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Evaluation of national programme for prevention and control of cancer, diabetes, cardiovascular diseases, and stroke (NPCDCS) in north coastal Andhra Pradesh a mixed method study

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ABSTRACT

Introduction

Program Monitoring and Evaluation (M & E) are important components of any program and are critical to sound strategic planning. NCDs are the leading causes of Morbidity and mortality. The present study was undertaken to assess the implementation of the NPCDCS programme and to explore the perception of community availing the services.

Methodology

Mixed method Study design using Triangulated approach with Quantitative component – Secondary data regarding the input, process and output indicators collected from Urban Primary Health Centres and Qualitative component: Exploratory theory approach using Focus group discussions and Key Informant Interviews was done in Visakhapatnam during August 2019- January 2022 among 63 UPHCs under the limits of Greater Visakhapatnam Municipal Corporation and for the Qualitative Component data was collected until data saturation was achieved (6Focussed Group Discussions and 13 in-depth interviews) The study included Health care professionals who are working in UPHCs and Participants from the Community who are utilising the services of the PHC.

Results

About 99.20% of the households were screened for diabetes, Similarly, 95% of the households were screened for cardiovascular diseases,92% of the households were screened for stroke, 86% of the households were screened for cancers. Low level of awareness and lack of trust are the barriers for utilisation of services by Community regarding the Programme.

Conclusion

The Lack of operational guidelines, inadequate training, technical issues and lack of political will were perceived as challenges by the health care providers both at the institutional and field level. The community perceptions were mixed which included both facilitators and barriers for the implementation of the Programme

Key-words: Evaluation, NCD, NPCDCS, UPHCs, In-depth interviews, Focused group Discussions

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INTRODUCTION

Non-communicable diseases (NCDs) are long-term illnesses caused by a mix of genetic, physiological, environmental, and behavioural factors.[1]Cardiovascular diseases (such as heart attacks and strokes), malignancies, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma), and diabetes are the most common NCDs. Each year, 41 million people are killed, accounting for 71% of all deaths worldwide. Every year, 15 million people aged 30 to 69 die from an NCD; over 85 per cent of these "premature" deaths occur in low- and middle-income countries.[2]The most common NCD is cardiovascular disease, which kills 17.9 million people per year, followed by cancer (9.0 million), respiratory disorders (3.9 million), and diabetes (3.9 million) (1.6 million). Over 80% of all premature NCD fatalities are caused by these four disease types. These 4 groups of diseases account for over 80% of all premature NCD deaths.[1]Tobacco use, physical inactivity, the harmful use of alcohol, and unhealthy diets increase NCD risk.The global disease burden of diabetes increased significantly from 1990 to 2017.Globally, the incidence of diabetes increased from 11.3 million (95% UI 10.6– 12.1) in 1990 to 22.9 million (21.1–25.4) in 2017, with a 102.9% increase[2] The Sustainable Development Goals – the global goals first time included NCDs in health goal number 3, i.e., ensure healthy lives and promote well-being for all at all ages. Of this, target 3.4 is to reduce by one-third premature mortality from NCDs through prevention and treatment and promote mental health and wellbeing.[3] As NCDs are top among the all-causes of mortality, there is a need to work on the global health agenda, i.e., SDGs for NCDs, acceptable to both developing and developed countries.[4]The 2030 Agenda for Sustainable 2 Development recognises NCDs as a significant challenge for sustainable development.To support countries in their national efforts, WHO developed a Global action plan for the prevention and control of NCDs 2013-2020, which includes nine global targets that have the most significant impact on global NCD mortality[5]. These targets address the prevention and management of NCDs. Since 2010, the Government of India has been implementing the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS) at the district level as part of the National Health Mission's efforts to tackle NCDs. The NPCDCS focuses on raising awareness about the importance of making behavioural and lifestyle adjustments, as well as screening and early identification of people who have a high level of risk factors and prompt referral to Community Health Centres and District Hospital for management of noncommunicable including cardiovascular diseases. It is also planned to improve infrastructure for screening, early detection, treatment, and referral. [6]Ayushman Bharat, a flagship scheme of the Government of India[7], was launched as recommended by the National Health Policy 2017, to achieve the vision of Universal Health Coverage (UHC). This initiative has been designed to meet Sustainable Development Goals (SDGs) and its underlining commitment, which is to "leave no one behind" In February 2018, the Government of India announced the creation of 1,50,000 Health and Wellness Centres (HWCs) by transforming the existing Sub Centres and Primary Health Centres.[8]These centres are to deliver Comprehensive Primary Health Care (CPHC) bringing healthcare closer to the homes of people. They cover both, maternal and child health services and noncommunicable diseases, including free essential drugs and diagnostic services. As a part of Ayushman Bharat all the eUPHCs in Visakhapatnam have been developed into Health and Wellness centres to provide preventive, promotive, rehabilitative, and curative care for an expanded range of services encompassing reproductive and child health services, communicable diseases, non-communicable diseases, palliative care and elderly care, oral health, ENT care, and basic emergency care. Programme Periodic evaluation of Health and Wellness Centres provides feedback on to the Programme Officers and offers scope for mid field correction and improvement of delivery of services.The present study was undertaken to assess the implementation of the NPCDCS programme and to explore the perception of community availing the services.

