

## Knowledge on Pre-conception Care among Reproductive Age Women

Kanchan Gautam<sup>1</sup>, Sushma Acharya<sup>2</sup>, Saraswoti Kumari Gautam Bhattarai<sup>3,4</sup>

<sup>1</sup>Technical Officer MNCH/FP, USAID, Strengthening System for Better Health Activity, Nepal

<sup>2</sup>Lecturer, Manmohan Memorial Institute of Health Sciences, Sotimode, Kathmandu, Nepal

<sup>3</sup>Associate professor, Karnali Academy of Health Sciences, Janak, Nepal

<sup>4</sup>Associate Professor, Mahabaguni Nursing Campus, Institute of Medicine, Tribhuvan University, Nepal

### Corresponding Author

Saraswoti Kumari gautam Bhattarai

Email: saraswotigautam@gmail.com

<https://orcid.org/0000-0002-4711-1803>

**Received Date** 26 October 2021

**Accepted Date** 19 November 2021

**Published Date** 18 March 2022

### ABSTRACT

**Background:** Preconception care is the provision of biomedical, behavioral and social health interventions to women and couples before conception occurs. It aims at improving their health status, and reducing behavioral and environmental factors that contribute to poor maternal and child health outcomes. Therefore, the study was to assess the knowledge on preconception care among reproductive age women.

**Methods:** A descriptive cross-sectional study was carried out amongst 150 reproductive age group women attending the OPD in Manmohan Memorial Teaching Hospital, Kathmandu. The sample was selected by non-probability/purposive sampling technique. Structured questionnaire was used to collect data using interview technique. Data was analyzed via SPSS software version 16. Mean, median and standard deviation was used for analysis of data.

**Results:** The finding showed that 31.3% had adequate knowledge, while 68.7% of the respondents had moderate knowledge about preconception care. Only 40.7% of the respondents knew that folic acid should be started when female discovers that she is pregnant, 36.7% of the respondents knew that folic acid should be started 3 months before conception. While only 24% respondents knew that folic acid is effective in reducing the risk of birth defects. significant association between level of knowledge on preconception care and family income and whereas there was no significant association between the level of knowledge and the age, ethnic group, education level, religion, residence, occupation, type of family, marital status.

**Conclusions:** This study concludes that there was moderate knowledge on preconception care among reproductive age women. Hence, there should be proper counseling and more educational intervention to upgrade the knowledge level of women of reproductive age.

## KEYWORDS

Knowledge, Pre-conception care, Reproductive age women

## INTRODUCTION

Preconception care is the provision of biomedical, behavioral and social health interventions to women and couples before the occurrence of conception to improve their health status (Ayalew, Mulat, Dile, & Simegn, 2017). Preconception care is highly important in reducing a number of adverse pregnancy outcomes and helps to improve maternal health. Improving women's knowledge on preconception care, improve the women planning pregnancy status and creating intervention that addresses adverse pregnancy outcome (Setegn, 2021). It is necessary that women and couples are encouraged to plan their reproductive lives (Luiza & Borges, 2019). The preconception period provides an opportunity to intervene earlier to optimize the health of potential mothers and father, and to prevent harmful exposures from affecting the developing fetus. These interventions include birth spacing and preventing teenage pregnancy, promotion of contraceptive use, optimization of weight and micronutrient status, prevention and management of infectious diseases, and screening and managing chronic conditions (Lassi, Dean, Mallick, & Bhutta, 2014). History of institutional delivery, postnatal care service utilization, and history of using modern contraceptives are significantly associated with good knowledge of preconception care (Fekene, Woldeyes, Erena, & Demisse, 2020). Therefore, the aim of this study was to assess the knowledge on preconception care among reproductive age women.

## METHODS

A descriptive cross sectional study was used to find out the knowledge regarding preconception care among the reproductive age women. The study was conducted in outpatient department (OPD) of Manmohan Memorial Teaching Hospital, Swoyambu, Kathmandu. Non-probability convenient sampling technique was adopted to collect the information by using semi-structured interview schedule. For this study sample was 150. The pretesting of the instrument was done in the 10% of total sample in reproductive age women other than study participants for reliability of the instrument. For the validity of instrument, literature review, consulting adviser and subject teachers was done. A semi-structured interview schedule based on the objective was divided into two parts: Part I: Socio demographic information of respondents, and Part II: Knowledge regarding preconception care.

