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Research Article

An Evaluation of Community Health Workers' Knowledge Regarding Non-Communicable Diseases in Selected Primary Health Centres of Suryapet District, Telangana

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A B S T R A C T

Background: Non-communicable diseases (NCDs) are on the rise in India. In 2010, the Government of India (GOI) initiated the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS) with the aim of assessing and addressing the anticipated burden of NCDs. As part of the programme, the GOI planned for community health workers (CHWs) to deliver health services to the last mile. However, the existing research shows that CHWs do not know enough about chronic diseases. This study aims to bridge this gap by examining the knowledge and skills of CHWs in Suryapet District regarding NCDs.

Aim: The study's objective was to find out how much Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwives (ANMs) in Telangana knew about NCDs and how good CHWs in Telangana were at screening for NCDs.

Methods: A cross-sectional study was conducted among 300 CHWs in Suryapet, Telangana, from June 2019 to August 2019. The CHWs were selected using a convenience sampling technique from designated Primary Health Centers (PHCs) in the Suryapet district.

Results: The CHWs older than 40 years, with post-secondary education or higher, and with prior training in NCDs had the highest levels of knowledge about these conditions.

Conclusions: The majority of respondents had a limited understanding of NCDs. Knowledge was also found to increase with age, education, and experience. However, training is needed to ensure that frontline workers can correctly identify various symptoms and risk factors of NCDs.

Keywords: Non-communicable Diseases, Primary Healthcare, Knowledge, Accredited Social Health Activists, Auxiliary Nurse Midwives, Prevention, Control

Introduction

According to the World Health Organization (WHO), cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases are identified as the primary non-communicable diseases (NCDs) of concern.[1,2] The four behavioural risk factors associated with these diseases, as identified by the WHO, include smoking, unhealthy dietary habits, physical inactivity, and alcohol abuse.[2] All nations are affected by NCDs' human, social, and economic costs, but the poor and vulnerable populations suffer the most.[3] Based on a recent report from the WHO in 2022, NCDs are found to be responsible for the annual death of 41 million individuals worldwide, which constitutes approximately 74% of all global deaths. Among these deaths, a staggering 17 million individuals succumb to NCDs before the age of 70 years, with 86% of these premature fatalities occurring in low- and middle-income countries. It is noteworthy that 77% of all NCD-related deaths are concentrated in low- and middle-income countries. The leading contributors to NCD mortality are cardiovascular diseases, claiming the lives of 17.9 million people annually, followed by cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (including kidney disease deaths caused by diabetes accounting for 2.0 million deaths).[4] This number is expected to go up even more by 2030.[5] Developing countries are currently experiencing an epidemiological transition characterised by a reduction in the burden of numerous infectious diseases and a simultaneous increase in the prevalence of NCDs, emerging as a significant cause of mortality.[6,7] Each year, 15 million people die from an NCD between the ages of 30 and 69 years; over 85% of these 'premature' deaths occur in low- and middle-income countries. NCDs are estimated to account for 63% of all deaths in India of which Cardiovascular Diseases (CVD) lead with 27% overall mortality followed by chronic respiratory diseases (11%), cancers (9%), diabetes (3%), and others (13%).[8,9] In India, the problem is made worse because NCDs start early; also, there are many underlying conditions people do not know about, and they do not have enough access to healthcare.[10] India is still having trouble with infectious and parasitic diseases, so the rising number of NCD cases, which creates a double burden of disease, puts much pressure on health facilities and is a big problem for the country's public health system.[11] It is now necessary to deal with this problem at the primary healthcare level, and a community-based approach to NCD care has been suggested.[12]

