ISSN: 2091-2889 (online)
2091-2412 (print)

Received: 08 Oct 2024
Accepted: 15 Nov 2024
Published: 30 Jul 2024

DOI: 10.54530/jcmc.1588

Knowledge regarding high-risk pregnancy among pregnant women attending an antenatal clinic in Hetauda, Nepal

Kopila Shrestha[1], Sahara Karki Silwal[2], Uma Prajapati[2], Sita Rai Koirala[2], Parbati Datheputhe[2]

[1]Hospital Nursing Administrator, Bir Hospital, National Academy of Medical Sciences, Kathmandu, Nepal
[2]Assistant Professor, JF Institute of Health Science/LACHS, Kathmandu, Nepal

Abstract

Background: Maternal mortality is high due to complication of pregnancy and childbirth. High risk pregnancy put the pregnant women, fetus and neonate in the state of jeopardy. To reduce complication of high-risk pregnancy, it is necessary to have knowledge about high-risk pregnancy and its prevention and management. This study was conducted to assess knowledge regarding high-risk pregnancy among pregnant women.

Method: A descriptive cross-sectional study was conducted at Antenatal Out Patient Department of Hetauda Hospital, Makawanpur, Nepal in 2021. Non-probability purposive sampling technique was used among pregnant women who met the inclusion criteria. Calculated Sample size was 132 pregnant women. Ethical approval was obtained from Nepal Health Research Council. Face to face interview technique was used to collect data. The collected data were analyzed by using descriptive statistics such as frequency, percentage, mean, standard deviation and inferential statistics such as Chi-square test.

Result: Among 132 respondents, majority 85(64.4%) had moderate level of knowledge regarding high-risk pregnancy followed by 30(22.7%) had inadequate level of knowledge and surprisingly only 17(12.9%) respondents had adequate level of knowledge regarding high-risk pregnancy. There was statistically significant association among duration of marriage (p-value 0.032) and gravida (p-value 0.013) with level of knowledge at 5% significant level.

Conclusion: Only few respondents had adequate level of knowledge regarding high-risk pregnancy so awareness activities are required in antenatal outpatient department of each hospital where maternity services are provided.

Keywords: High risk, Knowledge, Pregnancy, Women

How to cite

Shrestha K, Silwal SK, Prajapati U, Koirala SR, Datheputhe P. Knowledge regarding high-risk pregnancy among pregnant women attending an antenatal clinic in Hetauda, Nepal. Journal of Chitwan Medical College. 2024;14(50):49-57.

Correspondence

Ms. Kopila Shrestha, Master in Nursing, Hospital Nursing Administrator, Bir Hospital, National Academy of Medical Sciences, Kathmandu, Nepal. Email: kopila1@gmail.com, Telephone: +977 9841212032

Introduction

Globally, in the year 2020, about 800 women died from pregnancy or childbirth related complications every day.[1] In India, maternal mortality was 97/100,000 live births in 2020.[2] In Bangladesh, the overall Maternal Mortality Rate (MMR) was 196 per 100,000 live births in 2016.[3] In Nepal, the overall maternal mortality rate for the eight districts was found to be 229 per 100,000 live births.[4]

Globally, it is estimated that 37% of pregnant women are affected by anaemia. Anaemia caused 50 million years of healthy life lost due to disability in 2019.[5] In Nepal, Prevalence of anaemia among pregnant women was 46% in 2016.[6] In Ethiopia, the prevalence of pregnancy induced hypertension was 33(7.9%).[7] The prevalence of GDM in Qatar was 16.3% [8], in India, was 8.33% [9] and in Nepal was 27%.[10]

A study conducted in Indonesia showed that 89.7% of respondents had moderate knowledge, 4.8% had good knowledge and 5.5% had insufficient knowledge regarding high-risk pregnancy.[11] A study conducted in India showed that more than one-third (34.7%) of pregnant women had below average level of awareness, one third of women (33.3%) had average level of awareness, another one third women (30%) had good level of awareness and only 2% women had excellent awareness level.[12] A study conducted in Nepal showed that most of the participants (53.3%) had inadequate knowledge and 46.7% had adequate knowledge regarding high-risk pregnancy in pretest.[13]

This study aims to assess knowledge regarding high-risk pregnancy among pregnant women in Hetauda, Makawanpur, Nepal.

