

Readiness and Motivation of ASHAs towards Their Participation in Non-Communicable Disease Control Programme in North India: A Cross Sectional Study

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Abstract

Background: ASHAs (Accredited Social Health Activist) role is evolving beyond maternal and child health workers. They are engaged in NCD (Non-communicable Diseases) control activities. This study investigated their preparedness for this new task. The aim of the study was to assess the preparedness (knowledge, attitude, practices & patient navigation) of ASHAs in delivering community-based NCD prevention and control services under NPCDCS (National Programme for Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke) program. And the study also assessed the challenges faced by ASHAs in fulfilling their roles and responsibilities towards common NCDs. Settings and Design: Cross sectional descriptive conducted in Delhi. **Method:** Total 464 ASHAs randomly selected from 54 Primary Health Centres from 3 districts of Delhi. A self-administered, pre-tested, validated and piloted semi structured questionnaire was filled by enrolled ASHAs. It assessed their knowledge, attitude and practices related to NCD screening. Statistical analysis used: descriptive statistics, chi square test and logistic regression analysis were used. **Results:** Two-third ASHAs had moderate to good knowledge about NCDs. They had positive inclination towards NCD screening and risk mitigation. Their practices for hypertension and diabetes screening were adequate but common cancer screening practices were inadequate. Challenges encountered in performing these tasks were lack of appropriate referral linkages, minimal supportive supervision and no earmarked incentives. **Conclusions:** ASHAs showed willingness to work for NCD control provided they have optimum training, supportive supervision from their superiors, and screening facilities in functional state and appropriate incentives for the new tasks.

Keywords: ASHA- NPCDCS- NCD- motivation- cancer screening- hypertension- diabetes

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Introduction

Accredited Social Health Activists (ASHAs), from their inception were by and large engaged in maternal & child health services. With the advent of health & wellness centres and improvement in primary health services, the role of ASHAs has evolved (Park, 2007). National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke (NPCDCS) also plans to engage them in enlisting and facilitating people aged >30 years for screening of Non-communicable diseases (NCD) including common cancers (Kishore, 2019). Being close to the community and belonging to the same community where they serve, these frontline workers are well placed to deliver tasks needed for NCD control. There are more than 9 lakhs ASHA

workers available across India (Annual ASHA Update, 2020 -21). However, sometimes ASHAs are not well equipped to deal with additional duties entrusted to them. For ASHAs to be engaged in any programme, certain pre-requisites need to be fulfilled like a referral centre where ASHAs are able to send the identified patients and a well-organized training programme which instils in them immense confidence to carry out the new task. It is time when evaluation is done on these parameters. Some implementation studies on NPCDCS programme initiation were done in certain region of India (Mistry et al., 2021; Jeet et al., 2018; Patel and Misra, 2022; Elias et al., 2018). However, in last 2 years Covid-19 has impacted all the non-covid related activities. It's time to assess the need for re-training of ASHAs in common NCDs with special reference to common cancers. It is also important

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to address the barriers and challenges faced by ASHAs in pursuing the activities related to common NCDs.

This study was an exploratory study to understand the ground situation through ASHAs lens and find out the challenges which could be addressed later to improve the programme functioning. The objectives of the study were:

1. To assess the preparedness (knowledge, attitude, practices & patient navigation) of ASHAs in delivering community-based NCD prevention and control services under NPCDCS program

2. To assess the challenges faced by ASHAs in fulfilling their roles and responsibilities towards common NCDs

Materials and Methods

This was an observational study conducted over a period of 6 months. The initial one month for recruitment of ASHAs, three months for data collection and two months for data entry, analysis and manuscript writing. Multistage random sampling technique was used. Initially, 3 out of 11 districts were randomly selected; South Delhi having 340 ASHAs, New Delhi having 236 ASHAs and South-east Delhi having 606 ASHAs. List of all the ASHAs were obtained from each district through their district ASHA co-ordinator. Based on probability proportional to size (PPS) sample, 110, 77 and 197 ASHAs were then randomly selected from each list. The selected ASHAs were approached for enrolment in the study. In case of refusal next eligible ASHA worker was enrolled from the list. The study enrolment continued till adequate sample size was achieved in each district. Sample size was based on the assumption that minimum (p) 50% of ASHA workers will have satisfactory capacity in terms of knowledge and attitude for NCD service delivery. Considering a 5% error rate and 95% confidence interval a minimum sample size of 384 was estimated.

