Assessment of Knowledge Regarding Antenatal Care Among Men in Selected Rural Areas of Himachal Pradesh

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Abstract

Background: WHO defined health as the state of complete physical, mental, and social well-being and not merely an absence of disease or infirmity, but it includes ability to lead socially and economically productive life.[1] Being a man or women has a significant impact on health, as a result of both biological as well as gender related differences.

Antenatal care (ANC) is most important aspect of women's reproductive health. The antenatal care is the care provided by skilled health care professionals to pregnant women and adolescent girls to ensure best health conditions for mother and baby during pregnancy. It reduces maternal and perinatal morbidity and mortality both directly, through detections and indirectly, through the identification of women and girls at increased risk of developing complications during labour, delivery and ensuring appropriate level of care.[1] As per NFHS- 4, the 21% of pregnant women utilised full ANC, ranging from 2.3–65.9% across states. Overall, 51.6% had 4 or more ANC visits, 30.8% consumed IFA for at least 100 days and 91.1% had one or more doses of tetanus toxoid. Full ANC utilisation was inequitable across place of residence, caste, and maternal education. Registration of pregnancy, utilisation of government's Integrated Child Development Services (ICDS) and health insurance coverage were associated with higher odds of full ANC utilisation. Lower maternal education, lower wealth quintile, lack of father's participation during antenatal visits, higher birth order, teenage and unintended pregnancy were associated with lower odds of full ANC utilisation. This study assesses the knowledge about the antenatal care among married and unmarried men of 18-35 years age in selected rural areas of Himachal Pradesh.

Methods: The study was an unmatched case and control design where married men were considered as a case and unmarried men as comparator group. This study was a part of large study for which sample size of 268 men in each group was calculated assuming prevalence of female contraceptives 70% in unmarried men and 85% in married men. This was carried out by cluster-based sampling in villages of Nagrota Bagwan and Shahpur health blocks of DRPGMC Tanda at Kangra.

Results: The 93.3% participants among case group are aware of anaemia in pregnancy while only 64.9% among control group are aware of anaemia in pregnancy. The knowledge about all three causes of anaemia was statistically more in case group (61.9%) as compared to control group (38.8%). Assessment about high-risk pregnancy, about 72.4% participants among case group were aware about the risk factors in pregnancy as compared to 43.3% in control group with statistically significant differences (P=0.000). All the causes of high-risk pregnancy were reported by the participants of case group (44.0% vs 29.9%)

with statistically significant differences.

Conclusions: Married men had significantly more knowledge about various components of antenatal care. The awareness approach for unmarried men needs to be designed regarding antenatal care.

Keywords: Antenatal care, anaemia, married men, unmarried men

Introduction

WHO defined health as the state of complete physical, mental, and social well-being and not merely an absence of disease or infirmity, but it includes ability to lead socially and economically productive life.[1] Being a man or women has a significant impact on health, as a result of both biological as well as gender related differences.

Antenatal care (ANC) is most important aspect of women's reproductive health. The antenatal care is the care provided by skilled health care professionals to pregnant women and adolescent girls to ensure best health conditions for mother and baby during pregnancy. It reduces maternal and perinatal morbidity and mortality both directly, through detections and indirectly, through the identification of women and girls at increased risk of developing complications during labour, delivery and ensuring appropriate level of care.[2] As per NFHS- 4, the 21% of pregnant women utilised full ANC, ranging from 2.3–65.9% across states. Overall, 51.6% had 4 or more ANC visits, 30.8% consumed IFA for at least 100 days and 91.1% had one or more doses of tetanus toxoid. Full ANC utilisation was inequitable across place of residence, caste, and maternal education.[3] Registration of pregnancy, utilisation of government's Integrated Child Development Services (ICDS) and health insurance coverage were associated with higher odds of full ANC utilisation. Lower maternal education, lower wealth quintile, lack of father's participation during antenatal visits, higher birth order, teenage and unintended pregnancy were associated with lower odds of full ANC utilisation. This study assesses the knowledge about the antenatal care among married and unmarried men of 18-35 years age in selected rural areas of Himachal Pradesh.

Material and methods

The study was an unmatched case and control design where married men were considered as a case group and unmarried men as a comparator group. This study was carried out in selected villages of Nagrota Bagwan and Shahpur health blocks. Assuming knowledge prevalence about female contraceptives 70.0% in comparator and 85.0% in case group, a sample size of 134 males in each group (total 268) was calculated assuming 80.0% study power and 5.0% level of significance. The sample size was calculated using EpiInfo (7.2.3.1) software for unmatched case-control study design. Ethical clearance for the study was obtained from Institutional Ethics Committee of Dr Rajendra Prasad Government Medical College Kangra at Tanda, Himachal Pradesh India [Registration No: IEC/24/2021].