Primary healthcare (PHC) has evolved into the backbone of the nation's healthcare system and serves as the patient's first point of contact, particularly in rural areas.[13] Long-term, proactive, patient-centred, sustainable, community-based care should be provided to those with NCDs or at risk of developing them. Only healthcare systems built on PHC can equitably provide such care.[14,15] Furthermore, the difficulty of finding high-quality, reasonably priced, and crucial NCD interventions is made worse by the uneven distribution of healthcare professionals across nations, which varies by locality. In 2010, the Government of India (GOI) launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS), a nationwide initiative aimed at preventing and managing the burden of these specific diseases. This was done because the GOI thought NCDs would be a big problem. Due to serious shortages in the country's healthcare workforce, the GOI has planned for Community Health Workers (CHW), especially Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwives (ANMs), to deliver health services as the last mile part of the programme.[16,17] CHWs are set to become the backbone of primary healthcare services in the country because they are less expensive than other healthcare members and do a good job of providing essential services like healthcare for mothers and children, family planning, and nutritional health services.[18] Under the NPCDCS, the role of ASHAs is to do a "Complete Community-based Assessment" for NCD screening, find people with high-risk behaviours, raise awareness about NCDs, and promote health. ANMs also do "Population-based Screening" for different NCDs at the sub-centre level, follow up on NCDs, refer people who need confirmation, and report and record data.

Community health workers, who serve as ANMs and ASHAs, provide comprehensive support to address the complex underlying factors contributing to NCDs in communities.[19–21] Among the ASHAs, 42.5% have been trained to help with population-based NCD screening.[22] There is not much information about the training and supervision needed to bring female health workers into NCD care services and get them started.[23] The majority of studies conducted on NCDs have primarily focused on estimating disease burdens and conducting inventories of existing healthcare facilities. However, only a limited number of studies have specifically examined the knowledge of CHWs pertaining to these diseases. Also, there are few studies about how effectively they prevent and treat NCDs in developing countries.[24] CHWs play a crucial role in the early diagnosis and treatment of NCD patients at the PHC level. To fulfil this role effectively, CHWs require adequate knowledge and proficiency in utilising appropriate technologies. Conducting a study to assess the knowledge of NCDs among CHWs can offer valuable insights and opportunities to identify the necessity for training and re-training these frontline healthcare providers. Furthermore, such a study can provide baseline data on the skill mix of health personnel, and help in conducting targeted interventions and improving the overall quality of NCD care delivery at the PHC level.

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This study, therefore, aims to assess the knowledge and abilities of CHWs in selected PHCs in Suryapet about NCDs. The study's objective was to find out how much ASHAs and ANMs in Suryapet knew about NCDs and how good ANMs were at screening for NCDs.

Methods

Study Area

The study site was Suryapet district in Telangana state, which is situated in the south-central part of India (Figure 1). The main intention for the selection of this district was that it was semi-urban with a population of 1,104,953. The district had four main towns with two revenue divisions, Suryapet and Kodada. It was subdivided into 23 mandals.[25] In the district, there were two Area Hospitals, three community health centres, and 23 PHCs; under the jurisdiction of every PHC, there were 8 to 10 sub-centres and 4 Urban Primary Health Centres (UPHCs). These UPHCs did not have sub-centres. It consisted of 475 Gram Panchayats, and the researcher believed that this particular district would be more helpful in obtaining relevant information as the researcher was a resident of the same district and was well aware of the health systems and study setting. Furthermore, ease of access, transportation, and other logistical aspects guided the researcher to deliberately prefer the district more as compared to other districts of the state of Telangana.

Figure 1.Suryapet in Telangana

Study Design

For this study, a cross-sectional research design was employed. The primary tool utilised to gather data was a structured questionnaire, which served as a means to assess and measure the level of knowledge among CHWs. The questionnaire was carefully designed to capture relevant information pertaining to the understanding and awareness of CHWs regarding major NCDs such as CVD, hypertension, diabetes, cancer, and stroke.

Study Population

The study population consisted of CHWs serving in PHC facilities located in the Suryapet district of Telangana. The CHWs included in the study encompassed two specific cadres: ASHAs and ANMs. These CHWs were selected for their vital role in delivering healthcare services, particularly to populations residing in remote and underserved areas.

To maintain the integrity of the study, CHWs who were absent from their workplace during the study period were excluded from participation. This exclusion criterion aimed to ensure that the data collected accurately represented the knowledge levels of CHWs actively engaged in providing healthcare services during the study period.

