Effectiveness of Covid-19 Management Training of Community Health Officers (CHO) in Bulandshahr, UP

By

Suvarna Singh

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2018-2020

The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: **www.iihmr.edu.in**

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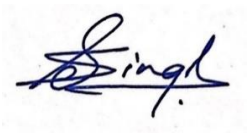
Ph: 0141 3924700, Fax: 3924738
Website: **www.iihmr.edu.in**

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **Effectiveness of Covid-19 management training of Community Health Officers (CHO) in Bulandshahr, UP** and submitted by (Name) **Dr, Suvarna Singh** Enrollment No **0852** under the supervision of **Dr. Neetu Purohit** for award of MBA in Hospital and Health/ Pharmaceutical / Rural Management in Health and Hospitals of the University carried out during the period from **3rd Feb,2020 to 3rd May, 2020** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.



(Suvarna Singh)
Signature

Abstract

The study is conducted to assess the effectiveness of training on Covid-19 management to all the Community Health Officers (CHOs) of Bulandshahr district of Uttar Pradesh. Novel Coronavirus 2019 / nCoV is a type of coronavirus that has not been previously identified in humans. COVID-19 is the disease caused by it. In December 2019, multiple cases of pneumonia caused by unknown agents were reported in Wuhan city, China. CHOs are nursing background students who undergo 6 months training program called the CCHN, Certificate Program in Community Health .64 CHOs participated in the study out of which 55 are posted for Covid-19 duty in the community. All CHOs were part of the descriptive cross sectional study in Bulandshahr District in the period of 90 days. The data was collected using Google forms and analyzed it through Excel sheet and google form. The training conducted in Bulandshahr District, UP to all the CHOs in the district on Covid-19 management was highly effective. The study suggested that 89% of CHOs felt the importance of the training and that it increased their knowledge on the topic and gave them confident to step on the field and practice Covid-19 management in the community with minimum hesitation. Their importance on the front line was unchallenged and the training acted a tool for their defense in the community. There is a need for refresher training with little modification and addition to it which will help the CHOs to refresh the topic and perform better. There were many challenges faced by the CHOs in the community while on duty which can be addressed during refresher training. It is imperative to maintain a continuous flow of capacity building sessions to the health care workers where this type of training can provide more than a tool to perform their duties in the community. Training and continuous education strengthens the skillset and keeps them up to date with the ongoing scenario in the world.

Acknowledgement

I would like to start by giving my sincerest gratitude to Former Dean, Dr. Piyush Kant Pandey because of whom I was able to join such a prestigious organization. It was his effort and belief that lead me to work where I desired.

My Faculty guide, Dr. Neetu Purohit who time and again from her busy schedule supervised my work. I am fortunate to receive the opportunity to learn a variety of imperative things from her. She never failed to address my apprehensions and encouraged me to do my best. Her constant support is deeply appreciated.

I would like to express thanks to Dr. Swati Mahajan, Chief of the party, Jhpiego to retain her faith in me and my work post internship and providing me this opportunity of a lifetime. Her work ethic and hardworking personality has inspired me every day. My supervisor Dr. Sanjay Tripathi, State Program Manager, Jhpiego for guiding me every step of the way, making my entry in the organization smooth and uneventful.

There are no words of acknowledgement for my parents and family without whom I would not be where I am. It is all thanks to their love and constant support in letting me chose my own path in life and weave my own destiny.

Table of Contents

List of Figures 10
List of Tables 11
List of Symbols and Abbreviations 12
1. Background 13
About the Organization 13
Ayushman Bharat 15
Location: Bulandshahr, UP 18
AB-HWCs Operational in the District 19
CHO Program 20
Covid-19 Management 20
2. Introduction 23
3. Literature Review 26
4. Research question 28
5. Objective 28
6. Methodology 29
7. Analysis of the Data 30
8. Results 31
8.1 CHOs posted in the district vs CHOs practicing Covid-19 management in the community 31
8.2 CHOs knowledge on Covid-19 before training 31
8.2.1 Platforms to gain knowledge on Covid-19 31
8.3 Knowledge assessment of CHOs post training 32
8.4 Importance of training of Covid-19 management 34
8.5 Increase in knowledge on Covid-19 after training 34
8.6 Ability to practice Covid-19 management in the community after receiving training 35
8.7 Need for a refresher training 36
8.8 Challenges faced by the participants in the field practicing Covid-19 management post training 36
8.9 Things lacking in the training module according to the participants 37
9. Recommendation 38
10. Conclusion 39

11. Annexure 40
Study instruments 40
12. References 43

List of Figures

Figure 1 Jhpiego's Work in Uttar Pradesh 14
Figure 2 CPHC Key elements.....**Error! Bookmark not defined.**
Figure 3 Continuum of Care 17
Figure 4 Map of Bulandshahr District 18
Figure 5 Sign and Symptoms of Covid-19 21
Figure 6 Percentage of CHOs posted for Covid-19 duty.....**Error! Bookmark not defined.**
Figure 7 CHOs knowledge on Covid-19 before training..... 31
Figure 8 Distribution percentage of CHOs gaining knowledge on Covid-19 before training..... 32
Figure 9 Distribution of knowledge of CHOs on full form of Covid-19..... 32
Figure 10 Distribution percentage of CHOs knowledge on common symptoms of Covid-19..... 33
Figure 11Distribution of CHOs knowledge on Covid-19 transmission 33
Figure 12 Distribution percentage of CHOs knowledge on highest risk to Covid-19..... 34
Figure 13 Based on knowledge gained after training on Covid-19 management, the answers correctly provided .....**Error! Bookmark not defined.**
Figure 14 Distribution on the importance of Covid-19 management training..... 34
Figure 15 Distribution of CHOs based on their experience if the training increased their knowledge on COvid-19 management..... 35
Figure 16 Distribution on percentage of CHOs able to practice Covid-19 management successfully based on the training..... 35
Figure 17 Distribution of percentage of CHOs who asked for a refrsher training 36

