(International Print/Online Journal)

SJIF IMPACT FACTOR: 6.829
PUBMED-National Library of Medicine ID-101739732

ISSN (Print): 2209-2870
ISSN (Online): 2209-2862

International Journal of Medical Science and Current Research (IJMSCR)
Available online at: www.ijmscr.com
Volume 9, Issue 2 , Page No: 531-540
March-April 2026

IJMSCR

Knowledge on Roles and Responsibilities of a Medical Officer in Primary Healthcare Setting and Self-Assessed Competencies and Proficiencies among Medical Interns: A Cross-Sectional Study

[1]Dr Sneha Dhali, [2]Dr Sandra Fernandez, [3]Dr Jalina Laishram, [4]Dr H. Sanayaima Devi, [5]Dr Shantibala K
[1]Senior resident, [2]Assistant Professor, [3]Associate Professor, [4]Professor, [5]Professor and HOD,
[1,3,4,5,6]Department of Community Medicine,
Regional Institute of Medical Sciences, Lamphelpat, Imphal-795004, Manipur, India
[2] Department of Community Medicine,
Aarupadai Veedu Medical College, Pondicherry, India

***Corresponding Author:**
Dr. Jalina Laishram
Associate Professor, Department of Community Medicine,
Regional Institute of Medical Sciences, Lamphelpat, Imphal-795004, Manipur, India

Type of Publication: Original Research Paper
Conflicts of Interest: Nil

Abstract

Background: Medical officers (MO) at Primary Health Centres (PHCs) play a pivotal role in delivering primary healthcare in India. Adequate knowledge of roles and responsibilities and clinical competencies among medical interns is essential for transition into primary care practice. However, evidence regarding interns' preparedness remains limited.

Objectives: To assess knowledge on roles and responsibilities of medical officers in primary healthcare settings and self-assessed competencies and proficiencies among medical interns, and to determine the association between knowledge and background characteristics.

Methods: A cross-sectional study was conducted among medical interns in a tertiary care teaching hospital in Imphal West, Manipur, during April to June 2024. Data were collected using a pre-tested structured questionnaire assessing knowledge on roles and responsibilities of Medical Officer, self-assessed competencies, and proficiencies. Data were analysed using SPSS version 26. Descriptive statistics like frequency and percentage were employed.

Results: Total 96 interns participated in the study with a mean age of 25.38 ± 1.02 years. Overall, 41.7% of interns had adequate knowledge regarding the roles and responsibilities of MOs at the PHC level. In the competency assessment, more than half of the interns reported low confidence in managing conditions such as chest pain and signs of stroke. Three-fourths perceived themselves to be proficient in healthy lifestyle counselling, whereas only one-third felt competent in organizing health promotion campaigns independently.

Conclusion: Four out of ten interns demonstrated adequate knowledge on roles and responsibilities of MO. Strengthening hands-on training, structured orientation on PHC roles, and competency-based skill development during internship is recommended.

Keywords: Medical interns, Primary Health Centre, Roles and responsibilities, Medical officer, Knowledge, Self-assessed competency, Manipur, India

Introduction

The delivery of services through the public health sector in India follows a three-tier structure: primary, secondary, and tertiary care. Within this framework, the Primary Health Centre serves as the first point of contact between the community and the healthcare system, particularly for populations residing in rural and remote areas. PHCs form the backbone of the Indian Public Health System (IPHS) and are mandated to provide comprehensive primary healthcare, encompassing preventive, promotive, curative, palliative, and rehabilitative services in accordance with the principles of equity, accessibility, and continuity of care [1].

At the PHC level, the Medical Officer (MO) plays a pivotal role in translating national health policies and programs into effective service delivery at the grassroots. As the technical and administrative head of the PHC, the MO is responsible not only for the management of common illnesses and emergencies, but also for the implementation of national health programmes, disease surveillance, maternal and child health services, supervision of health workforce, and community engagement activities. The effectiveness of PHC services and the overall quality of care delivered at the community level, therefore, depend substantially on the knowledge, skills, and competencies of Medical Officers [1].

Competency is defined as a combination of knowledge, skills, abilities, and behaviours that a healthcare professional must demonstrate to perform a task safely and effectively in the workplace. It is often considered the "minimum threshold" of the required skill [2,3]. Proficiency, in contrast, refers to the level of expertise or the degree of mastery a professional has achieved in performing a task. If competency is the foundation, proficiency represents the "ceiling" of skill, reflecting a high level of, or expert, performance [4].