Method

A descriptive cross-sectional research design was adopted to assess the knowledge regarding high-risk pregnancy among pregnant women attending antenatal outpatient department of Hetauda hospital, Makawanpur, Nepal in 2021. Non-probability purposive sampling technique was used to select the sample using self-developed structured questionnaire. Sample size was 132 pregnant women. Content validity of the instrument was maintained by developing the questionnaire based on objectives of the study after extensive literature review**,** through consultation with statistician, subject experts and research experts. Reliability of the instrument was maintained by pre-testing the instrument among 10% of the total sample size (i.e., among 14 pregnant women) in a similar setting. Ethical approval was taken from the Nepal Health Research Council. Formal written permission was taken from the director of Hetauda Hospital for conducting the study.

Face to face interview technique was used to collect data among pregnant women who came for antenatal checkup and willing to participate. Women having noted high risk pregnancy were excluded from the study.

A structured interview schedule comprising socio-demographic variables, high risk pregnancy related variables, prevention and management of high-risk pregnancy related variables was taken from each respondent. The researcher explained objectives of the study clearly and collected data without hampering their routine check-up. Verbal and written consent was taken from each respondent. Anonymity was maintained by keeping code number in questionnaires instead of respondent's name. Confidentiality was maintained by ensuring the respondents that the collected information will be used for research purpose only.

Level of knowledge was classified as adequate knowledge (obtained score >75%), moderate knowledge (obtained score 50-75%), and inadequate knowledge (obtained score <50%).

The data were analyzed in Statistical Package for Social Sciences (SPSS version 20) for descriptive as well as inferential statistics. A $p<0.05$ was considered statistically significant.

Result

Out of 132 pregnant women who participated in the study of knowledge regarding high-risk pregnancy, mean age was 25.85±4.4 years, majority 72(54.5%) below 25 years of old, 68(51.5%) from urban area, 86(65.2%) Hindu, 85(64.4%) home maker and 70(53.0%) primigravida, Table 1.

Among 132 pregnant women, majority 98(74.2%) said mother's age below 16 or above 35 years is high risk for pregnancy. Regarding meaning of hypertension, 100(75.8%) answered blood pressure where systolic blood pressure is 140 mm of Hg or more and diastolic blood pressure 90 mm of Hg or more. Nearly half of respondents 61(46.2%) answered that PIH occurs after 20 weeks of pregnancy. Majority 85(64.4%) said obesity is the risk factors of PIH and 99(75%) said headache is the sign/symptom of PIH. Regarding management of PIH, majority 116(87.9%) answered regular antenatal examination, Table 2.

Table 1. Socio-demography of pregnant women in study regarding knowledge of high-risk pregnancy, n=132

Variables	n(%)
Age	
≤ 25	72(54.5)
>25	60(45.5)
Residence	
Urban	68(51.5)
Rural	64(48.5)
Ethnicity	
Bramhin/Chhetri	56(42.4)
Others	76(57.5)
Religion	
Hindu	86(65.2)
Non-Hindu	46(34.8)
Education status	
Below secondary level	44(33.3)
Secondary level and above	88(66.6)
Occupation status	
Home maker	85(64.4)
Others	47(35.6)
Family income	
10000-20000	23(17.4)
20000-30000	45(34.1)
30000 and above	64(48.5)
Duration of marriage	
≤5	82(62.1)
≥6	50(37.9)
Gravida	
Primigravida	70(53.0)
Multigravida	62(47.0)

