



Original Article

Experience of Integrated Approach to Expand and Strengthen Disease Care at Primary Healthcare Facilities for Non-communicable Diseases in India

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ABSTRACT

Background: The state of Himachal Pradesh launched Mukhyamantri Nirog Yojna (MNY) in November 2018 as an integrated approach for chronic diseases. It was an addition to existing National Program for prevention and Control of Non-Communicable Diseases (NPNCDs).

Objectives: Current study was done to assess the level of implementation of MNY as compared to NPNCDs in one district of the state.

Material and Methods: A cross-sectional study was carried out from January to December 2024 where 51 public health care facilities, 132 health care professionals (HCPs), and 2,748 people were assessed for MNY and NPNCD.

Results: Health facilities were capacitated with diagnostics and medicines for chronic diseases with lack of specialists. HCPs have better awareness about NPNCD than MNY mainly for hypertension and diabetes along with their common risk factors. Facilities showed better medicine utilization for hypertension, diabetes, and abnormal lipid profile. Community based screening was found to be about 60.0% with better disease awareness among people.

Conclusion: Health care facilities and HCPs need to be capacitated to provide care for additional NCDs along with community awareness about additional NCD services available at health facilities.

Keywords: Chronic diseases, Integrated approach, National program for prevention and control of non-communicable diseases

INTRODUCTION WITH OBJECTIVES

The National Programme for Prevention and Control of Non-communicable Diseases (NPNCD) has placed priority on preventive, promotive, and curative services. These services include affordable screening, diagnostic services, and medicines at public healthcare facilities. Evaluation of the program showed its implementation status with certain issues related to human resources, community awareness, availability of services.¹⁻⁴ The government of Himachal Pradesh launched *Mukhyamantri Nirog Yojna* (MNY) in November 2018 as a continuum of care and life cycle approach. It focuses on the population of more than 18 years of age for risk reduction, health

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promotion, early screening, and management of non-communicable diseases (NCDs). Focusing population at an early age is a key distinguishing factor between MNY and NPNCD. In addition, MNY has included integrated surveillance of ten NCDs comprising including cancer, diabetes mellitus (DM), cardiovascular disease (CVDs), hypertension, deafness, blindness, chronic obstructive pulmonary disease (COPD), epilepsy, mental illnesses, and chronic kidney diseases (CKDs). In addition, MNY targets 15 risk factors for the prevention and control of NCDs. Under MNY, an accredited social health activist (ASHA) carried out house-to-house visits for risk assessment of NCDs. After assessment, the auxiliary nurse midwife screens for disease, and further management is done by the doctor. The e-health card of an individual is prepared on ANMOL handheld tablets or a mobile phone application.⁵ State-level monitoring data showed that since the implementation of MNY, about 29,00,000 (~66.0% of the ≥ 18 years population of the state) have been enrolled. Capacity building has been done in the state with the establishment of cardiac care units in every district (a total of 12). In addition, 15 dialysis units, 10 integrated Nirog clinics, 11 palliative care units, and seven chemotherapy units were established in the state. The success of any program lies in its monitoring and evaluation at different levels. With its three years of implementation, the MNY scheme is proposed to be evaluated as an effort to control NCDs. The current study was planned to assess MNY as an extended NPNCD in the selected healthcare facilities in one district of Himachal Pradesh. The specific objectives of the study were to assess selected health facilities for diagnostics, medicines, and other supporting logistics for management of NCDs; to assess knowledge and skills of healthcare professionals at selected health facilities; and to assess community awareness about NCDs, their risk factors, and MNY services in a district of Himachal Pradesh.