A study by Chandra BH et al [5] showed that while medical interns generally perceive themselves as competent in recording basic clinical parameters and core competencies of major clinical specialties, their confidence in examination skills and knowledge-attitudinal domains is considerably lower. Competencies in obstetric care, ENT, and ophthalmology have been reported as particularly inadequate. These findings highlight persistent gaps in comprehensive competency development among interns, which may affect their readiness to assume the wide-ranging clinical and public health responsibilities expected of MOs at the Primary Health Centre level [5].

Understanding the extent of their knowledge, competency and proficiency in executing the duties not only sheds light on the effectiveness of their training. Although a few studies from India have examined interns' self-assessed competencies, evidence specifically addressing preparedness for Primary Health Centre roles remains limited. Furthermore, to the best of our knowledge, no published studies from the North-Eastern region of India have assessed medical interns' knowledge and self-assessed competencies related to Medical Officer roles. Therefore, this study was conducted to assess knowledge on roles and responsibilities of medical officers in primary healthcare settings and self-assessed competencies and proficiencies among medical interns.

Materials And Methods: A cross-sectional study was conducted among medical interns in a tertiary care hospital in Imphal West district of Manipur. This is a 1074-bed teaching hospital that caters to patients across the state of Manipur. According to records maintained by the institute's academic section, 108 interns were enrolled during the study period.

The study was conducted from April to June 2024. All medical interns posted at the institute during the study period were the study population. Those interns who had worked in clinical departments (as per the National Medical Commission) for at least six months were included, and those who could not be contacted after two attempts were excluded.

Sample size and sampling: Included all MBBS interns who were posted in the institute during the study period, satisfying the eligibility criteria.

Study tools: A pre-tested, structured questionnaire was used to collect the data, consisting of 3 parts: background characteristics, knowledge on roles and responsibilities of Medical Officers, and self-assessed competencies and proficiency. The questionnaire was pre-tested among eight MBBS interns to assess clarity

Volume 9, Issue 2; March-April 2026; Page No 531-540

and feasibility. No modifications were done following the pre-test, and the data collected during this phase were excluded from the final analysis.

For knowledge on roles and responsibilities (15 items), each correct answer was given a score of one, and incorrect/don't know was given a score of zero (0-15). Those scoring more than 75% of the maximum obtainable score (>11) were considered to have adequate knowledge on roles and responsibilities of MO in primary healthcare setting.

For self-assessed competencies (11 items), each was described on a four-point Likert scale (very low, low, fair, high). For self-assessed proficiency in performing procedures: 16 items, each described on a three-point Likert scale (cannot perform, can perform under supervision, can perform independently).

Data collection: Participants were briefed about the study, and written informed consent was obtained prior to data collection. Data were collected using a self-administered questionnaire.

Data analysis: The data collected was checked for completeness and consistency. Then it was entered and analyzed in IBM SPSS version 26 for Windows (IBM, Armonk, New York, USA). Descriptive statistics like frequencies and percentages were used.

Ethical issues: Ethical approval was obtained from the Institutional Ethics Board (No: A/REB/Prop (SP)219/195/11/2024). Participation was voluntary, and their right to refuse was respected. A unique code number was assigned, and no names were taken to maintain confidentiality.

Results:

A total of 96 medical interns participated in the study. The mean age of the participants was 25.38 ± 1.02 years. Females constituted slightly more than half of the participants (n=49, 51%). Regarding domicile, 42.7% of the interns were from Manipur, and the majority of participants had completed their MBBS at the study site institute (n=87, 90.6%). (Table 1)

The full form of IPHS was correctly identified by 45.8% (n=44) of the participants. Only 18.2% knew the roles and responsibilities of MO (Clinical, Public Health & Administrative). The majority agreed that medical officers are engaged in health education & promotion activities (n=91, 94.8%) and also are involved in surveillance activities (n=81, 84.4%). High awareness was observed regarding key public health responsibilities, including implementation of National Health Programs (90.6%), organizing staff training programs (92.7%), involving community leaders and social agencies (89.6%), providing family planning counselling services (87.5%), performing contraceptive procedures (68.8%), ensuring availability of essential drugs and equipment (81.3%), promoting institutional delivery (87.5%), and implementing the Universal Immunization Programme (82.3%). However, only 37.5% correctly identified that a Medical Officer should visit each subcentre at least once a month. Only 29.2% correctly identified that all healthcare professionals are responsible for reporting of notifiable diseases. 76% correctly responded that MO will monitor & guide the activities of patient welfare societies of the hospital and village health and sanitation committee. (Table 2)