Study Period

The study was done from June 2019 to September 2019. During the study period, one month was used to review the literature, make an interview schedule, and do a pilot test. Two months were spent collecting data, and one month was spent putting everything together and analysing it.

Sample Size Estimation

Slovin's formula was used to arrive at the minimum sample size of 311 CHWs, some of whom were retired healthcare workers. In statistics, Slovin's formula is used to calculate the minimum sample size needed to estimate a statistic based on an acceptable margin of error.

Slovin's formula is calculated as: $n = N / (1 + Ne^2)$

where n: sample size, N: population size, and e: acceptable margin of error.

A total of 200 ASHAs and 100 ANMs were enrolled under the concerned PHC during the study period. All the ASHAs and ANMs were informed beforehand to come to the PHC. The PHC was visited on different days for data collection. ASHAs and ANMs who did not respond when called three consecutive times were omitted from the study.

Tools for Data Collection

A semi-structured questionnaire, which had already been piloted and refined, was used to gather the data. This questionnaire was carefully developed in advance, ensuring its suitability for the study objectives and content validity. Prior to implementation, the questionnaire underwent a rigorous testing process to ensure its reliability and appropriateness for assessing the desired information. By employing a semi-structured format, the questionnaire allowed for flexibility in gathering comprehensive and relevant data while maintaining consistency across respondents.

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The questionnaire was used to find out about the biosocial characteristics of the participants, risk factors, symptoms, non-drug ways to treat them, and screening methods for NCDs (cervical cancer, breast cancer, diabetes mellitus, cardiovascular diseases, and stroke). A checklist was used to see what steps ANMs took to measure blood pressure and blood sugar and perform breast examinations. This checklist was made based on their training module. The steps for measuring blood pressure were checked with a digital monitor (Citizen: REF CH-432). A glucometer (ACCU-CHEK Performa, NC) was used to evaluate the steps for measuring blood sugar.

Data Processing and Analysis

SPSS 24.0 was used to process and analyse the data. Frequency and percentages were used to show descriptive statistics (for categorical data). Graphs were also used to show the results.

The chi-square test was used to look for links between categorical variables. The factors for the outcome variables were found with the help of binary logistic regression analysis.

Scoring the Knowledge about NCDs

The questionnaire had 25 questions to test how much CHWs knew about the aforementioned NCDs. Each answer got a score of "1" if it was right and "0" if it was wrong or the person did not know. When the scores were added up, the maximum possible score was 45. The median score was 13, and people were given grades based on how they scored.

Ethical Considerations

Prior to their involvement in the study, each participant provided written informed consent after receiving comprehensive information regarding the study's objectives, potential risks, and anticipated benefits. It was emphasised that participation in the study was entirely voluntary, and participants were assured of the strict confidentiality and security measures implemented to protect their personal information and collected data. The Ethical approval for the study was obtained from the Tata Institute of Social Science (TISS), Mumbai.

Results

Sociodemographic Variables

For the study, 200 ASHAs and 100 ANMs were enrolled. Table 1 displays that most ASHAs (51.0%) were in the age range of 31–40 years and a majority had completed at least matriculation (69.0%). In contrast, most ANMs (65.0%) were over 40 years old and a majority had at least a higher secondary education (78.0%).

Table 1.Sociodemographic Characteristics of the CHWs

Characteristics of the Participant	Female Health Workers		
	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Age (in completed years)			
≤ 30	84 (42.0)	22 (22.0)	106 (35.3)
31–40	102 (51.0)	13 (13.0)	115 (38.3)
> 40	14 (7.0)	65 (65.0)	79 (26.3)
Education			
Up to matriculation	138 (69.0)	22 (22.0)	160 (53.3)
Higher secondary and above	62 (31.0)	78 (78.0)	140 (46.6)

Knowledge of CHWs about NCDs

Only a tiny percentage of ANMs were able to correctly identify CVDs (62.0%) and stroke (46.0%) as NCDs, even though all of them understood what NCDs were and could name diabetes and hypertension as NCDs. The majority of ASHAs (85.0%) could define what NCDs were. About three-fourths of them were able to identify NCDs, including hypertension (75.0%) and diabetes (82.0%). Less than one-fifth (10.0%) of them were unable to name any NCD, and only a small percentage (11.0%) and a much smaller percentage (5.0%) could identify CVD and stroke as NCDs, respectively. Only a small percentage of ASHAs (5.0%) and ANMs (15.0%) were aware of the government's efforts to combat NCDs, precisely the existence of NCD clinics (Table 2).