OBJECTIVES

1) To assess the implementation of NPCDCS in terms of Input, Process and output indicators in

Primary Health Centres (PHCs)in Greater Visakhapatnam Municipal Corporation.

2) To explore the challenges in the implementation of the programme from Health Care Providers'(HCP) perspective.

3) To explore the perception of the Community availing the services about the Programme.

METHODOLOGY

The present study was a Mixed method Study design using Triangulated approach.

Study setting: The study was carried out during August 2019- January 2022 among all the 63 UPHCs available under the limits of Greater Visakhapatnam Municipal Corporation.

Quantitative component – Secondary data regarding the input, process and output indicators collected from all 63 Urban Primary Health Centres available under the limits of Greater Visakhapatnam Municipal Corporation during the study duration.

Qualitative component: The exploratory theory approach using Focus group discussions and Key Informinterviews (KIIs)IIs) was done in Visakhapatnam district.

The Qualitative Component data was collected with the help of six focused group discussions and 13 in-depth interviews until data saturation was achieved. In the present study 8-10 participants were involved in the FDG sled by a moderator (interviewer) for an average duration of 45 min -1 hour. Like wise, six FDGs were conducted with the participants from the community who were utilizing the services of the UHC at their respective places.

Indepth Interviews : 13 In depth interviews were conducted for an average duration of 30 minutes- 45 minutes with health care professionals who are working in UPHCs, which include medical officers,ASHA workers, and ward volunteers who are willing to participate in the UHC itself.

Selection of study participants

Criterion sampling (a type of purposive sampling) was used to select Health care Professionals for In-depth interviews. Among the health care professionals, both the medical officers and the field workers have been selected randomly for a thorough understanding of the challenges at both institutional and field levels. Similarly, Homogenous sampling (a type of purposive sampling) of the participants from the community was done for the Focused group Discussions(FDG).Data related to PHCs like medicines, equipment, staff, laboratory tests, health promotional activities, screening, challenges was collected using Pretested, self-administered questionnaire, Semi-structured Field guides for Focus Group Discussions(FDG), Semi-structured Interview Guide for Key Informant Interviews (KII) and Video and audio recording aids of FGD and KIIs.The questionnaire for collecting the data about the PHCs was prepared taking the IPHS standards for Primary health centres review article by **Anand et al**[9] and was modified to the present settings of the study to include the following data:

Input indicators:

1. Proportion of health facilities which are FULLY functional

a. Proportion of health facilities with trained human resource

b. Proportion of health facilities with functional equipment

c. Proportion of health facilities with stock-out of IEC materials/ consumables

Process indicators:

1) Percent of different activities as against specific targets made for that time period.

a) Training sessions

b) Display of IEC materials

c) Meetings with schools/Workplaces

d) Community meetings

2) Percent Of health facilities sending their reports in time Output indicators.

Output indicators:

1.Percent Of eligible population which has been screened/ tested in last one year.

2.Percent Of prevalent cases in the community who are diagnosed in last one year.