Table 2. Pregnant women knowledge regarding high-risk pregnancy, n=132

Variables	n(%)
High risk pregnancy	
Pregnancy induced hypertension	91(68.9)
Gestational diabetes mellitus	83(62.9)
Anaemia during pregnancy	92(69.7)
PV bleeding	95(72.0)
Mother's age below 16 or above 35 years	98(74.2)
Others	10(7.6)
Definition of hypertension	
Blood pressure where systolic blood pressure is 140 mm of Hg or more and diastolic blood pressure 90 mm of Hg or more	100(75.8)
Occurrence of PIH	
After 20 weeks of pregnancy	61(46.2)
Risk factors of PIH	
Nullipara	36(27.3)
Mother's age more than 40 years or less than 18 years	36(27.3)
High blood pressure during previous pregnancy	66(50.0)
Diabetes mellitus	68(51.5)
Obesity	85(64.4)
Signs and symptoms of PIH	
High blood pressure	81(61.4)
Edema of leg	70(53.0)
Headache	99(75.0)
Blurred vision	77(58.3)
Abnormal weight gain	42(31.8)
Abdominal pain	54(40.9)
Management of PIH	
Regular antenatal examination	116(87.9)
Adequate rest	97(73.5)
Regular blood pressure monitoring	106(80.3)
Regular exercise	98(74.2)
Regular weight monitoring	96(72.7)
Medicine if blood pressure is very high	81(61.4)

Regarding meaning of anaemia, 87(65.9%) answered reduction of red blood cells in the blood, 104(78.8%) said decrease intake of iron containing food causes anaemia, 95(72.0%) answered teenage pregnancy is the risk factors of anaemia during pregnancy, 123(93.2%) said

weakness or fatigue as symptoms of anaemia, 108(81.8%) said pre-eclampsia (headache, edema of legs, blurred vision) is the effect of anaemia during pregnancy in mother, 117(88.6%) said oral intake of iron and folic acid tablet is the preventive measure of anaemia during pregnancy and 125(94.7%) said taking iron containing food like meat, fish, eggs, liver, etc. is the management of anaemia during pregnancy, Table 3

. **Table 3. Pregnant women knowledge regarding pregnancy induced hypertension (PIH), n=132**

Variables	n(%)
Meaning of anaemia	
It is the reduction of red blood cells in the blood	87(65.9)
Causes of anaemia	
Decrease intake of iron containing diet	104(78.8)
Increase iron demand	47(35.6)
Deficient iron absorption	48(36.4)
Hook worm infestation	46(34.8)
Anorexia and vomiting	97(73.5)
Bleeding	87(65.9)
Risk factors of anaemia	
Multiple pregnancy	84(63.6)
Repeated pregnancy	88(66.7)
Teenage pregnancy	95(72.0)
Had anaemia before pregnancy	94(71.2)
Hookworm infestation	53(40.2)
Signs and symptoms of anaemia	
Weakness or fatigue	123(93.2)
Anorexia and indigestion	96(72.7)
Shortness of breath	73(55.3)
Palpitation	79(59.8)
Pale skin, lips and nail	86(65.2)
Swelling of legs	74(56.1)
Effects of anaemia in mother	
Pre-eclampsia (headache, edema of legs, blurred vision)	108(81.8)
Preterm labour	82(62.1)
Heart failure	42(31.8)
Postpartum haemorrhage	91(68.9)
Shock	84(63.6)
Poor lactation	55(41.7)
Prevention of anaemia	
Regular antenatal examination	114(86.4)
Intake of adequate iron containing diet	111(84.1)
Oral intake of iron and folic acid tablets	117(88.6)
Intake of anti-helminthic medicine	80(60.6)
Management of anaemia	
Take iron containing diet like meat, fish, eggs, liver, etc.	125(94.7)
Regular intake of oral iron and folic acid tablets	114(86.4)
Intake of anti-helminthic medicine	82(62.1)
Intake of vitamin C containing food to absorb iron	89(67.4)

