while interpreting the findings of this study. First, the study is based on self-reported information and thus is subject to over-reporting of their actual utilization which may have been biased. Second, data collection was based on interview alone which was not verified by their report for reliability. Thirdly, the study was limited to pregnant women and having under one child mother of Tokha, therefore, findings cannot be generalized in other settings. Lastly, it was a cross-sectional study without follow-up.

Conclusion

The study reveals 2/3rd of women in an urban community had average level of knowledge regarding preconception care but almost all had low a low level of care utilization and requires in depth study to improve the preconception care.

Conflict of Interest
None

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Supplements (questionnaire)

Research Instrument (English Version)
Tribhuvan University, Institute of Medicine
Lalitpur Nursing Campus, Sanepa

Research Title: Knowledge and utilization of preconception care among married women of reproductive age in Tokha Municipality ward no 10, Kathmandu.
After obtaining verbal consent from each respondent, interviewer will read out each and every question clearly and will tick on obtained answer in box.
Code no:Date:

Part I: Demographic information

1. Age (in completed years)…..
2. Caste /Ethnicity:……
3. Type of family:
4. Educational status of respondent
    i. Illiterate   ii. Can read and writes
    iii. Primary Level   iv. Secondary Level
    v. Higher secondary level   vi. Bachelor level and above
5. Occupation of women
    i.House maker   ii. service   iii. Agriculture   iv.Business v.Others..
6.Monthly family income, in Nepali Rs.
    i. Rs. 10,000-20000/-   ii. Rs. 20,001-30, 000/-
    iii.Rs.30, 001-40, 000 /-   iv. Above 40,001/-
7. Number of pregnancy

    i. 1   ii. 2   iii. 3 or more
8. History of abortion/ still birth
    i. yes   ii. No
9. Respondent's age at first pregnancy
    i. Age below 20 years   ii. 20-35 years   iii. Above 35 years
10. Education status of husband
     i. Illiterate   ii Can read and writes
     iii. Primary Level   iv. Secondary Level
     v. Higher secondary level   vi. Bachelor level and above

PART II: Knowledge on preconception care related questions:

Direction: The questions in the scale ask you about your knowledge, feelings and thoughts. I will read out each question to you, along with the response options. In each case, give the appropriate answer to these questions according to own view point, answer should be single or multiple responses

S.N.	Meaning, purpose ,period and components of preconception care related questions
11	What is meant by preconception care? (Can give response in more than one answer)
	Care received by woman before pregnancy for health promotion.
	Risk factor assessment to women's health and future pregnancy.
	Investigation to detect present health condition, it is safe or not for future pregnancy?
	Intervention and modification of risks to a women's health and future pregnancy
	Genetic screening and counselling
12.	Why Preconception care is important? (Can give response in more than one answer)
	To prepare for pregnancy by improving health of couple prior to conception.
	To have safe pregnancy, delivery and healthy newborn
	To reduce intrauterine fetal abnormalities,
	To promote healthy life pattern of couple and child.
13.	Who needs preconception care?
	Only female
	Only male
	Both spouse
14.	What is meant by preconception period?
	Period before marriage
	Period after marriage
	Period between planning and onset of pregnancy (around 3 months)
	Period after pregnancy

	Questions related to health promotion
15	Which of the following preconception care do you know? (Can give response in more than one answer)
	Proper balanced diet,
	Monitor weight
	Folic acid supplementation prior to 3 months of pregnancy.
	Intake of iodized salt
	Moderate exercise
	Screening for anemia, calcium and vit.D deficiency
	Immunization for Japanese Encephalitis
	Immunization for Rubella (German measles)
	Immunization for hepatitis B
	Deworming
	Prophylaxis for filariasis, typhoid and malaria, cholera (in vulnerable area)
	Safer sex practice
	HIV counseling and testing
	Stop oral contraception prior to 3 months of pregnancy
	Avoid taking medicine without prescription
	Avoid substance or drugs before pregnancy
	Avoid occupational exposures, employer, Household chemicals – avoid paint thinners/strippers, other solvents, pesticides
16	What are the risks of preconception nutritional deficiencies to mother? (Can give response in more than one answer.
	Preterm labour
	Post partum bleeding
	Anaemia
	Preterm birth
17.	What are the risks of preconception nutrition deficiency to baby? (Can give response in more than one answer)
	Neural tube defects and other anomalies
	Low birth weight
	Preterm birth
	Delay physical growth
	Delay mental growth
18.	What are the possible effects of preconception obesity to future pregnancy? (Can give response in more than one answer
	Chances of high blood pressure and diabetes
	May have difficult to conceive
	Large/big baby
	Increase chance of neonatal morbidities
19.	Which life style is favourable while planning pregnancy? (Can give response in more than one answer)
	Regular moderate exercise
	Maintain adequate body weight
	Stop hormonal family planning method (oral contraception) prior to 3 months of pregnancy planning.
	Avoid hyperthermia (hot tubs)(for male)
20.	Why folic acid is important to take prior to pregnancy?
	To prevent congenital abnormalities and neural tube defect to baby.
	To increase weight
	To prevent anaemia
	Don't know

