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ASSESSING COMPETENCY OF NURSING OFFICERS PROVIDING INTRA-NATAL CARE IN COMMUNITY HEALTHCARE CENTERS AND SUB-DISTRICT HOSPITALS OF GADAG DISTRICT

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ABSTRACT

Background: A critical stage of maternal healthcare is intra-natal care, when prompt and expert interventions can lower mother and newborn mortality and avoid problems. Nursing officers are often the primary caregivers for institutional births in rural areas, such as the Gadag district, where Community Health Centers (CHCs) and sub-district hospitals are essential services. National initiatives, such as LaQshya and Janani Suraksha Yojana (JSY), have improved institutional delivery rates; however, competency gaps among nursing officers continue to pose a challenge to the quality of care. Research has indicated insufficient utilization of partographs, inadequate detection of the issues, and noncompliance with guidelines. Safe delivery procedures depend on having nurse officers with the necessary skills. **Objectives:** To assess the current competency levels of nursing officers in providing intranatal care at community health centres and sub-district hospitals of Gadag district. **Materials and Methods:** A Hospital-based Cross-Sectional study was conducted to assess the competency of nursing officers in providing intranatal care at selected Community Health Centres (CHCs) and Sub-District Hospitals (SDHs) in Gadag district. Prior permission was obtained from the District Health Officer, Gadag. An enumeration method was used to include all eligible nursing officers present during the study period. Data was collected using a structured self-administered questionnaire to assess knowledge and practices, and a competency-based observational checklist to evaluate skills in intranatal care. The data collected was entered and analysed using Microsoft Excel and SPSS version 20. Descriptive statistics such as frequencies and percentages were used to summarize the data. **Results:** The study included 57 nursing officers from CHCs and SDHs in Gadag district, of whom 96.49% were female, and 59.6% had over 10 years of experience. Most (80.7%) held GNM qualifications, and 49.1% had received in-service training in the past three years. T-test analysis revealed no statistically significant difference in knowledge scores based on qualification, experience, or training ($p > 0.05$). Routine tasks, such as obstetric history taking (94.7%), fetal heart monitoring (92.9%), and maternal vital assessment (91.2%), were performed well. However, emergency skills were lacking; only 10.5% managed PPH correctly,1.7% retained placenta, and 12.3% performed neonatal resuscitation. While 82.4% supported early breastfeeding, essential newborn practices like kangaroo care (10.5%), danger sign recognition (14%), and skin-to-skin contact (63.1%) were inconsistently followed. These findings indicate a gap between knowledge and practice, highlighting the urgent need for hands-on, competency-based training, particularly in emergency and respectful maternity care. **Conclusion:** The study emphasizes that despite Nursing officers' technical proficiency, there are still gaps in mother-infant bonding, emergency treatment, and respectful maternity practices. All demographics had similar levels of knowledge, which suggests that targeted, systematic training is required. Providing high-quality, patient-centered care for mothers and newborns requires ongoing in-service training that strengthens emergency readiness, respectful treatment, and communication. It is essential to improve practical skills through simulation, encouraging supervision, and ongoing professional growth. Neonatal danger sign detection, postpartum haemorrhage care, and neonatal resuscitation should get particular attention. Closing these gaps would help moms and babies have better health outcomes and safer births.

KEYWORDS: Maternal health**;** Competency; midwife; Nurses; Intra natal care; Work Competency; Skills; Karnataka.

