

Knowledge on Preconception Care among Bachelor Level Nursing Students of Selected Nursing Campuses of Tribhuvan University, Nepal

Ms.Kamala Uprety⁽¹⁾, Ms. Bhagawaty Kalikotay⁽²⁾

1. Associate Professor, Maharajgunj Nursing Campus, Institute of Medicine, Tribhuvan University, Kathmandu Nepal.

2. Lecturer, Maharajgunj Nursing Campus, Institute of Medicine, Tribhuvan University, Kathmandu Nepal.

Crossponding Author: Ms. Bhagawaty Kalikotay

Abstract: Preconception care is the provision of biomedical, behavioral and social health interventions to women and couples before conception occurs. Nurses have a responsibility to involve themselves in providing preconception care to individual women and families whereas the students today are the healthcare providers of tomorrow.

Objectives: The aim of this study was to find out the knowledge on preconception care among bachelor level nursing students.

Design: Descriptive cross sectional design was used.

Setting: Maharajgunj Nursing Campus and Biratnagar Nursing Campus of Institute of Medicine, Tribhuvan University, Nepal.

Sampling: Non probability purposive sampling technique was used and 64 students were selected using self-administered questionnaire. The questions were developed by researchers themselves.

Results: Among the total respondents, 9.4% had adequate level of knowledge, 85.9% had moderate level of knowledge and only 4.7% had inadequate knowledge on preconception care. The study found that knowledge on preconception care was significantly associated with training ($p=0.026$).

Conclusion: In conclusion, more than three out of four respondents had moderate knowledge and a very few respondents had adequate level of knowledge on preconception care. Level of knowledge on preconception care and training are significantly associated.

Recommendation: Level of knowledge of respondents is directly associated with the training they attend. So, education intervention or training should be provided to enhance knowledge of students on preconception care.

Keywords: knowledge, preconception care and nursing

Date of Submission: 29-08-2019

Date of Acceptance: 14-09-2019

I. Introduction

Preconception care is the provision of biomedical, behavioural and social health intervention to women and couples before conception occurs. It aims at improving their health status, and reducing behavioural, individual and environmental factors that contribute to poor maternal and child health outcomes. Its ultimate aim is to improve maternal and child health, in both the short and long term (1).

Preconception care is an integral part of antenatal care because this care programme has potential to assist women by reducing risk, promoting healthy lifestyle and improving readiness for pregnancy. It is also important to minimize foetal malformation (2). There is growing evidence that preconception care may have an important role in preventing short and long term adverse health consequences for women and their offspring (3).

From the perspective of health outcomes, the short term preconception care could reduce too early, too close, and unplanned pregnancies. Preconception care could contribute to reducing the risk of genetic disorders, environmental exposure, maternal and childhood mortality, and improving maternal and child health outcomes. It could also contribute to improving the health and well-being of women in other areas of public health, such as nutrition, infertility and sub-fertility, mental health, intimate partner and sexual violence, and substance use. In this way, preconception care could make useful contributions to Millennium Development Goals (MDGs) 1, 3, 4 and 5. In the long term, preconception care could contribute to improving the health of babies and children as they grow into adolescence and adulthood. From the programmatic perspective, preconception care provides a window to include interventions that have not traditionally been included in maternal, newborn and child health programmes, such as reduction in use of and exposure to tobacco (1).

In a study conducted to assess knowledge on preconception care among health care workers (including 826 nurses out of total 1229) of different health institutions in Ethiopia, only 31% demonstrated good level of knowledge (4).

A study on Socio-Demographic Predictors of Midwives' Knowledge and Practice Regarding Preconception Care in Tabriz health care center, Iran found that Mean (SD) score of midwives' knowledge was 73.21 (\pm 11.83) and mean (SD) score of midwives' practice was 80.31 (\pm 12.25). According to Pearson test, the direct relation between knowledge and practice was not significant ($P = 0.133$, $r = 0.238$). Study further highlights that age, educational level, employment status and work experience were defined as predictors of midwives' knowledge and age, employment status and job responsibilities as predictors of midwives' practice(5).

A descriptive cross-sectional study was conducted among 280 health workers (doctors and nurses) on awareness and perception of preconception care in Ahmadu Bello University Teaching University, Zaria. The result showed that most of the respondents (83.3%) had heard about preconception care but only (23%) knew more than 75% of the components of preconception care(6).

The study conducted among General Practitioners (GPs) and women attending maternity units in London on preconception care revealed the lack of knowledge and need for preconception care. The study also acknowledged the role of education and nurses in improving preconception health (7).

