

Assessment Of The Perception And Involvement Of Male Partners Of Antenatal Mothers In Maternity Care At Outpatient Department Of Selected Hospitals, Kolkata

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Abstract:

Background: Maternal and Child Health is a key index of any nation's development. Reduction of maternal and infant mortality rate were a component in the Millennium Development Goals and again incorporated in the Sustainable Development Goals (SDGs). Reducing the maternal mortality (SDG 3.1) and infant mortality (SDG 3.2) is fundamental for ensuring a healthful life and promoting the well-being for all ages by 2030.¹

Materials and Methods: A descriptive survey was undertaken on assessment of the perception and involvement of male partners of antenatal mothers in maternity care at outpatient department of selected hospitals, Kolkata to identify the perception and involvement of male partners of antenatal mothers in maternity care and find out the association between perception and involvement of male partners with selected demographic variables. The conceptual framework adopted was based on the Health Belief Model (Rosenstock, Strecher and Beckers 1988). A descriptive survey research design was followed. Semi structured interview schedule, structured knowledge questionnaire and structured four- point rating scale were used to collect data from 252 male partners of antenatal mothers selected by non-probability convenience sampling technique.

Results: The study findings revealed that 59% of the respondents had average knowledge and 82% had good involvement in maternity care. The Knowledge score of the respondents was significantly associated with educational status of the subjects [$\chi^2=18.26$, $df(1)$, $p<0.001$], their occupation [$\chi^2=4.18$, $df(1)$, $p<0.05$], education of their wives [$\chi^2=9.36$, $df(1)$, $p<0.01$] and gravida of their wives [$\chi^2=5.87$, $df(1)$, $p<0.02$]. This study can also be repeated using different setting and teaching strategies.

Keyword: Male partners, Perception of maternity care, involvement in maternity care.

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I. Introduction

Pregnancy is a joyful event but the scenario as estimated by the World Health Organization (WHO) in 2014 is that one mother dying in every 2 minutes, 800 each day, another 7-10 million women and girls suffer from severe or long-lasting illness caused by complications in pregnancy and childbirth.¹ A high burden of maternal deaths (99%) is occurred by the developing countries. Worldwide, over one third of all maternal death were in Nigeria and India in 2015, approximately 58,000 (19%) and 45,000 (15%) maternal death respectively.² Examining men's perception, attitude and involvement in maternal care, 51.5% of the respondents had poor knowledge though, 56.5% had a good attitude towards maternal health care. Regarding the involvement of the husband in maternal health care of their wives, about a quarter (29.1%), (24.0%), (27.1%) ever followed their wives to family planning clinic, ante-natal clinic and the delivery room respectively. So, the awareness level of men about maternal health was high, but their involvement in giving care was poor and only about half of them had good attitude towards maternal health care. Education and awareness programs should therefore be carried out by government agencies, non-government organizations and other voluntary groups to improve involvement of men in maternal health care.¹¹

The World Health Organization (WHO) suggests a focused ANC model in 2016 to ensure improvement in maternal health. One of these focused models for promoting the health of women and children is to support male involvement in maternal health care.¹⁵ ANC provides pregnant mother with information, manage social and medical conditions and screen for high- risk conditions. Still, it is not enough to receive adequate ANC as majority of the fatal complications occurs within the intra natal period or just after delivery. So, the presence of skilled obstetric attendance is mandatory. But, proper utilization of ANC services is still restricted due to various cultural and demographic factors resulting disproportion between high- and low-income countries regarding use of antenatal, intra natal and postpartum services. Study estimated that, about 97% of the pregnant women receive ANC and 99% utilizes trained birth attendants in developed countries while