3.Percent Of patients in the community who are on treatment in last one year.

4.Percent Of patients on treatment in the community whose disease is controlled in last one year.

The information for the Input and Process Indicators was obtained by observation during the visit to the Primary Health Centres (PHCs) as per the report of the Medical Officers. The

information regarding the outcome indicators was obtained from the District Program Officer.

Ethical clearance was taken from the Institutional Ethics Committee (IEC), Andhra Medical College, Visakhapatnam, prior to the start of the study. Written informed consent was taken from all the study participants who were included in the study in the local language. The confidentiality of the study participants was maintained. All the required permissions from the District Medical and Health Officer were obtained prior to the start of the study.

A pilot study was done in five PHCs. The questionnaire was modified according to the feedback. A route map was drawn to cover all the UPHCs (Urban Primary Health Centres) in the same route. The PHCs were visited after contacting the concerned medical officer on phone the previous day. Data was collected using the questionnaire by talking to the medical officer of the concerned PHC and observing the records at the PHCs. Written informed consent was taken from medical officers who have completed a minimum of one year of service and were then interviewed for the challenges faced in the implementation of the Programme. The interview was done using a semi-structured interview guide. The in-depth interviews were video recorded. Fieldnotes was taken with the help of the note taker. For the Focussed Group Discussions, Accredited Social Health Activist (ASHAs) and Ward Volunteers were contacted and were asked to gather the participants. Rapport was built with the participants before conducting the Focussed Group Discussion (FDG). The Focussed group discussions were conducted in neutral locations like community halls and Sachivalyams. After general introductions, icebreaking was done to make the participants comfortable. A pre-identified note-taker was noting the important points during FGD. Video and Audio recording was done with help of a health worker after taking consent. After finishing the FGD debriefing was done. Any points that were missed were added. Refreshments were provided after the FGD to participants.

RESULTS

The results of the present study are presented under the following headings:

1. Results of Quantitative methods:

A) Input indicators

B) Process indicators

C) Outcome indicators

2. Results of Qualitative method:

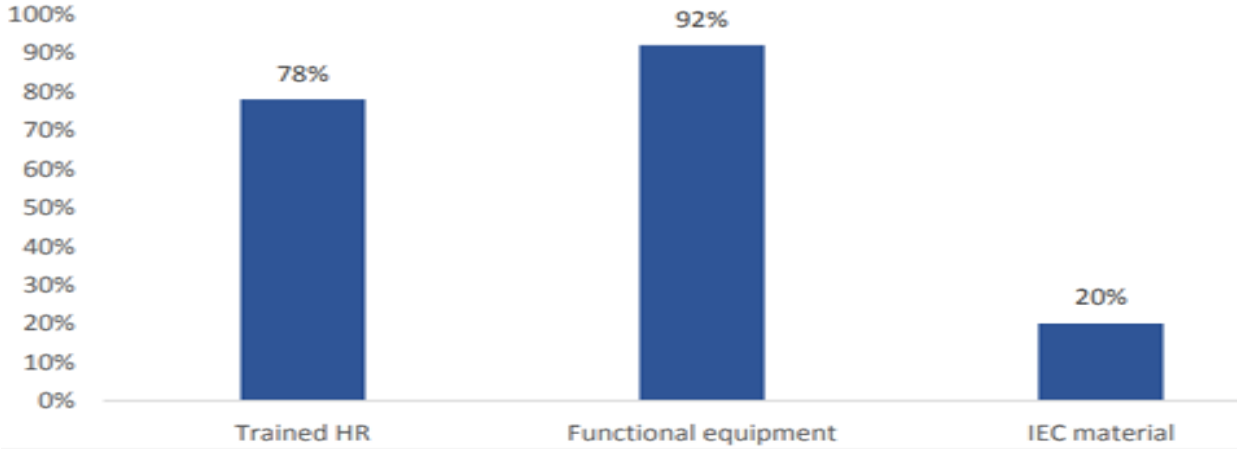
A) Thematic analyses of the In-depth interviews of the Medical Officers