Overall, 41.7% (n=40) of the interns demonstrated adequate knowledge regarding the roles and responsibilities of Medical Officers in the primary healthcare setting. (Figure 1)

Overall, participants reported fair to high confidence in managing metabolic and gastrointestinal conditions, with higher levels of confidence for acute diarrhoea (fair/high: 78.2%), high blood pressure (81.8%), low blood pressure (82.3%) and high blood sugar (77.0%). In contrast, lower confidence was observed for chest pain, signs of stroke, convulsions, and common mental disorder symptoms, where a substantial proportion reported low confidence, particularly for signs of stroke (52.0%), convulsions (51.3%), common mental disorder symptoms (50.0%), and chest pain (45.8%). Confidence in managing anaphylaxis was moderate, with most participants reporting fair (40.6%) or low confidence (40.6%). (Table 3)

A majority of participants could perform basic clinical skills independently, including measuring blood pressure (89.6%), using and interpreting a glucometer (86.5%), suturing wounds (83.3%), and providing healthy lifestyle counselling (75.0%). Independent proficiency was moderate for performing a 12-lead ECG (52.1%) and conducting normal vaginal delivery (38.5%). In contrast, lower independent proficiency

Volume 9, Issue 2; March-April 2026; Page No 531-540

was observed for interpreting a 12-lead ECG (18.8%), screening for common mental disorders (19.7%), assisted vaginal delivery (16.7%), and reporting notifiable diseases (33.3%). Skills related to preventive and quality assurance services showed the poorest independent performance, particularly visual inspection of the cervix with acetic acid (8.4%) and assessment of quality standards (12.5%), with most participants requiring supervision or unable to perform these tasks. (Table 4)

Discussion

This study assessed the knowledge regarding roles and responsibilities of Medical Officers in the primary healthcare setting and self-assessed competencies and proficiencies among medical interns in a tertiary care teaching hospital of Manipur. Only about four in ten participants demonstrated adequate knowledge of the roles and responsibilities of the Medical Officer. Gaps were particularly evident in emergency clinical management, administrative supervision, and public health functions.

The proportion of interns with adequate knowledge in the present study is comparable to findings reported by Chandra et al. [5], who found that interns possessed reasonable theoretical awareness of PHC but felt inadequately prepared for independent service delivery. Similarly, Sharma et al. [6] reported that while a majority of interns demonstrated satisfactory theoretical understanding, self-rated preparedness for practical and administrative responsibilities was considerably lower. These findings collectively suggest that undergraduate medical training provides foundational knowledge but may not sufficiently emphasize operational and system-level roles expected of MOs at PHCs.

Self-assessed competencies in the current study revealed that a higher proportion of interns expressed confidence in managing common conditions such as acute diarrhoea and more than half of the respondents expressed confidence in managing high blood pressure, consistent with findings from Pradhan et al. [7], where interns reported stronger competence in basic NCD-related tasks. However, more than half of the participants in our study reported low confidence in managing emergency presentations such as chest pain, stroke symptoms, convulsions, and mental health crises. Similar findings were highlighted by Sharma et al. [6] and Chandra et al. [5], who documented inadequate preparedness for emergency decision-making and independent patient management at peripheral facilities. These findings are consistent with earlier studies by Palappalil [9] and Bonnic K et al. [10], which demonstrated poor preparedness of interns in handling emergency and critical care scenarios independently. The limited confidence in emergency care may reflect limited hands-on exposure and restricted decision-making during internship postings.

Regarding procedural skills, interns in the present study reported very high proficiency in basic tasks such as blood pressure measurement, glucometer use, suturing, and lifestyle counselling. In contrast, lower proficiency was observed for conducting normal vaginal deliveries, screening for mental disorders, and performing administrative tasks such as inventory management and quality assurance. A similar pattern was reported by Pradhan et al. [7], where competence was stronger in routine screening procedures but weaker in counselling and long-term management components. Similar patterns were documented by Chandra et al [5] and Muthu et al. [11], where interns demonstrated higher competence in basic procedures but lacked confidence in public health-oriented and system-based tasks. This disparity underscores the need for structured exposure to comprehensive PHC-specific procedures and administrative responsibilities during internship.

