



A Study on Utilization of Maternal & Child Health Services in Sub-District Hospital Tanakpur, (Champawat) Uttarakhand

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Abstract

The research paper focuses on the utilization of maternal and child health services in a specific region, as highlighted in the Uttarakhand Health Compendium 2020. It acknowledges the significant decline in the coverage of mothers receiving full WHO-recommended services, reflecting a concerning trend in healthcare accessibility and quality. The study aims to address gaps in maternal and child health service utilization by analyzing factors such as attendance during delivery, location of delivery, and awareness of essential healthcare services like immunization and family planning.

Acknowledgments are made to key individuals who contributed to the success of the research, including Dr. Rajesh Kumar and Ms. Nidhi Kesarwal from the National Institute of Health and Family Welfare (NIHFW) in New Delhi. The paper underscores the importance of comprehensive maternal and child health services to improve healthcare outcomes and reduce infant mortality rates, aligning with global health objectives outlined by the World Health Organization (WHO). Through data analysis and collaboration with healthcare professionals, the study aims to provide insights for policymakers and healthcare providers to enhance maternal and child health services in the region, ultimately contributing to improved health outcomes for mothers and infants.

Keywords: Maternal Health; Child Health Services; Antenatal Care; Postnatal Care; Immunization; Maternal Mortality; Infant Mortality; Health Disparities; Socioeconomic Factors; Literacy; Institutional Delivery

Abbreviations

NIHFW: National Institute of Health and Family Welfare; WHO: World Health Organization; MDGs: Millennium Development Goals; SDGs: Sustainable Development Goals; RGI: Registrar General of India; SRS: Sample Registration System; IMR: Infant Mortality Rate; MMR: Maternal Mortality Rate; TBAs: Traditional Birth Attendants; PNC: Post-Natal Care; ANC: Ante-Natal Care; APL: Above Poverty Line; BPL: Below Poverty Line.

Introduction

According to data from the World Health Organization, 808 women perished every day from complications related to pregnancy and childbirth in 2017, accounting for 4.1 million infant deaths before they reached their first birthday [1,2]. Maternal and child health continues to be a problem for the healthcare delivery system despite all efforts in nations with low and middle incomes. The Millennium Development Goals (MDGs) and more recently the Sustainable Development Goals (SDGs) of 2015 underscored the global consensus on

the issues of maternal and child health [3,4]. SDG 3.1 aims to bring down the maternal mortality ratio to less than 70 per 100,000 live births by the year 2030. SDG 3.2 aims to bring down the neonatal mortality rate to less than 12 per 1000 live births and the under-5 mortality rate to less than 25 per 1000 live birth and SDG 3.7 aims to achieve universal sexual and reproductive health access [5].

The number of women who pass away during pregnancy and childbirth or within 42 days of the pregnancy's termination, regardless of the length of the pregnancy, from any cause related to or aggravated by pregnancy or its management (aside from accidental or incidental causes), is known as the maternal mortality ratio, or MMR and the pregnancy's location, per 100,000 live births. Over a four-year period, the national MMR level decreased by 21.22%, from 212 per 100,000 live births in 2007–2009 to 167 per 100,000 live births in 2011–2013. The country's overall life risk associated with motherhood is progressively declining, primarily as a result of government-run initiatives that support reproductive healthcare facilities.

Due to socioeconomic factors like poor health outcomes, higher direct and indirect healthcare costs, a slowdown in socioeconomic development, etc., maternal, newborn, and child health disparities in India continue to be major public health concerns. A number of researchers discovered that variations in the availability, accessibility, affordability, quality, and use of healthcare services are the main causes of different health outcome discrepancies. Moreover, disparities in overall health between states and regions of the population are caused by the inequality in healthcare services [6]. Unfair healthcare distribution resulting from inadequate

social arrangements is known as health inequality, and it is a harsh reality in India. Sharp differences in health outcomes between regions and socioeconomic classes are revealed by the most recent round of data from the National Family Health Survey.

