

Assessment of Knowledge of Antenatal Mothers Regarding Selected Health Problems of Complicated Pregnancy- A Cross Sectional Study

R. Johncyrani and Judie Arulappan*

Vice Principal, Indiragandhi college of Nursing, Munshiganj Amethi. UP-State, India.

<http://dx.doi.org/10.13005/bbra/2662>

(Received: 09 July 2018; accepted: 04 September 2018)

Pregnancy and child birth are common and highly important aspects of women's life. The focus of midwifery is on the care of essentially healthy women, and the care extends to women with social, medical or obstetric risk factors. A descriptive study to assess the knowledge of antenatal mothers on selected health problems complicating pregnancy was conducted. 100 antenatal mothers were selected through simple random sampling method. Among 100 antenatal mothers, 83% had inadequate knowledge and 17% had moderately adequate knowledge. There was highly significant association between the knowledge of antenatal mothers and their demographic variables such as educational status, occupation, and monthly income. It is reported that many of the antenatal mothers were having poor knowledge of selected health problems complicating pregnancy and its clinical manifestation and risk factors. Hence, it is necessary to create awareness among antenatal mothers which might improve their health seeking behaviors. This can be achieved by giving health education to the antenatal mothers. So the researcher had given instructional manual to improve knowledge regarding selected health problems complicating pregnancy which included iron deficiency anemia, gestational diabetes mellitus and pregnancy induced hypertension.

Keywords: Gestational diabetes mellitus, iron deficiency anemia, pregnancy induced hypertension, Antenatal woman, health problems complicating pregnancy.

The most common and major health problems of pregnant woman are Gestational Diabetes Mellitus (GDM), iron deficiency anemia and Pregnancy Induced Hypertension (PIH). Complicating pregnancy will have a negative impact on both the mother and the child. Regular prenatal visits help the doctors and nurses to identify potential health problems early and take steps to manage them, to protect the health of the mother and the developing fetus. Being aware of the symptoms of these conditions and getting

regular prenatal care can prevent health problems and help the mothers to get the treatment as early as possible.

The prevalence of GDM is increasing, fueled by advancing maternal age, racial/ethnic shifts in childbearing, and obesity.¹ Prevalence of diabetes is increasing globally, particularly in the developing world with China and India contributing a major part of the increasing burden. A serious concern is that India is projected to have the highest population of people with diabetes in

*Corresponding author E-mail: judie@sq.u.edu.om



the world, by 2030.² In fact, a high prevalence of gestational diabetes mellitus (GDM) of the order of 18% has been reported from India. Women with GDM are at high risk for developing diabetes later in life.³

Anemia is one of the world's leading cause of disability and thus one of the most serious global public health issues. In fact, it involves issues of morbidity and mortality, but it can be mostly the basis of the inability of the woman to react to a postpartum blood loss thus leading to serious consequences.⁴ According to a WHO review of nationally representative survey from 1993 to 2005, anemia affects approximately 42% of pregnant women worldwide (52 and 23% in developing and developed countries, respectively).⁵ Iron deficiency anemia continues to be major public health problem in India. It is estimated that about 20% of maternal deaths are directly related to anemia and another 50% of maternal deaths are associated with it.⁶

PIH is a pregnancy specific multisystem disorder characterized by development of edema, hypertension and proteinuria after 20 weeks of gestation. World Health Organization estimates that at least one woman dies every seven minutes from complications of hypertensive disorders of pregnancy. Pregnancies complicated with hypertensive disorders are associated with increased risk of adverse fetal, neonatal and maternal outcome including preterm birth, intrauterine growth retardation (IUGR), perinatal death, antepartum hemorrhage, postpartum hemorrhage and maternal death.⁷ The incidence of Pregnancy induced hypertension (PIH) in India ranges from 5- 15%. The incidence of PIH in primigravidae is 16% and 7% in multigravidae. Primary pre-eclampsia occurs in 70% of PIH cases and secondary pre-eclampsia occurs in 30% in all PIH cases.⁸

These data shows that the health problems that complicate pregnancy are relatively high in India. Moreover, the pregnant mothers are not aware of these life threatening complications and its preventive strategies. It is very important for women to receive health care before and during pregnancy to decrease the risk of pregnancy complications.

MATERIALS AND METHODS

The study aimed to assess the level of knowledge among antenatal mothers regarding selected health problems and determined the association between the level of knowledge and demographic variables.

The study adopted quantitative research approach and descriptive research design to assess the level of knowledge among antenatal mothers regarding selected health problems complicating pregnancy. The study was conducted in the antenatal clinic of upgraded primary health center, at Andimadam which is situated in Perambalur District, Tamil Nadu, India. This primary health center covers a population of 29,536 and four additional primary health centers.

