Knowledge on Preconception Care among Bachelor Level Students in a Public Campus of Janakpurdham Sub-Metropolitan City

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ABSTRACT

Introduction: Preconception care entails provision of biomedical, behavioral, and social health interventions to women and couples prior to conception aiming to foster a healthy pregnancy and favorable outcomes. The objective of the study was to find out knowledge on preconception care among bachelor level students in a selected public campus of Janakpurdham Sub-Metropolitan City.

Methods: A cross-sectional study design was used. Proportionate stratified random sampling method was used to select 209 students studying in different streams of Ram Swaroop Ram Sagar Multiple Campus, Janakpurdham. Structured self-administered questionnaire was used to collect data. Data was analyzed using descriptive statistics (frequency distribution, percentage, means, and standard deviation) to represent the facts and figures and inferential statistics (Chi square test and Fisher's exact test) to examine the association between the level of knowledge on preconception care and selected variables.

Results: The findings of this study revealed that 81.8% of the respondents had inadequate knowledge, 17.7% had moderately adequate and only 0.5% had an adequate level of knowledge on preconception care. There was statistically significant association between the level of knowledge on preconception care and age (p=0.009), sex (p=0.001), educational Stream (p=0.000), genetic problems (p=0.049), and medical problems (p=0.003).

Conclusions: It is concluded that most of the students have inadequate knowledge regarding preconception care. Therefore, health education programme and awareness campaigns need to be organized to promote knowledge on preconception care.

Keywords: Bachelor level, Knowledge, Preconception care, Public campus, Students

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INTRODUCTION

Preconception care entails provision of biomedical, behavioral, and social health interventions to women and couples prior to conception aiming to foster a healthy pregnancy and favorable outcomes.[1]It has a positive effect on a range of maternal and child health outcomes.[2]Globally, 287,000 women died from preventable causes related to pregnancy and childbirth in 2020.[3]Approximately 121 million unintended pregnancies occurred annually in between 2015-2019 and 61% ended in abortion.[4] Preconception care plays a vital role in prevention.[1]

The sustainable development goal ((SDG) 3 sets a target to reduce the global maternal mortality rate to below 70 per 100 000 live births and neonatal mortality rates to at least as low as 12 per 1000 live births by 2030. Nepal is also a

signatory country to the SDGs. Preconception care is a strategy for achieving SDG goal 3.[5]Several risk behaviors and exposures affect fetal development and subsequent outcomes.[6] It has been estimated that 71% of neonatal death, 33% of stillbirth and 54% of maternal death could be prevented through increasing the coverage and quality of interventions including preconception care per year by 2025.[7]

The set of interventions endorsed by the WHO for preconception care comprises micronutrient supplementation, screening and testing for infectious diseases, management of chronic diseases, diet therapy promoting health , vaccination, cessation of smoking and alcohol consumption, improving psychological health, counselling on the significance of exercise and planning and implementation reproductive health measures.[2,8]Preconception care offers a better opportunity to intervene and ensure continuous care for the mother.[9]

A study conducted in Ethiopia found that 17.1% of reproductive age women had a good level of knowledge on preconception care.[10]A cross-sectional study conducted in India among newly married women found that 12% had poor knowledge, 82% had average knowledge, and 6% had a good level of knowledge regarding preconception care.[11] Studies conducted in Midwestern and Western Nepal showed 84.5% and 64.5% respectively had an average level of knowledge on preconception care.[12-13]Another study conducted in Nepal among bachelor-level nursing students revealed that 17.8% had an adequate level of knowledge on preconception care.[14]

Improving preconception health can ultimately improve both fetal and maternal outcomes.[15]Limited studies have been documented. Therefore, the researcher here is interested to assess the level of knowledge on preconception care among bachelor-level students in Janakpurdham.