Each question had 2 or 4 alternative responses. A score value of 1 was allocated to each correct response and 0 is allocated for wrong response. A total score ranges from 0-20. Face to face interview method was adopted for the collection of data. The purpose of the research was explained to the respondents and written consent was taken. Data was collected within allocated time of 15-20 minute for each respondent. The data obtained from study was compiled, coded and analyzed using Statistical package for Social Sciences 16. Appropriate statistical tests mean, median and standard deviation was used for interpretation of data. Research was conducted after the approval of Institutional research committee (IRC) of Manmohan Memorial Institute of Health Sciences (MMIHS). Before including the respondent in the study, verbal consent was obtained from them after explaining the purpose of study, privacy, confidentiality and anonymity was maintained.

## RESULTS

**Table 1: Socio Demographic Characteristics of the Reproductive age women (n=150)**

| Socio Demographic Characteristics | Frequencies | Percentage |
|-----------------------------------|-------------|------------|
| <b>Age</b>                        |             |            |
| 16 – 20                           | 16          | 10.7       |
| 21 – 25                           | 57          | 37.9       |
| 26 – 30                           | 40          | 26         |
| 31 – 35                           | 24          | 16.1       |
| 36 – 40                           | 7           | 4.7        |
| 41+                               | 6           | 4.6        |
| Mean age: 27.7±6.30               |             |            |
| <b>Marital status</b>             |             |            |
| Unmarried                         | 24          | 16.0       |
| Married                           | 100         | 84.0       |
| <b>Religion</b>                   |             |            |
| Hindu                             | 117         | 78.0       |
| Buddhist                          | 22          | 14.7       |
| Muslim                            | 1           | 0.7        |
| Christian                         | 6           | 4.0        |
| Others                            | 4           | 2.7        |
| <b>Ethnicity</b>                  |             |            |
| Brahmin                           | 43          | 28.7       |
| Chhetri                           | 47          | 31.3       |
| Dalit                             | 8           | 5.3        |
| Janajat                           | 43          | 28.7       |
| Others                            | 9           | 6.0        |
| <b>Education level</b>            |             |            |
| Illiterate                        | 14          | 9.3        |
| Primary level                     | 12          | 8.0        |
| Secondary level                   | 56          | 37.3       |
| Higher level                      | 68          | 45.3       |
| <b>Occupation</b>                 |             |            |
| Housewife                         | 76          | 50.7       |
| Labourer                          | 9           | 6.0        |
| Businesswoman                     | 3           | 2.0        |
| Others                            | 32          | 21.3       |
| <b>Type of family</b>             |             |            |
| Nuclear                           | 84          | 56.0       |
| Joint                             | 66          | 44.0       |
| <b>Residence</b>                  |             |            |
| City                              | 115         | 76.7       |
| Village                           | 35          | 23.3       |

| Average family monthly Income |    |      |
|-------------------------------|----|------|
| Less than 10000               | 15 | 10.0 |
| 10000-20000                   | 30 | 20.0 |
| 20000-30000                   | 51 | 34.0 |
| More than 30000               | 54 | 36.0 |

Out of 150 respondents, 37.9% were between 21-25 years of age and 26% respondents were between 26-30 years of age. The mean age of the respondents was 27.17( $\pm$ 6.307) years. Majority (84%) of the respondents were married and 78% of the respondents were following Hindu religion. Among them, 28.7% were Brahmin, 31.3% were Chhetri and 28.7% were Janajati, 45% of the respondents studied up to higher education level, more than half of the respondents (56%) were from nuclear family, 76.7% of the respondents were from city, 36% of the respondents had average monthly family income of more than 10 thousand. As regards to the occupation, 50% were housewives (Table 1).

**Table 2: Knowledge on preconception care among Reproductive age women (N=150)**

| Knowledge on preconception care   | Frequency | Percentage |
|---|-----------|------------|
| Meaning of preconception care   | 121       | 80.7       |
| Purpose of preconception care   | 108       | 72.0       |
| Appropriate age of women for child bearing  | 142       | 94.7       |
| Appropriate time to visit the health professional before conception                                 | 94        | 62.7       |
| Both spouse need to involve in preconception care   | 143       | 95.3       |
| Carbohydrate, protein, vitamin and fat are essential diet to women for the preparation of pregnancy | 147       | 98.0       |
| Time to start folic acid  | 55        | 36.7       |
| Effective micronutrient to reduce the risk of birth defects   | 36        | 24.0       |
| Time to stop hormonal contraceptives 3 month prior to pregnancy                                     | 57        | 38.0       |