B) Thematic analysis of the in-depth interviews of the Field Staff

C) Thematic analysis of the Focussed Group Interviews of the Community

The study found that Screening is being done using an app NCD-CD which screens the population for Communicable diseases like leprosy along with noncommunicable diseases The above figure shows that among the whole of population among the identified eligible population i.e. 338266 households, 99.20% of the households were screened for diabetes, 98% were diagnosed and given treatment, and 87% were under control. Similarly, 95% of the households were screened for cardiovascular diseases, 92% were diagnosed and treated and 90% were under control. Likely 92% of the households were screened for stroke, 96% were diagnosed and treated and 92% were controlled with treatment. On similar lines 86% of the households were screened for cancers, 82% were diagnosed and put on treatment and 50% were controlled with treatment. Indicators like percent of schools and workplaces implementing specific component of the guidelines could not be measured as health promotional activities are not being implemented.

Figure 1:Input Indicators Proportion of health facilities which are fully functional



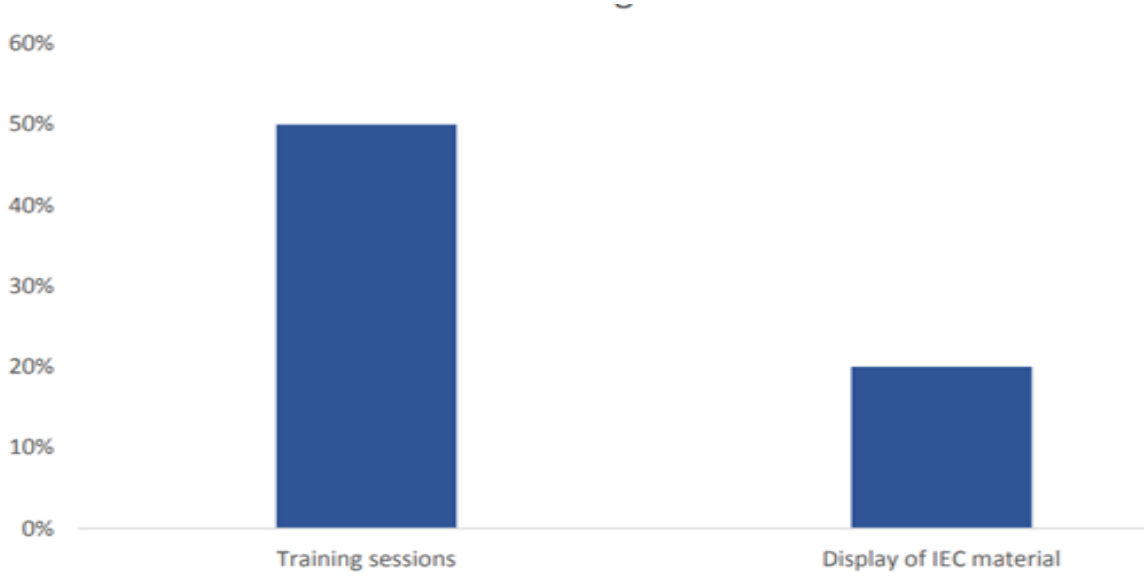


Figure 2:Process Indicators Percentage of activities undertaken as against specific targets