An important aspect of the present study is its comprehensive assessment of competencies beyond NCD-related domains. While disease-specific evaluations such as WHO-PEN–focused studies [7] provide valuable insights into preparedness for chronic disease management, the role of an MO at PHCs encompasses communicable disease control, maternal and child health services, surveillance, outbreak response, administrative leadership, and program implementation. The multidimensional gaps identified in the current study therefore reflect broader system-level preparedness issues that are less frequently captured in disease-specific competency assessments. These findings also align with the principles of competency-based medical education (CBME), which emphasize defined competencies,

Volume 9, Issue 2; March-April 2026; Page No 531-540

workplace-based assessment, and progressive entrustment before independent practice [12].

In the present study, participants showed relatively higher confidence in managing acute diarrhoea (34.4% high confidence) and hypertension (27.6% high confidence), whereas more than half of the interns reported low confidence in managing chest pain (45.8% low), signs of stroke (52% low), convulsions (51.3% low), and common mental disorders (50% low).Similar findings were reported in a study conducted by Yazdani et al [13], who observed that while medical interns expressed confidence in routine clinical tasks, lower confidence was noted in complex clinical decision-making and independent patient management.

Overall, the present study reinforces concerns raised in previous literature regarding the incomplete preparedness of medical interns for independent primary healthcare practice. Although basic clinical and screening competencies, particularly in NCD-related domains, appear relatively satisfactory, substantial gaps persist in emergency care, administrative responsibilities, public health functions, and longitudinal patient management. Addressing these gaps through structured PHC postings, workplace-based assessments, and strengthened mentorship may enhance readiness for the comprehensive role of Medical Officers in primary care settings.

Strength And Limitations

The strength of the study lies in its novelty, as it is one of the first studies from the North-Eastern region of India to comprehensively assess both knowledge of Medical Officer roles at the Primary Health Centre level and self-assessed competencies and proficiencies among medical interns. Social desirability bias may have influenced self-reported responses, although privacy and confidentiality were ensured to minimize this effect.

Conclusion

Only four out of ten interns demonstrated adequate knowledge on roles and responsibilities of medical officers in primary healthcare setting. The findings indicate substantial gaps in interns' preparedness for managing emergency and clinical conditions, with more than half reporting low confidence in handling chest pain, stroke symptoms, convulsions, and common mental disorders. While majority perceived themselves to be proficient in healthy lifestyle counselling, only few felt competent to independently organize health promotion campaigns. This imbalance highlights the need to strengthen hands-on emergency training and enhance exposure to community-based public health planning and leadership activities during internship to ensure comprehensive readiness for primary healthcare practice.

References

1. Ministry of Health and Family Welfare. Indian Public Health Standards (IPHS) Guidelines for Primary Health Centres: Revised 2022. New Delhi: Government of India; 2022.
2. Frank JR, Snell LS, Cate OT, Holmboe ES, Carraccio C, Swing SR, et al. Competency-based medical education: theory to practice. Med Teach. 2010;32(8):638–45.
3. Frank JR, Snell L, Sherbino J, editors. CanMEDS 2015 physician competency framework. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015.
4. Dreyfus HL, Dreyfus SE. A five-stage model of the mental activities involved in directed skill acquisition. Berkeley: University of California, Berkeley; 1980.
5. Chandra BH, Bandhu S, Raje S, Singh G. A study of self-perceived competence of medical interns in India. South Asian Res J App Med Sci; 2(4); 2020; 37-43.
6. Sharma R, Jain V, Gupta S. Self-assessment of clinical skills among medical interns: A cross-sectional study. J Educ Health Promot. 2019;8:255.
7. Pradhan PMS, Adhikari B, Pant SB, et al. Self-assessment of non-communicable diseases–related competencies among interns of a medical institute of Nepal. J Inst Med Nepal. 2022;44(2):7-13.
8. World Health Organization. Package of Essential Noncommunicable Disease Interventions (WHO-PEN) for Primary Health Care. Geneva: WHO; 2016.
9. Palappalil D. Self-reported training assessment of medical interns and fresh graduates of a tertiary

Volume 9, Issue 2; March-April 2026; Page No 531-540

care centre. Ind Journal of Scien. R. 2015 June; 1(2): 127-33.
10. Bonnic K. , Schears G. J , Schroeder D. R , Jenkins S. M , Warner D. O, Sprung J. Survey of self-assessed preparedness for clinical practice in one Croatian medical school BMC Research notes 2009, 2:152, 27 July 2009.
11. Muthu J, Muthanandam S, Sethuraman K, Narayan K, Ananthakrishnan N, Adkoli B. Assessment of self-perception competencies among a Group of Dental interns in Pondicherry, India. J. Educ. Health Promot 2019.
12. Modi JN, Gupta P, Singh T. Competency-based medical education, entrustment and assessment. Indian Pediatr. 2015;52(5):413-420.
13. Yazdani R, Panah EY, Shafian H, Pour HA. Self-Assessment of Clinical Skills in Medical Internship. Strides Dev Med Educ. 2017 September; 14(3):e68137.

