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RISK STATUS ASSESSMENT IN PREGNANT WOMEN PRESENTING FOR ANTENATAL CARE IN URBAN HEALTH CARE FACILITY – A CROSS SECTIONAL STUDY

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[doi: 10.33472/AFJBS.6.11.2024.1329-1336](https://doi.org/10.33472/AFJBS.6.11.2024.1329-1336)**Abstract:**

Introduction The number of pregnancies in less developed countries is many times higher when compared to the number of pregnancies in women in developed countries, leading to higher mortality in these women. Hence this study was to planned to evaluate the risk status of pregnant women presenting for antenatal care in an urban health facility.

Methodology: 214 pregnant women who attended antenatal clinics for antenatal check-up were included as study participants. Data was obtained from each participant regarding age group, number of children, past history of maternal complications and medical history, mother's educational status, time since last child birth, maternal age at index pregnancy. A scoring system devised by World Health Organisation (WHO) was used.

Result: The research indicated that 60.3% of the participants were between the ages of 20 and 24. Majority (50.9%) were educated till secondary. More than 90% were unemployed. Majority (53.3%) had a inter pregnancy interval of less than one year and were also found to be (56.5%) anaemic.

Conclusion: Our study showed that many rural women who were carrying at-risk babies did not receive adequate modern prenatal care during their pregnancy.

Keywords: maternal health, antenatal services, risk status, WHO scoring system

1. INTRODUCTION

Worldwide in the year 2017, deaths connected to pregnancy and childbirth resulting from avoidable causes attributed to around 750 deaths every day. More than 90% of these deaths happen in the countries belonging to the lower income strata.¹Maximum risk is associated with young adolescents (ages 10-14) due the complications that occur during pregnancy and child birth compared to other women. While the chances of mortality is maximum for teenage girls below the age of 15 years, complications during pregnancy and child birth are mainly seen among teenage girls between the age band of 10-19 years in contrast to teenage girls falling in the age band of 20-24 years.^{2,3}

The number of pregnancies in less developed countries is many times higher when compared to the number of pregnancies in women in developed countries, leading to higher mortality in these women. Majority of the complications arising out of pregnancy and child birth can be definitely detected at a reasonably earlier stage, some of which are anaemia, pregnancy induced hypertension, gestational diabetes mellitus, cardiac disease, renal disease, urinary infection, thyroid dysfunction, blood incompatibility, tuberculosis, pelvic diseases like uterine myomas, endometriosis, ovarian tumour, anatomical defects like uterine anomalies, incompetent cervix, malnutrition, congenital defects etc.1 women out of 5300 in developed countries die due to either late diagnosis of pregnancy related complication or late treatment

for the same in contrast to 1 women in 46 in low income countries.⁴ Our nation with a estimated maternal mortality ratio of 103 in the year 2017-2019 still has a long way to go for reaching the sustainable development goal(SDG) of 70 per lakh live births by the end of 2030.⁵

Maternal health care remains a main issue and obstacle to public health within developing countries. Pregnancy is a special event and family and community should treat pregnant women with particular care. Provision of antenatal services is valuable in protecting the health of pregnant women and ensuring successful outcome in pregnant women. Antenatal care is the 'care before birth' to promote the wellbeing of mother and foetus throughout pregnancy and child birth. Adequate and timely antenatal care can predict and manage pregnancy complications for antenatal care to be effective. So the main purpose of good care in pregnancy is to pick up those women who are at a substantially increased chance of developing complications from general population and provide appropriate skilled care.⁶ WHO has come out with a simple scoring method that can be utilised to know the risk category of pregnancy.⁷ It consist of maternal indicators like age, number of children, past medical diseases and complications, maternal education and time since last delivery. The use of risk approach as a managerial tool by ground level health care workers at primary health centre can help in early detection of pregnancy and child birth related complications

Objective: To assess the risk status of pregnant women presenting for antenatal care in an urban health facility.