MATERIAL AND METHODS

A cross-sectional survey was carried out in selected healthcare facilities in one district of Himachal Pradesh from January to December 2024. The study district was selected purposively and has about 1.5 million people with 4 civil hospitals, 14 community health centers (CHCs), 83 primary health centers (PHCs), 23 civil dispensaries, and 439 sub-health centers (SHCs). Multistage sampling was done to select health facilities. Initially, in the first stage, a total of 07 CHCs were selected randomly; in the second stage, from each selected CHCs, a total of 14 PHCs (2/selected CHC) were selected, and in the third stage, a total of 28 SHCs were selected (2/PHC). Like CHCs, PHCs, and SHCs were selected with simple random sampling. In selected SHCs, there were a total of 346 villages that were proposed to be studied for the community survey. The same was considered as a

sampling frame for a community survey. The sample size was calculated for carrying out a survey to assess their knowledge about NCDs and their risk factors. Based on state-level information system on MNY, about 25.0% of people had knowledge about physical inactivity and unhealthy diet as a risk factor for CVDs, and a sample size of 100 is calculated with 10.0% precision for each SHC with a sample size of 2,880 people, assuming a design effect of 0.5. The criteria for the selection of variables for sample size were based on their strong measurement of association with CVDs.⁶ Participants were selected and recruited from a randomly selected village from the list of villages of SHC using a cluster sampling method. From a sampling frame of 346 villages, a total of 10 villages (clusters) per SHC were selected using population proportion to size, and 10 participants were proposed to be selected from each cluster. A cluster (village) was divided into four quadrants, two using imaginative lines, and about four participants were recruited from each village quadrant. Inclusion criteria for the survey were participants aged ≥ 18 years, with or without NCDs, and willing to participate. Patients who were terminally ill and very old to comprehend the questions were excluded from the study. One participant was selected from each household, and the household was selected randomly from each quadrant. In a case, if more than one eligible participant was found in a household, the KISH method was used to recruit one eligible/household.

Trained project staff collected data following the sampling procedures using standardized interviewer-administered questionnaires. Among people of ≥ 18 years of age, MNY included following chronic conditions: Hypertension, type-2 DM, acute myocardial infraction (AMI), stroke, cancers, COPD, refractive errors, cataract, glaucoma, diabetic retinopathy (DR), non-alcoholic fatty liver diseases (NAFLDs), mental conditions, deafness, CKDs, and people needing palliative care. At the level of the health facility, a site supervisory checklist was used to assess the logistics for available equipment and medicines. The mean test (per facility) was calculated based on the total number of tests done at CHCs and PHCs divided by the number of facilities. Interviewer-administered questionnaire was used to assess the knowledge about NCDs from healthcare professionals (HCPs) working with selected healthcare facilities. It included medical officers (MOs), staff nurses (SNs), multi-purpose health workers (MPHWs), community health officers (CHOs), and ASHAs. Furthermore, a community-based survey was carried out to assess their knowledge, attitude, and behavior toward NCDs using a questionnaire adapted from STEPwise approach to NCD risk factor surveillance (STEPS) by the World Health Organization. Coverage of NCDs services was assessed during a community survey where participants were asked to report whether they received services such as community-based assessment checklist (CBAC) screening, blood pressure assessment, blood glucose

assessment, and urine albumin in their village/home. Participants were also asked about their satisfaction with receiving services from health facilities. Patient satisfaction questionnaire (PSQ-18) was used to assess the same, where responses were measured in a five-point Likert scale (1 = Strongly agree; 2 = Agree; 3 = Cannot Say; 4 = Disagree; 5 = Strongly Disagree). Data were entered in a Microsoft Excel spreadsheet with validity checks. The data were analyzed in R Studio (version 3.2.1). Data were presented as means with standard deviation for continuous variables and proportions for dichotomous variables. For health facilities assessment, the approval letter from the Mission Director, National Health Mission (NHM), Himachal Pradesh, was obtained. For the community survey, informed consent was obtained before data collection and sample collection. All the information about the patient is kept confidential. The prior approval from the Institute Ethics Committee, Dr. RPGMC, was obtained for the current study.