Table 2.Knowledge of CHWs about NCDs

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Knew the meaning of NCD	170 (85.0)	100 (100.0)	270 (90.0)
Diseases mentioned			
Diabetes	164 (82.0)	100 (100.0)	264 (88.0)
Hypertension	150 (75.0)	100 (100.0)	250 (83.3)

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Cancer	92 (46.0)	89 (89.0)	183 (61.0)
Cardiovascular diseases (CVD)	22 (11.0)	62 (62.0)	84 (28.0)
Stroke	10 (5.0)	46 (46.0)	56 (18.6)
Not able to name any NCD	20 (10.0)	0 (0.0)	20 (6.6)
Knowledge about the existence of NCD clinics	10 (5.0)	15 (15.0)	25 (8.3)

Knowledge about Diabetes

Obesity was the only risk factor mentioned for diabetes; only a small percentage of ASHAs (7.0%) and ANMs (10.0%) were able to mention it. The most common symptom mentioned by ASHAs (43.0%) and ANMs (47.0%) was increased frequency of urination; however, 51.0% of ASHAs and 21.0% of ANMs were unable to name any symptoms. ASHAs (84.0%) and ANMs (93.0%) most frequently mentioned sugar consumption as a non-pharmacological measure for disease management. Only a small percentage of ASHAs (7.0%) and ANMs (15.0%) could identify the random blood sugar level above which a patient should be referred to a PHC (Table 3).

Table 3.Knowledge about Diabetes

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Risk factors mentioned			
Obesity (only risk factor mentioned)	14 (7.0)	10 (10.0)	24 (8.0)
Symptoms mentioned			
Increased frequency of urine	86 (43.0)	47 (47.0)	133 (44.3)
Delayed wound healing	16 (8.0)	21 (21.0)	37 (12.3)
Weight loss	18 (9.0)	19 (19.0)	37 (12.3)
Polyphagia	14 (7.0)	8 (8.0)	22 (7.3)
Polydipsia	10 (5.0)	11 (11.0)	21 (7.0)
Generalised weakness	08 (4.0)	00 (0.0)	08 (2.6)
Visual disturbance	06 (3.0)	08 (8.0)	14 (4.6)
Tingling sensation (palms/ feet)	04 (2.0)	00 (0.0)	04 (1.3)
None	102 (51.0)	21 (21.0)	123 (41.0)
Non-pharmacological measures mentioned for management			
Reduce sugar intake	168 (84.0)	93 (93.0)	261 (87.0)
Reduce carbohydrate-rich food	74 (37.0)	55 (55.0)	129 (43.0)
Multiple frequent meals	08 (4.0)	30 (30.0)	38 (12.6)
Regular physical exercise	12 (6.0)	08 (8.0)	20 (6.6)
None	38 (19.0)	11 (11.0)	49 (16.3)
RBS level at which a patient should be referred to PHC for further diagnosis and management (> 140 mg/dL)	14 (7.0)	15 (15.0)	29 (9.6)

Knowledge about Cardiovascular Diseases (CVD)

In terms of CVDs, 64.0% of ASHAs and 81.0% of ANMs cited hypertension as the most common risk factor, and 49.0% of ASHAs and 82.0% of ANMs cited anxiety as the most common symptom. Reduced salt consumption was the non-pharmacological measure that ASHAs (66.0%) and ANMs (90.0%) mentioned the most. Near 25.0% of ASHAs and all ANMs were able to identify the blood pressure threshold at which a patient should be referred to a PHC (Table 4).