2. METHODOLOGY

Study setting: Urban health care facility of field practice area of community medicine

Study design: Cross sectional study

Study period: January 2020 to December 2021

Study population: Pregnant women attending antenatal clinics under urban health centre

Sample size: 214 pregnant women

Sampling method: All pregnant women attending antennal clinic for antenatal check-up during this study period were chosen by universal sampling method. Data was obtained from each participant regarding their age group, number of children, past history of maternal complications and medical history, mother's educational status, time since last child birth, maternal age at index pregnancy. Haemoglobin estimation, random blood sugar, urine sugar was done for every patient.

Information was collected using pre designed and pre tested questionnaire. Risk status was assessed using a simple scoring system devised by the World Health Organization (WHO).⁷

Maternal characteristics	Score
Age Group	Points
<19 yrs or >40 yrs	4
30-39 yrs	2
20-29 yrs	0
Number of children	Points
>10 children	4
0-1 child	2
2-9 children	0
Medical history	Points
Past obstetric complications, perinatal deaths	3
Diabetes, Heart disease, Renal disease, psychosis	5

Maternal Education	Points
Illiterate	1
Literate	0

Distinct maternal characteristics of interest were given distinct points under the scoring system.

Score	Risk status
0 to 2	Less risk
3 to 5	High risk
More than 5	Very High risk

Inclusion criteria:

All participants with positive urinary pregnancy test.

Women of all ages and trimester were included

Exclusion criteria: Patients undergoing obstetrics emergency needing urgent medical management and those who did not agree to participate were excluded

Informed written consent was obtained from every study participant.

Ethical clearance was obtained from Institutional Ethics committee.

Data Analysis: Data was analysed using R software version 3.6.1 (R Foundation of Vienna, Austria). To check the normality of variables, Shapiro-Wilk's test was used. Categorical variables were represented in the form of frequency. Chi square test was done. A value of $p < 0.05$ was considered as significant.

3. RESULTS:

Mean age of the participants in the study was 23.52 ± 3.374 years. 18 years was the minimum age and 35 years was the maximum. 60.3% of the participants were between the ages of 20 and 24 years. Almost half of them (50.9%) were educated till secondary level of education. More than 90% were unemployed. Majority (53.3%) had a inter pregnancy interval of less than one year and more than half (56.5%) were anaemic. 15% of the participants were at very high risk while 22% were at high risk. More than 50% of the study participants who were at high risk for complications took antenatal care in the latter stages of second and third trimester of pregnancy which was found to be associated with risk scores ($p < 0.05$).

4. DISCUSSION:

The concept of risk approach is most suited for needs of maternal and child health particularly as a part of primary health care, since this type of care requires continuity of inputs and supervision.

According to the current study's findings, there were 62.1% of "no risk" pregnancies, 22% of high risk pregnancies, and 15.9% of very high risk pregnancies. This can be compared to a previous study in Nigeria⁸, which used the same scoring system to calculate individual risk scores. As such according to World health organisation pregnancy should be registered early in first trimester so that it is possible to have good idea regarding certain baseline parameters and calculation of expected date of delivery but in our study more than 50% of the study participants who were at high risk for complications took antenatal care in the latter stages of second and third trimester of pregnancy which was found to be associated with risk scores ($p < 0.05$) which is similar to study conducted in Bhopal⁹, Karnataka¹⁰, Pudhucherry¹¹. While research from Telangana¹² and Saudi Arabia¹³ revealed that 44.1% of women registered for pregnancies before 12 weeks and 55.9% did so after 12 weeks.

In the current study, anaemia affected nearly half of the pregnant women. It is estimated that 40% of pregnant women globally¹⁴ are anaemic with highest prevalence of 52% in WHO regions of South East Asia¹⁵.

This study demonstrated that a considerable fraction of urban women, particularly those who reside in slum regions and have at-risk pregnancies, experience their pregnancy without receiving adequate modern antenatal care. The health institutions at national and state level needs to step up its health awareness programs to inform expectant mothers of the advantages of using contemporary antenatal care services.