INTRODUCTION

Maternal health refers to the health of women during pregnancy, childbirth, and the postnatal period, aiming to ensure a positive experience for both mother and child.[1] Every day, nearly 800 women die from preventable pregnancy-related complications 99% of these occur in low- and middle-income countries, with adolescent girls under 15 at the highest risk. Timely, affordable, and quality care is crucial to reduce maternal morbidity and mortality.[2] Maternal mortality is a key indicator of healthcare quality. Globally, the maternal mortality ratio (MMR) has dropped by 45% since 1990. In India, MMR declined from 437 (1990) to 130 (2016) and further to 97 per 100,000 live births by 2020, saving approximately 8,580 women annually.[3] However, India (17%) and Nigeria (14%) still account for one-third of global maternal deaths. SDG Goal 3.1 aims to reduce MMR to less than 70 by 2030. India has prioritized maternal health through initiatives like **RCH-I (1997), NRHM (2005)** merged into **NHM (2013),** and schemes such as **JSY,** the largest conditional cash transfer program, and **JSSK,** both promoting institutional deliveries.[4] Programs like **PMSMA** and **UNICEF-supported skilled birth attendance** have further strengthened maternal healthcare in the country.[5] India has reduced maternal mortality to 97 per 1 lakh live births, neonatal mortality to 20, and under-5 mortality to 32 per 1,000 live births (2020). Still, 40% of newborn deaths and half of maternal deaths occur on the day of birth. Addressing these preventable deaths is key to meeting the SDG 2030 targets.[6] According to NFHS-5 data, institutional births in India stand at 88.6%, with 58.1% of women receiving antenatal care and 78% benefiting from postnatal care.[7] In Karnataka, 97% of births occur in health facilities, with 70.9% receiving antenatal care and 87.9% postnatal care.[8] Midwifery is gaining global attention for its vital role in improving care quality. The State of the World's Midwifery Report 2014, covering 73 low- and middle-income countries, urges investment in quality midwifery. These countries account for most maternal, stillbirth, and newborn deaths, but have only 42% of the global health workforce. Only four have enough staff to meet care needs, reduce over-medicalization, and use resources efficiently.[9]

Access to a skilled birth attendant is a key strategy to reduce maternal and neonatal deaths in low/middle-income countries.[10] Since 2005, several efforts have been made in India through the National Rural Health Mission (now called National Health Mission—NHM) to increase institutional deliveries.[11] Institutional deliveries have been promoted by the government to increase access to skilled birth attendants from 39% to 79% by 2014, with 52% in public facilities highlighting the public sector's key role in access to skilled birth attendants.[12] The Indian Nursing Council outlines key nursing roles, including end-of-life care, emergency response, cultural sensitivity, and patient evaluation. Nurses also handle administration, train students, provide in-service education, and uphold ethical standards. Their leadership and activism support quality improvement, policymaking, and evidence-based, compassionate care, strengthening India's health system.[13] The Indian Nursing Council designed the GNM curriculum to train nurses for competent care, problem-solving, and deliveries. Nursing officers support procedures, medication, hygiene, records, emergencies, admissions, supplies, infection control, and ethical standards.[14] Public health facilities are the main care source for rural and vulnerable groups. In rural areas, 80.1% of births are institutional, with 70% in public facilities. In urban areas, 89.5% are institutional, with 47.4% in public facilities.[15] Public sector quality is especially important for the poorest populations, who depend more on government services. In rural areas, 58% of the poorest use public facilities compared to 29% of the richest. In urban areas, this reliance is 48% versus 19%.[16] In 2018, the WHO released intrapartum care guidelines promoting a positive childbirth experience. These updated recommendations redefined labor stages and addressed the timing and use of interventions to improve maternal and neonatal outcomes.[17] WHO emphasizes that effective, evidence-based labor practices and avoiding harmful interventions enable health workers to support the physical, emotional, and psychological well-being of mothers, newborns, and families.[18]

MATERIALS AND METHODS

Study Design: A Hospital-based Cross-Sectional study.

Study Setting: The study was conducted in Community Health Centres (CHCs) and Sub-District Hospitals (SDHs) of Gadag District, Karnataka, India, between November 2024 and December 2025. Data collection was completed over one month.

Participants: All registered nursing officers working in CHCs and SDHs who were actively involved in delivery management and had at least one year of maternal healthcare experience were included. Nursing officers on long-term leave or not directly involved in delivery management were excluded. A total of 57 participants were included using universal sampling.