only 65% and 53% possess in developing countries respectively.¹⁰The involvement of men in maternal and child health services facilitates the improved engagement with health service providers, thus presenting an opportunity to acquire health education and access to health services, improving family planning services, promoting awareness about obstetrical danger sign, making effective health care decision for their partners and children and unborn child. It also facilitates communication which leads to reduction of maternal workload, encourages postnatal care attendance, infant feeding practices and childhood immunization. Evidence showed that 39% of the respondents expressed that male involvement was important part in maternity care, 55% thought it was not, and 6% were indifferent. The respondents who confirmed that the male participation in MCH was not important because, MCH was a women's issue and men should not directly impact. 68% male respondents and 49% female respondents mentioned lack of interest as the main reason for less involvement of men in MCH care. 20% male respondents showed the cause behind that, most men were occupied with activities to meet the financial needs of their families and engaging in agricultural activities.⁵ Many factors that hinder male partners involvement in maternal and child health care are well documented and related to the traditional gender roles at home, fear of HIV testing, infrastructure and policies in health facilities. The majority of women (93.6 %) were willing to their husbands to accompany them to ANC.⁶ Improving the maternal as well as fetal health requires the men's increased knowledge, understanding as well as positive attitudes about perinatal care in different societies. Active participation of men in Antenatal Care (ANC) has been acknowledged by the World Health Organization as a key indicator for better maternal outcome as if male partners are involved, mothers get better antenatal care, makes the labour process easier and increase psychological satisfaction. The special importance was put on the requirement for training the husbands interested in involving in various maternity care, especially physical changes in pregnancy, prenatal nutrition and high -risk clinical features.³ So the researcher would like to conduct this study that will help to find out the level of knowledge of male partners of antenatal mothers regarding maternity care and their involvement in it, thus assisting the health planners, policy makers and administrators to make the policies and modify teaching strategies to improve the overall health status of the mother and child.

II. Material & methods

This study was conducted in March, 2022 on male partners of antenatal mother who were accompanying their wife during regular antenatal check-up.

Study approach: Quantitative research approach

Study design: Descriptive survey research design

Study Location: This was a OPD based study done at antenatal outpatient department of IPGME&R and SSKM Hospital, and Chitta Ranjan Seva Sadan Hospital, Kolkata, West Bengal, India.

Study Duration: 1st March, 2022 to 31st March, 2022

Variables under the study:

Research variables: Perception of maternity care, involvement in maternity care.

Demographic variable: Age, habitat, educational status, occupation, type of family, number of family member, family income per month, duration of marriage, gravida of spouse, educational status of spouse, occupation of spouse, number of children.

Sample size: 252

Sample size calculation: Sample size calculation was done using the formula for sample size determination is,
 $n = t^2 \times (p \times q) / d^2$

Here n = Required sample size

t = 1.96, standard deviation score for 95% set interval

p = Assumed proportion of male partners having perception and involvement in maternity care as estimated in West Bengal is 76.25% i.e., 0.7625

q = (1-p) = (1 - 0.7625) = 0.2375

d = Margin of error, that is 5% (0.05)

So, $n = (1.96)^2 \times (0.7625 \times 0.2375) / (0.05)^2$

n=276.48

So, for the present study the required sample size was 276. But depending on the OPD attendance and the time frame for a dissertation the investigator collect data from 252 samples

Subjects and selection method: Sample selection was done by non-probability convenience sampling technique. As the study was undertaken in the outdoor setting, it was not possible to get the list of accessible population. So, the subjects were selected in this technique due to their convenient accessibility and proximity to the researcher.

Inclusion criteria:

1. Male partner of antenatal mother of 24 to 37 weeks gestation.
2. Who were willing to participate in this study.

Exclusion criteria:

1. Spouse of parturient women.
2. Husband of pregnant women with immediate high- risk condition (Dribbling of amniotic fluid, APH, less fetal movement, Fetal distress).
3. Spouse of pregnant women who must go to other department for referral purpose or investigation after antenatal check up (from OPD to emergency department, Endocrinology, Cardiology, Neurology, Nephrology, Dermatology, Psychiatry, pathology, and USG department).

Procedure methodology:

Formal permission was obtained from the concerned authorities of the selected hospitals. The data collection schedule was planned according to the schedule of the outpatient department clinic. After obtaining the written informed consent from the subjects, the researcher gathered necessary information from them by face-to-face interview individually by using Bengali version of the tool and each respondent was interviewed for 35-40 minutes. She administered a semi structured interview schedule for collecting background data which include age (in years), habitat, educational status, occupation, type of family, number of family member, family income per month (in rupee), duration of marriage (in years), gravida of spouse, educational status of spouse, occupation of spouse and number of children., The level of perception was determined by the obtained knowledge score of the respondents on pregnancy related care. This tool was designed with twenty-five (25) multiple choice items of 15 (60%) knowledge based, 7 (28%) application based 3 (12%) understanding based. Each item carries one (1) for the correct response and zero (0) for the incorrect response. The content area of blue print includes Antenatal visit and investigation, Antenatal care, Complication during pregnancy, and Birth preparedness. The answer key was prepared. The maximum score was 25 and minimum score was zero (0). Score ranges between 21 to 25 indicates very good perception level on maternity care. Structured Four-point Rating Scale was prepared to collect data related to involvement of the respondents in maternity care during antenatal period. This tool was designed with thirty (30) items. Each item carries 4 as the maximum possible score and 1 for the minimum possible score. The responses were marked in one of the four columns and marked according to scoring keys such as: never-1, often-2, very often- 3, always -4. So, the highest possible score is 120 and lowest possible score is 30. Score ranges between 97 to 120 indicates very good involvement level in maternity care. The tools were checked by the English and Bengali language expert. The content validity was established by six experts chosen based on their clinical expertise, experience, and interest in the problem area. The experts were requested to give their valuable opinions on relevance, clarity, simplicity and ambiguity of the items. Item validity index had been calculated for each item of tool I, tool II and tool III. For tool I, there was 100% agreement for all twelve (12) items. For tool II, there was 97.6% agreement for twenty- five (25) items. For tool III, there was 98% agreement for thirty (30) items. Some modifications were made and retained the item according to their suggestion and after discussion with the guide. Pre-testing was done on 20 male partners of antenatal mother. They were selected on basis of the set sampling criteria (inclusion and exclusion). Reliability testing to find out the internal consistency of the tool was conducted upon 20 sample. Reliability of tool II was computed by split half method and it was 0.92. While, reliability of tool III was computed by Cronbach's alpha formula and it was 0.81. Ethical approval was obtained from the IPGME&R Research Oversight Committee, Kolkata – 20. Administrative permission was obtained from all concerned authorities. The need and nature of the study and the tool were explained to the subjects and ensured confidentiality and anonymity of their information. Informed written consent was obtained from the respondents.

Statistical analysis:

The obtained data were analyzed by SPSS version-20 using both descriptive and inferential statistics based on the objectives of the study. The results were organized in different sub sections e.g., **Section I:** Description related to the demographic characteristics of the respondents, **Section II:** Findings related to the

perception of male partners of antenatal mother regarding maternity care, **Section III:** Findings related to the involvement of male partners of antenatal mother in maternity care, **Section IV:** Finding related to association between perception and involvement of male partners with selected demographic variables and presented in tables. Descriptive statistics were used for analysis of the data in terms of Demographic variables with frequency and percentage and Central tendency and standard deviation on perception and involvement score. Inferential statistics were used in terms of Chi-square for assessing association between perception and involvement with selected demographic variables.

III. Result:

Description of Sample Characteristics:

A total 252 respondents presented in the outpatient department of selected hospitals of Kolkata, West Bengal, India were included in final analysis.

1. Near about half of the male partner of antenatal mothers (116; 46%) belonged to the age group 28-34 years, followed by 21-27years (61;24%),35-41years (52;21%), 42-48 years (20;8%) and 49-58 years (3;1%) age group.
2. Majority of them (160; 63%) lived in rural area and rest of them (92;37%) lived in urban area.
3. Majority of the respondents (140; 56%) had secondary level of education followed by graduate and postgraduate (53; 21%), Higher secondary (38;15%), Primary level (11;4%) and Illiterate (10;4%).
4. Majority of the respondents (87; 35%) were engaged in service, followed by self employed (75;30%), business (54;21%), daily labour (34;13%) and among all of them 2 (1%) respondents were student.
5. Three-fourth of the respondents (188; 75%) belonged to joint family and rest (64;25%) were in nuclear family.
6. Maximum of them (186; 74%) had 2-5 family member followed by (48;19%) of 6-9 family member, (13;5%) of 10-13 family members and (5;2%) of 14-17 family members.
7. About three fourth of the respondents (186; 73.8%) had monthly family income between Rs. 2000-20,000/- followed by (55;21.8%) between 20,001-50,000/-,(7;2.8%) between 50,001-1,00,000/- and (4;1.6%) between 1,00,001-2,00,000/-.
8. Near about one third of the respondents (85; 34%) belonged to middle class followed by upper middle class (71;28%), lower middle class (52;21%), upper class (31;12%) and lower class (13;5%)
9. Majority of the respondents (153; 61%) got married for 1-4 years followed by 5-8 years (48;19%), 9-12 years (40;16%) and 13-18 years (11;4%).
10. More than half of the spouse of respondents (139; 55%) were primigravida and rest (113;45%) were multi gravida.
11. Majority of the respondents (187; 70%) had no child.54 (22%) respondents had one child and rest (11;4%) had two children.
12. Majority of the spouse of respondents (111; 44%) had secondary level of education followed by higher secondary level (69; 27%), graduate and above (54;22%), primary level (11;4%), and illiterate (7;3%).
13. Maximum of their spouse (214; 85%) were home maker followed by in service (13;5%), student (10;4%) self employed (8;3%), daily labour (5;2%), and in business (2;1%).