A study on knowledge and attitudes of 203 undergraduate women on preconception health and wellness in Colorado revealed that almost all participants demonstrated low to moderate knowledge related issues of preconception health; with mean score 59.23% and have recommended for improvement in dissemination of information to the young women(8).

An online study of undergraduates' knowledge, awareness and attitudes of preconception care showed that most of the students demonstrated low to moderate knowledge of issues related to preconception health, with an average knowledge score of 50%. It was concluded with the recommendation of need for education on preconception care (9).

II. Significance of the Study

More than half of all maternal deaths occur in Sub-Saharan Africa and nearly a third occurs in South Asia (10). In 2015, every day about 830 women died due to complications of pregnancy and childbirth. More than 135 million women give birth per year; about 20 million of them experience pregnancy related illness after child birth. About 16 million girls aged between 15 to 19 years give birth each year. In low and middle income countries, complications from pregnancy and child birth are the leading cause of death among girls 15-19 years. The maternal mortality ratio in developing countries is 239 per 100,000 births versus 12 per 100,000 in developed countries. Most of the deaths can be prevented through skilled care during preconception period, child birth and access to emergency obstetric care (11).

In Nepal, 17% women between 15-19 years of age begin child bearing. Children born to very young mothers are at increased risk of sickness and death. Teenage mothers are more likely to experience adverse pregnancy outcomes and to be constrained in their ability to pursue educational opportunities than young women who delay child bearing. Nurse especially those working in clinic or in public health, play an important role in pregnancy planning and preconception care (12).

Improving preconception health can result in improved reproductive health outcomes and societal costs. Preconception care aims to promote the health of women of reproductive age before conception and thereby improve pregnancy-related outcomes. The role of nurse in educating the women has been acknowledged in many studies. However, the studies also showed low to moderate level of knowledge among the health care providers on preconception care.

A major nursing focus of preconception care is education and counselling. However, there is lack of study on knowledge of preconception care among bachelor level nursing students in Nepal. The students of today are the healthcare providers of tomorrow. Drawing from the above statements, there is the need for research among nursing students on assessing knowledge of preconception care.

Aim of the Study:

The aim of this study was:

- To assess the level of knowledge on preconception care among bachelor level nursing students in selected campuses of Tribhuvan University.
- To measure the association between level of knowledge on preconception care with selected demographic variable variables.

Research Question

What is the level of knowledge on preconception care among bachelor level nursing students in selected campuses of Tribhuvan University?

III. Subjects And Methods

Research Design

Descriptive cross-sectional design was used for conducting the study.

Setting

The study was conducted at Maharajgunj Nursing Campus and Biratnagar Nursing Campus of Tribhuvan University, Nepal.

Sampling Method

Purposive sampling method was used.

Sample Size

A total of 64 bachelor level nursing third year students were recruited as sample.

Data Collection Tools

A semi structured self-administered questionnaire was developed on the basis of objectives of the study. The instrument was developed in English language. The research instrument was divided into two parts:

Part I: Questions related to socio-demographic variables of respondents.

Part II: Questionnaire related to knowledge on preconception care.

Scoring System

Knowledge of Preconception Care: It refers to the students' existing information on preconception care. Altogether 22 knowledge related questions were included to assist the knowledge on preconception care. The scoring was done on the basis of correct response. Each correct response was provided score one. Knowledge level was divided in three categories (Bloom's Cut off point) as follows:

Inadequate Knowledge: Knowledge Scores Below 50%

Moderate Knowledge: Knowledge Score 50% - 80%

Adequate Knowledge: Knowledge score 80% and more

Validity and Pretesting

Content validity of the tool was maintained by consulting subject expert and literature review. Pretesting of the research instrument was done in 10% of the total sample size and modification of the instrument was done after pre-testing.

Data Collection Procedure

Prior to data collection, permission was obtained from the concerned authority and formal permission was taken from the chief of respective nursing campuses. Consent was obtained from respondents prior to data collection and only the researchers were involved in data collection process. The respondents were explained about the nature and an objective of the study. Data collection was done with the help of self-prepared semi-structured research questionnaire.

Ethical Consideration

Permission for conducting research study was taken from authority of institute of Medicine, Nursing campuses and from the study area. Principle of human dignity and justice was maintained and informed consent was taken from respondent after explaining study objective. Confidentiality of respondents was maintained. Code and category of personal characteristics of respondent was used to maintain anonymity. Participants were not forced to participate and allowed withdrawing their participation at any time.

Data Analysis Procedure

Data was checked daily after collection for its completeness. Collected data were entered in Statistical Package for Social Sciences (SPSS) version 16 for analysis. Data analysis was done by using descriptive and inferential statistics (chi-squares test was used to show the association between independent and dependent variables) and presented in table.