Regarding the Knowledge related to preconception care; 80.7% of the respondents knew actual meaning of the preconception care. Similarly, 72% of the respondents reported that purpose of preconception care is to maximize the health of prospective parents and hence creating a constructive environment in which conception and fetal development occur and thereby helps to reduce the rate of illness and death of child and mother. Likewise, 94.7% of the respondents knew the appropriate age of women for child bearing is between 20–30 years. More than half of the respondents (62.7%) knew that visiting the health professional or obstetrician immediately before conceiving the baby is necessary, 95.3% of the respondents answered that both female and male spouse should be involved in preconception care. Similarly, 98% of the respondents knew that using carbohydrate, protein, vitamin and fat as diet for the preparation of conception is necessary. Furthermore, 36.7% of the respondents knew that folic acid should be started 3 months before conception, and 38% of the respondents reported that hormonal family planning method should be stopped by female spouse before 3 months of pregnancy (Table 2).

**Table 3: Respondent's knowledge on harmful factors for conception (n=150)**

| Harmful habits for conception  | Frequency | Percentage |
|--|-----------|------------|
| Smoking and alcohol consumption in pregnancy harm the baby                             | 149       | 99.4       |
| Blood sugar should be in control in women before conception                            | 149       | 99.3       |
| Blood pressure should be in normal level in women before conception                    | 148       | 98.7       |
| Screening of HIV/AIDS is necessary for both parents before conception                  | 147       | 98.0       |
| Genetic test is essential prior to pregnancy by the couple                             | 149       | 99.3       |
| Taking drugs without medical prescription prior and during pregnancy harmful for fetus | 149       | 99.3       |
| Stress in women prior and during pregnancy may harm growing fetus                      | 150       | 100.0      |

Regarding the knowledge on harmful factors for conception; almost all respondents (99.4%) accepted that smoking and alcohol consumption in pregnancy can harm the baby, (99.3%) of the respondents agreed that blood sugar should be in control in women before conception. 98.7% of the respondents responded that blood pressure should be in normal level in women from preconception period for conceiving healthy baby. 98% of the respondents responded that screening of HIV/AIDS is necessary and 99.3% of the respondent responded that genetic test is essential to be carried out prior to pregnancy by the couple. Majority (99.3%) of the respondents agreed that taking drugs without medical prescription prior and during pregnancy by women is harmful for fetus, and all (100%) respondents agreed that stress in women prior and during pregnancy may harm growing fetus (Table 3).

**Table 4: Respondents' Level of Knowledge Regarding Preconception Care (n=150)**

| Level of knowledge |     |      |
|--------------------|-----|------|
| Moderate           | 103 | 68.7 |
| Adequate           | 47  | 31.3 |

In regard to level of knowledge of respondents'; majority of respondents (68.7%) had moderate knowledge and 31.3% had adequate knowledge regarding preconception care which is measured by using the percentage score (Table 4).

## DISCUSSION

Out of 150 respondents, 37.9% were between 21-25 years and 26% were between 26-30 years of age. The mean age of the respondents was 27.17( $\pm$ 6.307) years. A study conducted in Iran showed the mean age of the participants was 30.73 ( $\pm$ 6.77 years)(Bayrami, Didarlo, & Asadinejad, 2021). Likewise, majority (84%) were married whereas one study conducted in Ethiopia showed the contrast finding that is 59.5% were married (Aynew et al., 2017). In this study 78% of the respondents were following Hindu religion which was near similar with the study of Dang, Nepal that is 96.95% belonged to Hindu (Prashansa Gautam, 2016). And regarding the ethnicity; higher proportion (81.3%) were Chhetri. About 42% of the respondents studied up to higher education level, more than half of the respondents (56%) were from nuclear family which near similar with the study of Dang, Nepal that is 66.96% (Prashansa Gautam, 2016). Likewise, 76.7% of the respondents were from city which is near similar with the study of South Ethiopia that is 64.7% were urban residents (Kassa & Yohannes, 2018). In this study 36% of the respondents had average monthly family income of more than 30 thousand. Which was contrast with one study of Kathmandu Nepal that is 78.5% had more than 30 thousand monthly income (Khanal, 2020). As regards to the occupation,

50% were housewives which is contrast with the study of Gujarat that is 82% of women were housewives (Patel, 2019).