Table 1: Frequency and percentage distribution of male partners of antenatal mothers according to the sample characteristics

n=252		
Variables	Frequency	Percentage
Age in years		
21-27	61	24
28-34	116	46
35-41	52	21
42-48	20	8
49-58	3	1
Habitat		
Rural	160	63
Urban	92	37
Educational status		
Illiterate	10	4
Primary	11	4
Secondary	140	56
Higher Secondary	38	15
Graduate and Postgraduate	53	21
Occupation		
Service	87	35
Business	54	21
Self employed	75	30

Daily labour	34	13
Student	2	1
Type of family		
Nuclear	64	25
Joint	188	75
No. of family members		
2-5	186	74
6-9	48	19
10-13	13	5
14-17	5	2
Family income per month (Rs.)		
2,000 - 20,000	186	73.8
20,001- 50,000	55	21.8
50,001- 1,00,000	7	2.8
1,00,001- 2,00,000	4	1.6
Socio-economic status		
Upper -class I (7863 and above)	31	12
Upper middle -class II (3931-7862)	71	28
Middle- class III (2359- 3930)	85	34
Lower middle -class IV (1179-2358)	52	21
Lower- class V (<1179)	13	5
Duration of marriage (in years)		
1-4	153	61
5-8	48	19
9-12	40	16
13-18	11	4
Gravida of spouse		
Primigravida	139	55
Multi gravida	113	45
No. of children		
No child	187	74
One child	54	22
Two children	11	4
Education of spouse		
Illiterate	7	3
Primary	11	4
Secondary	111	44
Higher secondary	69	27
Graduate and above	54	22
Occupation of spouse		
Home maker	214	85
Service	13	5
Business	2	1
Self employed	8	3
Labour	5	2
Student	10	4

Findings related to the perception of male partners of antenatal mother regarding maternity care in terms of knowledge:

1. Range of possible knowledge score was 0-25 and range of obtained knowledge score was 5-20.
2. Calculated mean of the knowledge score was 12.15 ± 2.96 and median was 12. As the mean and median are nearly similar, so the knowledge score of the subjects regarding maternity care was normally distributed.
3. Majority of the respondents (59%) had average knowledge regarding maternity care followed by poor knowledge level (70;28%) and good knowledge level (34;13%).
4. Highest mean percentage of knowledge score was in the area of birth preparedness (64.2%) followed by antenatal care (50.17%), antenatal visit and investigations (47.22%). Maximum knowledge deficit was in the area of complication during pregnancy (35.38%).

Table 2: Distribution of maximum possible score, range, mean, median and standard deviation of obtained knowledge score of respondents regarding maternity care.

n=252					
Variables	Range of possible score	Range of score obtained	Mean	Median	Standard deviation
Perception of maternity care	0-25	5-20	12.15	12	2.96

Table 3: Frequency and percentage distribution of respondents according to their level of perception of maternity care in terms of knowledge

n= 252

Knowledge score	Range of score	Frequency	Percentage
Very good (> 80%)	21-25	Nil	0
Good (61-80%)	16-20	34	13
Average (41-60%)	11-15	148	59
Poor (≤ 40%)	≤ 10	70	28

Table 4: Area wise distribution of mean score, mean percentage and rank of knowledge of respondents in maternity care

n=252

Area	Maximum possible score	Mean score	Mean percentage	Rank order
Birth preparedness	5	3.12	64.20	1 st
Antenatal care	7	3.51	50.17	2 nd
Antenatal visit and investigation	7	3.30	47.22	3 rd
Complication during pregnancy	6	2.12	35.38	4 th

Findings related to the involvement of male partners of antenatal mother regarding maternity care:

1. Range of possible involvement score was 30-120 and range of obtained involvement score was 58-107
2. Calculated mean involvement score was 81.09 ±8.05 and median was 82. As the mean and median are nearly similar, so the involvement score of the subjects in maternity care was normally distributed.
3. Most of the respondents (82%) had good involvement in maternity care followed by average involvement (38;15%) and very good involvement (7;3%).
4. Highest mean percentage of involvement score was in the area of financial involvement (83%) followed by involvement in birth preparedness (75.28%), companionship (72.93%), physical involvement (57.75%) and psychological involvement (53.35%).