Table 4. Pregnant women knowledge regarding anaemia during pregnancy, n=132

Variables	n(%)
Meaning of Gestational Diabetes Mellitus (GDM)	
Increase sugar level in the blood during pregnancy	110(83.3)
Risk factors of GDM	
Previous GDM	88(66.7)
Positive family history of diabetes	75(56.8)
Previous birth of baby of 4kg or more	20(15.2)
Mother's age over 30 years	61(46.2)
Obesity	81(61.4)
Effects of GDM in mother	
Abortion	74(56.1)
Preterm labour	78(59.1)
Prolong labour	57(43.2)
Postpartum haemorrhage	60(45.5)
Puerperal sepsis	64(48.5)
Recurrence of GDM in subsequent pregnancies	67(50.8)
Effects of GDM in baby	
Increased perinatal loss	50(37.9)
Congenital abnormalities like cardiac problems, renal problems	78(59.1)
Macrosomia	48(36.4)
Birth injuries	29(22.0)
Birth asphyxia	70(53.0)
Preventive measure of GDM	
Regular antenatal examination	116(87.9)
Dietary therapy-small frequent meal	100(75.8)
Lose weight	77(58.3)
Regular exercise	92(69.7)
Relaxation therapy	76(57.6)
Management of GDM	
Take small frequent meals	99(75.0)
Avoid concentrated sweets	107(81.1)
Regular exercise at least 30 minutes	94(71.2)
Regular blood glucose monitoring	100(75.8)
Maintain body weight	86(65.2)
Medication in severe condition-insulin therapy	69(52.3)

Regarding meaning of gestational diabetes mellitus, 110(83.3%) said GDM is increase sugar level in the blood during pregnancy, 78(59.1%) said preterm labour is the effect of GDM in mother and in baby, 78(59.1%) said congenital abnormalities like cardiac problems, renal problems, 116(87.9%) answered regular antenatal examination is the preventive measure of GDM and 107(81.1%) replied avoiding concentrated sweets as management of GDM, Table 4.

Majority of respondents 85(64.4%) had moderate level of knowledge, 30(22.7%) had inadequate level of knowledge and surprisingly only 17(12.9%) respondents had adequate level of knowledge regarding high-risk pregnancy, Table 5.

There was statistically significant association of level of knowledge with duration of marriage (p-value 0.032) and gravida (p-value 0.013) at 5% significant level, Table 6.

Table 5. pregnant mothers Knowledge Score regarding high-risk pregnancy, n=132

Variables	Frequency	Percentage
Inadequate	30	22.7
Moderate	85	64.4
Adequate	17	12.9

Table 6. Association of knowledge level of high-risk pregnancy and socio-demographic variables among pregnant mothers, n=132

		Knowledge level			
		Inadequate	Moderate	Adequate	p-value
Age	≤25	19	45	8	0.495
	>25	11	40	9	
Residence	urban	14	41	13	0.087
	rural	16	44	4	
Ethnicity	Bramhin/chhetri	9	37	10	0.149
	Others	21	48	7	
Religion	Hindu	20	55	11	0.981
	Non-Hindu	10	30	6	
Education	Below secondary level	6	33	5	0.16
	Secondary level and above	24	52	12	
Occupation	Homemakers	22	52	11	0.489
	Others	8	33	6	
Family Income	10000-20000	4	16	3	0.841
	20000-30000	9	29	7	
	30000 and above	17	40	7	
Duration of Marriage, y	≤5	24	46	12	0.032
	≥6	6	39	5	
Gravida	Primigravida	21	37	12	0.013
	Multigravida	9	48	5	

Discussion

The present study showed that 65.9% respondents answered correct meaning of anemia, 88.6% gave correct response that pregnant women should take iron and folic acid tablets as a supplement which is not similar with the finding of the study conducted in India.[14] In the present study, 78.8% respondents answered decreased intake of iron containing food caused anaemia during pregnancy. Regarding prevention of anemia, 86.4% said regular antenatal examination, 84.1% said intake of adequate iron containing diet, and 88.6% answered oral intake of iron and folic acid tablets which is nearly similar with the findings of the study conducted in Kathmandu, Nepal.[15]