Regarding the Knowledge related to preconception care; 80.7% of the respondents knew actual meaning of the preconception care. Near similar result was found in North-western Nigeria that is 91.6% knew the meaning of preconception care correctly (Tokunbo et al., 2016). Similarly, 72% of the respondents reported that purpose of preconception care is to maximize the health of prospective parents and hence creating a constructive environment in which conception and fetal development occur and thereby helps to reduce the rate of illness and death of child and mother. A study conducted in Kerala showed that more than 70% of women were aware of importance of preconception care, which is similar to this study. (Sunila, Viswanath, & Anju Philip, 2019) Likewise, 67.7% of the respondents knew the appropriate age of women for child bearing is between 20-30 years. A study conducted in Kerala showed the different finding that is 43.5% were aware on ideal age for pregnancy (Sunila et al., 2019). More than half of the respondents (62.7%) knew that visiting the health professional or obstetrician before conceiving the baby is necessary. A contrast result was found in Northwestern Ethiopia that is only 31.8% were aware to visit health institution before pregnancy (Ayalew et al., 2017). In this study 95.3% of the respondents answered that both female and male spouse should be involved in preconception care. One study of Southwest Ethiopia revealed that 76.1% women were aware to discuss with her husband about the pregnancy which is less than this study finding (Teshome, Kebede, Abamecha, & Birhanu, 2021).

In this study 98% of the respondents were aware to use carbohydrate, protein, vitamin and fat as diet for the preparation of conception is necessary which is contrast with the finding of Nigeria that is only 14% of respondents perceived that women should eat good nutrition and vitamins (Akinajo, Osanyin, & Okojie, 2019). Furthermore, 36.7% of the respondents knew that folic acid should be started 3 months before conception. One study conducted in Kathmandu Nepal showed that 11% had knowledge about folic acid supplementation before 3 month of conception (Khanal, 2020). Likewise, 38% of the respondents reported that hormonal family planning method should be stopped by female spouse in 3 months before pregnancy. A study conducted in Kerala showed that 59.5% were aware to stop the hormonal contraception before pregnancy which is higher than our study finding (Sunila et al., 2019).

In this study 99.4% accepted that smoking and alcohol consumption in pregnancy can harm the baby. A study conducted in Pakistan showed near similar finding that is 84.6% females were aware that smoking cause harm to the baby. (Tariq, Hussain, Afzal, & Gilani, 2021) About 99.3% of the respondents agreed that blood sugar should be in control in women before conception.

Similarly, 98.7% of the respondents responded that blood pressure should be in normal level in women from pre-conception period for conceiving healthy baby. Contrast result was found in Southwest Ethiopia that 61.5% of them knew screening for hypertension before the conception (Teshome, Kebede, Abamecha, & Birhanu, 2020). In this study 99% of the respondents responded that screening of HIV/AIDS is necessary. Near similar finding was found in study of Ethiopia that is 80.3% were aware about risk of STIs including HIV/AIDS (Tesema et al., 2021). In this study 99.3% of the respondent responded that genetic test is essential to be carried out prior to pregnancy by the couple. A study finding of Ruiru sub-County showed the contrast result that is only 7.6% were known about the screening for genetic diseases (Joyce, 2018). Majority (99.3%) of the respondents agreed that taking drugs without medical prescription prior and during pregnancy by women is harmful for fetus. Similar finding was found on study conducted in Kathmandu Nepal that is 99% had knowledge on avoidance of harmful drugs and substances (Khanal, 2020). All (100%) respondents agreed that stress in women prior and during pregnancy may harm growing fetus.

In regard to level of knowledge of respondents; 68.7% had moderate knowledge and 31.3% had adequate knowledge regarding preconception care which is measured by using the percentage score. According to study conducted in Chitwan, Nepal, 51% of the respondents had inadequate level of knowledge and 42% had moderate level of knowledge and 7% of the respondents had adequate level of knowledge (Nepali & Sapkota, 2017). Another study of Ethiopia showed that 73.2% had inadequate knowledge and 26.8% had good knowledge on preconception care (Fekene et al., 2020).

## CONCLUSIONS

This study shows that majority of respondents had moderate knowledge and least proportion had adequate knowledge on preconception care among reproductive age women attending. Therefore, there should be proper counselling and educational intervention to upgrade the knowledge level of reproductive age women.