One of the key measures of the nation's health care quality is the maternal mortality ratio. The Registrar General of India (RGI) Sample Registration System (SRS) Bulletin states that the 2018 infant mortality rate (IMR) was 30 per 1,000 live births, down from 39 in 2014, and the 2018 maternal mortality rate (MMR) was 6.5, down from 8.8 in 2014–16 during the 2017–19 National Level [7,8]. West Bengal, Punjab, and Uttarakhand have high maternal mortality rates (100–130 per 100,000 live births). With 71–100 maternal deaths per 100,000 live births, it is 'low' in Karnataka and Haryana [8].

The primary goals of MCH Services are to guarantee that every mother maintains optimal health throughout her pregnancy and puerperium, to have a healthy mother and baby at the end of her pregnancy, and to support the health of the child throughout infancy and childhood [9]. Mothers and Even though national initiatives to improve MCH are in place in India, there is still a high rate of neonatal mortality and morbidity. There are a number of possible causes for this, but under- or non-use of services is a key one. Every pregnant woman should receive three or more antenatal care visits, ninety or more IFA tablets, and two or more TT injections, per Indian government guidelines [10–12]. In the Indian state of Uttarakhand, there is a district called Champawat [13] (Table 1).

Indicator	Champaawat UK-NFHS 5 (2019-2021)	Champaawat UK-NFHS 4 (2015-2016)	UK- NFHS 5 (2019-2021)	UK-NFHS 4 (2015-2016)
Mothers-ANC checkup I trimester (%)	72.3	43.7	68.8	53.5
Mothers at least 4 ANC visits (%)	62	29	61.8	30.9
Institutional birth (%)	79.8	73.3	83.2	68.5
Children age 23-23 months fully vaccinated	91.9	68.4	80.2	57.6

Table 1: Status of health indicators.

Fewer older women, such as relatives or traditional birth attendants (TBAs), make decisions, oversee the entire birth process, and provide community delivery in both rural and urban areas. When performing home deliveries, Dai's (TBA) and family members don't take any precautions regarding personal hygiene. A few cultural practices, like not feeding the mother and delaying breast feeding, are also significant contributors to elevated IMR and MMR. With the identification of all these variables, the NHM program places

increased emphasis on institutional delivery. In order to boost institutional deliveries, the government has provided incentives for beneficiaries under JSY and JSSK. It was discovered that from 5.6% in 2019–21, the number of home births (delivery) had increased As compared with the data in 205-16(2.7%) [14].

Numerous factors influence the use of maternal health services, and this calls for careful consideration. Utilizing

maternal health services lowers maternal morbidity and death, as is commonly acknowledged. As a result, the current study will be carried out at Tanakpur Sub- District Hospital in the District of Champawat, Uttarakhand, to determine how the study subjects use MCH services and what factors or barriers affect the indicators of maternal and child health [15,16]. Numerous factors impact the use of maternal health services, necessitating targeted attention. Utilizing maternal

health services lowers maternal morbidity and death, as is commonly acknowledged. Accordingly, the current study will be carried out at Tanakpur's Sub- District Hospital in the district of Champawat, Uttarakhand, to determine how the study subjects use MCH services and the factors /barriers affecting the Maternal & child health indicators [17] (Table 2).

2021	Total delivery	Registered delivery	Nonregistered delivery
November	30	23	7
December	17	12	5
2022			
January	22	19	3
February	14	10	4
March	18	14	4
April	9	7	2
Total	110	85	25

Table 2: Delivery performed at sub district Hospital Tanakpur (Champawat), UK.

Objective

General Objective

To study the utilization of Maternal and Child Health services in Sub-District Hospital Tanakpur.

Specific Objectives

- To assess the status of MCH services viz. antenatal, natal, and postnatal and immunization services.
- To determine the referral facilities for MCH services available to the community.
- To assess the knowledge and practices regarding maternal and child health among women of the area.
- To identify the gap between availability and utilization of MCH services by the community, if any.
- To suggest the measure to improve the MCH services in the area.

Material & Methods

Study Area

The present community based observational study was carried out at the Sub-District Hospital Tanakpur, District Champawat in Uttarakhand [18].

Study Design

Descriptive cross-sectional design.