Ethical approval for the study was obtained from Institute’s Ethics Committee (IEC-384/06.05.2022, RP-22/2022). Study was conducted in accordance with Helsinki Declaration modified in 2000. The ASHAs who trained for NCDs and were recruited before 2018 were included in the study. Those who refused to participate and not available during study period were excluded.

After obtaining written informed consent, each enrolled ASHA was given a self-administered semi-structured questionnaire in local vernacular language (Hindi) to fill at their respective primary health centres. The questionnaire was designed and validated through

expert consultation. The questionnaire was translated into English (back translated to check for translation validity) during data entry and data analysis. It was pre-tested in a sub-set of ASHAs not included in the study. The redundant questions were removed and questions which were difficult to understand were reframed. The questionnaire was divided into six sections: 1) Personal and work details 2) knowledge 3) attitude 4) self-practice towards NCD 5) service delivery and 6) challenges faced in performing NPCDCS activities. As ASHAs have not been assessed regarding their self-screening practice for common cancer which might be an indicator of her motivation for facilitating this screening in the community. Hence two kinds of practices were assessed:

a) Self-practice: Practice of ASHAs of getting themselves screened for these NCDs

b) Community screening practices: Practice of ASHAs of facilitating community members for screening of NCDs

Data Analysis

After elimination of personal identifiers, the data was anonymized and entered in Epidata software. The analysis was done using STATA version 15. Descriptive statistics was applied for mean, SD, frequency and percentage. For finding associations, chi square test and multivariate analysis was done.

Results

Total 464 ASHAs were enrolled in the study from 54 primary health centres including the government dispensaries and primary urban health centres from 3 districts of Delhi. Their mean age was 41.7 ± 0.3 years (Range 25-63 yrs). Mean duration of their posting as ASHAs was 9.4 ± 0.2 years (Range 1-15 yrs). ASHAs in Delhi were trained in activities related to NPCDCS. Around three-fourth of the ASHAs (343, 73.9%) enrolled in the study were trained prior to 2020, some (78, 16.8%) were trained last year and few (43, 9.3%) of them were yet not trained.

Knowledge levels of ASHA regarding common NCDs

The knowledge of ASHAs in relation to various NCDs was assessed through a self-administered questionnaire. The ASHAs were categorized as per Bloom’s cut off for knowledge score as good 152 (32.8%), moderate 163 (35.1%) and poor 149 (32.1%) (Alzahrani MM et al., 2022).

Table 1. Perception of ASHAs towards NCD

Items on perception	Completely Agree		Somewhat Agree		Completely Disagree	
	n	%	n	%	n	%
	NCDs could be asymptomatic	97	21	176	38	191
Lifestyle modifications can control NCDs	319	68.8	115	24.8	30	6.4
Tobacco/alcohol causes cancer	411	88.6	38	8.2	15	3.2
Should people screen for NCD	425	91.6	25	5.4	14	3
ASHAs have a role in NCD control	382	82.3	71	15.3	11	2.4