Table 4.Knowledge about Cardiovascular Diseases (CVDs)

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Risk factors mentioned			
Hypertension	128 (64.0)	81 (81.0)	209 (69.6)
Obesity	18 (9.0)	38 (38.0)	56 (18.6)
None	78 (39.0)	15 (15.0)	93 (31.0)
Symptoms mentioned			
Anxiety	98 (49.0)	82 (82.0)	180 (60.0)

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Syncope	52 (26.0)	33 (33.0)	85 (28.3)
Breathlessness	30 (15.0)	24 (24.0)	54 (18.0)
Sweating	12 (6.0)	28 (28.0)	40 (13.3)
Headache	16 (8.0)	16 (16.0)	32 (10.6)
Vomiting	10 (5.0)	0 (0.0)	10 (3.3)
Oedema	8 (4.0)	0.(0.0)	8 (2.6)
Chest pain	6 (3.0)	9 (9.0)	15 (5.0)
None	94 (47.0)	17 (17.0)	111 (37.0)
Non-pharmacological measures mentioned for management			
Reduce salt consumption	132 (66.0)	90 (90.0)	222 (74.0)
Dietary modification	30 (15.0)	26 (26.0)	56 (18.6)
Reduce weight	16 (8.0)	24 (24.0)	40 (13.3)
Regular physical activity	06 (3.0)	29 (29.0)	35 (11.6)
None	76 (38.0)	16 (16.0)	92 (30.6)
BP at which a patient should be referred to PHC	50 (25.0)	100 (100.0)	150 (50.0)

Knowledge about Cervical Cancer

Poor genital hygiene was cited as a risk factor for cervical cancer by ASHAs (18.5%) and ANMs (54.0%), and post-coital bleeding was cited as a symptom by 37.0% of ASHAs and 44.0% of ANMs. Only about one-third (37.0%) of ASHAs and roughly two-thirds (71.0%) of ANMs were aware of the cervical cancer screening procedure. Very few (8.5%) ASHAs and about one-fourth (28.0%) of ANMs were aware of the cervical cancer vaccine's existence (Table 5).

Table 5.Knowledge about Cervical Cancer

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Risk factors mentioned			
Poor genital hygiene	37 (18.5)	54 (54.0)	91 (30.3)
Genital warts	32 (16.0)	25 (25.0)	57 (19.0)
Multiple sexual partners	12 (6.0)	38 (38.0)	50 (16.6)
Early marriage	06 (3.0)	31 (31.0)	37 (12.3)
None	160 (80.0)	38 (38.0)	198 (66.0)
Symptoms mentioned	96 (48.0)	61 (61.0)	157 (52.3)
Post-coital bleeding	74 (37.0)	44 (44.0)	118 (39.3)
Lower abdomen pain	64 (32.0)	32 (32.0)	96 (32.0)
Dyspareunia	12 (6.0)	59 (59.0)	71 (23.6)
None	124 (62.0)	48 (48.0)	172 (57.3)
Knew screening method (visual inspection)	74 (37.0)	71 (71.0)	145(48.3)
Knew about the vaccine to protect against cervical cancer	17 (8.5)	28 (28.0)	45 (15.0)

Knowledge about Breast Cancer

The most frequently cited risk factor for breast cancer was avoiding breastfeeding, as reported by ASHAs (12.5%) and ANMs (45.0%). The only symptom reported by ASHAs (36.0%) and ANMs (72.0%) was the emergence of a breast lump. About half of the ANMs (56.0%) and one-third of ASHAs (33.0%) were aware of clinical breast examination being a method of disease screening (Table 6).