Study Period

13 June -12 July 2022.

Study Population

Registered ANC women and women whose delivery takes place, mothers availing the PNC, Immunization services during study period. Data has been collected from all mothers those who came for delivery during study period at SDH Tanakpur selected for study purpose. Similarly 25% mothers availing the ANCs, PNCs, Immunization services (for their baby) at SDH Tanakpur during has been selected for the study [19].

Post-Natal Care (PNC): It is defined as receiving 'post-natal care/health check-up' from a health facility or at home within 48 h of delivery for last live birth.

Ante-Natal Care (ANC): ANC is defined as at least 4 ante-natal visits for a pregnant woman, as per the Government of India's guidelines, to minimize pregnancy-related risks. Data on the number of ANC visit during pregnancy was available in NFHS4.

Sampling Technique

Purposive sampling.

Sample Size

Estimation for desired sample size (n = 100) was based on consideration that the proportion of women received

any ANC services in SDH Tanakpur Uttarakhand as 13%, by application of formula for cross-sectional studies [$n = (Z_{1-\alpha/2})^2 \times p(1-p)/d^2$]. In that formula Z (1.96) is the standard normal variate for level of significance for 2-sided test with “a” as level of significance (0.05) at “p” of 13% as prevalence, with “d” as absolute allowable error (4%) and “n” reflects the estimated sample size.

Study Tools

A standard questionnaire was used in the study which was pretested and predesigned, which included, demographic details; utilization pattern of maternal health care services and pregnancy related complications. A Semi-structured interview scheduled done for data collection.

➤ Primary Data

Interview with Beneficiaries: Pregnant women and women who have delivered during the study period.

➤ Secondary Data

Record and registers

➤ Inclusion Criteria

- Both primi and multipara mothers having delivered during study period.
- Women who are registered for Ante-natal care (ANC) services.
- Women who are taken Post-natal care and Immunization services for baby.
- Women/mothers who are willing to participate.

➤ Exclusion Criteria

- Not willing to participate.
- Mothers who were mentally retarded/ handicapped/ mentally ill.

➤ Independent Variables:

- Age at Marriage & present age
- Age of First Pregnancy
- Number of children
- Socio-economic status
- Literacy level of mothers
- Service availability etc.

➤ Dependent Variables

- Maternal and Child Health services.

➤ Outcome Variables

Awareness of MCH services, immunization, pathological (blood and urine) investigation, USG for Fwb, ANC visits during pregnancy, 90 or more IFA tablets and 2 or more TT injections, Newborn screening / care, PNC visits,

immunization service for new born baby, awareness about family planning, etc. are some of the outcome variables that I captured from the respondent. The respondent was questioned about a number of outcome variables, including vaccination, pathological (blood and urine) investigations, USG for Fwb, ANC visits during pregnancy, 90 or more IFA tablets and two or more TT injections, newborn screening and care, PNC visits, immunization services for newborns, and family planning awareness [20].

Data analysis

Data interpretation before analysis, the subjects' responses were entered into an MS Excel spreadsheet and formulated into a table. Categorical variable data were represented as percentages (%). To determine the degree of correlation ($p < 0.05$) between the dependent variable (ANC/PNC care) and the independent variables (current age, residence, economic status, age at marriage, post-marital period, number of children, and literacy status), a chi square test with a 5% significance level was used. With the aid of SPSS, a statistical analysis of the data was conducted.

Results

The data were collected by face to face interview of 100 mothers with the help of pre-tested semi structured questionnaire. The data were processed through Ms excel and SPSS to analysed by using appropriate statistical methods. The overall results of the study have been presented in tabular form in table 1 to table 5. In study 100 women were included as a part of study of 20-36 years age group in table 1 shows the socio-demographics characteristics of the participants interpreted in association with ANC/PNC [21]. It can be seen from the table that the major proportion of the participants was in the age group 21- 25 years (49%). The other defining characteristics of the respondents were: residence in a urban area (74%), rural residence (26%). The economic status of study participants were 67% and 33%, below poverty line (BPL) and above Poverty line (APL) respectively. The age of marriage was 49%, 46% & 5% under 21, 21-25, & 25- 30 age groups respectively.