Table 1: Demographic characteristics of study participants (n=214)

Characteristics		No. (%)
Age group	<19 years	14 (6.5)
	20-24 years	129 (60.3)
	25-29 years	55 (25.7)
	≥30 years	16 (7.5)
Education	Illiterate	18 (8.4)
	Primary	49 (22.9)
	Secondary	109 (50.9)
	College	38 (17.8)
Occupation	Labour	7 (3.3)
	Self employed	4 (1.9)
	Student	38 (17.8)
	Unemployed	202 (94.4)
Religion	Hindu	103 (48.1)
	Muslim	97 (45.3)
	Christian	14 (6.5)

Table 2 : Maternal characteristics of study participants.

Maternal Characteristics		No. (%)
Time of last delivery (months)	<12	114 (53.3)
	13-24	54 (25.2)
	25- 36	23 (10.7)
	≥37	23 (10.7)
Number of children	0-1	177 (82.7)
	2-5	44 (19.4)
History of previous obstetric complications	Gestational Diabetes	1 (1.5)
	Pre- Eclampsia	3 (1.9)
	Pre-term	5 (2.3)
	Post term	1 (1.5)
	IUGR	8 (3.7)
Anaemia	Yes	121 (56.5)
	No	93 (43.5)

Table 3: Risk status according to WHO scoring system:

Risk status	Risk status score	No. (%)
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Normal	0-2	133 (62.1)
High risk	3-5	47 (22.0)
Very high risk	>5	34 (15.9)

Table 4: Association between Risk status of pregnant women and time of registration for antenatal care

Risk status	Registration of pregnancy			Total
	1 trimester	2 trimester	3 trimester	
At risk	16 (19.8)	50(61.7)	15 (18.5)	81
No risk	16 (12)	103 (77.4)	14 (10.5)	133

$\chi^2=6.120$

df= 2

p=0.047

Table 5: Predictors of antenatal care

Variables		Gestational age ≤ 12 wks	Gestational age > 12 wks	χ^2	P
		No (%)	No (%)		
Education	Illiterate	5 (27.8)	13 (72.2)	1.560	0.212
	Literate	27(13.8)	169 (86.2)		
Age(in years)	<19	2 (14.3)	12 (85.7)	0.091	0.956
	20-29	28 (15.2)	156 (84.8)		
	>30	2 (12.5)	14 (87.5)		
Previous LSCS	Yes	6 (24)	19 (76)	1.105	0.293
	No	26 (13.8)	163 (86.2)		
Socioeconomic status	I	0 (0.0)	6 (100)	0.865	0.105
	II	2 (4.9)	39 (95.1)		
	III	18 (16.2)	93 (83.8)		
	IV	8 (26.7)	22 (73.3)		
	V	4 (15.4)	22 (84.6)		
Religion	Hindu	15 (14.6)	88 (85.4)	0.865	0.649
	Muslim	16 (16.5)	81 (83.5)		
	Christian	1 (7.1)	13 (92.9)		

5. CONCLUSION

Only 6.5% of participants were younger than 19 years, while the majority (86%) were in the 20-to-29 age range. Majority (78.5%) had inter-pregnancy interval of less than two years and around half of the participants had interval less than one year. Prevalence of anaemia in our study was 56.5%. Around 22% of them were categorised as high risk cases and 15.9% as very high risk cases. In our study more than 50% of the study participants who were at high risk for complications took antenatal care in the latter stages of second and third trimester of pregnancy which was found to be associated with risk scores ($p < 0.05$). The risk approach can be used as a managerial tool to assess the risk status of pregnant women presenting for antenatal care which in turn can improve the coverage and quality of MCH/Family planning services and prevent maternal mortality.

Recommendations

- Training of the paramedical staff to use risk approach as a tool to identify risk pregnancy.
- Scoring should be done in first visit to assess the risk status, classify them and give appropriate care and continue to give appropriate care.
- Women with higher risk should be referred to higher centres for further management. Remaining pregnant women must be given care at primary health care level only.

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