List of Tables

Table 1 Healthcare Facilities in the district .....**Error! Bookmark not defined.**
Table 2 Current status of operational HWCs in the district..... 19

List of Symbols and Abbreviations

AB-HWC	Ayushman Bharat- HWC
ASHA	Accredited Social Health Activist
ASMAN	Alliance for Saving Mothers and Newborns
CBAC	Community Based Assessment Checklist
CHO	Community health officer
CPHC	Comprehensive Primary Health care
GoI	Governement of India
HWC	Health and Wellness Centre
IEC	Information Education and Communication
IT	Information technology
Jhpiego	John Hopkins Program for International Education of Gyneacology and Obstetrics
MERS	Middle East Respiratory Syndrome
MO	Medical officier
MoHFW	Ministry of Health and Family Welfare
MOIC	Medical Officer Incharge
NCD	Non-Communicable Diseases
PHC	Primary Health Centre
PMA	Performance Management and Accountability
SARS	Severe Acute Respiratory Syndrome
SC	Sub Centre
SHC	Sub health centre
SHC	Subhealth Centre
UP	Uttar Pradesh
UPHC	Urban Primary Health Centre
USAID	U.S Agency for International Development

1. Background

About the Organization

Jhpiego is a nonprofit global leader in innovation and delivery of transformative health care solutions that save lives. In partnership with national governments, health experts and local communities, Jhpiego builds health provider's skills and develops systems that save lives now and guarantee healthier futures for women and their families.Johns Hopkins University affiliate organization Headquartered in Baltimore, USA, been working for 45 years in 147 countries all across the globe. Currently active participation in more than 50 countries.

Jhpiego has been working in India to strengthen reproductive health services with funding from the **U.S Agency for International Development (USAID)** and in collaboration with the Government of India and the **Ministry of Health and Family Welfare (MOHFW).** Its presence is found in 18 states on India working under various banners of health care.

In its early years, Jhpiego was recognized as an expert in reproductive health and family planning. As the organization has grown and become more field-based, its programming areas have grown and expanded. As of 2015, Jhpiego's primary program areas are:

- Maternal, newborn, and child health
- Family planning and reproductive health
- HIV/AIDS prevention and care
- Infection prevention and control
- Malaria prevention and treatment
- Cervical cancer prevention and treatment
- Tuberculosis (TB)
- Urban and community health
- Education and training
- Innovations

USAID: The United States Agency for International Development (USAID) is an independent agency of the United States federal government that is primarily responsible for administering civilian foreign aid and development assistance. With a budget of over $27 billion, USAID is

one of the largest official aid agencies in the world, and accounts for more than half of all U.S. foreign assistance, the highest in the world in absolute dollar terms. USAID leads international development and humanitarian efforts to save lives, reduce poverty, strengthen democratic governance and help people progress beyond assistance.

UPTAST: This project is run in 14 districts of Uttar Pradesh where Jhpiego provides Technical Assistance to NHM (National Health Mission) in implementing Ayushman Bharat-Health and Wellness Centres (AB-HWCs) in line with the National and State guidelines. The Donor for the project is University of Manitoba who have provided a funding of $ 1.86 Million till June 2020. The Goal of UPTAST project is to Strengthen the delivery of comprehensive primary health care through 'Ayushman Bharat Health and Wellness Centres' and creation of sustainable training ecosystems for provision of equitable, comprehensive and client-centered primary health care that contributes to improved health outcomes in Uttar Pradesh.