Table 5: Distribution of maximum possible score, range, mean score, median and standard deviation of involvement in maternity care

n=252

Variable	Range of possible score	Range of score obtained	Mean	Median	Standard deviation
Involvement in maternity care	30-120	58-107	81.09	82	8.05

Table 6: Frequency and percentage distribution of male partners of antenatal mothers according to their level of involvement in maternity care

n=252

Level of involvement	Range of score	Frequency	Percentage
Very good (>80%)	97-120	7	3
Good (61-80%)	73-96	207	82
Average (41-60%)	49-72	38	15
Poor (≤ 40%)	≤48	Nil	Nil

Table 7: Area wise distribution of mean score, mean percentage and rank of involvement of respondents in maternity care

n=252

Area	Maximum possible score	Mean score	Mean percentage	Rank order
Financial involvement	24	19.92	83.00	1 st
Birth preparedness	28	21.08	75.28	2 nd
Companionship	16	11.67	72.93	3 rd
Physical involvement	24	13.86	57.75	4 th
Psychological involvement	28	14.94	53.35	5 th

Association between perception of the respondents regarding maternity care and selected demographic variables: Chi square value depicted that-

- The knowledge score was dependent on the educational status of the subjects as evident from calculated chi square value [$\chi^2=18.26, df (1), p < 0.001$].

- The knowledge score was also dependent on the occupation of the subjects as evident from computed chi square value [$\chi^2= 4.18,df (1), p< 0.05$].
- There was disproportionate association found between gravida of the spouse and knowledge score of the respondents as evident from calculated chi square value [$\chi^2=5.87, df (1), p< 0.02$].
- The knowledge score of the respondents was also dependent on the educational status of the subject's spouse as evident from computed chi square value [$\chi^2=9.36, df (1), p< 0.01$].
- There was no significant association of knowledge scores and socio- economic status of the respondents as evident from calculated chi square value [$\chi^2= 2.95, df (1), p>0.05$].
- The knowledge scores of the subjects were not dependent on their number of children as evident from computed chi square value [$\chi^2=1.93,df (1), p> 0.05$].

Table 8: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and educational status

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
Education ≤secondary	91	70	161	18.26***
Higher secondary to post graduate	26	65	91	
Total	117	135	252	

$\chi^2_{0.001(1)} = 10.83$

Table 9: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and occupation

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
Occupation Employed	31	56	87	4.18*
Unemployed	81	84	165	
Total	112	140	252	

$\chi^2_{0.05(1)} = 3.84$

Table 10: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and gravida of spouse

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
Gravida of spouse Primigravida	55	84	139	5.87*
Multigravida	62	51	113	
Total	117	135	252	

$\chi^2_{0.02(1)} = 5.41$

Table 11: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and educational status of spouse

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
Education of spouse ≤Secondary	72	57	129	9.36**
Higher secondary to post graduate	45	78	123	
Total	117	135	252	

$\chi^2_{0.01(1)} = 6.64$

Table 12: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and Socio-economic status as per modified BG Prasad Socio-economic Classification, updated May 2021

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
Socio economic status Up to middle class	76	72	148	2.95

Above middle class	42	62	104
Total	118	134	252

$$\chi^2_{0.05(1)} = 3.84$$

Table 13: Chi square test of association and its significance existing between perception of maternity care in terms of knowledge and number of children

n=252

Variables	Knowledge score		Total	Chi square
	<Median	≥Median		
No. of children				
No child	82	105	187	1.93
1-2 children	35	30	65	
Total	117	135	252	

$$\chi^2_{0.05(1)} = 3.84$$

Association between involvement of the respondents and selected demographic variables: Chi square value depicted that-

- The physical involvement was disproportionately dependent on the number of family members of the subjects as evident from calculated chi square value [$\chi^2=4.22$, df (1), $p < 0.05$].
- The emotional involvement was disproportionately associated with the duration of marriage as evidenced by computed chi square value [$\chi^2=8.44$, df (1), $p < 0.01$].
- Financial involvement of the respondents was significantly associated with the occupation of the subject's wife but was not dependent upon the socio-economic status of the respondents as evident from calculated chi square value [$\chi^2=8.54$, df (1), $p < 0.01$] and [$\chi^2=3.4$, df (1), $p > 0.05$] respectively.
- Companionship [$\chi^2=6.52$, df (1), $p < 0.02$] and birth preparedness [$\chi^2=4.21$, df (1), $p < 0.05$] were significantly associated with the gravida of the respondent's wife as evidenced by calculated chi square value.