Table 1: Background characteristics (N=96)

Background characteristics	**n (%)**
Gender	
Male	47 (49.0)
Female	49 (51.0)
Domicile state	
Manipur	41 (42.7)
Other North Eastern states	50 (52.1)
Others*	5 (5.2)
Place of completion of MBBS	
Study site institute	87 (90.6)
Foreign Medical Graduates	9 (9.4)

Tabl 2: Response to knowledge questions on roles and responsibilities of the medical officer in PHC (N=96)

Questions		**n (%)**
1. Full form of IPHS	Indian Public Health System	28 (29.2)
	Indian Public Health Standards (Correct)	44 (45.8)
	Integrated Public Health System	8 (8.3)
	Integrated Public Health Standards	1 (1.0)
	Don’t know	15 (15.7)

Volume 9, Issue 2; March-April 2026; Page No 531-540

2. The roles and responsibilities of MO in PHC	Correct (Clinical, Public health, Administrative)	18 (18.2)
	Incorrect/Don't know	78 (81.2)
3. Medical officers do not engage in health education and promotion activities	True	4 (4.2)
	False (Correct)	91 (94.8)
	Don't know	1 (1.0)
4. Medical officers are not involved in surveillance activities	True	10 (10.4)
	False (Correct)	81 (84.4)
	Don't know	5 (5.2)
5. Medical officers play a vital role in implementing National Health Programs	True (Correct)	87 (90.6)
	False	8 (8.3)
	Don't know	1 (1.0)
	True (Correct)	89 (92.7)

6. Medical officers organize training programs for the staffs of PHC	False	4 (4.2)
	Don't know	3 (3.1)
7. Medical officers involve community leaders, various social welfare agencies & people for effective provision of patient centric healthcare	True (Correct)	86 (89.6)
	False	2 (2.1)
	Don't know	8 (8.3)
8. Medical officers provide counselling on family planning services	True (Correct)	84 (87.5)
	False	8 (8.3)
	Don't know	4 (4.2)
9. Medical officers perform contraceptive procedures like NSV, tubectomy & IUCD	True (Correct)	66 (68.8)
	False	19 (19.8)
	Don't know	11 (11.5)
10. They ensure adequate supplies of essential drugs and equipment	True (Correct)	78 (81.3)
	False	11 (11.5)
	Don't know	7 (7.3)
11. They promote institutional delivery	True (Correct)	84 (87.5)
	False	7 (7.3)
	Don't know	5 (5.2)
12. They plan and implement UIP	True (Correct)	79 (82.3)

Volume 9, Issue 2; March-April 2026; Page No 531-540

	False	6 (6.3)
	Don't know	11 (11.5)
13. MO should visit each subcenter in his/her area to provide service atleast	Once in a year	17 (17.7)
	Once in a month (correct)	36 (37.5)
	Once in a week	28 (29.2)
	Don't know	15 (15.6)
14. Who is responsible for reporting notifiable diseases to the designated health authorities	Medical Officers	55 (57.3)
	Nurses	5 (5.2)
	All healthcare professionals (correct)	28 (29.2)
	Laboratory technicians	2 (2.1)
	Don't know	6 (6.3)
15. MO will monitor & guide activities of	Patient welfare societies of hospital	17 (17.7)
	Village health and sanitation committee	4 (4.2)
	All the above (correct)	73 (76.0)
	Don't know	2 (2.1)

Volume 9, Issue 2; March-April 2026; Page No 531-540

Figure 1: Distribution of participants by knowledge on roles & responsibilities of Medical Officer in primary healthcare setting (N=96)