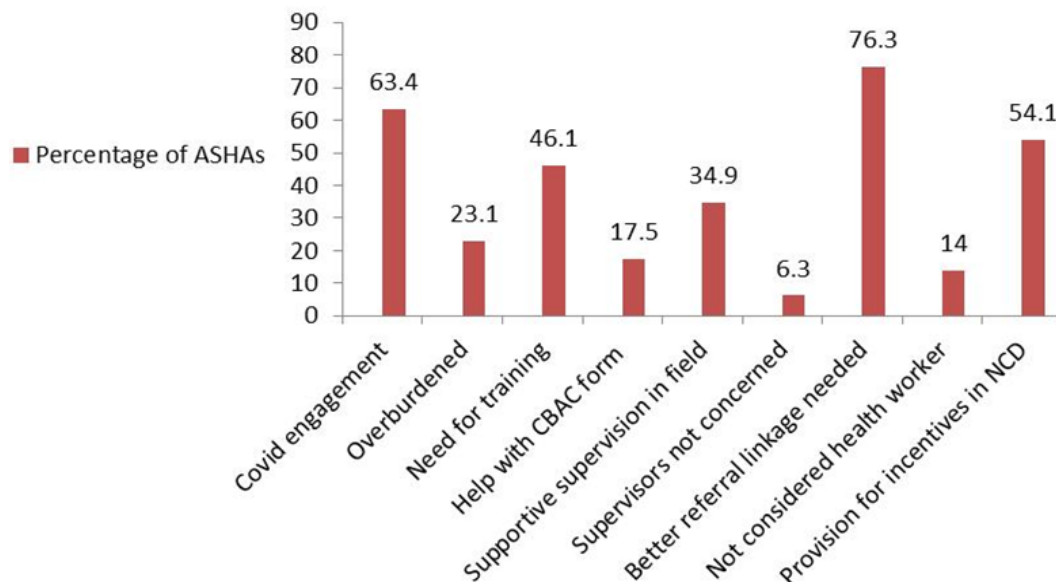


Figure 1. Challenges and Barriers Faced by ASHAs in Pursuing Tasks Related to NCD

Perception of ASHAs towards NCD

ASHAs had positive inclination towards screening for NCD and also towards their role in the NCD control programme. However, not many agreed that NCDs could present without symptoms (191, 41%) (Table 1).

Practices of ASHAs towards NCD screening for themselves and that of community members

There was greater inclination towards screening for diabetes and hypertension than that for common cancers. ASHAs who got themselves screened for diabetes (84%) and hypertension (91%) were many times more than those who got screened for common cancers like oral (14%), breast (39%) and cervix (25%). Similarly facilitating community people for screening, showed similar disparity, ranging from 79% sent for hypertension screening versus 37% sent for oral cancer screening (Table 2).

Various factors associated with ASHAs screening practices

On multivariate analysis it was found that odds of getting self-screened for hypertension were significantly associated with age of ASHAs and the availability of services in the centre. Apart from service availability, duration of work as ASHAs was found to be significantly related to ASHA getting screened for diabetes themselves. Duration of their engagement as community volunteer,

and having received training in NCD was significantly associated with practice of community screening for hypertension and diabetes (Table 3). Self-screening for breast and oral cancers were significantly associated with awareness of ASHAs for screening, and availability of screening facilities at the centre. Self-screening for cervical cancers was significantly related to age of ASHA, training of ASHA on NCD and availability of screening facility in centre. Attitude for NCD screening was significantly associated with community screening for all three cancers. For breast cancers, other relevant factors were duration of engagement as community volunteer, their training in NCD, awareness of ASHA for cancer screening and availability of screening facilities at the centre (Table 4). Challenges faced by ASHAs in delivering their duties related to NCD programme

When ASHAs were asked a multiple choice question on challenges faced by them in pursuing activities pertaining to NCD programme, majority 252 (54.3%) felt a need for separate incentive for this particular entity. More than three-fourth wanted a better and functional referral centre where they could send the patients from the community referred by them. Many ASHAs (294, 63.4%) claimed that Covid duty was a barrier in carrying forward other responsibilities. Almost half (214, 46.1%) of them felt a need for more intensive training along with supportive supervision (162, 34.9) in field in this regard

Table 2. Practice of ASHAs Related to Self-Screening and Community Screening of NCD