Table 6.Knowledge about Breast Cancer

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Risk factors mentioned			
Avoiding breastfeeding	25 (12.5)	45 (45.0)	70 (23.3)
Late marriage	19 (9.5)	28 (28.0)	47 (15.6)
None	178 (89.0)	43 (43.0)	221 (73.6)
Symptoms mentioned			
Lump in the breast (only symptom mentioned)	72 (36.0)	72 (72.0)	144 (48.0)
Knew screening method (CBE)	66 (33.0)	56 (56.0)	122 (40.6)

CBE: Clinical Breast Examination

Knowledge about Stroke

Regarding stroke, hypertension was the only risk factor identified by ASHAs (64.0%) and ANMs (28.0%), and paralysis was the only mentioned symptom (by 29.0% of ASHAs and 53.0% of ANMs). ASHAs (8.0%) and ANMs (12.0%) both

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mentioned regular exercise as a non-pharmacological method of preventing stroke (Table 7).

Table 7.Knowledge about Stroke

Variables	ASHAs (N = 200) n (%)	ANMs (N = 100) n (%)	Total (N = 300) n (%)
Risk factors mentioned			
Hypertension (only symptom mentioned)	128 (64.0)	28 (28.0)	156 (52.0)
Symptoms mentioned			
Paralysis (only symptom mentioned)	58 (29.0)	53 (53.0)	111 (37.0)
Preventive measures mentioned			
Regular physical activity (only symptom mentioned)	16 (8.0)	12 (12.0)	28 (9.3)

Other Variables

About 38.0% of ANMs and a smaller percentage (19.0%) of ASHAs had three days of NCD training in the previous year of the study. Even though the majority of ANMs (89.0%) were able to accurately demonstrate each step of blood pressure measurement, only about half of them (51.0%) were able to do the same for each step of blood sugar measurement, and only about one-fourth of ANMs (23.0%) were able to do the same for each step of clinical breast examination.

The knowledge of NCDs among CHWs was found to be higher for those over 40 years old (81.0%), those with higher secondary or higher education (82.1%), and also among those who had previously undergone training for NCDs (84.2%). The correlation between the score and each of these variables was statistically significant (Table 8).

Table 8.Other Variables Linked with Knowledge Regarding NCDs Among CHWs

Variables	Values	Below Average n (%)	Average and Above n (%)	p Value
Age (in years)	≤ 30	59 (55.6)	47 (44.3)	< 0.001
	31–40	66 (57.3)	49 (42.6)	
	> 40	15 (18.9)	64 (81.0)	
Education	Up to matriculation	81 (51.2)	78 (48.7)	< 0.001
	Higher secondary and above	25 (17.8)	115 (82.1)	
Training	Received	15 (15.7)	80 (84.2)	< 0.001
	Not received	175 (85.3)	30 (14.6)	

Using a variety of study variables, binary logistic regression analysis was used to determine predictors of knowledge about NCDs (based on score). According to the model's predictions for the total score, respondents with prior training in NCDs were 2.99 times more likely to receive a higher score [OR = 20.072 (5.339–74.624), $p < 0.001$]; additionally, respondents with senior secondary-level education or higher were 1.4 times more likely to receive a higher score [OR = 4.070 (1.491–11.113), $p = 0.006$]. Similarly, respondents who were in the age group of more than 40 years were 1.6 times more likely to get a higher score [OR = 5.094 (2.452–10.583), $p < 0.001$].

Discussion

The main reason for doing this research was to gauge the level of understanding of NCDs among CHWs in Suryapet, Telangana. The findings of this research study revealed a significant knowledge gap among CHWs regarding the prevention and control of NCDs within selected PHCs in Suryapet, Telangana. These results are consistent with previous studies conducted in India, which have also identified poor knowledge levels among CHWs, particularly concerning the prevention and management of specific NCDs such as diabetes and hypertension. It is noteworthy that these findings are particularly relevant to CHWs working in lower-level healthcare settings. A study in Andhra Pradesh revealed that medical officers believed that ASHAs lacked the necessary knowledge to deliver NCD care, but all ANMs got above-average scores for knowledge of NCDs.[26]

The CHWs found that obesity was the only significant risk factor associated with the onset of diabetes. Almost half of the healthcare providers recognised the most common symptom: an increase in urination. When asked to name a symptom, more than half of the CHWs were unable to do so. Delay in wound healing, polydipsia, and polyphagia are all symptoms that only a small percentage of CHWs were aware of. The results of a study conducted in Karnataka came to similar conclusions, showing that the participants had insufficient diabetes knowledge at the outset and that training improved their understanding.[27] Approximately half of the ASHAs and ANMs surveyed knew the normal range for