The present study showed that regarding signs and symptoms of pregnancy induced hypertension, majority of the respondents 75.0% answered headache. Regarding management of pregnancy induced hypertension, 61.4% answered medicine if blood pressure rise which is not similar with the finding of the study conducted in Ethiopia.[16]

The present study showed that 87.9% said regular antenatal examination, 75.8% answered dietary therapy- small frequent meal as the prevention of gestational diabetes mellitus which are nearly similar with the findings of the study conducted in Samoa and in Rawalpindi, Pakistan.[17, 18]

The present study showed that 56.8% said positive family history of diabetes as the risk factors of gestational diabetes mellitus which is similar with the finding of the study conducted in South Tamil Nadu.[19]

The present study showed that majority of respondents (64.4%) had moderate level of knowledge regarding high-risk pregnancy

followed by 22.7% with inadequate level of knowledge and surprisingly only 12.9% respondents had adequate level of knowledge regarding high-risk pregnancy. These findings are inconsistent with the findings of the study conducted in Indonesia with 89.7% of respondents showing moderate knowledge, 4.8% good knowledge and 5.5% insufficient knowledge regarding high-risk pregnancy.[11]

Similarly, studies from Ludhiana, Punjab showed that 34.7% of pregnant women had below average level of awareness, 33.3% had average level of awareness, 30% had good level of awareness and only 2% women had excellent awareness level.[12] Also, inconsistent finding report was from the study conducted in Bhairahawa, Nepal which showed that most of the respondents (53.3%) had inadequate knowledge and 46.7% had adequate knowledge regarding high-risk pregnancy in pre-test.[13] Similarly, findings are inconsistent with the study conducted in India which showed very good knowledge of 85%.[20] This difference may be due to differences in study setting.

The present study showed that there were statistically significant association among duration of marriage (p-value=0.032) and gravida (p-value=0.013) with level of knowledge at 5% significant level. This study findings are inconsistent with the finding of the study conducted in Malaysia which showed that there were no statistically significant association to the duration of marriage and gravida.[21]

Some of the limitation of present study includes single center, hospital-based study that may not represent overall scenario.

Conclusion

Only few respondents had adequate level of knowledge regarding high-risk pregnancy. Based on the findings, effective educational intervention is required in antenatal outpatient department to increase knowledge regarding high-risk pregnancy.

Author contribution

Concept, design, planning: All; Data collection: KS, SKS; Data analysis: All; Draft manuscript: All; Revision of draft: All; Final manuscript: All; Accountability of work: All

Acknowledgment

None

Conflict of interest

None

Funding

None

Supplementary material

The data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. World Health Organization. Maternal Mortality: Key facts. 2024. Link
2. United Nations Children's Fund. Maternal health: UNICEF's concerted action to increase access to quality maternal health services. Link
3. National Institute of Population Research and Training (NIPORT), International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), and MEASURE Evaluation. Bangladesh Maternal Mortality and Health Care Survey 2016: Final Report. Dhaka, Bangladesh, and Chapel Hill, NC, USA: NIPORT, icddr,b, and MEASURE Evaluation. 2019. Link
4. Suvedi BK, Pradhan A, Barnett S, Puri M, Chitrakar SR, Poudel P, et al. Nepal Maternal Mortality and Morbidity Study 2008/2009: Summary of Preliminary Findings. Kathmandu: Government of Nepal. 2009. Link
5. World Health Organization. Anaemia: key facts. Link
6. Ministry of Health and Population (MOHP) Nepal, New ERA & ICF International, 2017. Nepal Demographic and Health Survey 2016.