Disease entity	Self-practice		Community practice		People facilitated for screening per ASHA Mean ± SD (CI)
	Yes n,%	No n,%	Yes n,%	No n,%	
Oral	64,13.8	400,86.2	171,36.9	293,63.1	12.9 ± 1.7 (9.6-16.4)
Breast	183,39.4	281,60.6	191,41.2	273,58.8	15.9 ± 3.0 (10.0-21.9)
Cervical	118,25.4	346,74.6	174,37.5	29,62.5	14.1 ± 3.3 (7.6-20.5)
Hypertension	426,91.8	38,8.2	366,78.9	98,21.1	94.9 ± 7.1 (80.9-109.0)
Diabetes	390,84.1	74,15.9	357,76.9	107,23.1	84.3 ± 6.5 (71.5-97.0)

Table 3. Factors Associated with Practices of ASHA for Hypertension and Diabetes Screening

Independent variable	Self-practice		Community Practice	
	HTN	DM	HTN	DM
	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)
Age of ASHA ≥45 (ref <45)	3.07 (1.10 – 8.50)	0.92 (0.50 – 1.69)	1.18 (0.67 – 2.67)	1.01 (0.60 – 1.73)
Duration of being employed as ASHA for >9 years (ref ≤9 years)	1.15(0.56 -2.35)	1.78 (1.02 – 3.10)	1.91 (1.16 – 3.14)	1.94 (1.19 – 3.15)
Positive attitude for screening (ref: negative)	0.83(0.40 -1.74)	0.89 (0.50 -1.61)	0.59 (0.36 – 0.97)	0.63 (0.39 – 1.04)
Trained in NCD (ref: no training received)	0.82 (0.43- 1.60)	1.15 (0.69 -1.93)	0.46 (0.28 – 0.74)	0.50 (0.32 – 0.79)
Centre having facility for screening (ref: no facility for screening)	3.71 (1.35 – 10.20)	1.76 (1.06 – 2.95)	1.85 (0.78 – 4.39)	1.00 (0.63 – 1.60)

Table 4. Factors Associated with Practices of ASHAs for Common Cancer Screening

Independent factors	Breast cancer		Oral Cancers		Cervical Cancers	
	Self-practice	Community practice	Self-practice	Community practice	Self-practice	Community practice
	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)	Odds Ratio (CI)
Age of ASHA ≥45 (ref <45)	0.98 (0.62 -1.54)	0.80 (0.51 - 1.26)	1.26 (0.67 - 2.34)	0.75 (0.48 - 1.18)	1.64 (1.01 - 2.67)	0.80 (0.51 - 1.26)
Duration of being employed as ASHA for >9 years (ref ≤9 years)	1.31 (0.87 -1.99)	1.55 (1.02 - 2.35)	0.75(0.42- 1.33)	1.47 (0.97 - 2.21)	1.33(0.84 - 2.11)	1.34 (0.89 - 2.03)
Awareness that early detection causes better survival (ref: no awareness)	2.11 (1.25 - 3.56)	2.19 (1.31 - 3.67)	2.14 (1.00 - 4.54)	1.11 (0.71 - 1.74)	0.94 (0.60 - 1.47)	1.3 (0.87 - 1.96)
Positive attitude for screening (ref: negative)	0.59 (0.32 - 1.08)	0.24 (0.10 - 0.57)	0.51 (0.18 - 1.42)	0.28 (0.12 - 0.64)	0.77 (0.41 - 1.39)	0.3 (0.14 - 0.66)
Trained in NCD (ref: no training received)	0.96 (0.65 - 1.42)	0.62 (0.41 - 0.93)	1.27 (0.72 - 2.25)	0.85 (0.57 - 1.25)	0.64 (0.41 - 0.99)	0.79 (0.53 - 1.18)
Centre having facility for screening (ref: no facility for screening)	2.43 (1.64 - 3.59)	1.79 (1.21 - 2.66)	2.9 (1.56 - 5.22)	1.19 (0.71 - 1.98)	3.44 (1.73 -6.81)	3.37 (1.67 - 6.81)

(Figure 1).