Table 14: Chi square test of association and its significance existing between physical involvement score and number of family member

n=252

Variables	Physical Involvement score		Total	Chi square
	<Median	≥Median		
No. of family member				
2-5	77	109	186	4.22*
>5	37	29	66	
Total	114	138	252	

$$\chi^2_{0.05(1)} = 3.84$$

Table 15: Chi square test of association and its significance existing between emotional involvement score and duration of marriage

n=252

Variables	Emotional Involvement score		Total	Chi square
	<Median	≥Median		
Duration of marriage				
1-4 years	58	95	153	8.44**
>4 years	56	43	99	
Total	114	138	252	

$$\chi^2_{0.01(1)} = 6.64$$

Table 16: Chi square test of association and its significance existing between financial involvement score with Socio-economic status as per modified BG Prasad Socio-economic Classification, updated May 2021 and occupation of spouse of respondents

n=252

Variables	Financial Involvement score		Total	Chi square
	<Median	≥Median		
Socio economic status				
Up to middle class	81	69	150	3.40
Above middle class	43	59	102	
Total	124	128	252	
Occupation of spouse				
Homemaker	97	117	214	8.54**
Others	27	11	38	

Total	124	128	252	
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$\chi^2_{0.05(1)} = 3.84, \chi^2_{0.01(1)} = 6.64$

Table 17: Chi square test of association and its significance existing between companionship score and gravida of spouse of respondents

n=252

Variables	Companionship score		Total	Chi square
	<Median	>Median		
Gravida of spouse				
Primigravida	50	89	139	6.52*
Multigravida	24	89	113	
Total	74	178	252	

$\chi^2_{0.02(1)} = 5.41$

Table 18: Chi square test of association and its significance existing between involvement in birth preparedness score and gravida of spouse of respondents

n=252

Variables	Involvement in birth preparedness score		Total	Chi square
	<Median	≥Median		
Gravida of spouse				
Primigravida	57	82	139	4.21*
Multigravida	61	52	113	
Total	118	134	252	

$\chi^2_{0.05(1)} = 3.84$

IV. Discussion

Throughout this discussion we have identified similar as well as contradictory findings in regard to both perception of and involvement in maternity care in various studies on the same topic.

The men's increased and updated knowledge, understanding as well as positive attitudes about perinatal care in different societies are the pre requisites for improving the maternal as well as fetal health. Active participation of men in Antenatal Care (ANC) has been acknowledged by the World Health Organization as a key indicator for better maternal and fetal outcome. In practice, still this is often limited due to different factors like cultural, social, and institutional barriers. The present study findings reported that, mean knowledge score was 12.15 ± 2.96 out of 25. 59% of the respondents had average knowledge regarding maternity care followed by 28% with poor knowledge and 13% with good knowledge. Highest mean percentage of knowledge score was in birth preparedness (64.2%) followed by antenatal care (50.17%), antenatal visit and investigations (47.22%). Maximum knowledge deficit was in complication during pregnancy (35.38%). The study findings also showed that the respondents were aware about antenatal diet (60%), antenatal investigation (55.55%), danger sign during pregnancy (51.48%), rest and positioning (49.08%), antenatal visit (40.87%), immunization (35.51%), IFA supplementation (25.19%), sexual relation (25%) and family planning (23%).

Roy A et al. (October, 2012) conducted a descriptive study to assess the knowledge of husbands of primigravida women related to antenatal care in eastern India. The study findings identified that 55% respondents had fair knowledge. 75.5% mean percentage knowledge score fell in preparation for delivery, 63.5% in antenatal check -up and 54% in antenatal nutrition that supports the present study.

Olugbenga Bello A.I. et al. (2013) conducted a study on Perception, attitude and involvement of men in maternal health care in a Nigerian community. The study findings showed that 42% of the men had a poor level of knowledge, while 51.2% had a good attitude toward maternal healthcare though 95.3% were aware about family planning that were not significant with this study. **Singh R et al. (2021)** conducted a community based cross sectional study in four villages of Kashi Vidyapeeth block, Varanasi. This study aimed to assess the awareness and practices of male spouse in maternal care services in rural areas. Results revealed that among the total 130 interviewed male spouse, only 30% were aware of birth preparedness, 40% of the respondents aware about antenatal visits, 26.9% knew about the health- related problems during pregnancy and 7.7% were aware about the danger sign of pregnancy that is not consistent with the present study. **Falade-Fatila O et al. (2020)** conducted a study on male partner's involvement in pregnancy related care among married men in Ibadan, Nigeria. The study results depicted that overall, 62.9% had good knowledge in pregnancy related care that also does not support the present study.

