

Gap Analysis in Workforce and Infrastructure in the Subcenters for Upgradation to Health and Wellness Center in a Community Development Block of Purba Bardhaman District, West Bengal

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Abstract

Context: The government of India has recently decided to upgrade subcenters (SCs) to health and wellness centers (HWCs) for providing comprehensive quality services. **Aims:** The present study was undertaken to determine workforce- and infrastructure-wise gaps in the SCs for upgradation to HWCs and assess knowledge of the auxiliary nurse midwives (ANMs) regarding services to be delivered through HWCs. **Settings and Design:** This cross-sectional study was conducted in Bhatar block of Purba Bardhaman district between August and October 2019. **Subjects and Methods:** Workforce and infrastructure availability was assessed using a checklist in 38 SCs and knowledge was assessed using a questionnaire among ANMs. **Statistical Analysis Used:** Data entry and analysis was done in Microsoft™ Excel™. **Results:** No Subcentre had Community Health Officer and 23.7% of Subcentre were without second ANM. 28.9% of the ANMs had adequate knowledge about services to be delivered through HWCs. Infrastructurally, lack of staff residential facility (76.3%), water supply (34.2%), and inadequate civil construction (34.2%) were major barriers. **Conclusions:** Adequate recruitment of HCWs, infrastructure upliftment, and proper training of HCWs in the SCs are the need of the hour.

Keywords: Health and wellness center, health planning, Indian Public Health Standards, physical infrastructure, workforce

INTRODUCTION

Subcenters (SCs), the first contact point for the community to health services, provide basic health services such as maternal and child health care, adolescent health care, curative service for minor ailments, and also help in implementation of national health programs.^[1,2] The success of any nationwide program largely depends on well-functioning SCs providing services of acceptable standards to people which then again depends on multitude of factors, for example, infrastructure, workforce, and logistic support. Recognizing this importance, Indian Public Health Standards prepared a guideline enlisting minimum requirement for SCs.^[3]

Recently, the Government of India (GoI) has made a decision to upgrade all SCs to health and wellness centers (HWCs) for bringing services closer to communities and thus making it more accessible, equitable, and universal. This is expected to

ultimately be immensely helpful in attaining universal health coverage.^[4] The operational guidelines for HWCs are made with emphasis on health promotion and prevention of diseases and designed to bring focus on keeping people healthy by choosing healthy behaviors and reduce the burden of mortality and morbidity of chronic diseases.^[4]

Infrastructure is the primary requirement for a well-functioning SC. Adequate infrastructure improves the occupational environment and thus motivates health workers; additionally, beneficiaries also feel comfortable while accessing the

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services. For ensuring adequate infrastructure for the delivery of comprehensive primary health care, certain facilities were mentioned in the guideline for HWCs, for example, patient reception and registration area, provision of sitting arrangement of patients, and separate toilets for males and females.

Workforce adequacy is another determining factor for quality of health services. When workers face excessive workload, their ability to deliver quality services are affected. Every attempt, thus, should be undertaken for maintaining optimum workforce balance for the health staff.

In view of the above context, the present study was undertaken with the objective to determine the infrastructure and workforce gap in the SCs for becoming HWCs in Bhatar community development block (CDB) of Purba Bardhaman district, West Bengal. In addition to adequate infrastructure and workforce, the other essential component, for providing quality health services, is the knowledge of the health care staff on the services to be offered. Without adequate knowledge on the services to be offered, the staff will be unlikely to provide quality health care services. Hence, knowledge of the ANMs about the recent implementation of service delivery for HWCs was also assessed.

SUBJECTS AND METHODS

This descriptive type of observational study with cross-sectional design was conducted in the 38 SCs of Bhatar CDB of Purba Bardhaman district of West Bengal from August to October 2019.^[5,6] All 38 SCs were included in this study as primary study units. ANMs working in these SCs were considered as study population for knowledge assessment. One ANM from each SC was selected randomly; in case of only one ANM being posted in any SC, she was included leading to selection of 38 ANMs.