METHODS

A cross-sectional study design was used to find out the knowledge on preconception care among bachelor level students in a public campus of Janakpurdham Sub-Metropolitan city. The study was done in Ram Swaroop Ram Sagar Multiple (RRM) Campus located at Janakpurdham-04 of Dhanusha district, Madhesh Province. Campus has bachelor and master level courses in humanities, management, science and education. Final year bachelor level students of different streams were the study population. The total numbers of final year students studying in different streams were 1244. Male and female both groups of final year students were included in the study. Students studying in humanities stream were excluded from the study as they were absent during the period of data collection. Sample size was determined by using the Cochrane's formula, $n = (Z^2 pq)/d^2$ and formula for finite population. Non –response rate 10% was added to the calculated sample size. The total sample size was 209 students. Probability stratified random sampling technique was used to select the sample. The streams Bachelor of Science (BSc.), Bachelor of Engineering in Computer Science and Information Technology (CSIT), Bachelor of Business Studies (BBS) and Bachelor of Education (B.Ed) were divided into four different strata. The total students studying in four different strata were 1036 students. The proportion of sample from BSc, CSIT, BBS and B.Ed streams were 7, 21, 103 and 78 respectively. Finally, simple random sampling technique lottery method was used to take sample from each strata. For this roll number of each student of each strata was written in a separate piece of paper and folded it separately then mixed in a box. The number of sample were picked randomly from it then unfolded the paper. The selected roll number of the students was the respondents of the study.

A structured self-administered questionnaire

was constructed by the researcher through extensive literature review, consultation with research advisor and subject experts. The first part of the questionnaire consisted of background variables and second part related to of knowledge on preconception care. In the knowledge questions, score one was given for each correct answer and zero for the wrong answer. For multiple response questions, score one was given for each option and zero score for no response. Then the score was summed up to obtain an overall score for each respondent. The level of knowledge was categorized into inadequate, moderately adequate and adequate by taking reference of Bhatta et al.[14]which was less than or equal to 50% was considered inadequate, 50% to 80% was considered moderately adequate and greater than 80% was considered adequate level of knowledge on preconception care. The content validity of the research instrument was established through extensive literature review, consultation with research advisors and subject experts. Content validity index was calculated. The calculated scale-content validity index (S-CVI) average and S-CVI universal agreement (UA) average for relevance of the item in the instrument were 0.99 and 0.97 respectively. Similarly, regarding clarity of the item in the instrument, the calculated S-CVI average and S-CVI UA average was 0.98 and 0.92 respectively. Pretesting of the instrument was done. The score of Cronbach's Alpha was 0.838.

Data was collected after getting ethical approval from Institutional Review Committee of Institute of Medicine and RRM campus, Janakpurdham. The IRC approval reference number is 557(6-11) E^{2}078/79. The objective, process and importance of the study were explained to the concerned authorities. The researcher approached to students through programme coordinators and teachers. Purpose of the study was also explained to the students. An informed written consent was obtained from each subject prior to data collection. The respondents were assured voluntary participation. Confidentiality of the information was maintained by not disclosing the information and using the obtained information for the study purpose only. The data was collected from 14th August to 10th September, 2022.The collected data was edited, organized, coded and analyzed using computer package with SPSS (Statistical Package for Social Science) software version 16. Data was analyzed by using descriptive and inferential statistics. Descriptive statistics i.e., frequency, percentage, mean, range, standard deviation was computed for the study variables. Inferential statistics i.e., Chi square test and Fisher's exact test were used to find out the association between the variables. P value of <0.05 was considered significant.

RESULTS

Out of 209 respondents 94.2% were between the ages of 20-24 years. The mean age was 21.62±1.598 years. Most of the respondents (92.8%) were unmarried and 58.9% of them were female. Regarding education, 49.3% were studying in BBS, 37.3% in B.Ed, 10% in BSc and 3.3% in CSIT. More than half (55.0%) were living with joint family and 42.1% had got information on preconception care through health personnel and internet. Among the married respondents, 86.6% had no child and 60% were planning for pregnancy. Regarding health and genetic problems, 27.8% had self-reported different types of medical problems and 8.6% had had history of genetic problems in their family.

Table 1 : Knowledge of Respondents on different Dimensions of Preconception Care (n=209)

Dimensions	Number of Items	Total score	<50% score No. (%)	≥50% score No. (%)
Concept of preconception	6	11	101(48.3)	108(51.7)
Promotion of health	18	43	159(76.1)	50(23.9)
Prevention of teratogenic exposure	13	48	183(87.6)	26(12.4)

Most of the respondents (87.6%) had below 50 % score regarding prevention of teratogenic exposure while more than half of the respondents (51.7%) had ≥ 50% score in concept of preconception care (Table 1).