The literacy rate in study participants was 94%, out of the 16%, 25%, 13% and 40% were Primary, Middle, Matric and Senior secondary & above respectively. The chi square tests for p value were analyzed in variables between ANC & PNC as shown in table 1. The MCH services utilization with socio demographic data in number of children already present shown 41% with 1 child and significant correlation (P value= 0.04) observed in ANC & PNC services (Tables 3-5). The highly significant correlation was found between literacy of mothers and utilization of MCH services (p value - 0.0002).

S.no	Variables	ANC	PNC	Test of significance P value	
1	Age of mother	<21	3	2	$\chi^2=1.598$, df=3, P=0.6598
		21-25	23	26	
		26-30	14	24	
		>30	8	4	
2	of Place Residence	Urban	37	37	$\chi^2=4.158$, df=1, P=0.0414
		Rural	7	19	
3	Economic Status	BPL	27	40	$\chi^2=1.129$, df=1, P=0.2880
		APL	17	16	
4	Age of Marriage	<21	24	25	$\chi^2=1.798$, df=2, P=0.4071
		21-25	19	27	
		26-30	1	4	
		>30	0	0	
5	Post Marital Period	<4	21	24	$\chi^2=5.404$, df=2, P=0.0671
		4-6	13	27	
		>6	10	5	
6	Number of Children already present	0	18	13	$\chi^2=8.870$, df=3, P=0.0311
		1	11	30	
		2	12	9	
		>2	3	4	
7	Literacy Status of Mother	Illiterate	0	6	$\chi^2=21.86$, df=4, P=0.0002
		Primary	10	6	
		Middle	16	9	
		Matric Senior	9	4	
		secondary & above	9	31	

Table 3: Distribution of Socio-demographic and association of the study participants with utilization of ANC&PNC (n=100).

S.no	Variables	ANC	PNC	Delivery	
1	Average time given by Medical staff (Doctors/Nurse) for attending you.	<10 minutes	4	33	0
		10-20 minutes	40	9	14
		20-30 minutes	0	0	0
		>30 minutes	0	0	0
2	Physical/Clinical examination done by Medical staff	Yes	44	42	14
		No	0	0	0
3	Is vital were measured/monitored at the time of ANC visit	Yes	44	42	14
		No	0	0	0
4	Were any complication detected during pregnancy	Yes	1	0	0
		No	42	42	14
5	If yes, were you referred to a higher centre hospital for treatment of those complications?	Yes	0	0	0
		No	42	42	14
6	Did you get any home based care/advice of visit by ASHA/ANM regarding Maternal/Child services	Yes	42	42	14
		No	0	0	0

Table 4: Accessibility of Maternal Health Services provided by Healthcare facilitators.

S.no.	Variables	ANC	PNC	Delivery
1	Number of ANC visits during pregnancy period	1	0	0
		2	19	0
		3	18	0
		>3	7	42
2	Is Iron-Folic Tablet given by Medical staff?	Yes	44	42
		No	0	0
3	If yes, How many tablets given by medical staff during ANC visit?	<90 tablets	40	42
		>90tablets	4	0
4	Is Tetanus vaccine were given by medical staff during ANC visit?	Yes	44	42
		No	0	0
5	If yes, how many TT doses given	1	19	0
		2	25	42
6	Is blood/urine investigations facilities were provided to you during ANC visit?	Yes	44	42
		no	0	0
7	Is USG were done for fetel wellbeing during ANC visit at health facility?	Yes	42	42
		No	0	0

Table 5: Distribution of Utilization Pattern of MCH Services among the Study Participants.

Beneficiaries had taken <90 IFA tablets during pregnancy followed and more than>90 IFA tablets during post natal care.

All 100% of the beneficiaries were TT immunised. The level of vaccination against tetanus among ANC women

43% got first dose and 57% were got second dose and in PNC both doses taken by 100% of the study participants. In the present study 100% mothers vitals were measured, the 100% mothers were given blood, Urine Investigation and abdominal examination using ultrasound facilities were provided during ANC Visit (Table 6).