The men's increased involvement in maternal and child health services facilitates the improved engagement with health service providers, thus presenting an opportunity to acquire health education and access to health services, improving family planning services, promoting awareness about obstetrical danger sign, making effective health care decision for their partners and children and unborn child. Involvement of male

partner in maternity care also facilitates communication which leads to reduction of maternal workload, encourages postnatal care attendance, infant feeding practices and childhood immunization. In the present study, mean involvement score was 81.09 ± 8.05 . 82% respondents had good involvement in maternity care. Highest mean percentage of involvement score was in area of financial involvement (83%) followed by involvement in birth preparedness (75.28%), companionship (72.93%), physical involvement (57.75%) and psychological involvement (53.35%).

Chakrabarti Set al. (2017) undertook across-sectional study on awareness and involvement of male spouse in various aspects of antenatal care. Results of the study findings revealed that among the respondents, 76.25% of them were involved in their wives' antenatal care that support the present study. **Wai K.M.et al. (June-July, 2014)** carried out a community-based, cross-sectional study in Thingangyun Township, Yangon, Myanmar. The study findings revealed that 64.8% respondents accompanied their wives for antenatal visit more than once. 95.8% respondents were major financial supporters of their wives during antenatal period. About birth preparedness, maximum of the respondents was ready for skilled birth attendance (91.1%), delivery place (83.6%), and money saving (81.7%) before their spouses gave birth that findings are compatible with the present study. **Falade-Fatila O et al. (2020)** conducted a study on male partner's involvement in pregnancy related care among married men in Ibadan, Nigeria. The study results depicted that 89.9% of the men believed that they had roles to play in their partners' care during pregnancy. Overall, 56.9% of the respondents had good involvement in pregnancy related care and only 19.6% followed their partners to antenatal care that is not significant with the present study though 54.5% of respondents with good knowledge accompanied their partners for antenatal and 80.1% participated in birth preparedness, almost 50% of the respondents believed that their role was to provide domestic support that is consistent with the present study.

A community-based cross-sectional study was conducted by **Zakaria M et al. (2020)** on Women's perception of male involvement in antenatal, childbirth and postnatal care in urban slum areas in Bangladesh among women and their husbands living in 12 slums of Chattogram city. The study results indicated that 60% of the husbands support in wives' ANC that does not supports the present study.

The study finding also reported that there was significant association of the perception of male partners of antenatal mother regarding maternity care with educational status ($\chi^2 = 18.26, df (1), p < 0.001$), occupation of the subjects [$\chi^2 = 4.18, df (1), p < 0.05$], gravida of the spouse [$\chi^2 = 5.87, df (1), p < 0.02$] and educational status of the subject's spouse [$\chi^2 = 9.36, df (1), p < 0.01$]. This study also revealed that there was no significant association of knowledge score of the respondents with socio economic status [$\chi^2 = 2.95, df (1), p > 0.05$] and number of children [$\chi^2 = 1.93, df (1), p > 0.05$].

The study also showed that the physical involvement was disproportionately dependent on the number of family members of the subjects [$\chi^2 = 4.22, df (1), p < 0.05$] and the emotional involvement with the duration of marriage [$\chi^2 = 8.44, df (1), p < 0.01$]. The study findings also depicted that financial involvement of the respondents was significantly associated with the occupation of the subject's wife [$\chi^2 = 8.54, df (1), p < 0.01$] but was not dependent upon the socio-economic status of the respondents [$\chi^2 = 3.40, df (1), p > 0.05$]. Companionship [$\chi^2 = 6.52, df (1), p < 0.02$] and birth preparedness [$\chi^2 = 4.21, df (1), p < 0.05$] were also significantly associated with the gravida of the respondent's wife.

Roy A et al. (October, 2012) conducted a descriptive study to assess the knowledge of husbands of primigravida women related to antenatal care in eastern India. Here, knowledge regarding antenatal care is significantly associated with education of the respondents as evident from calculated chi square value [$\chi^2 = 6.92042$ at $df (1)$ at 0.01 level]. So, the researcher suggested that the knowledge score was dependent on educational status of the husband of antenatal mother that is significant with the present study findings.

Dahake S et al. (August -October, 2016) carried out a community based observational cross-sectional study on husbands of pregnant women in the Malvani slum community of Mumbai to assess husband's knowledge and attitude toward their involvement in Antenatal care and to identify factors that influence husband's attitude toward involvement in ANC. Results showed the majority (67.4%) of the husbands had a positive attitude, whereas 32.6% had a negative attitude toward involvement in ANC. From the study findings it was also seen that respondent's involvement score was dependent on educational level of husbands ($\chi^2 = 42.224, p < 0.001$) and occupation of husbands ($\chi^2 = 5.299, p = 0.021$) that is consistent with the present study.