The population for this study included all the antenatal mothers who were attending the antenatal clinic in primary health center. A total of 100 antenatal women were selected as study samples who met the inclusion criteria such as the antenatal mothers whoever was attending the antenatal clinic in primary health centre, who knows Tamil and English, and who were willing to participate in the study. Convenient sampling technique was used to collect the sample of 100 antenatal mothers.

The data was collected using structured interview questionnaire developed and validated by the investigator of the study. The instrument was divided into two parts. Part I- consisted of demographic data and Part II consisted of questions related to the knowledge regarding selected health problems complicating pregnancy. Structured interview questionnaire had 30 questions. A score of 1 was given to the right answer. Total scores of 30 were given. Scores were interpreted as inadequate knowledge < 50%; moderately adequate knowledge 5-75%; and adequate knowledge > 75%. Ethical clearance was obtained from ethical clearance committee, college of nursing, Saveetha dental college and hospitals, Chennai, Tamil Nadu, India. After getting the content validity from the nursing, medical, and research experts, the pilot study was conducted. 10% of total sample of main study were selected and the tool was tested. No significant modifications were made in the tool

after pilot study. The reliability of the tool was checked by spearman brown formula $r = 2r/1+r$, and the the reliability value was $r = .8392$.

Permission was obtained from Director of public health, Tamilnadu and local permission was received from Medical officer in charge of Andimadam block primary health centre to conduct the main study. Informed written consent was obtained from all the study participants. The data was collected by using interview method. Privacy was maintained. The time of data collection was done from 8 am to 2 pm by spending 30-40 minutes for each participants. The total period of 6 weeks was taken to complete the data collection from 100 samples.

Data was collected, tabulated and analyzed by using descriptive and inferential statistics such as number, mean and standard deviation. Chi-square test was adapted to find out the association between demographic variables with their level of knowledge. Table -1 shows the distribution of Level of Knowledge on GDM, Table-2 depicts the distribution of Level of Knowledge on Iron Deficiency Anemia, Table -3 illustrates the distribution of Level of Knowledge on Pregnancy Induced Hypertension, Table – 4 outlines the distribution of Overall Knowledge on selected health problems complicating pregnancy and Table-5 demonstrates the distribution of Level of Knowledge on educational status, occupation, monthly income.

Table 1. Distribution of Level of Knowledge on GDM

Levels of Knowledge	No.	%
In adequate knowledge	91	91%
Moderately adequate knowledge	9	9%
Adequate knowledge	0	0

Table 3. Distribution of Level of Knowledge on Pregnancy Induced Hypertension

Levels of Knowledge	No.	%
In adequate knowledge	81	81%
Moderately adequate knowledge	19	19%
Adequate knowledge	0	0

RESULTS

The data analysis from table-1 shows that 91(91%) antenatal mothers had inadequate knowledge and 9(9%) antenatal mothers had moderately adequate knowledge on gestational diabetes mellitus. None of them had adequate knowledge.

Table-2 shows that 74 (74%) antenatal mothers had inadequate knowledge and 25 (25%) antenatal mothers had moderately adequate knowledge and only one antenatal mother had adequate knowledge on iron deficiency anemia.

The data analysis from table-3 shows that 81 (81%) antenatal mothers had inadequate knowledge and 19 (19%) antenatal mothers had moderately adequate knowledge and none had adequate knowledge on pregnancy induced hypertension.

The data analysis from table-4 shows the overall knowledge of mothers on selected health problems complicating pregnancy. Out of 100 mothers, 83 (83%) antenatal mothers had inadequate knowledge on gestational diabetes, iron deficiency anemia and pregnancy indeed hypertension and 17 (17%) mothers had moderately adequate knowledge and none had adequate knowledge on the above aspects. The lack of awareness of the health problems complicating pregnancy gave direction to the researcher to intensify the knowledge of mothers through health

Table 2. Distribution of Level of Knowledge on Iron Deficiency Anemia

Levels of Knowledge	No.	%
In adequate knowledge	74	74.0
Moderately adequate knowledge	25	25.0
Adequate knowledge	1	1.0

Table 4. Distribution of Overall Knowledge on selected health problems complicating pregnancy

Levels of Knowledge	No.	%
In adequate knowledge	83	83%
Moderately adequate knowledge	17	17%
Adequate knowledge	0	0

education regarding selected health problems complicating pregnancy.