Before initiation of data collection, ethical approval was obtained from the Institutional Ethics Committee of the institute. Requisite administrative approval was also obtained for gap analysis.

Cares were taken not to disrupt the regular service provision through the SCs. For this, researchers visited each SC after contacting the respective ANMs. During this contact, the presence of the randomly selected ANM on the day of visit was ensured.

Spot observation checklists were used for collecting data on infrastructural and workforce gap analysis; record review, where appropriate, was also done.

Assessment of SCs in respect of infrastructural and workforce facility was done according to recent Operational Guideline of Ayushman Bharat for Comprehensive Primary Health Care through HWCs. Variables observed for the infrastructural assessment were rooms available in respect of clinic purpose, clinical examination, and office work with adequacy of space and proper ventilation, waiting space for beneficiaries, any storage space, and yoga room. Space for laboratory, residential

facility for staff, civil construction of the building with proper signage in local language, toilet facility, and outside drainage system were also taken into consideration. The presence of biomedical waste management process were also noted. If it was found to be present, the process (regular disposal/ Deep Burial Pit) of the same were noted as well. Water supply, firefighting facility, and any environment-friendly measure were included as well. Workforce was assessed in relation to number of staff including auxiliary nurse midwives (ANMs), health worker (male), community health officer (CHO), accredited social health activist (ASHA), and other staff.

For knowledge assessment, the ANMs were interviewed using a predesigned, pretested questionnaire comprising a set of total 43 questions on services to be delivered through HWCs. For each correct response, a score of 1 was assigned and score 0 (zero) was given to incorrect and nonresponse answer. If an individual scored more than 75th percentile, she was judged to have adequate knowledge; individuals with scores <75th percentile were considered to have inadequate knowledge.

Collected data were entered in MicrosoftTM ExcelTM spreadsheet software. After checking for erroneous and duplicated entries, further analysis was conducted in ExcelTM. Quantitative data were expressed in mean (\pm standard deviation [SD]) and median (interquartile range [IQR]) depending on the distribution of the variable; qualitative data were expressed in frequency (percentages). Chi-square test was applied for the analysis of any association of adequacy of knowledge with background characteristics; $P < 0.05$ was considered as statistically significant.

RESULTS

The findings are presented in three subsections: infrastructural characteristics, workforce availability, and knowledge of ANMs.

Infrastructural characteristics

All 38 SCs were running in government buildings and located in an easily accessible area. All SCs had dedicated room for clinic purposes, but 28 (73.7%) had clinical examination room, 18 (46.4%) had storage room, and only 5 (13.2%) had separate room for office work. No SC had yoga room.

Thirty-five SCs (92.1%) had adequate area (77 sq. ft.) for clinic purpose; among the SCs which had room for clinical examination, only 24 (85.7%) had adequate space (121 sq. ft). Required 50 sq. ft area for office work was present in 4 (80%) SCs. No SCs had required 120 sq. ft storage space.

In the rooms for clinic purpose, clinical examination, and office work, adequate ventilation was present in 36 (94.7%), 21 (75.0%), and 4 (80%), respectively. None of the storage space (18) has adequate ventilation.

Water supply facility was available in 30 (78.9%) SCs, but drinking water was available in all 38 SCs. The main sources of drinking water were local arrangements (16, 42.1%), followed

by submersible (11, 28.9%) and tube well (8, 21.1%). Only 3 (7.9%) SCs had tap water source for drinking water and 4 (10.5%) had water filter.

All the SCs had electric supply from grid and two had backup source (generator and charging light). None of them had any dedicated firefighting facility.

Residential facility for staff was present in only 23.7% of the SCs, and among those, no SC was found where they were residing physically.