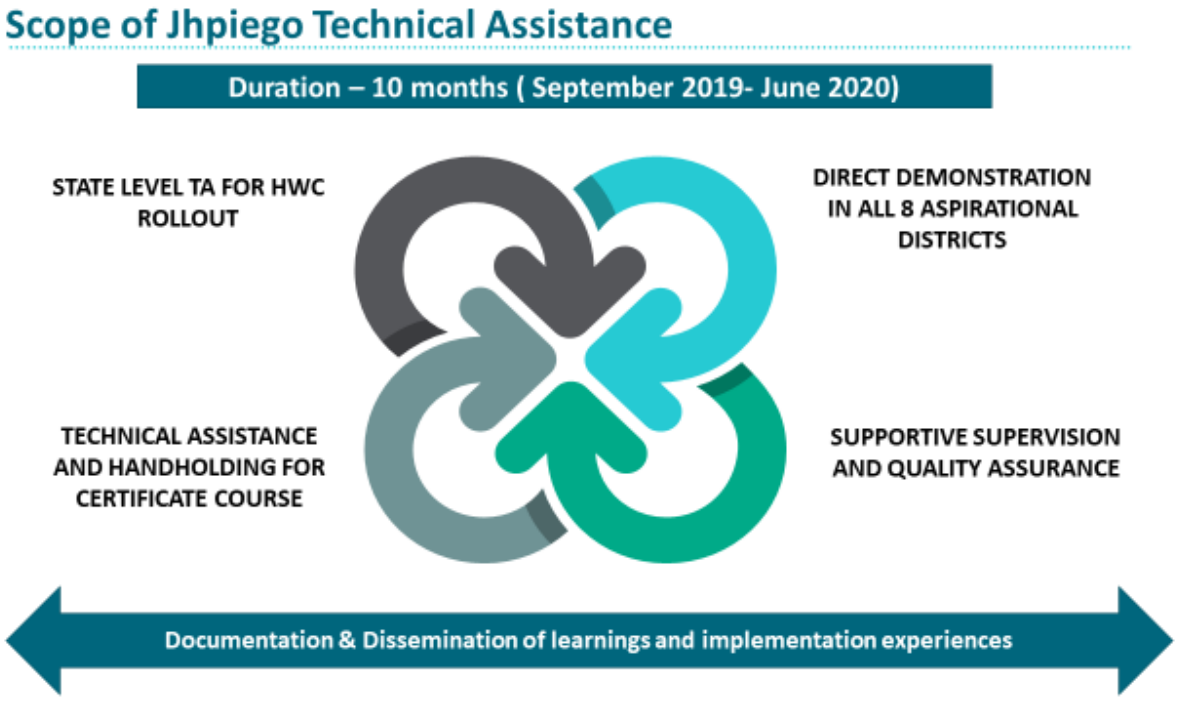


Figure 1Jhpiego's Work in Uttar Pradesh

Ayushman Bharat

The National Health Mission (NHM), the country's flagship health systems strengthening programme, particularly for primary and secondary health care envisages "attainment of universal access to equitable, affordable and quality health care which is accountable and responsive to the needs of people" (NHSRC, 2017).

"India is witnessing a demographic and epidemiological transition where NCDs such as diabetes, cancer, cardiovascular diseases etc. There has been a global example proving Primary Health Care is critical in improving health outcomes. It has an important role in the primary and secondary prevention of several disease conditions, including non-communicable diseases.

Providing CPHC (Comprehensive Primary Health Care) reduces mortality and morbidity at significantly lower costwhich reduces the need for secondary and tertiary care. For primary health care to be comprehensive it needs to incorporate preventive, promotive, curative, rehabilitative and palliative aspects of care. Primary Health Care goes beyond first contact care, and is expected to mediate a two-way referral support to higher-level facilities (from first level care provider through specialist care and back) and ensure follow up support for individual and population health interventions." (NHSRC, 2017)

These ten Framework Factors broadly included:

1. Lack of Responsiveness
2. Limited attention to Social Determinants
3. Human Resource Shortage
4. Marginalisation and Exclusion of specific population groups
5. Supply side deficiencies
6. Mismatch between provider training and services to be delivered

7. Poor quality of relationship between provider and the community
8. Weak realization of potential of ICT in primary health care
9. Inadequate efforts of community participation and awareness
10. Low Institutional capacity

The task force carried out a detailed analysis of these ten framework factors and also carried out a situation analysis of the existing primary health care. (NHSRC, 2017)

They came up with nine key areas of action in order to make the primary health care comprehensive and universal.

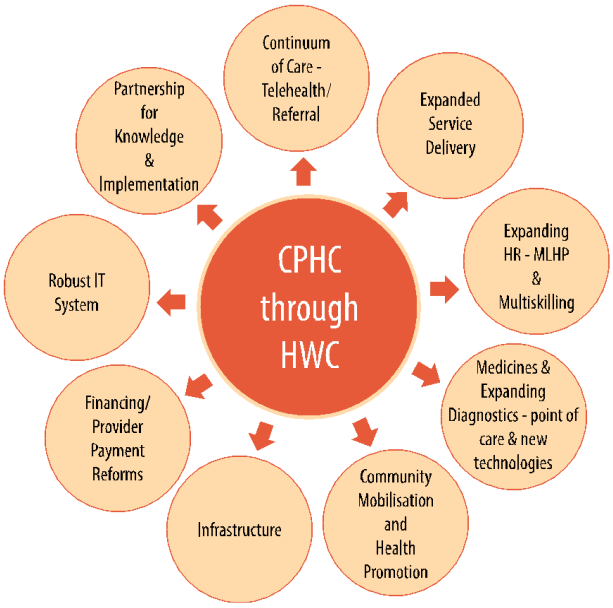


Figure 1 CPHC key elements

1. Strengthening of Institution Structures and Organization of Primary Health Care Services
2. Improve access to technologies, drugs and diagnostics for Comprehensive Primary Health Care
3. Increase utilization of Information, Communication and Technology (ICT) - empowering patients and providers
4. Promote Continuity of care- for patient centric services
5. Enhance Quality of Care
6. Focus on Social Determinants of Health

7. Emphasize Community Participation and Address Equity Concerns in Health
8. Develop a Human Resource Policy to support Primary Health care
9. Strengthen Governance Financing, Partnerships and Accountability

"Every action area of the CPHC is a goal in itself and certain steps need to be taken to achieve it. In order to strengthen the Institutional structure and organising primary health services it is imperative to have a set of defined service which should be made available at all the health delivery centre. As mentioned earlier, this role of delivering comprehensive health services will be fulfilled by the Health and Wellness Centres(HWCs)" (NHSRC, 2017)