Discussion

Engagement of Community Health Worker (CHW) in NCD is of utmost importance because these diseases do not pose immediate health challenge to a person. Despite the fact they are the most common cause of mortality, they are rarely considered a health priority, especially in marginalized communities. CHW belonging to the same community have a greater impact in motivating people to come forward for screening. Their self-discipline could act as a role model for the community. Across the world there are various examples where CHWs have been engaged for NCD control. In China and South Africa they were engaged in cervical cancer and breast cancer screening programmes respectively(Wong et al., 2019; Walder et al., 2011). Similar approach is also been tried in Latin America and in Nepal for raising awareness and navigating people for early detection of common cancers and NCD respectively (Mojica et al., 2016; Jeet et al., 2018). One systematic review from Australia highlights the possible roles of CHW in cancer early detection as awareness generation, patient navigation and ensuring regular follow-ups (Mistry et al., 2021).

Although NPCDCS programme was launched in 2010 after combining cancer control and NCD control programmes, most of the programme evaluation studies for NPCDCS have only explored hypertension and

diabetes (Jeet et al., 2018; Patel and Misra. 2022). This study is one of its kind because it tries to explore and compare the practices related to common cancers with other NCDs. It is also an important study to highlight the importance of self-screening practices of the health workers (Memon et al., 2019). If the health worker is motivated towards getting herself screened for any disease, she would be more inclined to facilitate people of her community for the same.

ASHAs are not new to the health system of Delhi. They have been a part of the state health machinery since last 9 years. Majority of them have been trained in NPCDCS activities even before 2020, when pandemic struck the world. Since, the ASHAs enrolled were from 54 centres across 3 randomly selected districts of Delhi, it gives a comprehensive picture of ASHAs working in Delhi.

Their knowledge assessment was centred around NCD like hypertension, diabetes and three common cancers-oral, breast and cervical. It included risk factors, early detections and preventive strategies pertaining to these NCDs. One third of the ASHAs had good knowledge about them. Perhaps they were trained already. One third had moderate knowledge score wherein the role of re-training comes. Various studies have highlighted the importance of re-training for ASHAs in improving their work outcomes (Shukla et al., 2020).

Regarding their attitude and perception towards NCDs. ASHAs felt strongly that lifestyle modifications and doing away with the addictions like tobacco and

alcohol can be helpful in NCD control. One of the systematic review advocates the role of CHW from Low Middle Income Countries in NCD control activities like diabetes, hypertension control and tobacco cessation. 5 In the present study, there was poor cognizance that NCD could be asymptomatic (21%) which actually calls out for the necessity of screening, because a person may not be aware that he/she may be harbouring this disease. A study from Kozikhode had reported a positive predictive value of cancer detection based on symptoms as 11.4% (Paramasivam et al., 2016).

Interesting part was that majority of them believed strongly in screening for NCDs. They did not shy away with their responsibility of working for NCD control and agreed strongly that ASHAs can do that. A feasibility study from Hong Kong had developed a theoretical framework where CHWs may be trained to promote awareness about breast and cervical cancers (So et al., 2019). However, they needed certain pre-requisites to be fulfilled before actively pursuing this task. It is difficult for ASHAs to facilitate people for a particular investigation/ treatment if the facilities for the same are not available at the nearest centre. There are examples from south India where critical gaps were identified in providing management of diabetes and hypertension in the PHCs (Elias et al., 2018). NPCDCS programme envisages providing for population-based screening for common NCDs. The primary centres are still not equipped to provide for such screenings especially for common cancers. A study on assessing the readiness of facility for cervical cancer screening based on district level household and facility survey-4 (DLHS-4) showed that there was wide variation in public health facilities. Infrastructure and human resource emerged as large barriers to cervical cancer screening at PHCs (Dhillon et al., 2020).

ASHAs engagement in NCD (like hypertension and diabetes) prevention has been studied elsewhere. However, there are not many studies where the practices regarding their own screening or behaviour for any disease was studied. A self-screened ASHA may be more motivated to facilitate women in her area for NCD screening. Therefore, in this study ASHAs self screening practices were assessed before the assessment on how they facilitate people for NCD screening.