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blood pressure, and an even smaller percentage of ANMs (17.2%) could accurately demonstrate all the processes to monitor blood pressure. These results are consistent with those of a study done in Himachal Pradesh, which found that a vast majority of healthcare providers could not take accurate blood pressure readings.[28]

Less than half of the CHWs could identify women having several sexual partners or early marriage as risk factors for cervical cancer, and almost two-thirds could not name any risk factor at all. About 8.5% of the ASHAs were aware of the vaccine's availability to prevent cervical cancer. However, two-thirds of ANMs were aware of the approach for early detection of cervical cancer. Research in Lucknow found results comparable to ours, with almost two-thirds of ASHAs achieving average or worse ratings.[29] Among ASHAs and ANMs, about 33% and 56%, respectively, were familiar with clinical breast examination as a screening procedure, but fewer than a quarter of ANMs could show all the processes accurately. The majority of health personnel in Himachal Pradesh were unable to do breast examinations, according to a survey.[27] The study indicated that CHWs have even less knowledge of stroke than the general population. Hypertension was the only potential threat mentioned. Similar to a study done in Karnataka, where ASHA workers were shown to have a limited understanding of stroke, a small number of those surveyed correctly indicated that regular physical exercise could prevent stroke onset.[30] While the NHM survey found that 42.5% of ASHAs were trained to facilitate population-based NCD screening, this study found that only 19.9% of CHWs (41.2% of ANMs and 15.1% of ASHAs) had received training for NCDs. Research from Karnataka found similar results, showing that 69.44% of ANMs had been exposed to NPCDCS education.[31]

The inadequate knowledge exhibited by CHWs in this study can be attributed to several factors, including insufficient training on the prevention and control of NCDs and the limited availability of guidelines and Information, Education, and Communication (IEC) materials pertaining to specific NCDs. These shortcomings have also been observed in a separate study conducted in India, wherein CHWs serving in PHC facilities reported limited participation in capacity-building activities and outreach programmes specifically focused on NCDs. The cumulative effect of these factors contributes to the overall poor knowledge base among CHWs in effectively addressing NCDs in their respective roles. Knowledge scores for NCDs were shown to be higher among individuals with prior training for NCDs, consistent with the findings of numerous research studies in India and elsewhere.[32,33]

Study Strengths and Limitations

All the people who filled out the survey were given a briefing on the problem statement and how their answers, when taken together, can help bring about a positive change. Attempts were made to preserve diversity by assembling different teams of CHWs, such as ASHAs and ANMs. Both cumulative and individual group results were displayed.

The study is not without its flaws, in any case. To ensure the study's viability, we adopted a time- and effort-saving sampling strategy. Due to variations in access to and quality of education and training across India, it may not be fair to extrapolate the results to the entire country. The opinions and perspectives presented in this article are solely those of the authors and do not necessarily represent the official policy or position of any affiliated organisation or agency associated with the authors.

Conclusion

The majority of participants in this study had a limited understanding of NCDs. Good knowledge was also found to be connected with being older, having training, and having a better level of education. In India, a woman needs to be literate to be considered for the ASHA programme, and candidates with at least a tenth-grade education are given preference. According to the Government of India assessment, fewer than half of ASHAs had received training in NCDs. Since the training of frontline workers is essential for their ability to correctly detect the symptoms of various NCDs, the education of hired ASHAs must be addressed. It is unreasonable to expect them to teach the community members about NCDs if they are themselves unaware of the risk factors, symptoms, and preventive actions. Women, men, and adolescents can benefit from their instructions on the causes of NCDs and how to avoid risk factors such as poor nutrition, lack of exercise, cigarette use, alcohol use, stress, and other related issues if they receive the appropriate training. Last but not least, the overall inadequate knowledge in the current study was much higher, indicating that more research will have to be done on the subject in the Indian subcontinent, where only a small number of studies have previously been completed.

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