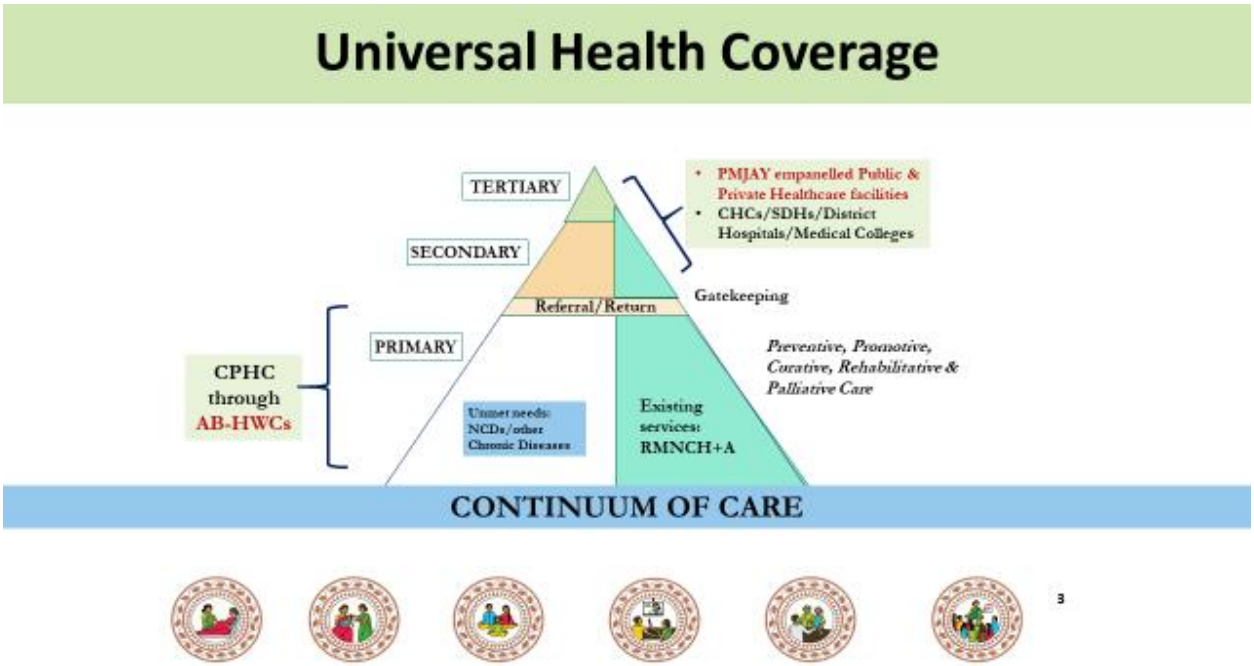


Figure 2 Continuum of Care

Location: Bulandshahr, UP

Bulandshahr district in Uttar Pradesh is part of National Capital Region of India which lies in Meerut region. According to the 2011 census, Bulandshahr had a population of 34,99,171. This makes it the 85th most populous district of the total 640. The district has a population density of 788 inhabitants per square kilometre (2,040/sq mi).

State	Uttar Pradesh
District	Bulandshahar
Population (2011)	3499171
Growth	20.12%
Sex Ratio	896
Tehsils	Anupshahr, Bulandshahr, Debai, Khurja, Shikarpur, Siana, Sikandrabad
Area (km2)	3719
Number of SC	344
Number of PHC	59
Number of UPHC	8
Number of Block	19

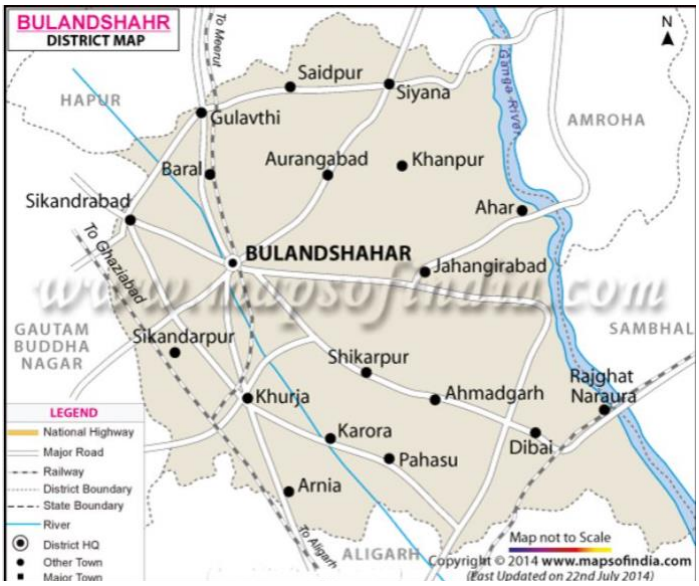


Figure 3 Map of Bulandshahr District

1.1 Health care facilities in the district

	Total population of rural/urban area	**Required number of facilities (R)**	**Sanctioned number of facilities (S)**	**Functional facilities (F)**	**Facilities which need to be established against the requirement (R- F)**
SC	2631742	526	344	344	182
PHC		87	59	55	32
UPHC	867429	17	8	8	9

Table 1 Health care facilities in the district

AB-HWCs Operational in the District

There are 8 Functionality criteria based on which a Sub Centre (SC), Primary Health Centre (PHC), Urban PHC (UPHC) to convert into AB-HWC (Ayushman Bharat- Health and Wellness Centres). Once a facility fulfills the 8 criteria's they are made operational on the HWC portal which is an online platform for the government to monitor the progress and status of the facilities. The 8 Functionality criteria's are the following :

1. HR- Human Resource- HWC team consists of the following:
    a. SC-HWC: CHO (Community Health Officer), MPW (Multipurpose Workers) also known as ANM (Auxiliary Midwives), ASHA
    b. PHC and UPHC: MO (Medical Officer), MPW, Lab technician, Pharmacist, Staff Nurse and ASHA.
2. Training- Of the HWC team in CPHC guidelines, NCD Screening (Non-Communicable Disease), NCD Application and Population Enumeration which involves filling of CBAC Forms (Community Based Assessment Checklist) and Family folders.
3. Infrastructure- Renovation of facility and Branding of the facility as per state guidelines
4. Drugs- Availability as per guidelines
5. Diagnostic test- 14 diagnostic tests at AB-HWC-SHCs and 63 diagnostic tests at AB-HWC-PHC as per the revised
6. Population Enumeration- Population enumeration by filling our Family folders and CBAC forms(Community Based Assessment Checklist)
7. IT- IT support available in the form of Laptop/Desktop and Tablets etc
8. Universal Screening of NCD

Once these criterias are filled a facility becomes operational into a HWC

1.2 AB-HWCs which are operational as of May,2020.

Current Status	SC AB-HWC	PHC AB-HWC	UPHC AB-HWC	Total
Till May 2020	64	29	5	99

Table 2Current status of operational HWCs in the district

CHO Program

CHOs are nursing background students who undergo 6 months training program called the CCHN, Certificate Program in Community Health has been developed by IGNOU in collaboration with MoHFW, GoI. It aims at improving the knowledge, skills and competencies of registered nurses (RNRM)/ Ayurveda Practitioners for strengthening primary health care services at peripheral level.