Variables: The study examined demographic characteristics, professional background, in-service training, and competency levels in intranatal care. Outcomes included competency in routine tasks, emergency care, respectful maternity care, and neonatal care.

Data Sources: Primary data were collected using a structured self-administered questionnaire assessing knowledge and practices, and an observational checklist evaluating practical skills. Consistency in data collection methods was maintained across all participants.

Study Size: A Universal sampling technique was used to select 57 eligible nursing officers present during the study period.

Quantitative Variables: Continuous variables, such as knowledge scores, were summarized using mean and standard deviation. Categorical variables were reported in frequencies and percentages.

Statistical Methods: Descriptive statistics were used to summarize the data. T-tests were used to examine associations between knowledge scores and demographic variables. A $p<0.05$ was considered statistically significant.

RESULTS

Table No. 1: Distribution of socio-demographic details and descriptive statistics of nursing officers.

Sl. No	Variables	Category	Frequency (n)	Percentage (%)
1	Age groups	26 -35 years	24	42.1
		Above 35 years	33	57.8
2	Gender	Male	02	3.5
		Female	55	96.4
3	Religion	Hindu	49	86.0
		Islamic	06	10.5
		Christian	02	3.5
4	Marital status	Married	51	89.5
		Un married	05	8.8
		Prefer not to say	01	1.8
5	Type of family	Joint	20	35.1
		Nuclear	35	61.4
		Prefer not to say	02	3.5
6	Qualification	GNM	46	80.7
		BSc/MSc	11	19.2
7	Graduated Institution	Government	23	40.3
		Private	33	57.8
		Un answered	01	1.7
8	Total year of experience	Below 10 years	23	40.3
		Above 10 years	34	59.6
9	In service training (past 3 years)	Yes	28	49.1
		No	29	50.8
10	Conduct deliveries per week?	1-5	34	59.6
		Above 5	23	40.3
11	Have you been posted in the labour section in this institution in last year?	Yes	57	100

Among the 57 nursing officers, the vast majority were female (96.4%), and over half were above 35 years of age, reflecting a mature and experienced workforce. Most were married (89.5%), followed the Hindu religion (86%), and lived in nuclear families (61.4%). Four out of five (80.7%) held a GNM qualification, while only a few had higher degrees. Slightly more than half worked in private institutions (57.8%), and about three-fifths had over 10 years of experience. Notably, only half had received intranatal care training in the past three years, despite all being posted in the labor room, and most handling 1–5 deliveries per shift. While the nursing officers were experienced and actively involved in labor care, the lack of recent training in half of them indicates a need for regular skill updates to ensure consistent and quality intranatal services.

Table No 2: Distribution of Practical skills of Nursing officers in Phase I (During Antenatal care).

An observational checklist was used to assess the competency and practical skills of the nursing officers.[19]

Sl. No.	Questions	Excellent/Good	Average/Poor/Very poor
1	Comprehensive obstetric and medical history taken before labor monitoring?	94.7%	5.6%
2	Physical Examination of pregnant women conducted?	77.1%	22.8%
3	Appropriate tools used for intermittent fetal monitoring?	80.7%	19.2%
4	Information and Support are provided to pregnant women throughout labor and delivery.	64.9%	35.0%
5	Emotional Encouragement provided to the women during labor?	66.6%	33.3%

In this phase, the most consistently performed task was taking comprehensive medical histories, reported by nearly all nursing officers (94.7%). A large majority also conducted thorough physical examinations and used appropriate tools effectively. However, performance declined in areas requiring interpersonal engagement. Approximately two-thirds of participants provided adequate information, support, and emotional encouragement to the women during care. While clinical assessment skills were well established, the limited focus on communication and emotional support indicates a need for capacity building in patient-centered care and interpersonal communication.

Table No 3: Distribution of Practical skills of Nursing officers in Phase II (During Intranatal care).