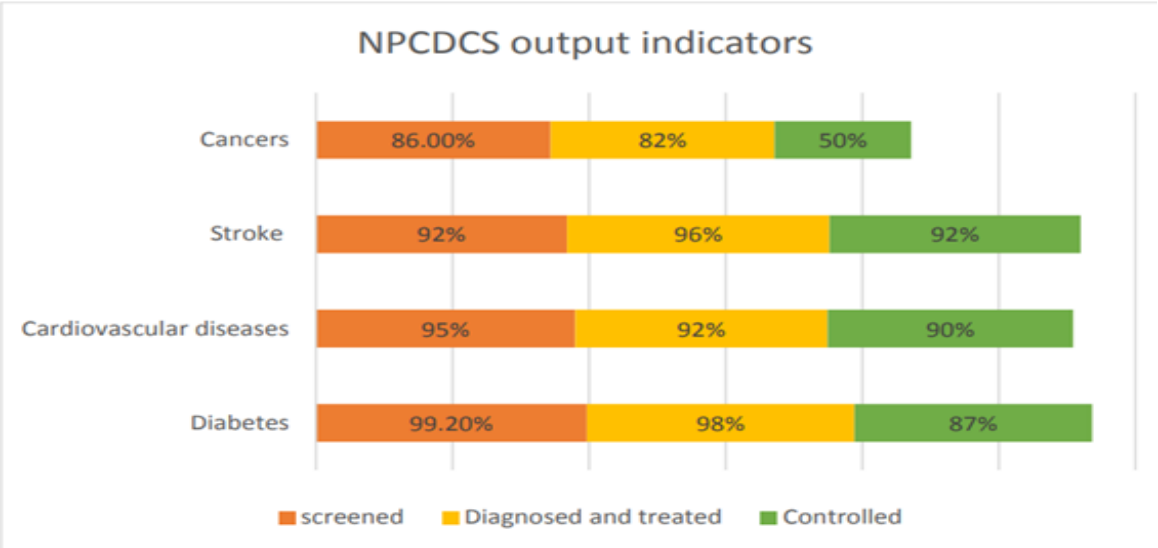


Figure 3:NPCDCS Output indicators

Table 1: Challenges faced by the Medical Officers

S.No	Themes	Categories
1	Inadequate Training	Training regarding Screening Training regarding usage of app
2	Work related challenges	Lack of specific targets 3Non provision of incentives
3	Challenges faced while working in the Community	Lack of Awareness in the Community regarding the Programme Reluctance in the Community No Identity cards
4	Technical Challenges	App related Challenges Equipment related Challenges
5	Scanty Resources	Shortage of Equipment Unavailability of Personal Protective equipment Under supply of IEC material
6	Challenges due to Pandemic	Unavailability of Transport due to lockdown Tremendous Work burden

Results of Qualitative Methods

In-depth interviews have been conducted with the medical officers and the Field staff in order to have a greater understanding of the challenges faced both at the institutional and field level. The following themes have been deduced after the analysis of the codes.

Results of Focused Group Discussions

Perceptions of the Community regarding the Programme: Focused group discussions were conducted among the community to study the perceptions of the community regarding the programme. The following themes have been identified.

Table 2:Perceptions of the Community regarding the Programme

S.No	Themes	Categories
1	Lack of Operational guidelines	Lack of information for conducting camps Ambiguity regarding the activities to be taken up Inadequate guidelines for Screening Non standardized Treatment protocols
2.	Inadequate Resources	Lack of separate Budget allocation Inadequate Manpower Lack of Equipment Dearth of regular supply of Medicines Non provision of IEC material
3.	Inadequate Training	Training for Screening of cancers Training regarding Referral protocols
4	Challenges pertaining to Community	Low Awareness regarding the programme Non-Acceptance of the Programme

5	Technical issues	Glitches related to App Inadequate Training regarding usage of app Insufficient Equipment
6	Challenges posed by Covid Pandemic	Interruption of household Screening Increased work burden for Staff Fear of Covid among the Community Exclusive Focus on Covid related activities.
7	Lack of Intersectoral Co ordination	Lack of coordination with Education Department Noninvolvement of Public and private sector organizations
8	Lack of political will	At Local level At State level

Barriers identified At Individual level:

1. Low level of awareness: The respondents were unaware of the programme as there was no IEC activities being taken up in the community for creating awareness. There was low awareness about the screening that has to be undergone by people who are above the age of 30 years.
2. Lack Of trust in Government Facilities: The respondents were of the opinion that the quality of services in government facilities were not good and hence preferred private facilities.

Barriers identified at Community level:

1. No medical camps were being conducted for screening of non-communicable diseases:

Barriers Related to health sector

1.Non-Availability of the doctor round the clock: The respondents opined that the non-availability of the doctor in the PHC round the clock was one of the barriers for them to utilize the services being provided under the programme. The Mukyamantri Arogya Kendralu are not round the clock PHCs hence the doctor would be available only from 9am to 5pm.

2. Low quality of drugs: The respondents were of the perception that the drugs being provided at the government facilities were of low quality and hence preferred to get treated from private facilities.