Workforce availability

CHO was not posted in any SC. Thirty-six SCs (94.7%) had 1st ANM and 29 (76.3%) had 2nd ANM; 27 (71.0%) SCs had both 1st and 2nd ANMs. Only one SC had multipurpose health worker (male). The median (IQR) for the number of population catered by an ASHA was 1529 (1176, 1736).

Knowledge regarding services of health and wellness centers

The background characteristics of the ANMs and their knowledge status (adequate/inadequate) are presented in Table 1. However, no significant association between knowledge status of ANMs and their background characteristics was observed.

Out of possible scores between 0 and 43, the minimum obtained score was 11 and maximum was 34. The mean (SD) of the score was 23.79 (± 5.75); median (IQR) was 24 (19.25, 28.00).

Table 1: Distribution of auxiliary nurse midwives according to their background characteristics and adequacy of knowledge about health-care delivery in health and wellness centers (n=38)

| Background characteristics | Adequate knowledge (>28), n (%) | Inadequate knowledge (≤ 28), n (%) |
|----------------------------|---------------------------------|---|
| Age (years) | | |
| <45 | 4 (21.0) | 15 (79.0) |
| ≥ 45 | 7 (36.8) | 12 (63.2) |
| Designation | | |
| 1 st ANM | 9 (33.3) | 18 (66.6) |
| 2 nd ANM | 2 (18.2) | 9 (81.8) |
| Service duration (years) | | |
| <20 | 4 (22.2) | 14 (77.8) |
| ≥ 20 | 7 (35.0) | 13 (65.0) |
| Literacy status | | |
| Secondary | 4 (33.3) | 8 (66.7) |
| HS and above | 7 (26.9) | 19 (73.1) |
| Religion | | |
| Hindu | 9 (25.7) | 26 (74.3) |
| Muslim | 2 (66.7) | 1 (33.3) |
| Caste | | |
| General | 8 (25.0) | 24 (75.0) |
| Others | 3 (50.0) | 3 (50.0) |
| Total | 11 (28.9%) | 27 (71.1%) |

ANM: Auxiliary nurse midwife

Only 11 (28.9%) respondents had adequate knowledge about the services to be implemented under HWCs. The different domain-wise knowledge of ANMs is depicted in Figure 1.

DISCUSSION

The process of transforming SCs to HWCs is an ongoing activity and needs careful implementation throughout the country. This study was aimed to unveil the lacunae present in the SCs when encumbered to deliver a wide range of comprehensive health services without adequate preparation.

Gap analysis of SCs as part of health-care delivery had also been an area of health system research in India, but no such study was found which was aimed to identify the gaps in existing SCs to convert them to HWCs. Thus, this study is unique in nature in time perspective when GoI has made a decision to upgrade all existing SCs to HWCs.

Earlier studies also identified certain gaps which might exist even today, and comparing the findings of the present study may identify the areas of focused attention. Our findings of inadequate infrastructural facility in relation to rooms for different service provisions were supported by Narlawar and Sourav^[7] and Patil and Shivaswamy.^[8]

Only about one-fourth (23.7%) of the SCs had residential facility for health staff in our study. Reddy *et al.*^[9] in a study in Chittoor district of Andhra Pradesh also reported that 26.4% of the SCs had residential facilities for the staff, though Narlawar and Sourav^[7] and Patil and Shivaswamy,^[8] in their studies, revealed that three-fourth of the SCs had residential facilities for staff. Regarding water supply, both the above studies^[7,8] reported universal availability, but in our study, one-fifth (21%) of the SCs had no water supply. Almost similar to our study, Reddy *et al.*^[9] also found that 27.6% of the SCs had no water supply.