Sl.No.	Questions	Excellent/ Good	Average/Poor/ Very poor	N/A
1	Shared decision making facilitated with women during labor?	73.6%	26.3%	0
2	Companion of choice allowed throughout labor?	75.4%	24.5%	0
3	Woman encouraged for freedom of movement during labor?	1.7%	98.2%	0
4	Woman allowed to choose her birthing position?	0	100%	0
5	Fluids provided to the woman during labor?	96.4%	3.5%	0
6	Relaxation or back massage offered during labor?	77.1%	22.8%	0
7	Woman's vital signs regularly assessed?	91.2%	8.7%	0
8	Uterine Contraction monitored regularly?	89.4%	10.5%	0
9	Cervix changes assessed during labor?	73.6%	26.3%	0
10	Fetal descent monitored consistently during labor?	80.7%	19.2%	0
11	Partograph used to detect complications?	77.1%	22.8%	0
12	Perineal area cleaned with antiseptic during delivery?	75.4%	24.5%	0
13	Labor augmentation managed effectively if needed?	42.1%	0	57.8%
14	Active management of the third stage of labor done?	96.4%	3.5%	0
15	Woman coached on controlled pushing to avoid trauma and routine episiotomy?	77.1%	22.8%	0
16	Obstructed labor identified and managed promptly?	29.8%	3.5%	66.6%
17	Fetal heart rate monitored regularly?	92.9%	7.0%	0
18	Maternal blood loss estimated and recorded accurately?	91.2%	8.7%	0
19	Excessive bleeding managed with uterotonics?	10.5%	0	89.4%
20	PPH cases identified and managed properly?	10.5%	0	89.4%
21	Vacuum-assisted vaginal delivery done if required?	3.5%	0	96.4%
22	Consent taken before any vaginal examination?	70.1%	29.8%	0

The most consistently followed practice during intranatal care was fluid administration, reported by nearly all nursing officers (96.4%). Most also performed routine monitoring tasks like fetal heart rate, vitals, and uterine contractions. About three-fourths allowed a birth companion and used relaxation methods, though not consistently. Respectful maternity care was notably poor—only one encouraged mobility, and none allowed choice of birthing position. Emergency responses were limited, with fewer than half managing augmentation and only a few handling obstructed labor or postpartum bleeding. While clinical monitoring was strong, critical gaps in respectful care and emergency management point to the need for targeted training and system-level support.

Table No 4: Distribution of Practical skills of Nursing officers in Phase III (During Postnatal care).

Sl. No	Questions	Excellent/Good	Average/Poor/ Very poor	N/A
1	Uterine tone assessed regularly after delivery?	94.7%	5.2%	0
2	Retained placenta managed efficiently?	1.7%	0	98.2%
3	Referral made to a specialist for complications?	5.2%	0	94.7%
4	Woman educated on danger signs post-delivery?	92.9%	0	7.0%
5	One-to-one respectful care given during labor and delivery?	96.4%	3.5%	0
6	Procedures explained before performing?	77.1%	22.0%	0
7	Staff avoided shouting at the woman during labor?	98.2%	1.7%	0
8	Any physical mistreatment (e.g., slapping) during labor?	100	0	0
9	Family planning counselling provided post-delivery?	17.5%	29.8%	0

In this phase, most predominant practice was avoiding any form of physical mistreatment, reported by all nursing officers, followed closely by respectful communication, with nearly all (98.2%) refraining from shouting. And the complete avoidance of physical mistreatment during labor, reported by all nursing

officers (100%). One-to-one respectful care and regular assessment of uterine tone were also widely practiced by the majority. Information on postnatal danger signs was shared by most participants, indicating good awareness of immediate postpartum needs. However, more specialized postnatal care was lacking. Very few managed retained placenta or referred complications to specialists, and fewer than one in five provided family planning counselling after delivery. over all respectful and basic postnatal care practices were consistently maintained, there was a clear gap in addressing complications and providing reproductive counselling, pointing to a limited focus on comprehensive maternal care beyond delivery.

Table No 5: Distribution of Practical skills of Nursing officers in Phase IV (During Neonatal care).