IV. Results

Table (1): Socio-Demographic Information's of Respondents

n=64

Variables	Number	Percentage
Age in Years		
20 to 25	25	39.0
26 to 30	38	59.4
30 Above	1	1.6
Marital Status		
Married	24	37.5
Unmarried	40	62.5
Religion		
Hindu	62	96.9
Buddhist	2	3.1
Work Experience Before Bachelor Nursing course (in Years)		
1-2	27	42.2
3-4	20	31.2
5 and above	17	26.6
Job Training		
Training taken	20	28.1
Training not taken	44	71.9
Type of Health Facility Worked Before BN study		
Government hospital	42	65.6
Private hospital	15	23.4
Teaching hospital	7	10.9
Type of Health Facility		
Teaching hospital	46	71.9
Zonal hospital	18	28.1

Table (2): Item – Wise Distribution of Correct Responses on Knowledge of Preconception Care

n=64

Items	Correct Response	
	Number	Percentage
• The eligible clients for preconception care (PCC) include all adolescents and reproductive aged individuals	49	76.6
• To be effective ,PCC should start four weeks before conception	22	34.4
• Periodontal disease is a risk factor for adverse pregnancy outcomes (APO)	34	53.1
• Women with BMI ≤ 18.4 planning pregnancy are at risk of developing APO	46	71.9
• All women of reproductive age should take 0.4 mg (400 mcg) of folic acid daily.	30	46.9
• The recommended routine pre-conceptual laboratory tests include Hgb, Hct, HIV, HBV,HIV, and RPR or VDRL tests	59	92.2
• Preconception genetic counseling and screening include recommending carrier screening tests for client with sickle cell hemoglobinopathies	50	78.1
• A clinician providing PCC for clients with diabetes mellitus and chronic hypertension should recommend genetic screening testing	19	29.7
• Isotretinions, Valproic acid, and Warfarin are medications poses teratogenic effects requiring preconception modification	61	95.3
• Women with asthma planning pregnancy should avoid taking Salbutamol one month before and after conception	13	20.3
• Early identification and treatment of diseases like depression, seizure disorder, and phenylketonuria during the preconception period reduce the occurrence of APO	55	85.9
• The recommended test that guarantee good periconceptual blood sugar control for a woman with pre-gestational diabetes is random blood sugar (RBS) test	36	52.2
• Pre-conception genetic counseling and screening include recommending carrier screening test for client with Sickle cell anemia	45	70.3
• Except Influenza vaccine, vaccines such as Human Papilloma Virus, Rubella, and Varicella are all vaccines contraindicated during pregnancy	28	43.8
• Recommending regular exercise is an important PCC counseling point. Thus, a women Planning pregnancy should aim 30 minutes of moderate exercise 5 days a week.	61	95.3
• Women planning pregnancy should be advised to delay pregnancy until reducing drug, alcohol and tobacco use	57	89.1
• Avoidance of exposure to environmental hazards or toxin such as ionizing radiation, pesticide, lead, mercury, & pets is a concern for a women with established first trimester pregnancy not for couples planning pregnancy	35	54.7
• A clinician attending clients with previous caesarian section (C/S) should advise the client to delay the next pregnancy for at least 18 months before next conception	51	79.7
• Infertility screening and management is not the concern of preconception care	47	73.4

• Serious birth defects can be caused by a pregnant woman binge drinking (5 or more drinks) on one occasion even prior to the time that she realizes she is pregnant.	43	67.2
• If a pregnant woman has an active case of a sexually transmitted disease such as genital herpes or syphilis the baby can be born with the disease.	45	70.3
• Herbal supplements and herbal teas are typically considered unsafe to consume during pregnancy	30	46.9

Table (3): Respondent's Level of Knowledge on Preconception Care

n=64

Level of Knowledge	Number	Percentage
Adequate Knowledge	6	9.4
Moderate Knowledge	55	85.9
Inadequate Knowledge	3	4.7

Table (4): Association between Respondent's Levels of Knowledge on Preconception Care with Selected Demographical Variables