Chakrabarti S et al. (2017) undertook across-sectional study on awareness and involvement of male spouse in various aspects of antenatal care. Results of the study findings revealed that among the respondents it was seen that respondents were significantly more involved in their wives' first pregnancy compared to the subsequent pregnancies ($\chi^2 = 9.3, p = 0.003, df = 1$) that does not support the present study findings.

Strength of the study:

The data were collected by face-to-face interview individually on spot while the respondents came in antenatal outpatient department while accompanying their wives so there is no question of biasness. The findings would encourage the local administration and leader too to formulate policy and implement it to

increase the knowledge regarding maternity care and men's involvement in it to improve maternal and fetal outcome in pregnancy. The researcher collected data from more than one setting for better generalization.

Limitations of the study:

The study samples were not selected by randomization. They were chosen by non-probability convenient sampling technique as it was not possible to get the list of accessible population in outpatient department settings, so the scope of generalization of findings was limited. This study was limited to the subjectivity of self-reports by the respondents. No standardized data collection tool was available to accomplish the study.

Recommendation:

Based on the study findings, following recommendations have been made: -

A similar study can be repeated in a large sample or in different settings to validate the study findings and make a generalization. A comparative study can be done on husband's perception and involvement in maternity care between primigravida and multigravida women or rural and urban areas. A study can be conducted to assess the effect of men's involvement in antenatal care on pregnancy outcome. An experimental study can be done using other teaching strategies like planned teaching program, video assisted learning or self-instructional module. An observational study can be conducted in the actual practice throughout the pregnancy.

V. Conclusion

Based on the findings of the present study the researchers had conclude that the knowledge of the respondents regarding maternity care was average as measured by structured knowledge questionnaire and evidenced by obtained knowledge score. The researcher concluded that the knowledge of the subject was dependent on their educational status. As education is the cultivation of knowledge, the qualitative higher education is crucial for sustainable and potential human development and enriching people's understanding of themselves and the whole world. Education is a process where knowledge, skills, and values are imparted within the pupil. It builds in us a perspective of looking at life. Higher education necessitates to acquire analytical and problem-solving skills, ultimately assisting humans to develop intellectual curiosity and character. Therefore, a refined higher education enables economic, physical, and social well-being to a person. It provides us with the ability to apply our knowledge in everyday life leading to broader benefits to individuals and society. **(National Education Policy 2020).**

The researcher also depicted that the perception of male partners of antenatal mother regarding maternity care was somehow dependent on educational status of their wives. The World Health Organization recommended with a minimum of eight antenatal visit for the pregnant woman to reduce perinatal mortality and improve women's experience of care. At least four antenatal care visits should be encouraged on the basis of effectiveness of the healthcare system for promoting institutional deliveries, reducing maternal mortality and improving child survival. ANC provides the opportunity to communicate and support the pregnant women, families, and communities throughout this critical time. The process of developing the recommendations on ANC has highlighted the importance to provide effective communication about physiological, biomedical, behavioral, and socio-cultural issues in a respectful way. As different studies identified overall low awareness and low involvement of male spouse in antenatal care, most of the time the antenatal women do not accompany by their husbands during antenatal visit. Hence, the pregnant women receive alone most of the pregnancy related information, education and behavior change communication from health personnel during their antenatal check -up. As per their educational level then they perceive and convey that information to her husbands or other family members. **(The 2016 WHO ANC model)**

The research findings also showed that the involvement in birth preparedness was associated with gravida of respondent's spouse. Hence, the researcher concluded that the husbands of multigravida women are more involved in birth preparedness than primigravida women. Birth preparedness and complication readiness is an important strategy that encourages and involves pregnant women, their families, and communities to plan effectively and efficiently for births and deal with emergencies, if occurred. It is a key component of globally accepted safe motherhood programs. The component of birth preparedness and complication readiness plan includes; antenatal registration, identifying the place of delivery, saving money, preparing essential items for childbirth, identifying a skilled birth attendant, arranging transportation and blood donors, and designating decision maker. So, the possible explanation is as that the respondents who were informed and well known about the components of birth preparedness and complication readiness since previous pregnancy or pregnancies, they were more likely to be prepared effectively and efficiently for present pregnancy as compared to the husbands of primigravida women. **(WHO recommendations on antenatal care for a positive pregnancy experience)**

The investigator also revealed that there was a need of health education to deliver to the husband of antenatal mother regarding maternity care. There was also the special need of husband's involvement and support for the women throughout the pregnancy. Husbands of antenatal mother had less exposure to reproductive and maternal health and perinatal care. This study aimed to improve the husband's knowledge and encouraged their involvement in antenatal care of their wives for betterment of the maternal and fetal outcome.

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