Results

This was a case control study among unmarried and married participants about their perceptions and knowledge about women empowerment. The table 1 shows the socio-demographic profile of participants. The type of family among cases, majority (57.5%) belongs to joint family whereas among controls, the majority (65.0%) belongs to nuclear with statistically significant difference (P=0.000). The

majority among both groups (cases as well as controls) belongs to the OBC category with statistically significant difference. The statistical indifference was observed for religious association, as all the respondents in the case group while 97.0% respondents in control group practice Hindu religion.

Characteristics	Case n=134, (%)	Control n=134, (%)	P value
Type of family			
Joint	77 (57.5)	35 (26.0)	0.000
Nuclear	47 (35.1)	87 (65.0)	0.000
Three generation	10 (7.5)	12 (9.0)	0.824
Cast			
General	48 (35.8)	31 (23.1)	0.031
SC	19 (14.2)	16 (11.9)	0.717
ST	10 (7.5)	6 (4.5)	0.440
OBC	57 (42.5)	77 (57.5)	0.007
Others	0 (0.0)	4 (3.0)	0.020
Religion			
Hindu	134 (100)	130 (97.0)	0.122
Sikh	0 (0.0)	4 (3.0)	0.122

Table 2: Educational status and occupation of married men (cases) and unmarried men (controls) in selected rural areas of district Kangra, Himachal Pradesh, India 2021-2022.

Characteristics	Case n=134, (%)	Control n=134, (%)	P value
Education status (Self)			
Postgraduate	8 (6.0)	2 (1.5)	0.102
Graduate	58 (43.3)	54 (40.3)	0.710
Intermediate	37 (27.6)	59 (44.0)	0.007
High school	24 (17.9)	14 (10.4)	0.114
Middle school	4 (3.0)	4 (3.0)	0.084
Primary school	3 (2.2)	1 (0.7)	0.622
Illiterate	0 (0.0)	0 (0.0)	NC
Occupation (Self)			
Professional	7 (5.2)	2 (1.5)	0.172
Semi professional	22 (16.4)	6 (4.5)	0.002
Businessman/ shop owner	54 (40.3)	17 (12.7)	0.000
Skilled worker	35 (26.1)	30 (22.4)	0.568
Semiskilled worker	4 (3.0)	5 (3.7)	1.000
Unskilled worker	4 (3.0)	10 (7.5))	0.167
Unemployed	8 (6.0)	64 (47.8)	0.000

The table 2 describes the study participants according to their education status. The table displays that the graduates were more 58 (43.3%) in cases and 59 (44.0%) in control group while none were illiterate in both cases as well as control group. The intermediate educational level was observed in 37 (27.6%) among cases and 59 (44.0%) among the comparator group which was statistically significant (P=0.007).

The part B of table 2 describes participants according to their self-reported occupation status. The majority (40.3%) among case group were businessman/ shop owners followed by skilled workers (26.1%). Among controls the majority (47.8%) were unemployed followed by skilled workers (22.4%). The differences across these occupations were observed to be statistically significant (P=0.000)

Table 3: Socioeconomic status of married men (cases) and unmarried men (controls) in selected rural areas of district Kangra, Himachal Pradesh

Characteristics	Case n=134, (%)	Control n=134, (%)	P value
Upper class	8 (5.97)	3 (2.2)	0.216
Upper middle class	40 (29.8)	25 (18.6)	0.045
Middle class	58 (43.2)	70 (52.2)	0.178
Lower middle class	26 (19.4)	33 (24.6)	0.376
Lower class	2 (1.4)	3 (2.2)	1.000

The table 3 describes the study participants according to their socioeconomic status. Higher proportion of participants belongs to middle class in case group (43.2%) and control group (52.2%) with no statistically significant differences.