RESULTS

First, a total of 51 health facilities (CHCs: 07, PHCs: 14, and SHCs: 30) were selected and assessed for availability of health services for NCDs. Record assessment for the past 1 year showed that all health facilities screened 77,019 and 1,561 individuals in outpatient department and health camps, respectively, for various chronic diseases and mostly were with hypertension (36,802), type-2 DM (33,414), COPD (5006), refractive errors (1,109), cataract (256), AMI (167), stroke (66), NAFLD (76), mental conditions (68), deafness (21), glaucoma (6), DR (7), for palliative care (8), CKD (6), and cancers (7). In addition, 1,561 people were screened positive for chronic diseases, mostly with hypertension (803), and type-2 DM (742). Availability of HCPS showed that MOs were mostly stationed (CHCs: 47; PHCs: 14) in health facilities, whereas two ophthalmologists, three ophthalmic assistants, and two speech specialists were available at CHCs without any clinical expert (internal medicine). CBAC for home-based screening was available at 36 facilities (CHCs: 07, PHCs: 8; and SHCs: 21). Information, education and communication (IEC) material was displayed mostly (2.0/facility) for NPNC (CHCs: 33, PHCs: 24; and SHCs: 43) and less (0.4/facility) for MNY (CHCs: 10, PHCs: three; and SHCs: five). Capacity for laboratory assessment showed availability of functional biochemical analyzer and electrocardiogram (ECG) machines at five CHCs, whereas two and six PHCs had analyzer and ECG machines, respectively. Facilities were also assessed for laboratory/rapid screening and diagnostic services provided under MNY. Mean tests performed were highest in CHCs than in PHCs. Liver function tests was performed mostly (Mean: 628.9) followed by autoanalyzer-based blood glucose assessment (Mean: 604.7), chest radiology (Mean: 506.4), glucometer-based

blood glucose assessment (Mean: 369.1), renal function tests (Mean: 317.4), lipid profile (Mean: 199.1), and dipstick urine (Mean: 154.7). Visual inspection under acetic acid, hearing, and psychological assessment were not reported to be performed at health facilities. Drug utilization was assessed, which was prescribed from health facilities under the NPNC. A total of 20,30,690 medicines were dispensed from health facilities, and mostly were tablets: Metformin (44.8%), amlodipine (24.2%), atorvastatin (15.3%), aspirin (8.8%), enalapril (3.4%), and metoprolol (3.1%). Zero utilization was reported for tablet glyceryl trinitrate (sublingual), atenolol, hydrochlorothiazide, frusemide, captopril, methyl dopa, clopidogrel, isosorbide dinitrate, potassium IP, digoxin, verapamil, promethazine, and prednisolone. It was also nil for injection insulin, streptokinase, atropine sulfate, promethazine, diazepam, lignocaine hydrochloride, heparin sodium, glyceryl trinitrate, digoxin, and mannitol.

Second, after facility assessment, 132 HCPs were assessed (MOs: 28, SNs: 9, MPHWs: 14, ASHAs: 58, CHOs: 19, and pharmacist: 4) with an average [mean(SD)] age of 39.5 (8.2) years and a 5.7 (4.5) years duration of service at health facilities. The mean age of MOs and CHOs was lower (MOs: 34.4 [8.2]; CHOs: 30.8 [2.7]), which was about 45.0 years for other HCPs. Awareness was higher about NPNC (97.7%) as compared to MNY (43.2%). All types of HCPs were aware of NPNC, whereas except MOs (71.4%) and only a few HCPs (32.7%) had MNY awareness. Most HCPs received training for NPNC (85.5%) as compared to MNY (14.4%). Awareness about diseases covered under MNY was assessed: among HCPs, it was high for hypertension (99.2%), type-2 DM (99.2%), cancers (85.6%), AMI (82.6%), stroke (70.5%), COPD (69.7%), CKD (68.9%), deafness (65.9%), and mental health issues (65.9%). A similar trend for disease awareness was observed among all types of HCPs [Table 1]. Awareness about risk factors for diseases showed that most HCPs were aware of high salt/sugar intake (94.7%), unhealthy food (92.4%), physical inactivity (90.9%), passive smoking (84.8%), and family history of chronic disease (82.6%). Like about disease, the awareness trend was also similar across types of HCPs [Table 2]. Key difference for MNY and NPNC was the eligible population for screening, which was people of ≥ 18 years and ≥ 30 years, respectively. Awareness about screening criteria was high among HCPs for NPNC (87.9%) and less for MNY (12.1%).