Table 2 : Level of Knowledge on Preconception Care among Respondents (n=209)

Level of knowledge	Number	Percent	95% CI
Inadequate (<50)	171	81.8	35.09 - 37.45
Moderately adequate (50-80)	37	17.7	
Adequate(>80)	1	0 .5	
Mean± SD: (35.2727 ± SD)			

Most of the respondents (81.8%) had inadequate level of knowledge on preconception care (Table 2).

Table 3 : Association between Level of Knowledge on Preconception Care and Selected Variables

Variables	Level of Knowledge		x^2 value	*p*- value
	Inadequate (<50%)	Adequate (≥50%)		
	No. (%)	No. (%)		
Age				
<21 years	48(94.1)	3(5.9)	6.860	0.009*
≥21 years	123(77.8)	35(22.2)		
Sex				
Male	61(70.9)	25(29.1)	11.645	0.001*
Female	110(89.4)	13(10.6)		
Marital status				
Unmarried	161(83.0)	33(17.0)		0.156#
Married	10(66.7)	5(33.3)		
No. of Children				
No children	8(61.5)	5(38.5)		0.524#
One children	2(100.0)	1(0.0)		
Plan for Pregnancy				
Yes	5(55.6)	4(44.4)		0.580#
No	5(83.3)	1(16.7)		
Educational Stream				
Science	16(57.1)	12(42.9)	13.233	<0.001*
Others	155(86.6)	26(14.4)		
Family type				
Nuclear	70(77.8)	20(22.2)	1.735	0.188
Joint	101(84.9)	18(15.1)		

Medical problems				
Yes	55(94.8)	3(5.2)	9.133	0.003*
No	116(76.8)	35(23.2)		

**Chi square test significant (p<0.05 at 95%confidence level); # Fisher's exact test*

There was statistically significant association between the level of knowledge on preconception care with age, sex, educational stream, genetic problems and medical problems (Table 3).

DISCUSSION

Preconception and pregnancy care are crucial for ensuring a healthy pregnancy and a positive outcome for both mother and newborn. The present study helps to assess the level of knowledge on preconception care among bachelor level students.

The finding of the current study depicts that 81.8% had below 50%, 17.7% had 50%-80% and only 0.5% have more than 80 percent level of knowledge on preconception care. The findings was inconsistent with the previous study conducted by Bhatta et al.[14] in Nepal which was 0.8% of the respondents had ≤50 percent, 81.4% had 50-80 percent and 17.8% had above 80 percent level of knowledge on preconception care. The finding of the current study was contrast with the study conducted by Nepali and Sapkota in Bharatpur, Nepal.[16]The differences observed might be due to the studies looking at different population groups. The present study was also not in line with previous study conducted in Saudi Arabia which showed 43% of the respondents had good knowledge, 48.2% had fair knowledge and 8.8% had poor level of knowledge on preconception care.[17]These differences could be because of various factors like socio-cultural background, level of knowledge, population and setting. Another study done among bachelor level students in Nepal found that 24% of the respondents had good, 51% had average and 25% had poor level of knowledge on preconception care.[18]

In the present study, 48.3% of the respondents scored less than 50%, while 51.7% scored 50% or more knowledge on concept of preconception care. Similarly, 76.1% of the respondents scored less than 50%, while 23.9% scored 50% or more knowledge on preconception promotion of health. Likewise, most of the respondents (87.6%) had scores below 50%, while 12.4% had scores 50% or more on prevention of teratogenic exposure. The finding of the study was inconsistent with previous study conducted by Manandhar and Subedi in Banepa Nepal.[19] Study done in Banepa Nepal reveals that 64.8% scored mean percentage of awareness on concept of preconception care, 56.2% scored mean percentage of awareness on health promotion and 71.7% scored mean percentage of awareness on prevention of teratogenic exposure.[19] This difference could be observed due to differences in the setting and level of the students.

In this study, there was statistically significant association between the level of knowledge on preconception care and age, sex, educational stream, medical problems and genetic problems whereas study conducted by Giri and Gautam showed significant association between education and number of children.[13] Another study conducted in Kathmanu, Nepal observed no significant association between the level of knowledge and selected variables.[20]

CONCLUSIONS

It is concluded that most of the students had inadequate level of knowledge on preconception care. Concerning with the dimension of knowledge, most of the students had score below average in preconception promotion of health and prevention of teratogenic exposure. There was statistically significant association between level of knowledge on preconception

care with age, marital status, genetic problems and medical problems. The campus could organize awareness campaigns or health education programs to help students learn more about preconception care.

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