Table 4: The knowledge of family planning and contraception among married men and unmarried men in selected rural areas of Kangra, Himachal Pradesh

Characteristics	Case n=134, (%)	Control n=134, (%)	P value
Participant aware of family planning services	123 (91.8)	70 (52.2)	0.000
Number of children a couple should have			
One	43 (32.0)	8 (5.9)	0.000
Two	78 (58.2)	112 (83.5)	0.000
Three	12 (8.9)	14 (10.4)	0.836
More than three	1 (0.74)	0 (0.0)	NC
Ideal interval for birth spacing			
One year	4 (3.0)	4 (3.0)	1.000
Two years	29 (21.6)	63 (47.0)	0.000
Three years	78 (58.2)	60 (44.8)	0.037
Five years	23 (17.2)	7 (5.2)	0.003
Method of contraception for birth spacing			
Condom	112 (83.6)	92 (68.7)	0.006
Oral contraceptive pills	3 (2.2)	1 (0.7)	0.611
Injectables	1 (0.7)	1 (0.7)	1.000
Copper T	17 (12.7)	7 (5.2)	0.052
Don't know	1 (0.7)	33 (24.6)	NC

The table 4 describes the knowledge of family planning and contraception among study participants. Irrespective of source of information participants were assessed for knowledge about family planning

and contraception. The 91.8% of participants among case group were aware of family planning services in their areas while among control group only 52.2% of participants are aware of family planning services with statistically significant difference (P=0.000).

Regarding perception of ideal family size, 90.2% participants among case group and 89.4% among control group believe that ideal family size consists of two or less than two children (P=0.000). Knowledge about interval for birth spacing of 2 years observed to be higher in control group (21.6% vs 47.0%), higher for 3 years (58.2% vs 44.8%) and 5 years (17.2% vs 5.2%) and the difference was statistically significant in case group.

Knowledge about condom observed to be highest in both groups, statistically high in case (87.6%) as compared to control group (68.7%). The knowledge about Copper-T is high among case group (12.7%) as compared to control group (5.2%) with statistically significant difference. Majority of participant (24.6%) in control group did not know about any methodof contraception.

Table 5: The knowledge about pregnancy among married men (cases) and unmarried men (controls) in selected rural areas of Kangra, Himachal Pradesh

Characteristics	e n=134,(%)	ol n=134,(%)	P value
Anaemia in pregnancy	125 (93.3)	87 (64.9)	0.000
Causes of anaemia			
Nutritional	35 (26.1)	39 (29.1)	0.682
Menstruation	10 (7.5)	4 (3.0)	0.167
Systemic diseases	1 (0.7)	0 (0.0)	1.000
All the above	83 (61.9)	52 (38.8)	0.000
I don't know	5 (3.7)	39 (29.1)	0.000
Pregnancy is associated with increased risk of complications	97 (72.4)	58 (43.3)	0.000
High risk pregnancy			
Diabetes mellitus	24 (17.9)	15 (11.2)	0.165
Hypertension	8 (6.0)	3 (2.2)	0.216
Thyroid disease	4 (3.0)	0 (0.0)	0.122
Others	3 (2.2)	1 (0.7)	0.622
All the above	59 (44.0)	40 (29.9)	0.022
Don't know	36 (26.9)	75 (56.0)	0.000

The table 5 describes the knowledge about pregnancy among study participants. The 93.3% participants among case group are aware of anaemia in pregnancy while only 64.9% among control group are aware of anaemia in pregnancy (P=0.000).

The knowledge about all three causes of anaemia was statistically more in case group (61.9%) as compared to control group (38.8%).

Assessment about high-risk pregnancy, about 72.4% participants among case group were aware about the risk factors in pregnancy as compared to 43.3% in control group with statistically significant differences (P=0.000). All the causes of high-risk pregnancy were reported by the participants of case group (44.0% vs 29.9%) with statistically significant differences.

Table 6: The knowledge about various aspects of antenatal care among married men and unmarried men in selected rural areas of Kangra, Himachal Pradesh.

Characteristics	e n=134,(%)	ol n=134,(%)	P value
Antenatal visits are required during pregnancy	130 (97.0)	106 (79.1)	0.000
Iron and folic acid supplementation required during pregnancy			
Yes	119 (88.8)	90 (67.2)	0.000
No	0 (0.0)	5 (3.7)	0.060
I don't know	15 (11.2)	39 (29.1)	0.000
How iron and folic acid should be ideally taken			
Water	120 (89.6)	106 (79.1)	0.028
Tea	2 (1.5)	3 (2.2)	1.000
Lemon water	2 (1.5)	1 (0.7)	1.000
Anyone	10 (7.5)	24 (17.9)	0.016

The table 6 describes the knowledge about various aspects of antenatal care among study participants. Majority (97.0%) of participants in case group were aware regarding importance of antenatal visits while 79.1% were aware among control group with statistically significant difference (P=0.000). Knowledge about iron and folic acid supplementation was statistically higher (88.8%) among case group as compared to control group (67.2%) (P<0.001). Majority of participants among case as well as control group believe that iron and folic acid tablet should be taken with water (89.6% vs 79.1%, 0.028), statistically high in case group.