Finally, community-level assessment was done among 2,748 people with a mean age of 54.8 (16.5) years, of whom 63.3% were female. They were local residents who were staying in the village for about 41.5 (19.9) years. Most (83.4%) were educated up to the 12th standard, and 16.4% completed graduation/postgraduation. More than half (57.4%) had one or more NCDs at the time of interview. Most heard about type-2 DM (72.0%), hypertension (67.2%), and cancers (41.2%). Only a

Table 1: Distribution of different HCPs as per their awareness about various NCDs.

Diseases	MOs n=28 n (%)	SNs n=09 n (%)	MPHWs n=14 n (%)	ASHAs n=58 n (%)	CHOs n=19 n (%)	Pharmacists n=04 n (%)	All n=132 n (%)
Hypertension	28 (100.0)	9 (100.0)	14 (100.0)	57 (98.3)	19 (100.0)	4 (100.0)	131 (99.2)
Type-2 DM	28 (100.0)	9 (100.0)	14 (100.0)	57 (98.3)	19 (100.0)	4 (100.0)	131 (99.2)
Cancers	27 (96.4)	8 (88.9)	13 (92.9)	46 (79.3)	15 (78.9)	4 (100.0)	113 (85.6)
AMI	25 (89.3)	8 (88.9)	12 (85.7)	45 (77.6)	16 (84.2)	3 (75.0)	109 (82.6)
Stroke	25 (89.3)	7 (77.9)	5 (35.7)	38 (65.5)	15 (78.9)	3 (75.0)	93 (70.5)
COPD	7 (75.0)	6 (66.7)	10 (71.4)	39 (65.5)	14 (73.7)	3 (75.0)	92 (69.7)
CKD	23 (82.1)	7 (77.8)	10 (71.4)	41 (77.7)	9 (47.7)	1 (25.0)	91 (68.9)
Deafness	21 (75.0)	5 (55.6)	9 (64.3)	43 (74.1)	8 (42.1)	1 (25.0)	87 (65.9)
Mental health issues	23 (82.1)	6 (66.7)	8 (57.1)	38 (65.5)	11 (57.9)	1 (25.0)	87 (65.9)
Cataract	21 (75.0)	4 (44.0)	10 (71.4)	36 (62.1)	10 (52.6)	1 (25.0)	82 (62.1)
NAFLD	21 (75.0)	7 (77.8)	8 (57.1)	31 (53.4)	7 (36.8)	0 (0.0)	74 (56.1)
Refractive errors	21 (75.0)	5 (55.6)	8 (57.1)	25 (43.1)	8 (42.1)	1 (25.0)	68 (51.5)
Illicit use of drugs	15 (53.6)	3 (33.3)	5 (35.7)	25 (43.1)	4 (21.1)	0 (0.0)	52 (39.4)

DM: Diabetes mellitus, NAFLD: Non-alcoholic fatty liver disease, AMI: Acute myocardial infarction, COPD: Chronic obstructive pulmonary disease, CKD: Chronic kidney disease, MOs: Medical officers, SNs: Staff nurses, MPHWs: Multi-purpose health workers, CHOs: Community health officers, ASHAs: Accredited Social Health Activists.

Table 2: Distribution of HCPs according to their awareness to different NCD risk factors.