Barriers At Structural Level

Services not in accordance with the felt needs: The respondents felt that the services being provided were not in line with their felt needs. Only generic services are being provided which are not in accordance with the felt need of the community.

FACILITATORS

Facilitators at Individual level:

Willingness to approach the health care system: Some of the respondents said that they approached the PHCs regularly for their checkups and medications. The respondents were satisfied about the services being provided at the PHCs.

Facilitators at Community level:

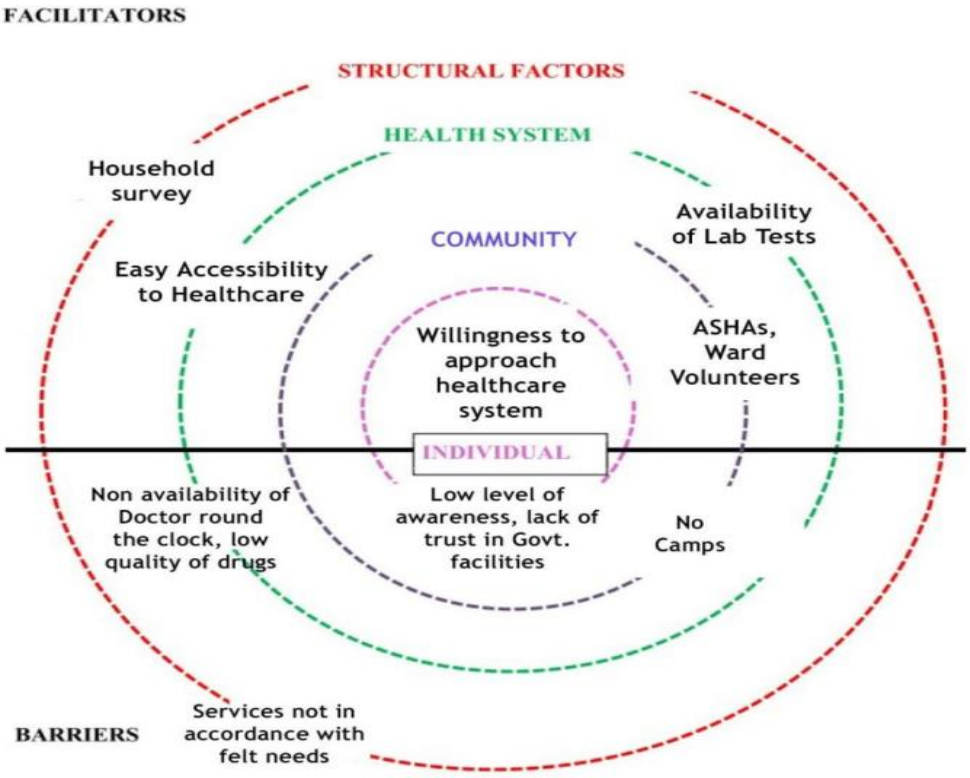
ASHAs and Ward Volunteers: Community health workers like ASHAs and ward volunteers played a major role in delivery of services to the community. The respondents informed that they had a good rapport with the ASHAs and ward volunteers who also educated them about availing health services from PHCs

Facilitators at Health System level:

Accessibility of Health Care: The respondents were of the perception that the Primary health care was accessible to them. All the respondents said they had a PHC or a Grama Sachivalayam near to their houses.

Availability of Laboratory Tests: Most of the respondents were of the opinion that there was availability of all the lab tests in the PHCs. The respondents commented that they received the laboratory tests on time.

Facilitators at Structural level:
Household survey: The respondents felt that the house hold survey helped in getting access to screening. They also felt it helped them seek care at an early stage.