Academic Session: 1st January and 1st July of each year

Programme duration: Minimum: 6 months Maximum: 2 years

Eligibility Criteria: GNM / BSc Nursing / Post Basic BSc Nursing/Ayurveda Practitioners (preferably 2 years of relevant work experience in health sector)

Admission/ Selection Procedure: Candidates fulfilling eligibility criteria will be sponsored by NHM (candidates have to serve in sub-centres for at least 3 years after training)

Covid-19 Management

Coronaviruses are a large family of viruses that cause a wide range of illnesses from common cold to more severe diseases like:

- Severe Acute Respiratory Syndrome (SARS)
- Middle East Respiratory Syndrome (MERS)

Novel Coronavirus 2019 / nCoV is a type of coronavirus that has not been previously identified in humans. COVID-19 is the disease caused by it. In December 2019, multiple cases of pneumonia caused by unknown agents were reported in Wuhan city, China. In January 2020, a novel strain of coronavirus was isolated and identified as the cause.

Mortality rate ranges between 2-3%. It is significantly less severe than 2003 SARS (MR: 10%) or 2012 MERS (MR: 35%) outbreaks. Risk of death is only higher in older people (above an age of ~60 years) and people with pre-existing health conditions like heart conditions, diabetes, asthma

etc.) The disease caused by this new strain of coronavirus was named as COVID-19 by the World Health Organization.

The virus is thought to spread mainly:

- Between people in close contact (less than 1 metre)
- Via respiratory droplets when a person coughs / sneezes (Droplets can land in mouths or noses of people nearby or possibly be inhaled into lungs)
- Via contaminated surfaces / objects - May be possible that a person can get COVID-19 by touching a surface, then touching their own mouth, nose, or possibly eyes, but this is not thought to be main way the virus spreads

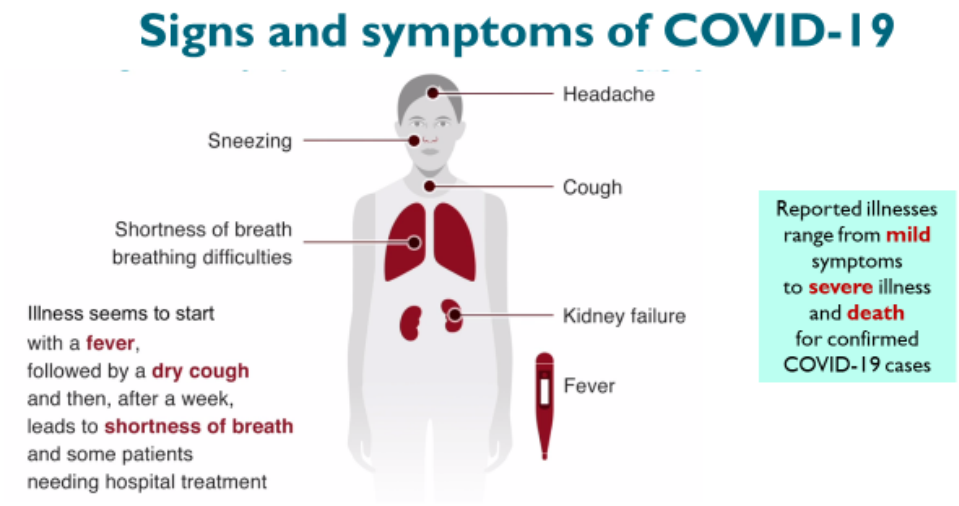


Figure 4 Sign and Symptoms of Covid-19

Effectiveness of Covid-19 management training of Community Health Officers (CHO) in Bulandshahr, UP

2. Introduction

An army without weapons is rendered useless just like that in the war against the pandemic our health care workers biggest asset is knowledge and safety gear. Every health worker needed right training to deal with the disease to look after themselves and the patients they are treating. In the block level the community was served by CHOs to tackle the disease in the community, it was important to assess their knowledge on management of the disease in the community based on the training they received. The purpose of this research is to find the effectiveness of the training conducted by Jhpiego and district Medical Officers (MOs) for Covid-19 management during the pandemic which was imparted to the CHOs to increase their knowledge on the subject and successfully implement it on the field without hesitation. Uttar Pradesh Healthcare system is managed by a Mission Director (MD) at state level, at District level the head of healthcare operations is managed by Chief Medical Officer (CMO) at Block level it is the Medical Officer Incharge (MOIC) who is responsible for implementation of programs at block, their instructions are then passed on Community/village level where at a HWC Sub health Centre the CHO holds leadership roles where he works in close communication with ANM and ASHAs. Till date, May 2020 Uttar Pradesh has 2978 CHOs in 74 districts and out of which Bulandshahr has 64 CHOs. Being the centre of HWCs at sub centre village level these CHOs play an integral part in the community in managing the pandemic working at front lines these were our soldiers and the training they received makes them more confident when working at the community level.

It is important to know whether or not this training was useful and they were prepared well before working in the field. Assessing the problems and challenges they faced which was not incorporated in the training module which would have been helpful is essential as it will help us recommend the organization on how to improve it for better knowledge.

The CHOs are trained under CCHN course after their nursing graduation for 6 months to become CHO which is the training given by KGMU/IGNOU in collaboration with Jhpiego and once they are placed in the HWCs centres further necessary training is given to them as in when required. After Jhpiego’s role in CCHN course the organization is imparted with providing training for Coivd-19 Management to the CHOs for preparing them and giving them sufficient knowledge about their roles and responsibilities in the field.