Risk factors	MOs n=28 n (%)	SNs n=09 n (%)	MPHWs n=14 n (%)	ASHAs n=58 n (%)	CHOs n=19 n (%)	Pharmacists n=04 n (%)	All n=132 n (%)
High salt/sugar	26 (92.9)	8 (88.9)	14 (100.0)	57 (98.3)	18 (94.7)	2 (50.0)	125 (94.7)
Unhealthy food	26 (92.9)	9 (100.0)	14 (100.0)	52 (89.7)	17 (89.5)	4 (100.0)	122 (92.4)
Physical inactivity	26 (92.9)	9 (100.0)	14 (100.0)	51 (87.9)	17 (89.5)	4 (100.0)	120 (90.9)
Passive smoking	24 (85.7)	9 (100.0)	14 (100.0)	45 (77.6)	16 (84.2)	4 (100.0)	112 (84.8)
Past/family history	24 (85.7)	8 (88.9)	12 (85.7)	44 (75.9)	19 (100.0)	2 (50.0)	109 (82.6)
Alcohol use	18 (64.3)	6 (66.7)	8 (57.1)	35 (60.3)	14 (73.7)	2 (50.0)	83 (62.9)
Tobacco use	14 (50.0)	3 (33.3)	4 (28.6)	31 (53.4)	12 (63.2)	3 (75.0)	67 (50.8)
Eye problem	6 (21.4)	1 (11.0)	5 (35.7)	30 (51.7)	7 (36.6)	3 (75.0)	52 (39.4)
Respiratory	10 (35.7)	2 (22.2)	5 (35.7)	21 (36.2)	8 (42.1)	2 (50.0)	48 (36.4)
Psychological issue	8 (28.6)	1 (11.1)	6 (42.9)	20 (34.5)	8 (42.1)	1 (25.0)	44 (33.3)
Breast lump/wound	7 (25.0)	1 (11.1)	5 (35.7)	21 (36.2)	5 (26.3)	2 (50.0)	41 (31.1)
Hearing	4 (14.3)	2 (22.2)	4 (28.6)	15 (25.9)	7 (36.6)	1 (25.0)	33 (25.0)
Urogenital	9 (32.1)	2 (22.2)	2 (14.3)	10 (17.2)	5 (26.3)	1 (25.0)	29 (22.0)
Oral cavity wound	5 (17.9)	1 (11.1)	1 (7.1)	11 (19.0)	3 (15.8)	1 (25.0)	22 (16.7)

MOs: Medical officers, SNs: Staff nurses, MPHWs: Multipurpose health workers, CHOs: Community health officers

few heard about blindness (11.8%), stroke (7.4%), deafness (5.4%), COPDs (2.0%), NAFLD (1.9%), mental health issues (1.3%), and CKD (1.1%). About three-fourths (74.9%) and one-third (30.5%) heard about NPNC and MNY, respectively. Coverage for other community-based services was assessed, where 67.8% participants reported that ASHA used the checklist (CBAC), of which 61.0% had abnormal

CBAC scores, and all were referred to a public health facility. Among the referred, 92.7% visited the facilities for further assessment of NCDs by the MO. Coverage of other services was asked, where it was reported to be high for village-level blood pressure (96.7%), blood sugar (60.4%), and urine test for albumin (40.1%). About three-quarters (74.6%) of people with NCDs reported that they received free medicines from

public health facilities. Assessment for advice on risk factor reduction was done, where most stated that ASHA informed them about physical activity (98.2%), healthy diet (97.7%), stopping of tobacco use (96.2%), and alcohol intake (96.1%). However, 18.0% reported smoking/chewing of tobacco and 16.8% drinking of alcohol. Analysis revealed that most of the participants were satisfied with the explanation about the disease, confidence in the health facility and care, financial ease, general behavior of staff, and level of attention received by the staff [Table 3].

DISCUSSION

The current study carried out an assessment at three levels: Public health facilities, HCPs, and communities/people, with the aim of having a view of healthcare services for NCDs. It has been shown that HCPs and people knew more about NPNCD as a program than MNY as a scheme. In the state, MNY acted as an integrated approach focusing on early age screening (≥ 18 years) for additional (to NPNCD) chronic conditions, along with their risk factors.⁵ Among HCPs, knowledge about

screening criteria for MNY was less as compared to NPNCD. It showed that HCPs and people heard about common chronic diseases hypertension, type-2 DM, AMI, and stroke, along with their risk factors. Awareness level was also found to be good for COPD, CKD, and mental health issues. In general, there was a high level of awareness among HCPs and people about chronic diseases and their common risk factors. Medicine utilization patterns showed that it was used mainly for hypertension, diabetes, and abnormal lipid profiles. Community-based screening by ASHA was observed with a high level of coverage among the studied population.