Discussion

In pregnancy, women face greater risks, both because of physiological differences and gender inequities. Marriage is a partnership and women have a right to health but protecting that right often depends on a partner's support.[4] Worldwide, only a few studies have been conducted to explore married and unmarried men perception and practices in family planning and reproductive health of women. The present study was community-based unmatched case control study in which 268 participants- 134 cases (married participants) and 134 controls (unmarried participants) were recruited for assessment. As expected in present study, the average age of married participants was significantly high (32.4 years) while of unmarried participants was 24.0 years. It was comparable to most of studies conducted in the past on married and unmarried men about reproductive health and contraception. Like Chankapa YD et al[5] conducted a population based cross-sectional study among 596 married participants in rural area of Sikkim in which mean age of participants was 32.9 years.

The assessment for awareness regarding family planning methods was done. In present study the 83.6% participants among married men and 68.7% among unmarried men know about condom as a method of contraception. T. Rekha et al[6] conducted a hospital based cross- sectional study in Southern India among 156 married men using pretested semi-structured questionnaire and about 90.0% of married participants in this study were aware of condoms as method of contraception. According to NFHS-4[7] conducted by International Institute of population Sciences in rural areas, the 93.0% married men and 92.2% unmarried men among rural area know condom as method of contraception. K.C. Bharat et al[8] conducted a community based cross-sectional study in the urban slum area of Karnataka among 320

married men and 64.91% among them were using condom as a method of contraception. Char A. et al[9] conducted a study among unmarried men in which 99.0% participants have heard about condom.

Awareness about health issues during pregnancy was assessed and in current study the 93.3% of married men while only about 64.9% of unmarried men were aware of anaemia in pregnancy. Pruthi N. et al[10] conducted a hospital based cross-sectional study among 245 married men in Delhi in which 68.5% participants believe that women require haemoglobin measurement during pregnancy. This study reported relatively high level of awareness about anaemia during pregnancy, highest among married men.

With high level of knowledge for anaemia, participants were assessed for iron folic acid supplementation. The present study observed that 88.8% of married men and 67.2% of unmarried men were aware regarding iron folic acid supplementation during pregnancy. T Swetha et al[11] conducted a study among married men in which 59.5% married participants aware about iron folic acid supplementation. Pruthi N. et al[10] conducted a study in which 92.5% of married men were aware of iron folic acid supplementation during pregnancy. It indicates high level of awareness about anaemia and iron folic acid supplementation among married males.

The high-risk pregnancy has adverse outcome to the pregnancy. It was assessed for knowledge and found that the 72.4% married participants were aware of high-risk pregnancy while 43.3% among unmarried participants were aware of high-risk pregnancy. J. Suresh and P. Balram[12] conducted a community based cross-sectional study among 385 married men in rural areas of Maharashtra and 60% of participants in their study were aware of high-risk pregnancy. As there is evidence that unmarried men have less awareness regarding high-risk pregnancy and there is need of more knowledge and awareness among them so that they can understand and promote ante-natal check-ups and skilled birth attendance among their partners in future.

Conclusion

The findings revealed several significant differences in socio-demographic factors between the two groups. Married men were more likely to belong to joint families, while unmarried men predominantly came from nuclear families. Moreover, the study highlighted differences in caste distribution, with a higher proportion of participants belonging to the OBC category in both groups. This study examined the knowledge of antenatal care among married and unmarried men in selected rural areas of Himachal Pradesh.

Educational status also varied between the two groups, with a higher percentage of graduates among the married participants and more individuals with an intermediate level of education in the unmarried group. This discrepancy in education levels could be attributed to the age difference between the two groups, as married participants tended to be older on average.

Occupation status showed notable disparities, with a significant number of married men engaged in businesses or as shop owners, while a larger proportion of unmarried men were unemployed.

Married men had significantly more knowledge about various components of antenatal care like anemia in pregnancy, high risk pregnancy etc. The awareness approach for unmarried men needs to be designed regarding antenatal care so that they can know about various complications and special nutritional requirement during pregnancy which can further improve maternal and child health.

Conflict of interest: There is no conflict of interest

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