Kathmandu, Nepal: Ministry of Health and Population, Nepal. Link
7. Gudeta TA, Regassa TM. Pregnancy Induced Hypertension and Associated Factors among Women Attending Delivery Service at Mizan-Tepi University Teaching Hospital, Tepi General Hospital and Gebretsadik Shawo Hospital, Southwest, Ethiopia. Ethiop J Health Sci. 2019 Jan 29;(1):831-40. DOI PubMed Google Scholar Full Text
8. Bener A, Saleh NM, Al-Hamaq A. Prevalence of gestational diabetes and associated maternal and neonatal complications in a fast-developing community: global comparisons. International Journal of Women's Health. 2011 Nov 7;(3): 367–73. DOI PubMed Google Scholar Full Text
9. Kalyani KR, Jajoo S, Hariharan C, Samal S. Prevalence of gestational diabetes mellitus, its associated risk factors and pregnancy outcomes at a rural setup in Central India. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2014 Mar 1;3(1):219-25. DOI Google Scholar Full Text
10. Joshi A, Yonzon P. Prevalence of gestational diabetes mellitus in Nepal: data from a tertiary endocrine centre in Kathmandu. Conference: IDF Congress. 2019. Link
11. Dewi AC, Ermiati E, Hidayati NO. Pregnant women's knowledge about high risk in pregnancy. Journal of Maternity Care and Reproductive Health. 2018 Dec 26;1(2). Google Scholar Full Text
12. Simarpreet, Mamta, Tondon P, Kaur J. Study on awareness regarding high risk factors of pregnancy among pregnant women. International Journal of Current Research. 2015 Oct 31;7(10): 21868-9. Google Scholar
13. Ponnose R, Karki S. Effectiveness of planned teaching programme on knowledge about high risk pregnancy among Muslim women in the selected ward, Bhairahawa, Nepal. Asian J. Nur. Edu. and Research. 2015 Oct 29;5(3): 323-6. Google Scholar Full Text
14. Nivedita K, Shanthini F. Knowledge, attitude and practices of pregnant women regarding anemia, iron rich diet and iron supplements and its impact on their hemoglobin levels. Int J Reprod Contracept Obstet Gynecol. 2016 Feb;5(2):425-31. DOI Google Scholar Full Text
15. Ghimire N, Pandey N. Knowledge and practice of mothers regarding the prevention of anemia during pregnancy, in teaching hospital, Kathmandu. Journal of Chitwan Medical College. 2013 Sep 15;3(3):14-7. Google Scholar Full Text
16. Berhe AK, Ilesanmi AO, Aimakhu CO, Bezabih AM. Awareness of pregnancy induced hypertension among pregnant women in Tigray Regional State, Ethiopia. Pan African Medical Journal. 2020 Mar 11;35:71). DOI PubMed Google Scholar Full Text
17. Price LA, Lock LJ, Archer LE, Ahmed Z. Awareness of gestational diabetes and its risk factors among pregnant women in Samoa. Hawai'i Journal of Medicine & Public Health. 2017 Feb;76(2):48. PubMed Google Scholar Full Text
18. Khalid T, Shaheen F, Javed N. Awareness regarding gestational diabetes mellitus among pregnant women at tertiary care hospital, Rawalpindi, Pakistan. Pakistan Journal of Medical Research. 2015 Jul 1;54(3):87. Google Scholar Full Text
19. Bhavadharini B, Deepa M, Nallaperumal S, Anjana RM, Mohan V. Knowledge about gestational diabetes mellitus amongst pregnant women in South Tamil Nadu. Journal of Diabetology. 2017 Jan 1;8(1):22-6. Google Scholar Full Text
20. Damor A, Mehta S. Knowledge and Attitude of Antenatal Mother Regarding High-risk Pregnancy in a Tertiary Care Hospital in Western India. National Journal of Community Medicine. 2021 Jan 31;12(01):11-4. Google Scholar Full Text
21. Sator, P. Knowledge, Attitude, and Practice among Antenatal Mother Regarding High-risk Pregnancy in Penampang Health Clinic, Sabah, Malaysia. J Comm Pub Health Nursing. 2019 Aug 23;5(3):231. DOI Full Text