ASHAs were motivated for self-screening for hypertension and diabetes, but the practices related to common cancer screening were not optimum. A similar disparity existed for community screening practices as well. There could be multiple reasons for this disparity like lack of awareness of common cancers and unavailability of screening services at primary centres etc. Utilization of cancer screening services especially cervical cancer screening is in itself a debatable concern. In fact various new strategies are been utilized across the world to improve the utilization rates like using Human Papilloma Virus (HPV) self-screening tools and mobile application based assistance in India and Spain respectively (Poli et al., 2020; Arrossi et al., 2019).

Self-practices for hypertension and diabetes screening seem to be related to age of ASHAs and their duration of engagement as community volunteer respectively.

However, community practices for these diseases were related to duration of their engagement as ASHAs and having received training in this regard.

Non availability of screening facility at centres were found to be significantly associated with self and community screening for almost all three cancers. Similarly community screening practices for breast and cervical cancers were significantly associated with training of ASHAs on NCD. ASHAs engagement with NPCDCS programme poses various challenges for them including lack of proper referral linkages, lack of targeted incentives and need for training or re-training. Though lucrative to engage them in NCD driven activities, Nepal study also highlighted various barriers and challenges of effectively engaging these CHW in NCD control programmes (Rawal et al., 2020). ASHAs have been overburdened and engaged in Covid duty which has caused a stumble in their progress in NCD sector. A time motion study from Assam reported that ANM and ASHAs devoted only 4% and 11% of their time to NCD related activities respectively (Oswal et al., 2020). More in-depth and focussed qualitative studies from India are needed to know the bottlenecks in ASHAs pursuing these tasks effectively. A review from China has enumerated similar potential facilitators and barriers in CHW engagement for NCD control (Long et al., 2018) Perhaps more role clarity and supportive supervision in the field practice area would boost their morale and motivate them to actively participate in the programme activities. They should be motivated for getting themselves screened first, prior to facilitating community patients. This would make them more inclined for motivating and facilitating community participants.

Engaging ASHAs in tasks beyond maternal and child health should be wisely curated. Being universally available throughout the country they have a potential for a large-scale impact. However, this requires full support from the public health machinery. A comprehensive qualitative study from Guntur also reported similar themes (Abdel-All et al., 2019).

In conclusion, it is thus concluded that ASHAs have optimum preparedness, in terms of knowledge, attitude and screening practices, for delivering community based diabetes and hypertension control services. However, practices related to common cancer screening were inadequate, mostly because of the need for better referral linkages. Other challenges associated with ASHA engagement in NCD control programme were ASHA being overburdened in multiple activities including Covid support, need for refresher training and supportive supervision and lack of ear-marked incentives for these activities. These incentivised volunteer workers can work to wonders provided they are given a strong and well conceptualized framework. This study would pave the way in understanding how this framework may be constituted and which important indicators need to be included in it to make it a sustainable programme. This was an exploratory study to understand the way ASHAs are adapting to the new role as facilitators for non-communicable disease control. A bird's eye view of the challenges associated with ASHAs new

engagement was given. However, there is need for more intensive mixed method studies to completely decipher the success potential of this new strategy of population based screening for NCD. Few recommendation would be ASHAs self-screening, hand-holding in the field practice areas, training for real time data recording, incentivise for better app based data recording, regular refresher trainings and placing referral channels in place for screening of common cancers and other NCDs.

Author Contribution Statement

PS – Concept, Design, Definition of intellectual content, literature search, data acquisition, data analysis, statistical analysis, manuscript preparation, manuscript editing, manuscript review, guarantor. HP - Concept, Design, Definition of intellectual content, literature search, data analysis, manuscript preparation, vi. Availability of data (if apply to your research) JKM - Design, Definition of intellectual content, data analysis, manuscript editing, manuscript review. SS- data acquisition. MB - Concept, Design, manuscript review. AS – data acquisition.

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Availability of data

Data are available upon official request from the corresponding author

Ethical approval

Permission was obtained from the Institutional Ethics Committee of All India Institute of Medical Sciences New Delhi (IEC-384/06.05.2022, RP-22/2022).

Conflict of interest

There is no conflict of interest to be declared.

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