Besides gaps in infrastructural availability and adequacy, the present study revealed major gaps in workforce also. Scarcity of workforce in the SCs is still a major challenge, particularly for CHO (100% deficit) and male MPW (97% deficit) in the study area. Nonrecruitment might play a role in this regard. In addition, 14.5% scarcity of ANMs, who are supposed to deliver the existing services, indicated the lack of preparedness for transition from SCs to HWCs. A study by Patel *et al.*^[10] in SCs of Ahmedabad District of Gujarat showed a 61.3% shortfall of female health workers. Although it was not directly under consideration of the present study, one ASHA in the studied block had to serve nearly double population than recommended. A study by Mondal and Murekhar^[11] in Howrah district of West Bengal showed that 59.4% of the ASHAs were overburdened. These findings highlight the need for immediate action for fulfilling the gaps in workforce.

The dream of comprehensive health care to the community through HWCs demands recruitment of all recommended workforce as well as their capacity building. Health service

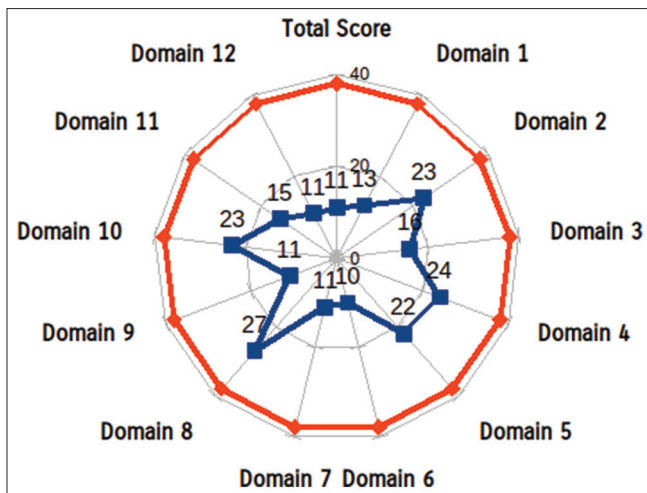


Figure 1: Spider diagram showing the level of knowledge among ANMs regarding different domain of services to be delivered in health and wellness centers ($n = 38$). Note: Different domains in the spider diagram and the number with percentage of ANMs having adequate knowledge: Domain 1: Care in pregnancy and child birth (13, 34.2%), Domain 2: Neonatal and infant health (23, 60.5%), Domain 3: Childhood and adolescent health-care services including immunization (16, 42.1%). Domain 4: Family planning, contraceptive services, and other reproductive care services (24, 63.2%). Domain 5: Management of communicable diseases and general outpatient care for acute simple illness and minor ailments (22, 57.9%). Domain 6: Management of communicable diseases: National Health Programs (10, 26.3%). Domain 7: Prevention, screening, and management of noncommunicable diseases (11, 28.9%). Domain 8: Screening and basic management of mental health ailments (27, 71.1%). Domain 9: Care for common ophthalmic and ear, nose, and throat problems (11, 28.9%). Domain 10: Basic oral health care (23, 60.5%). Domain 11: Elderly and palliative health-care services (15, 39.5%). Domain 12: Emergency medical services, including for trauma and burns (11, 28.9%)

providers must have sound knowledge about the services to be provided. This study attempted to explore that aspect too. However, alarmingly more than two-third of the respondents had lack of knowledge. In the context of converting SCs to HWCs, capacity building activities will certainly require to be strengthened.

CONCLUSIONS

The study revealed scarcity in both infrastructural facilities and essential workforce. The block is yet to be prepared enough as per the guidelines for upgrading the SCs to HWCs to deliver comprehensive primary health-care services.

Recommendations

Focused measures are warranted for ensuring adequate infrastructural facilities and human resource development. The latter includes recruitment of health personnel of all categories and providing them proper training on the services to be rendered.

Limitations

Being a cross-sectional study, it recorded the conditions

prevalent at that time. Health system is undergoing rapid changes recently and the changes occurred since the data collection could not be reflected in this. Further, observations in perpetuity might be warranted in this regard.

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Conflicts of interest

All the researchers are employees of the Government of West Bengal.

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