The results also showed a statistically highly significant association between knowledge of antenatal mothers and their educational status, occupation, monthly income at the level of $P < 0.05$

Distribution of Level of Knowledge on educational status, occupation, monthly income

Transport difficulties, such as poor road conditions, lack of readily available transport, long distance, poor vehicle conditions contributed to prolonged travelling time. These are the factors which prevented them to attend the health care agency and to gain the knowledge regarding selected health problems complicating pregnancy.

DISCUSSION

This study was undertaken to assess the knowledge of antenatal mothers regarding selected health problems complicating pregnancy with a view to find how far the antenatal mother are aware of the health problems that complicate pregnancy, and their participation in utilizing maternal services provided in their area in order to prevent maternal mortality and morbidity.

Among 100 antenatal mothers, 83% had inadequate knowledge and only 17% had moderately adequate knowledge, regarding

selected health problems complicating pregnancy. There was highly significant association between the knowledge of antenatal mothers and their demographic variables such as educational status, occupation, and monthly income. There was no significant association between the knowledge of antenatal mothers and their age, religion, type of family, gravida and source of information. The instructional manual on selected health problems that complicate pregnancy will improve the mother's knowledge on identifying symptoms of health problems and that will enhance their health seeking behavior. The findings of the study will help the nurses in arranging health education sessions on individual basis as well as on group basis to the antenatal mothers.

Our study shows that 74 (74%) antenatal mothers had inadequate knowledge and 25 (25%) antenatal mothers had moderately adequate knowledge and only one antenatal mother had adequate knowledge on iron deficiency anemia. Our study findings are consistent with another study which assessed knowledge of antenatal mothers on anemia during pregnancy. The findings revealed that majority of the antenatal mothers (54%) had satisfactory knowledge, 38% had poor knowledge, and 8% had good knowledge regarding anemia during pregnancy. The overall knowledge in the study population was 29.9%. Hence, the

Table 5.

S. No.	Demographic variables	Levels of knowledge			χ^2 - Value P Value
		Inadequate	Moderately adequate	Adequate	
1.	Educational status				
	a) Non literate	2	-	-	χ^2 - 17.714
	b) Primary School	38	2	-	$P < 0.05$
	c) High School	38	8	-	(sig)
	d) Higher Secondary school	5	6	-	
	e) Graduate	-	1	-	
2.	Occupation				
	a) House wife	78	5	-	χ^2 - 11.56
	b) Coolie	4	9	-	$P < 0.05$
	c) Employed	1	3	-	(sig)
3.	Monthly income in rupees				
	a) Less than 1000	62	2	-	
	b) 1001 – 2000	21	12	-	χ^2 - 14.163
	c) 2001 – 3000	-	3	-	$P < 0.05$
	d) More than 3000	-	-	-	(sig)

researcher emphasizes the need for more research to improve the knowledge of antenatal mothers on anemia during pregnancy.⁹ Another study also highlighted the need to educate the mothers on anemia during pregnancy. The findings of the study illustrated that the knowledge regarding cause of anemia, sign and symptoms of anemia, proper diet to prevent anemia was poor. Knowledge regarding prevention and treatment of anemia, knowledge regarding preventive practice of anemia was good.¹⁰ Thus it is very evident that knowledge of antenatal mothers on anemia that complicate pregnancy is poor and it is necessary to improve the knowledge of mothers to prevent maternal mortality and morbidity.

The present study shows that the 91(91%) antenatal mothers had inadequate knowledge and 9(9%) antenatal mothers had moderately adequate knowledge on gestational diabetes mellitus. None of them had adequate knowledge. Another study supports our study findings. The results reports that overall, 17.5% women had good knowledge, 56.7% had fair knowledge, and 25.8% women had poor knowledge about GDM. The major sources of awareness of GDM were reported to be television/radio, neighbors/friends, and family members.¹¹ A study reported on the knowledge about gestational diabetes mellitus amongst pregnant women in South Tamil Nadu. Among a total of 100 pregnant women attending antenatal clinics, regarding risk factors of GDM, 48.8% of rural women were unaware of any risk factor while 55.9% of urban women reported a family history of diabetes as a risk factor. 49.2% of urban women and 75.6% of rural women did not know the long-term consequences of GDM to babies born to GDM women. 50.8% urban women said that GDM could lead to type 2 diabetes mellitus in future while only 45% of rural women were aware of this.¹² These studies also proves that the knowledge of antenatal mothers on GDM is poor and the need to educate the antenatal mothers is very important.