2.1 Roles and Responsibilities of CHO in Covid-19 Management

- Standard Infection prevention and control measures to be taken by the CHO such as following basic level of IPC (Infection Prevention and Control) measures for Covid-19 at all times regardless of suspected or confirmed status of the patients.
- Recommend infection prevention practices to reduce transmission of infection by breaking any link in the chain of transmission such as practicing:
    - Hand hygiene, by teaching them proper handwashing technique
    - Appropriate use of Personal Protective Equipment (PPE) such as mouth masks
    - Environment cleaning and disinfection: Cleaning surfaces with water and detergent and using disinfectants such as hypochlorite, 0.5%, disinfecting medical devices, equipment's, laundry, utensils etc.
    - Respiratory Hygiene/Etiquett
- Counselling of the community to tackle social stigma and discriminatoy behaviors towards sick/infected people. Covid-19 is new hence there is a lot of confusion, anxiety and fear among the public unfortunately, for such events the CHOs needs to address social stigma, preventive measures to be taken to avoid discrimination and home care for suspected or positive cases with mild symptoms.
- Communicate and educate HWC staff: to explain the team signs and symptoms of Covid-19 for better practice of covid-19 management in the community, Brief them on necessary infection prevention measures, helpline no.s and availability of testing facilities in the states. Demonstrate handwashing practices and ask them to perform the same with communities on a regular basis. Promote healthy habits such as hand washing, cough etiquette and basic hygiene practices. Explain them to separate patients with respiratory symptoms so they are not waiting among other patients seeking care. Explain them on how to address social stigma in communities by providing them adequate and correct information
- Preparedness and Responsiveness: The CHO should know about the following in case of a suspected case is identified:
    - The Helpline Number for corona-virus : +91-11-23978046 Toll Free No: 1075

- The Helpline Email ID for corona-virus : ncov2019@gov. in
- State COVID-19 helpline numbers
- https://www.mohfw.gov.in/pdf/coronvavirushelplinenumber.pdf
- List of testing labs in state
- List of hospitals for referral

2.2 Knowledge of CHOs on Covid-19

Various CHOs who are working in the field has average knowledge on the subject through social media and news but management aspect was only known on a superficial scale. They had an overview of what was happening around the world, presence of a new virus and disease, mode of transmission and what to do to avoid getting infected. They had a somewhat idea on the Corona virus and its origin along with basic knowledge of do's and don't's but not enough to practice in the front lines. The training enhanced their knowledge and gave them confidence to perform at their level best on the field managing the community and spreading awareness. The most important role of a CHO in the community during Covid-19 was to generate awareness amongst the villagers before community spread and halt the infection if it penetrates that level of society. They are entrusted with mass screening of the villagers and take accurate history to make a data base of the community and identify potential cases so they can be quarantined and tested for the same. They were even placed at hospitals in quarantine centers to be part of the Covid-19 management team. Their nursing background helps them in managing the situation very well.

3. Literature Review

India lacks the number of health care providers and health infrastructure to deliver health care services and tackle a pandemic of this scale. Every Able bodied Doctor, Nurse, additional staff etc are asked to report on duty to handle the situation in best possible way. CHOs are Nursing background health care workers with an additional 6 months training in Community health. Nurses/CHOs play a vital role in such health care emergencies it is important to protect the protectors so the nation and the government is responsible to provide them with PPE kits for protection and training so they know what to do in the field, what is expected out of them and they perform with maximum efficiency.

According to Quan Liu "The healthcare fraternity was overwhelmed with the situation. And it was global scenario. In the early stages of the outbreak of coronavirus disease 2019 (COVID-19) in Hubei, China, the local healthcare system was overwhelmed. Physicians and nurses who had no infectious disease expertise were recruited to provide care to patients with COVID-19" (Qian Liu, 2020) The lack of knowledge and training of the staff played a big role in China during the pandemic as suggested in the article the initial few weeks were chaos and people were struggling to do the right thing the right way due to lack of knowledge on the subject. To avoid the similar situation the CHOs in the community were trained before they are sent on the field to practice management of the disease.

"We know from our colleagues that despite being actively engaged in this fight against COVID-19, in a way that few other professions are, and despite appearing calm and professional; like everyone else, many nurses are also experiencing fear of the unknown and concern for what lies ahead, for themselves, their patients, colleagues and their own families and friends." (Jackson D, 2020) To avoid the fear of unknown in our staff a detailed training was imparted so that they work more efficiently and have confidence in dealing with the scenario with their best foot forward.

There is a growing demand to educate health-care professionals regarding the medical aspects of pandemics, in order to improve their capabilities for dealing with the threats (Bruria Adini, April 2012) Training health-care personnel to manage emergencies is regarded as an important component in emergency preparedness, and exercises are generally considered to be part of the

training programmes. We suggest that exercises should serve a dual purpose: (i) a component of the training; and (ii) an evaluation tool to determine the effectiveness of the training programmes. A variety of methods have been utilized to prepare hospital health-care professionals to manage emergencies, such as lectures, seminars, workshops, table-top exercises and drills. Drills and/or exercises have been identified as the intervention most successful in preparing hospital personnel to manage actual emergencies.11,12 Efficient utilization of exercises require that they be planned, organized and implemented with the goal of providing reliable and valid information on the performance of all personnel (Bruria Adini, April 2012)

Healthcare professionals have always been encouraged to update their knowledge and maintain clinical competence. The rapid changes currently taking place within healthcare systems have increased the pressure from direct care providers, professional bodies and the general public for nurses to engage in continuing education programmes. Despite a growing body of empirical research on this topic, the effectiveness and impact of continuing education remains underexplored (PhD, 2006)

4. Research question

How effective was the training on Covid-19 management for the Community Health Officer (CHOs) in the community?