21.	**Question related to assessment and investigation:** Which factors should be assessed and Investigate prior to conception? (Can give response in more than one answer) Measurement of height, weight, Blood pressure Blood test for hepatitis B, C, blood sugar, uric acid, cholesterol Test for STI i.e. **,** Syphilis**,** Gonorrhea/Chlamydia/VDRL/TORCH Blood test for hemoglobin, Blood grouping, RH factor Screening for non-communicable/chronic diseases i.e. diabetes, hypertension, thyroid disease, dental or gum disease/infection , heart disease, asthma etc. Screening for cervix i.e. Pap smear /VIA test Assess the status of smoking, drinking alcohol, any drug abuse Previous obstetrics history i.e. LSCS, IUFD, premature baby, twin pregnancy, Semen analysis (for male)
22.	Which conditions are high-risk for pregnancy? (Can give response in more than one answer) Age below 18 years Too frequent pregnancy (less than 2 years) First pregnancy at age 35 years and above. Other (specify)…..
23.	What are the risks for baby that the mother taking tobacco, smoking, drugs and drinking alcohol in preconception period? (Can give response in more than one answer) Preterm birth Small/underweight baby Increase risk of abortion Slower physical growth Slower mental growth
24.	What are the risk for mother that her habit of taking tobacco, smoking, drugs and alcohol in preconception period? (Can give response in more than one answer) Increase morbidities while pregnant Premature labour Increase risk of abortion Difficult to normal delivery
25.	Which conditions are risk for planning Pregnancy? (Can give response in more than one answer) Exposures to toxic substances: Household chemicals –paint thinners/strippers, other solvents, pesticides Take more caffeine (^ two cups of coffee or six glasses of soda per day. Expose to cat litter(stool), garden soil Eat raw meat consumption of drugs without doctor's advice
26.	**Questions related to intervention/management** Which Intervention/Management should be taken prior to conception? Control blood sugar level in diabetes women. Maintain blood pressure with in normal level. Control thyroid hormone level. Treatment and management for any type of STI Treatment of subfertility Treatment and management for psychiatric problem Correction of nutritional deficiency condition
27.	**Questions related to Genetic screening and counselling** What is meant by Genetic screening and counselling before conception? Carrier screening/screening for genetic disorder (racial/ethnic background/family history)**,** Sickle cell anemia**,** Cystic fibrosis**,** Thalassemia etc. Yes ii. Don't know

28.	Who are the candidate for genetic screening and counselling? (Can give response in more than one answer)
	Positive history of family for any type of genetic disorder.
	Women over 35 years
	Women who have previous history of recurrent abortion
	History of previous defect baby/chromosomal anomaly/neural tube defect.
	Mental retarded child with or without congenital anomaly

Part III: Questions related to utilization of preconception care:

Instructions: The following items are not designed to test your knowledge. Instead, they are meant to explore some of your practice and points of view toward preconception care utilization. Kindly respond to any of the column against each of the following statement:

S.N.	Statement of Interventions	Yes	No
29.	Which type of preconception care you have taken prior to your pregnancy?		
	Proper balanced diet,		
	Monitor weight		
	Folic acid supplementation prior to 3 months of pregnancy		
	Screening for anaemia, calcium and Vitamin D deficiency		
	Carrier screening (racial/ethnic background/family history)**,** Sickle cell anemia**,** Cystic fibrosis**,** Thalassemia etc.		
	Immunization for Japanese Encephalitis		
	Immunization for Rubella (German measles)		
	Immunization for hepatitis B		
	Deworming		
	Prophylaxis for filariasis, typhoid and malaria, cholera (in vulnerable area)		
	Blood test for hepatitis B, C, uric acid, cholesterol		
	Test for STI; Syphilis**,** Gonorrhea/Chlamydia, VDRL, TORCH		
	Avoid taking medicine without prescription		
	HIV counseling and testing,		
	Screening/ test for chronic disease; diabetes, thyroid disease, dental or gum disease/problems, heart disease, asthma etc.		
	Avoid expose to cat litter (stool) and garden soil		
	Stop eating raw meat		
	Avoid occupational exposures, Household chemicals – avoid paint thinners/strippers, other solvents, pesticides, insecticides		
	Check blood sugar		
	Check/monitor blood pressure		
	Any other(specify)…		

30. Where you have taken these services?
      i. Government facilities: hospital/HP/ teaching hospital   ii. Private sector
31. Distance of service center from your residence, time duration (within ½ transportation)?
      i. Close   ii. Far
32. Did you face any challenges / difficulties while taking services
   Didn't face
   Services are not integrated
   Services were too expensive /financial problem
   Consumption of extended time
   Lack of privacy assurance
   Shortages of materials and supplies

33. Do you have support/company from your husband and family for preconception care?
     a. Husband: i. Yes   ii. No
     b. family: i. Yes   ii. No

34. Why you didn't take complete preconception care?
    Due to lack of knowledge on how the service benefits couples
    Due to less time management
    Less priority for preconception care
    No family tradition/ culture to preconception care.
    Fear of wrong outlooks in the community

35. Does the Preconception care should be made available to all couple as an integral part of primary health care?
    i. Yes   ii. No

36. What specific care consideration would you like to made in your future pregnancy? Specify……

THANK YOU