# Retracted

## REFERENCES

- Akinajo, O. R., Osanyin, G. E., & Okojie, O. E. (2019). Preconception care : Assessing the level of awareness , knowledge and practice amongst pregnant women in a tertiary facility. *JOURNAL OF CLINICAL SCIENCES*, 16(3), 87–92. <https://doi.org/10.4103/jcls.jcls>
- Ayalew, Y., Mulat, A., Dile, M., & Simegn, A. (2017). Women ' s knowledge and associated factors in preconception care in adet , west gojjam , northwest Ethiopia : a community based cross sectional study. *Reproductive Health*, 1–10. <https://doi.org/10.1186/s12978-017-0279-4>
- Bayrami, R., Didarloo, A., & Asadinejad, A. (2021). Predictors of preconception care behaviour among women of reproductive age using a behaviour-change model. *Journals.Sagepub.Com/Home/Psh*, 30(2), 125 –130. <https://doi.org/10.1177/2010105820958727>
- Fekene, D. B., Woldeyes, B. S., Erena, M. M., & Demisse, G. A. (2020). Knowledge , uptake of preconception care and associated factors among Knowledge, uptake of preconception care and associated factors among reproductive age group women in West Shewa zone, Ethiopia, 2018. *BMC Women's Health*, 20(30), 1–8.
- Joyce C. Assessment of the Knowledge on Pre Conception Care Among Women of Reproductive Age in Ruiru Sub-County , Kiambu County , Kenya Assessment of the Knowledge on Pre Conception Care among Women of Reproductive Age in Ruiru. 2018;3(1):82–100.
- Kassa, A., & Yohannes, Z. (2018). Women ' s knowledge and associated factors on preconception care at Public Health Institution in Hawassa City , South Ethiopia. *BMC Research Notes*, 1–6. <https://doi.org/10.1186/s13104-018-3951-z>
- Khanal, L. D. (2020). Knowledge and utilization of preconception care among women in selected community of Kathmandu. *Journal of Nepal Academy of Health Sciences*, 7(2), 112–123. <https://doi.org/10.3126/jpans.v7i2.31152>
- Lassi, Z. S., Dean, S. V, Mallick, D., & Bhutta, Z. A. (2014). Preconception care : delivery strategies and packages for care, 11(Suppl 3), 1–17.
- Luiza, A., & Borges, V. (2016). Preconception health behaviors associated with pregnancy planning status among Brazilian women, 50(2), 208–215.
- Nepali, G., & Sapkota, S. D. (2017). Knowledge and practice regarding preconception care among antenatal mothers. *International Journal of Preconception in Public Health*, 8164(4), 224–227.

- Prashansa Gautam, R. D. (2016). Knowledge on Preconception Care among Reproductive age Women. *Saudi Journal of Medical and Pharmaceutical Sciences*, 1(1), 1–6.
- Pritesh G Patel, T. A. S. (2019). Assessment of Knowledge and Attitude Regarding Pre-Conceptional Care among Newly Married Women Residing At Urban Areas of Vadodara City , Gujarat , India. *National Journal of Community Medicine*, 10(12), 649–652.
- Setegn, M. (2021). What Women Do Before Pregnancy ? A Preconception Care of Women in Mizan-Aman town Southwest , Ethiopia , A Mixed Study, 11(1), 1–6.
- Sunila, L., Viswanath, L., & Anju Philip, T. (2019). Awareness regarding preconception care among women in reproductive age group. *Indian Journal of Public Health Research and Development*, 10(9), 391–395. <https://doi.org/10.5958/0976-5506.2019.02458.6>
- Tariq, N., Hussain, M., Afzal, M., & Gilani, A. (2021). Knowledge , Attitude and Practice of Preconception Care among Women Attending Appointments at a Teaching Hospital in Lahore , Pakistan, 9(2), 154–162. <http://doi.org/10.2811/enoc.4.162894>
- Tesema, K. F., Cheneka, T., Alemu, A., Feyissa, M., Birkaye, B., Mohammed, H., ... Wasihun, B. (2021). Knowledge of Preconception Healthcare and Associated Factors : A Study among Mothers in Jinka Town , Southern Region , Ethiopia, 2021.
- Teshome, F., Kebede, Y., Abamecha, F., & Birhanu, Z. (2020). What do women know before getting pregnant ? Knowledge of preconception care and associated factors among pregnant women in Mana district , Southwest Ethiopia : a community- - based cross- - sectional study, 1–9. <https://doi.org/10.1136/bmjopen-2019-035937>
- Teshome, F., Kebede, Y., Abamecha, F., & Birhanu, Z. (2021). Practice of Preconception Care and Associated Factors among Pregnant Women in Manna District , Southwest Ethiopia : A Community-Based Cross-Sectional Study, 1–8. <https://doi.org/10.35248/2167-0420.21.10.519>. Copyright
- Tokunbo, A. T., Abimbola, K. A., Polite, A. P., & Gbemiga, O. A. (2016). Awareness and perception of preconception care among health workers in Ahmadu Bello University Teaching University , Zaria, 149–152. <https://doi.org/10.4103/0189-5117.192215>