How to improve the training module based on the CHOs experience in the field to better prepare them for their work in the community?

5. Objective

To assess the knowledge of CHOs post training on the Covid-19 management

To improve the training module based on the CHOs experience in the field performing Covid-19 management.

6. Methodology

6.1 Research designs

Descriptive Cross sectional study

6.2 Study setting

Bulandshahr District, Uttar Pradesh

6.3 Study population

Inclusion criteria: CHOs are a new cadre developed to lead the team of Health and Wellness Centre (HWC) at subcentre level acting as the first point of contact providing comprehensive primary healthcare to the community. They are nurses with additional training in community health who is the HWC team leader with ASHA and ANM working under them provides first line of treatment and play an essential role in NCD screening. In the time of pandemic they are the health care workforce responsible for identifying potential cases by screening the community and providing awareness in the community. Jhpiego is responsible for providing them the training necessary for Covid-19 management in the community

6.4 Duration of Study

This study is completed in 90 days i.e. 3 months

6.5 Sampling method

No sample taken. All 64 CHOs placed in the district were selected.

6.6 Data Collection procedure

Data was collected using pre tested structured questionnaire after taking consent of the participants. Questionnaire consisted of both Qualitative and quantitative questions

6.7 Data analysis plan

The data was gathered using google forms and analysed through Google forms and Excel sheet

6.8 Ethical Consideration

Informed consent was obtained from all the CHOs who participated in the study. Privacy and confidentiality was maintained as none of them were asked to identify themselves.

Questionnaire

7. Analysis of the Data

The data was collected from CHOs through google form and transferred to Microsoft Excel sheet for reproduction of graphs and charts.

Descriptive analysis was used to describe the characteristic of findings and individual level data was aggregated to perform analysis. Final data was analyzed using Microsoft Excel where graphical representation in the form of pie charts and graphs were made which are used for analysis and were observed for obtaining substantial findings.

The research findings were correlated with the available data and inferences were made based upon them. Finally, the overall conclusion was made based on inference and discussion.

8. Results

8.1 CHOs posted in the district vs CHOs practicing Covid-19 management in the community

The number of CHOs posted in the district are 64 out of which majority of the CHOs are posted for Covid-19 duty in the district from April 1st on orders passed by the Chief Medical Officer (CMO) of Bulandshahr. All 64 CHOs were given training on Covid 19 management. 14 % of CHOs who were not practicing/posted on Covid-19 duty were posted at CHC and asked to do routine OPD.

Total CHO Placed in District	Total CHOs posted in Covid-19 duty
64	55

8.2 CHOs knowledge on Covid-19 before training

CHOs previously attained some form of knowledge on Covid-19 through various means such as social media, new channels, you-tube, word or mouth, articles etc. 45% of them said they had sufficient knowledge on the subject prior to the training given to them while 55% of them received it through the training which helped them practice in the community with more confidence.

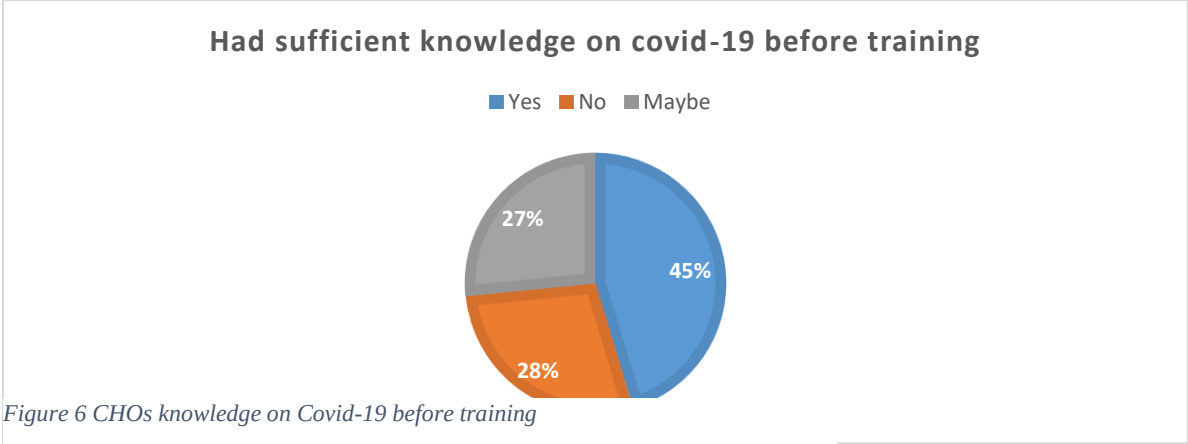


Figure 6 CHOs knowledge on Covid-19 before training

8.2.1 Platforms to gain knowledge on Covid-19

Before the training they gathered knowledge on Covid 19 Management through various means. Most commonly was Google and other web browsing tool, Social media and news channel with 36% of them receiving knowledge from google and other search engine.