n =64

Variables	Level of Knowledge on Preconception Care			P value
	Inadequate Knowledge n (%)	Moderate Knowledge n (%)	Adequate Knowledge n (%)	
Age in Years				
20 to 25	1(4.0)	22(88.0)	2(8.0)	0.385
26 to 30	5(13.2)	32(84.2)	1(2.6)	
30 Above	0(0.0)	1(100)	0(0.0)	
Marital Status				
Married	4(16.7)	20(83.3)	0(0.0)	0.173
Unmarried	2(5.0)	35(87.5)	3(7.5)	
Religion				
Hindu	6(9.7)	53(85.5)	3(4.8)	0.338
Buddhist	0(0.0)	2(100)	0(0.0)	
Work Experience Before Bachelor Nursing course (in Years)				
1-2	1(3.7)	25(92.6)	1(3.7)	0.129
3-4	1(5.0)	17(85.0)	2(10.0)	
5 and above	4(23.5)	13(76.5)	0(0.0)	
Job Training				
Training Taken	1(5.0)	16(80.0)	31(15.0)	0.026*
Training Not Taken	5(11.4)	39(88.6)	0(0.0)	
Type of health facility Worked Before BN study				
Government hospital				
Private Hospital	3(7.1)	37(88.1)	2(4.8)	0.724
Teaching Hospital	2(13.3)	12(80.0)	1(6.7)	
Type of Health facility for Clinical Practicum				
Teaching Hospital	1(14.3)	6(85.7)	0(0.0)	
Zonal Hospital	3(6.5)	42(91.3)	1(2.2)	0.091
	3(16.7)	13(72.2)	2(11.1)	

* P< 0.05 denotes statistical significant

V. Discussion

This study finding showed that among 64 respondents, majority of them (59.1%) were of age group between 20 to 25 years but a study conducted by Kassa(4), reported that majority of the respondents (59.6%) were between 26 to 30 years of age. In relation to marital status, 62.5% were unmarried. This result is in line with the study result reported by Kassa(4) where 50.8% of the respondents were single. In relation to work experience, 42.2% respondents had up-to two years of work experience and less than 1/3rd (26.6%) of the respondents had five years and above work experience before the enrolment in bachelor level nursing course. About 28% percent respondents had taken training (Skilled Birth Attendant). Regarding the type of health facility they worked before bachelor level study, 65.6% had worked in government hospitals and 23.4% worked in private hospitals. Similarly, 71.9% respondents practiced in teaching hospital and 28.1% practiced in Zonal hospital.

Regarding knowledge on preconception care, the study result revealed that among 64 respondents, only 9.4% had adequate level of knowledge, 85.9% had moderate and 4.7% had inadequate level of knowledge. The result is similar to the findings of Corbett (8) and Crusenberry (9) on Knowledge and attitudes of undergraduate women on preconception health and wellness in Colorado. The researchers have recommended for improvement in dissemination of information to the young women. However, in contrast, Kassa, Human & Gameda(4) in their study to assess knowledge on preconception care among health care workers (including 826 nurses out of total

1229) of different health institutions in Ethiopia had found that 31% of the respondents demonstrated good level of knowledge on pre-conception care.

This study result showed that more than half (>50%) of the respondents knew more than 70% of the components of preconception care. This finding has no consistency with the result reported in Ahmadu Bello University Teaching University, Zaria (6) where only (23%) knew more than 75% of the components of preconception care.

This study finding showed that level of knowledge has significant association with Job training of the respondents. However, there was no association between demographic factors like age, religion, experience, working area, and marital status with knowledge on preconception care. This result has no consistency with the findings reported by Niloofar, Azizeh & Elaheh (5) on socio-demographic predictors of Midwives' Knowledge and Practice Regarding Preconception Care in Tabriz health care center, Iran where age, educational level, employment status and work experience were defined as predictors of midwives' knowledge.

VI. Conclusion

This research finding reveals that more than three out of four respondents had moderate knowledge on preconception care. The knowledge of respondents in different issues of pre-conception care is more than average in majority of the items included in the tools. However, respondents' knowledge is below average on some of the very important issues such as effective time for pre-conception care, folic acid intake and vaccines contraindicated during pregnancy. This study shows that there is statically significant association between level of knowledge on preconception care and training.

VII. Recommendations

On the basis of the study findings, the following recommendations can be made: Simple guideline of preconception care should be developed and well incorporated in the nursing curriculum. Continuous refreshment courses and follow up programs for health workers regarding preconception care should be provided. Furthermore, intervention studies can be done by using probability sampling technique to generalize the findings.

Acknowledgement

This research has been completed with the support, guidance, suggestions and help from many people. Therefore, we would like to express special thanks to the Chairperson of Research Center, Tribhuvan University, Kirtipur, Kathmandu Nepal for providing an opportunity to do this research study. Likewise, our sincere thank goes to campus chief, Maharajgunj Nursing Campus who provided permission letter for the application of research proposal and also like to acknowledge the respondents for their valuable responses.

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Ms. Bhagawaty Kalikotay. " Knowledge on Preconception Care among Bachelor Level Nursing Students of Selected Nursing Campuses of Tribhuvan University, Nepal" .IOSR Journal of Nursing and Health Science (IOSR-JNHS), vol. 8, no.05 , 2019, pp. 01-06.