A large survey across 537 public and 512 private facilities, where 72.8% of CHCs reported implementing NPNCD, and only 0.4% of CHCs were reported to be fully equipped for management of NCDs. CHCs observed with deficiencies in staff positions, especially specialists, with poor coverage of training. It also showed that essential medicines to manage three NCDs were 1.1% (95% confidence interval: 0.3–3.3) in public health facilities in rural areas.² Evidence also observed suboptimal financial and managerial allocation of resources

Table 3: Distribution of participants according to their responses to items for measuring satisfaction (n=2,748).

Questions	Responses n (%)				
	SA	A	CS	D	SD
Doctors/staff are good at explaining the reason for medical care.	836 (30.4)	1679 (61.1)	189 (6.9)	37 (1.3)	7 (0.3)
I think that the health facility has everything needed to provide complete care.	588 (21.4)	1834 (66.7)	253 (9.2)	66 (2.4)	7 (0.3)
The medical care I have been receiving at this facility is just about perfect.	570 (20.7)	1760 (64.0)	341 (12.4)	70 (2.5)	7 (0.3)
Sometimes doctor makes me wonder if their diagnosis is correct.	519 (18.9)	532 (19.4)	917 (33.4)	708 (25.8)	72 (2.6)
I feel confident that I can get medical care I need without being set back financially.	496 (18.0)	1049 (38.2)	472 (17.2)	704 (25.6)	27 (1.0)
When I go for medical care, they carefully check everything when treating and examining me.	546 (19.9)	1129 (41.1)	806 (29.3)	245 (8.9)	22 (0.8)
I have to pay for more of my medical care than I can afford.	80 (2.9)	401 (14.6)	844 (30.7)	1300 (47.3)	123 (4.5)
I have easy access to the medical specialist I need.	406 (14.8)	1241 (45.2)	811 (29.5)	271 (9.9)	19 (0.7)
Where I get medical care, people have to wait too long for emergency treatment.	359 (13.1)	306 (11.1)	565 (20.6)	1336 (48.6)	182 (6.6)
Doctors/staff act too business-like and impersonal towards me.	299 (10.9)	221 (8.0)	569 (20.7)	1388 (50.5)	271 (9.9)
Doctors/staff at this health facility treat me with a friendly and courteous manner.	589 (21.4)	1636 (59.5)	375 (13.6)	139 (5.1)	9 (0.3)
Those who provide my medical care sometimes hurry too much when they treat me.	121 (4.4)	347 (12.6)	669 (24.3)	1383 (50.3)	228 (8.3)
Doctors/staff sometimes ignore what I tell them.	209 (7.6)	162 (5.9)	591 (21.5)	1492 (54.3)	294 (10.7)
I have some doubts about the ability of doctors/staff who treat me.	234 (8.5)	145 (5.3)	591 (21.5)	1397 (50.8)	381 (13.9)
Doctors/staff usually spend plenty of time with me.	498 (18.1)	1105 (40.2)	722 (26.3)	382 (13.9)	41 (1.5)
I find it hard to get an appointment for medical care right away.	298 (10.8)	248 (9.0)	690 (25.1)	1273 (46.3)	239 (8.7)
I am dissatisfied with some things about medical care I receive.	93 (3.4)	267 (9.7)	1126 (41.0)	1074 (39.1)	188 (6.8)
I am able to get medical care whenever I need.	660 (24.0)	1110 (40.4)	810 (29.5)	131 (4.8)	37 (1.4)

SA: Strongly agree, A: Agree, CS: Cannot say, DA: Disagree, SD: Strongly Disagree