DISCUSSION

The present study was done in urban PHCs of Visakhapatnam district, run on a Public-Private partnership model. This posed certain challenges such as a lack of strategic vision and commitment from diverse partners, ill-defined responsibilities and objectives, member coordination issues, and a lack of leadership capabilities. The study revealed that operational guidelines for NPCDCS have not been formulated in the state of Andhra Pradesh as per the in-depth interview with the District Program Officer. This is a particular scenario as other states like Kerala, Karnataka and Orissa have operational guidelines at their respective state levels[10]

The Qualitative component of the present study consisted of in-depth interviews with the medical officers and the field workers working in the Urban health centres of Visakhapatnam district. The study revealed that the medical officers perceived non-acceptance of the programme by the community, Inadequate resources as challenges for the proper implementation of the programme. **KatayounRabiei, Roya Kelishadi et al** [11] in 2009 showed similar findings that refusal to accept the programs, negative attitudes among the people, lack of adequate facilities and shortage of human resources acted as barriers for the implementation of the programme. The findings may be attributed to the nascent stage of implementation of the programme. Though the programme has been started in 2010 no proper guidelines or structural organisation has been established due to which there is lack of resources and no proper awareness among the public.

In the present study the health care professionals were of the opinion that lack of political will at local level and at state level posed a challenge for the successful implementation of the programme. This finding is in line with the findings from the study by **Anand Krishnan et al** [9] in 2010 which showed that community level

involvement in local governance is a key to the success of any programme. This is because many preventive programmes necessitate policy changes in order to be widely implemented. Securing the resources for policy change requires political will, or society's resolve to support or change prevention programmes. The **input indicators in** the present study showed 78% of the health facilities had Health care workers trained in diagnosing the NCDs. These findings are slightly different form the study done by **Lewin et at** [12] in Myanmar which showed that 64% of the sanctioned posts were filled; 90% of those appointed been trained in PEN. The low level of trained staff in the present study may be attributed to the recruitment of the staff on a contract basis as a part of the public private partnership mode on which the PHCs are being run.

The findings from the present study in which the in-depth interviews with the health, technical issues acted as barriers for the programme implementation which are consistent with the findings from a systematic review published In China by **Hongfei Long et al** [13]in 2018 which revealed heavy reliance on technology as a barrier in engaging Community Health Workers in Non-Communicable Disease (NCD) Prevention and Control. The technical issues could have been overcome if the app was pilot tested prior to the introduction in the field and the staff were adequately trained regarding the usage of the app.

The present study revealed that health promotional activities are not being taken up at the school level which is similar to the findings from a study by **Hiromi Kohori-SegawaID et al** [14] in Bhutan. The similarity in findings may be because both the countries are developing countries[15] and hence the focus is more on communicable diseases[16]

Focussed group discussions with the Community in the present study revealed that people approached private practitioners instead of the government facilities as they found them to be easily accessible. This is similar to the findings from the study by **Nicole Vidal et al** [17]**in El Salvodar.** In the present study the people approached the private practitioners because the PHCs functioned only from 9am to 5pm during which the people had to attend their jobs and hence might have found attending the clinics in late evenings to be feasible.

In-depth interviews with the medical officers, the present study found that lack of operational guidelines at state level, inadequate resources, inadequate training, low awareness and lack of political will were challenges in the implementation of the programme. Similar findings were also observed in the study done by **Lal Rawal et al** [18] using qualitative methods in Bangladesh.

In the present study focussed group discussions with the community revealed that ASHAs and ANMs played a facilitating role for the implementation of the programme which was similar to the findings from the study by **Lal Rawal et al**[18] in Bangladesh which also showed that Community Health workers played an important role in the implementation of the programme.

In the present study the Medical Officers revealed that though training had been given regarding the modules of NPCDCS, no skill-based training sessions were conducted. This is similar to the study done in West Bengal by **Indrajitsaha et al** [19] which concluded there was a residual gap of 25% in the training of Medical officers. The training should have included both knowledge and skill modules as the components like screening of cancers require skill along with knowledge.

CONCLUSION

The Evaluation of National Programme for Prevention and control of Cancer, Diabetes, Cardiovascular diseases and stroke in Visakhapatnam done in the UPHCs of Visakhapatnam showed that 99.20% of the population was screened for diabetes, 95% for cardiovascular diseases, 92% for stroke and 86% for cancers. The Lack of operational guidelines, inadequate training, technical issues and lack of political will were perceived as challenges by the Health care providers both at the institutional and field level. The community perceptions were mixed which included both facilitators and barriers for the implementation of the Programme

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