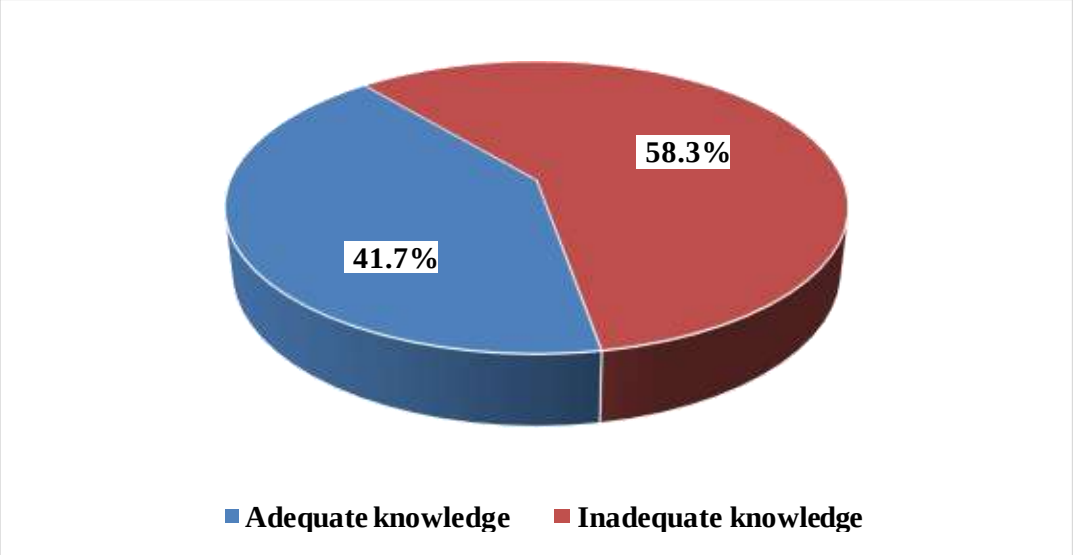

Table 3: Competency in managing patients with presenting complaints (N= 96)

COMPETENCY				
Presenting complaints	**Confidence n (%)**			
	Very low	**Low**	**Fair**	**High**
Shortness of breath	5 (5.2)	35 (36.5)	42 (43.8)	14 (14.5)
High blood pressure	2 (2.1)	16 (16.7)	52 (54.2)	26 (27.0)
Low blood pressure	3 (3.1)	14 (14.6)	57 (59.4)	22 (22.9)
High blood sugar	4 (4.2)	18 (18.8)	53 (55.2)	21 (21.8)
Low blood sugar	2 (2.1)	24 (25.0)	50 (52.1)	20 (20.8)
Chest pain	8 (8.4)	44 (45.8)	34 (35.4)	10 (10.4)
Signs of stroke	9 (9.4)	49 (52.0)	32 (33.3)	6 (6.3)
Common mental disorder symptoms	13 (13.5)	48 (50.0)	24 (25)	11 (11.5)
Acute diarrhoea	1 (1)	20 (20.8)	42 (43.8)	33 (34.4)
Convulsions	8 (8.3)	49 (51.0)	32 (33.3)	7 (7.4)
Anaphylaxis	5 (5.2)	39 (40.6)	39 (40.61)	13 (13.6)

Volume 9, Issue 2; March-April 2026; Page No 531-540

Table 4: Proficiency in managing patients (N= 96)

PROFICIENCY	Cannot perform	Can perform under supervision	Can perform independently
Measurement of blood pressure	2 (2.1)	8 (8.3)	86 (89.6)
Perform a 12 lead ECG	11 (11.4)	35 (36.5)	50 (52.1)
Interpret a 12 lead ECG	15 (15.6)	63 (65.6)	18 (18.8)
Glucometer use and interpretation	3 (3.1)	10 (10.4)	83 (86.5)
Clinical breast examination	2 (2.1)	53 (55.2)	41 (42.7)
Visual inspection of cervix with acetic acid	37 (38.5)	51 (53.1)	8 (8.4)
Examination of head, neck and oral cavity	5 (5.2)	53 (55.2)	38 (39.6)
Suturing of wound	0 (0)	16 (16.7)	80 (83.3)
Screening of common mental disorders	18 (18.8)	59 (61.5)	19 (19.7)
Conducting normal vaginal delivery	4 (4.2)	55 (57.3)	37 (38.5)
Conducting assisted vaginal delivery	25 (26.0)	55 (57.3)	16 (16.7)
Inventory and record keeping	6 (6.3)	47 (49.0)	43 (44.7)
Reporting of notifiable diseases	12 (12.5)	52 (54.2)	32 (33.3)
Assessment of quality standards (NQAS, LAQSHYA, KAYAKALP)	34 (35.4)	50 (52.1)	12 (12.5)
Healthy lifestyle counselling	4 (4.2)	20 (20.8)	72 (75.0)
Organize health promotion campaigns	0 (0)	67 (69.8)	29 (30.2)

Volume 9, Issue 2; March-April 2026; Page No 531-540