Sl.No.	Questions	Excellent/Good	Average/Poor/ Very poor	N/A
1	APGAR score assessment performed for the neonate in the first minute of life?	70.1%	29.8%	0
2	NEWS assessment done?	64.9%	35.0%	0
3	Are appearance variations identified?	70.1%	29.8%	0
4	Neonates' Vitals monitored regularly?	98.2%	1.7%	0
5	Resuscitation given if needed?	12.3%	0	87.7%
6	Is delayed cord clamping practiced?	82.4%	17.5%	0
7	Cord care provided properly?	84.2%	15.7%	0
8	Physical Examination of the neonate done in front of the mother/family?	54.3%	45.6%	0
9	A safe environment ensured for the neonate?	82.4%	17.5%	0
10	Newborn Prophylaxis administered correctly?	100%	0	0
11	Breastfeeding started within 1 hour of birth?	82.4%	17.5%	0
12	Skin-to-skin contact is supported between the mother and the neonate?	63.1%	36.8%	0
13	Zero separation between mother and neonate is practiced in the birthing room	61.4%	38.5%	0
14	Abnormal findings referred to a specialist?	14.0%	3.5%	82.4%
15	Partner/support involved in neonatal care?	80.7%	19.2%	0
16	Attention paid to fostering Parent-newborn interaction?	68.4%	31.5%	0
17	IKMC or KMC started for preterm/LBW?	10.5%	1.7%	87.7%

Most essential neonatal care practices were well-executed. Nearly all nursing officers monitored neonatal vitals (98.2%), and all administered prophylactic treatments (100%). A majority performed cord care (84.2%), delayed cord clamping, and early breastfeeding (both 82.4%). However, bonding and emergency preparedness practices were limited. About two-thirds supported skin-to-skin contact (63.1%) and practiced zero separation (61.4%). Only around one in ten provided neonatal resuscitation (12.3%), referred abnormal findings (14%), or practiced Kangaroo Mother Care (10.5%). While routine neonatal care was consistently followed, emotionally supportive and emergency response practices were significantly lacking, highlighting the need for improved training in bonding and neonatal complication management.

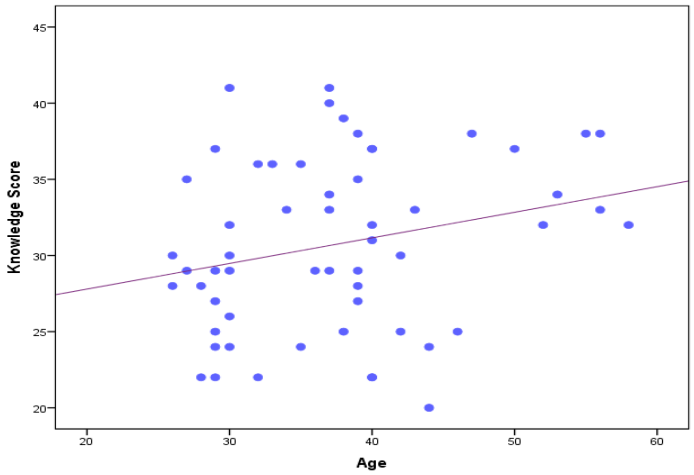

Figure 1: Scatter plot showing the correlation between the age of participants with practical knowledge score (n=57).

The relationship between age and knowledge score is depicted in Figure 1, which shows a positive correlation (r-value = 0.248, p-value = 0.063). This indicates that as the age of participants increases, there will increase in the practical knowledge score.