Our study reported that 81 (81%) antenatal mothers had inadequate knowledge and 19 (19%) antenatal mothers had moderately adequate knowledge and none had adequate knowledge on pregnancy induced hypertension. Our study findings are supported by another study which showed that, the pretest knowledge of maximum number of mothers 26(65.5%) was between the

range of 11-20% (average). The mean knowledge score was 14.88 whereas the maximum possible score was 30. The mean percentage knowledge in the area of basic factors of PIH was 43.75%, clinical features 41%, diagnosis 44%, management 57.5%, diet 50%, complication 50%, and prevention 58%. The study also reported that there was significant association between pretest level of knowledge and age, educational status, occupation, monthly income, parity, gestational age, history of hypertension in previous pregnancy.¹³

In general, many of the research studies carried out in various parts of the nation reported that the knowledge of antenatal mothers on health problems complicating pregnancy is poor. The studies advocates on the significance of creating awareness on the major health problems complicating pregnancy such as Iron deficiency anemia, gestational diabetes mellitus and pregnancy induced hypertension. If the mothers are educated on the prevention and management of these major health problems, the wellness of the mothers and the newborns can be enhanced. Our study strongly recommends the need to have health education clinics in the antenatal outpatient departments to enhance the knowledge, attitude and practice of antenatal mothers. Thus, the health seeking behavior of antenatal mothers will be improved.

The investigator of the study shared instructional manual regarding the identification, prevention and management of gestational diabetes mellitus, iron deficiency anemia, and pregnancy induced hypertension to improve the antenatal mother's knowledge and health seeking behavior.

Limitations of the study

The study limits the generalization of research findings as the study is conducted in one setting with limited number of samples.

CONCLUSION

Our study concludes that many of the antenatal mothers were having poor knowledge of selected health problems complicating pregnancy, its clinical manifestation, and risk factors. So there is necessity to bring the awareness which might improve their health seeking behaviors. This can be achieved by giving health education to the antenatal mothers. The antenatal mothers were motivated to utilize the health services available in their area

and were encouraged to have regular antenatal visits during their first, second and third trimester of pregnancy. Home visits by village health nurse were emphasized with health education to antenatal mothers on health problems that complicate pregnancy.

ACKNOWLEDGEMENT

Prof. Sundaram, Principal, College of Nursing, Saveetha Dental College and Hospitals, Chennai is hereby acknowledged for his encouragement, valuable suggestions, support and advice given throughout the study.

REFERENCES

1. Kim C. Gestational diabetes: risks, management, and treatment options. *International journal of women's health*. 2010; **2**:339.
2. Shaw JE, Sicree RA, Zimmet PZ. Global estimates of the prevalence of diabetes for 2010 and 2030. *Diabetes research and clinical practice*. 2010; **87**(1):4-14.
3. Seshiah V, Balaji V, Balaji MS, Sanjeevi CB, Green A. Gestational diabetes mellitus in India. *Japi*. 2004; **52**:707-11.
4. World Health Organization. Iron deficiency anemia. Assessment, prevention, and control. A guide for programme managers. 2001:47-62.
5. Benoist BD, McLean E, Egll I, Cogswell M. Worldwide prevalence of anaemia 1993-2005: WHO global database on anaemia. Worldwide prevalence of anaemia 1993-2005: WHO global database on anaemia. 2008.
6. Anand T, Rahi M, Sharma P, Ingle GK. Issues in prevention of iron deficiency anemia in India. *Nutrition*. 2014; **30**(7-8):764-70.
7. National High Blood Pressure Education Working Group. Report on high blood pressure in pregnancy. *Am J Obstet Gynecol*. 1990; **163**:1689-712.
8. Raddi Sudha A, Nayak Baby S, Prakash Ratna RP. Stress, Coping Strategies, Quality of Life and Lived Experiences of Women with Pregnancy-induced Hypertension. *Journal of South Asian Federation of Obstetrics and Gynecology*. 2009; **1**(1):65-8.
9. Baby A, Venugopal J, D'silva R, Chacko S, Vineesha PV, Kumary TV. Knowledge on management of anemia during pregnancy: a descriptive study. *Archives of Medicine and Health Sciences*. 2014; **2**(2):140.
10. Yadav RK, Swamy MK, Banjade B. Knowledge and Practice of Anemia among pregnant women attending antenatal clinic in Dr. Prabhakar Kore hospital, Karnataka-A Cross sectional study. *Literacy*. 2014; **30**(34):18.
11. Shriram V, Rani MA, Sathiyasekaran BW, Mahadevan S. Awareness of gestational diabetes mellitus among antenatal women in a primary health center in South India. *Indian journal of endocrinology and metabolism*. 2013; **17**(1):146.
12. 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; **8**(1):22.
13. Joseph Sr J, Nayak S, Fernandes P, Suvarna V. Effectiveness of Antenatal care package on knowledge of Pregnancy Induced Hypertension for Antenatal mothers in selected hospitals of Mangalore. *Nitte University Journal of Health Science*. 2013; **3**(1):8.