for NCDs. It demonstrated a limited utilization of primary healthcare facilities for NPNCD activities, mainly lacking continued support for chronic diseases.⁷ Another evidence suggested a lack of specialists and diagnostics in public care facilities, limiting the accessibility.⁸ Assessment for equipment in 177 public facilities showed limited availability of digital blood pressure equipment (35–43%), with limited availability of NCD drugs.⁹ The current study reported that CHCs did not have any specialists along with limited support staff in PHCs, whereas laboratory facilities, availability of medicines, and training under NPNCD were available in the facilities. Most of the HCPs were aware and trained for NPNCD, but their knowledge and formal training for MNY were reported to be sub-optimal. A study among 464 ASHAs in Delhi showed that two-thirds participants had moderate-to-good knowledge with adequate screening practices for hypertension and diabetes, but were sub-optimal for cancers.¹⁰ Another study among 38 community workers showed better awareness about NPNCD and diseases, with limited knowledge about risk factors.¹¹ Evidence has supported the critical role of ASHAs, where they were identified as the key connecting link between the healthcare delivery system and the community/people.¹² Engagement of community-level workers reported to improve the implementation and coverage of NCD activities in rural settings.¹³ Current study observed that almost all HCPs, including ASHAs, were aware of NCDs under MNY, ranging from 99.2% for hypertension and 39.4% for illicit use of drugs. For NPNCD, the awareness level of diseases and their risk factors was more than 60.0% among HCPs. More than two-thirds of people reported home visits by ASHAs for NCDs screening and assessment. ASHAs further referred screened cases and almost all visited public health facilities for care.

In addition to health system strengthening, community awareness about NCDs and their risk factors is an important intervention to improve service utilization. A study done in two northern states of India showed that of 4,085 people with hypertension and diabetes, 42.2% and 31.8% had awareness about their respective diseases. The current tobacco use was significantly associated with disease awareness among affected people.¹⁴ Another study among 264 patients with hypertension and diabetes showed that 80.7% heard about heart diseases. Awareness about alcohol consumption (82.6%), tobacco smoking (79.8%), unhealthy diet (77.0%), and physical inactivity (74.2%) as risk factors was reported to be high among study participants.¹⁵ Similarly, the current study reported that among people, knowledge about diseases was high for diabetes and hypertension as compared to other diseases such as cancers and AMI. The reported awareness about risk factors of chronic diseases was also high among participants.

NCDs require lifelong treatment and support to improve quality of life. Evidence has shown that, irrespective of

socioeconomic status, patients with NCDs are expected to visit public health facilities to reduce financial burden.¹⁶ Health system strengthening and improving community awareness by improving access to medicines for NCDs found to be effective in public healthcare facilities.^{7,17} The current study has given an insight into improved capacity of public healthcare facilities in terms of availability of MOs, equipment, rapid kits, medicines, IEC material, assessment checklists, with limited investment in positioning of specialists and support staff at CHCs. The capacity of village-level functionaries, ASHAs, was found to be optimal along with their coverage for services in villages. It can be ascertained that the system and people are largely aware of common NCDs and their risk factors. Since diagnostics and medications for most chronic diseases are available at health facilities, capacity building of MOs for expanding services for included diseases under MNY can be done. As people are aware and receiving services with better patient-level satisfaction, the community engagement model can be adopted to improve utilization of services for diseases covered under MNY.¹⁸

The current study has its strengths, where a comprehensive assessment for the state-level initiative – MNY – was done along with NPNCD. It has covered most of the public healthcare facilities and covered about 96% of the population for the survey, as per the sample size. The current study has indicated that there is a scope to further strengthen the integrated approach as facilities are capacitated with drugs and diagnostics along with ASHAs, as people have better awareness about chronic diseases and risk factors. It was considered to be vital for improving the quality and coverage of chronic disease care through primary care settings.^{12,15,19} Study has limitations: First, it is a descriptive study that limits drawing of causal inferences, and second, it is limited to one district of a state, limiting its generalizability to other states.

CONCLUSION

It can be concluded that the health system has the capacity to prevent and manage chronic diseases under NPNCD, but there is limited awareness about MNY among HCPs and community members. Healthcare delivery in the state looked to be nearly successful in the provision of chronic disease care, with a clear scope for service expansion. Positioning of specialists and support staff at public health facilities will improve the delivery and utilization of chronic disease services.

Ethical approval: The research/study was approved by the Institutional Review Board at Dr. Rajendra Prasad Government Medical College, Kangra, Himachal Pradesh, approval number IEC/42/2022, NHMHP-MNHODE-A/2/2020-22709-11015, dated 8th January 2023.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent.

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