Table No 6: Comparison of professional qualities of nursing officers with knowledge score.
To assess the knowledge of the nursing officers, structured self-administered questionnaires were used.[20]

Sl .No	Variables	Categories	No. of participants	Knowledge score		
				Mean	SD	P-value
1	Institution	Government	23	32.34	4.92	0.0996
		Private	33	29.81	5.96	
2	Education	GNM	46	30.80	5.44	0.8560
		BSc/MSc	11	30.45	6.83	
3	Years of Experience	Below 10 years	23	29.43	5.33	0.1562
		Above 10 years	34	31.61	5.80	
4	In service training (past 3 years)	YES	28	31.39	4.87	0.8566
		NO	29	30.10	6.37	
5	Conduct deliveries per week?	1-5 deliveries	34	30.94	5.67	0.7424
		Above 5 deliveries	23	30.43	5.79	

The independent t-test analysis indicated minor variations in mean knowledge scores across different categories, such as type of institution, educational qualification, years of experience, in-service training within the past three years, and number of deliveries conducted per week. However, none of these differences were found to be statistically significant, as all p-values were above the standard significance level of 0.05. This suggests that there is no statistically meaningful association between any of the examined variables and knowledge scores in this study population. Therefore, the observed differences are likely due to random variation, and none of the assessed demographic or professional factors appear to significantly influence knowledge level. (Table 6)

DISCUSSION

Nurses trained in government institutions and those with greater work experience showed marginally higher knowledge scores; however, these differences were not statistically meaningful. Similarly, recent in-service training did not appear to enhance knowledge levels. These outcomes are consistent with the findings of Matsui et al., who also reported that formal training alone was insufficient in developing clinical competence. Although participants in both studies performed routine intranatal tasks with consistency, their ability to manage obstetric emergencies was limited. Notably, while both studies reveal a disconnect between standard task execution and critical decision-making, the current study further identifies a substantial gap in respectful maternity care, an area not addressed in previous studies.[21] In the present stud, nursing officers demonstrated consistent proficiency in routine neonatal care practices but showed limited preparedness in managing critical situations such as neonatal resuscitation, kangaroo mother care, and recognizing neonatal danger signs. This suggests that routine task performance may not reflect comprehensive clinical competency, particularly in emergency scenarios. Moller and colleagues similarly emphasized that conventional assessments often overlook real-world skills and recommended simulation-based evaluations and practical drills to bridge this gap. While both studies highlight the need for competency-focused approaches, the present study specifically reinforces this through observed deficiencies in applied emergency responses.[22] In the present study, most nursing officers reported performing Active Management of the Third Stage of Labor, yet few administered uterotonics correctly or recognized referral needs. Similarly, Muzeya's study found high self-reported adherence but poor understanding of WHO guidelines. Both studies exposed gaps in emotional support and respectful care, suggesting a superficial approach. While Muzeya advocated reflective, case-based learning, the present study underscores the need to move from routine tasks to patient-centered, judgment-based care.[23] The literature review by Mika Fukada in 2018 defines nursing competency as the integration of knowledge, skills, attitudes, and values essential for professional nursing. It categorizes competency into behaviourism, trait theory, and holism, favouring holism for its comprehensive view. The study discusses tools like the CNCSS and HNCS for assessment and highlights that competency evolves through experience and learning. Yet, the concept remains insufficiently defined, calling for further research on its structure, evaluation, and training methods.[24] Steven A. Harvey et al. (2007) assessed SBA competence in five high-maternal-mortality countries using WHO's IMPAC guidelines. Among 1,358 SBAs, knowledge scores were moderate (62%), but key skills like AMTSL (46%) and neonatal resuscitation (55%) remained low. The study highlighted a gap between the SBA title and actual capability, urging better training, regular assessments, and stronger system support.[25]

CONCLUSION

Most of the participants belonged to the 31–40 years age group, held GNM qualifications, and had more than 10 years of experience. While they demonstrated fair knowledge (68%) and efficiently carried out routine

tasks such as recording obstetric history, monitoring fetal heart rate, and checking vital signs, their overall practical competency was lower at around 43%. Notable shortcomings were seen in emergency interventions like postpartum hemorrhage (10.5%) and neonatal resuscitation (12.3%), as well as in providing respectful maternity care, including freedom of birthing position (0%) and support for mobility during labor(1.7%). These observations reflect a disconnect between knowledge and real-world practice. Focused, hands-on training, practical simulations, and regular supportive supervision are essential to enhance emergency response, neonatal care, and delivery of respectful, woman-centered care.

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