S.no.	Variables	PNC	Delivery
1	During delivery, were you attended by a skilled health attendants (doctors/nurses/midwife)	Yes	42
		No	0
2	If yes, who were you attended by?	Doctor	42
		Nurse	0
		Midwife	0
3	Was delivery done by	Vaginal	42
		LSCS	0
4	Was delivery conducted in Labor room/OT/Health Facility?	Yes	42
		No	0
5	Was place/room of delivery and ward were clean and have all facilities?	Yes	42
		No	0
6	How satisfied were you with care received from skilled birth attendant?	Completely	42
		Partially	2
		Dissatisfied	0
7	Did you experience any complications during delivery?	Yes	0
		No	42
8	Did you given/taken to secondary/higher centre hospital for emergency care/Referral services	Yes	0
		No	42

Table 6: Assessment of Health Services received during Delivery of Study Participants.

Majority 98% of the mothers had institutional delivery at SDH Tanakpur and 2% mothers had others site delivery due to complications & referral. All the deliveries were conducted

by doctors and had normal vaginal delivery (Table 7).

S.no.	Variables	PNC	
1	Did you receive medical care after delivery	Yes	54
		No	0
2	What health services did you receive when you visit for PNC	1.None	0
		2.Physical examination	54
		3.Counsel for breast feeding	54
		4.Contraceptive	54
		5.Blood test for Anemia	54
		6. Nutritional support	54
3	Did you have advice and counseling regarding family planning	Yes	54
		No	0
4	Is your registration was done under JSY/JSSK health program and facility provided to you?	Yes	54
		No	0
5	Did you get any incentives given by the centre/state government under the scheme	Yes	54
		No	0
6	Did you get any home based care of visit by ASHA/ANM regarding Maternal/Child Services	Yes	54
		No	0

Table 7: Assessment of MCH Services received after the Delivery of study participants (n=54).

The cost of the MCH services to all the study participants were provided 100% free of cost.

Discussions

Mothers' literacy rates among participants in the study were 94%, which is consistent with the 82% reported in the NHSRC health report on Uttarakhand. This is also correlated with good MCH service utilization at SDH, Tanakpur, which is further supported by the NHSRC report and a study by Awasthi, et al. The results of our study's sociodemographic characteristics are strongly supported by research by Abhishek, et al. which will improve and enhance the use of maternal health care services [22,23]. According to the NHSRC health dossier and NFHS 5 data, 72.6% of women in Uttarakhand received four ANC check-ups, and the districts of Dehradun, Rudraprayag, and Udham Singh Nagar reported relatively good ANC coverage, ranging from 75.3% to 76.5%, of which 63% were observed at SDH, Tankpur, during our study period. In the study found that SDH Tankapur's MCH services are effectively used, which is consistent with Panday, et al.'s finding that maternal healthcare facilities were better utilized in Almora, Bageshwar, Champawat, Nainital, and Udham Singh Nagar. In Hyanki, et al.'s 2019 study, 98.2% of participants reported receiving IFA tablets, confirming that

all study participants used the tablets during their ANC and PNC visits. Under the NRHM-JSY program, which aims to give all pregnant women guaranteed, comprehensive, and free maternity care, all study participants received MCH services at no cost.

Conclusion

- According to the current study, a woman's age, place of residence, socioeconomic status, marital age, length of time after marriage, number of children she currently has, and literacy level are all significant factors that affect her use of maternal health care services.
- The study participants' literacy status and number of children at present were found to be significantly correlated with their use of ANC and PNC services.
- Literacy of mothers about Maternal and child health plays a key role in better utilization of maternal and child health services.
- Free of cost maternity care to all pregnant women under JSY scheme is highly supported in institutional deliveries
- The lower utilization of ANC among women less than 21 years raises a serious concern.

Recommendation

- ANC services among less than 21 years, such determinants shall be considered for upcoming intervention aiming to bring attitudinal changes and concurrently leading to improved and enhanced usage of maternal health care services.
- There is gap of blood bank services at SDH level to deal with anemic emergency delivery cases.
- Along with this if there are regular trainings of health staff and there is established institution with most of required facility complemented with proper implementation of in hand resources can bring down the mother and child deaths.

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