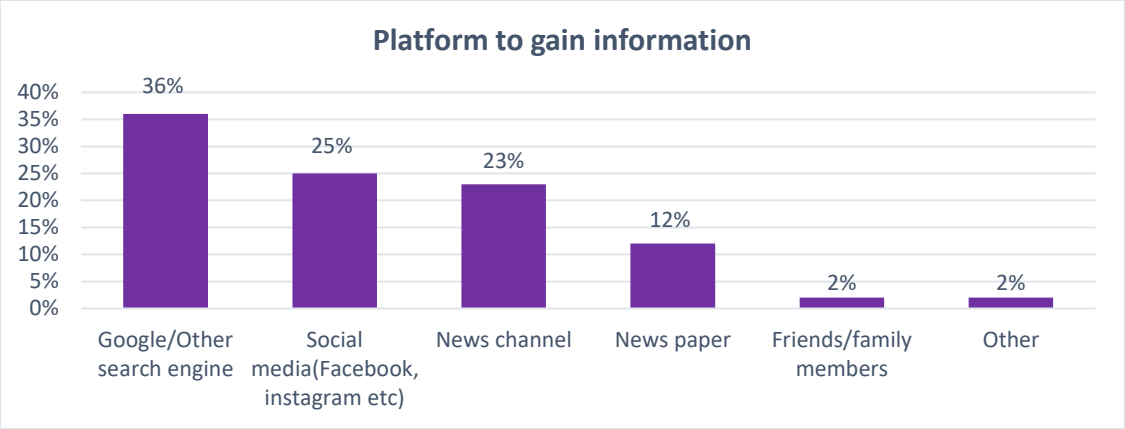


Figure 7 Distribution percentage of CHOs gaining knowledge on Covid-19 before training

8.3 Knowledge assessment of CHOs post training

8.3.1 The data was collected after 3 weeks of training. Their knowledge on Covid-19 management was assessed post training. 79.6% of CHOs knew correctly what Covid-19 stands and 13 of them (20.4 %) even after training did not know what Covid-19 meant.

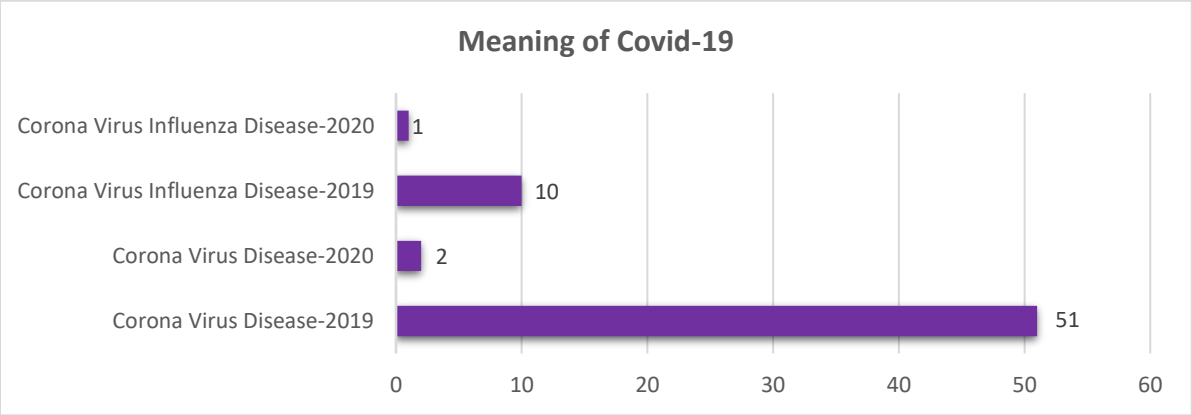


Figure 8 Distribution of knowledge of CHOs on full form of Covid-19

8.3.2 Common symptoms of Covid-19 are Dry cough, difficulty breathing and sore throat. 58 % of CHOs knew difficulty in breathing as one of the most common symptoms of Covid-19 followed

by 23 % each of sore throat and dry cough were answered. 24 % was selected by 24 % of CHOs wheras Joint pain is not a symptom of Covid-19 along with diarrhea and running nose.

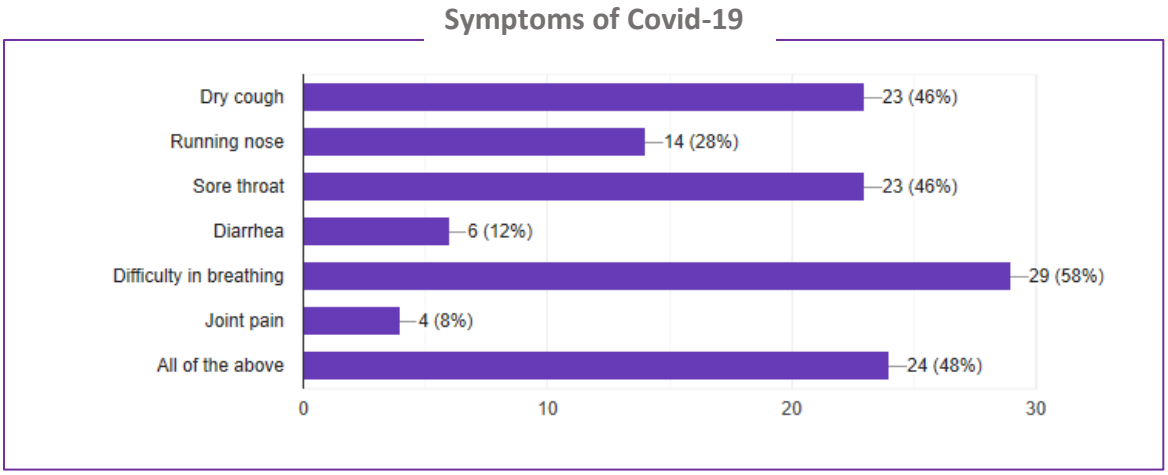


Figure 9 Distribution percentage of CHOs knowledge on common symptoms of Covid-19

8.3.3 The most important information to know when being a part of front line team during a pandemic is to know how an infectious disease is spread. There is little to no evidence suggesting that Covid-19 is spread via blood transfusion yet 10% CHOs think it is. It is mostly spread via droplet of the infected person which 43%CHOs knew and second most common is via touching contaminated surface which 30% answered. There is no transmission via mosquitoes which positively was not answered by anyone of the participants.

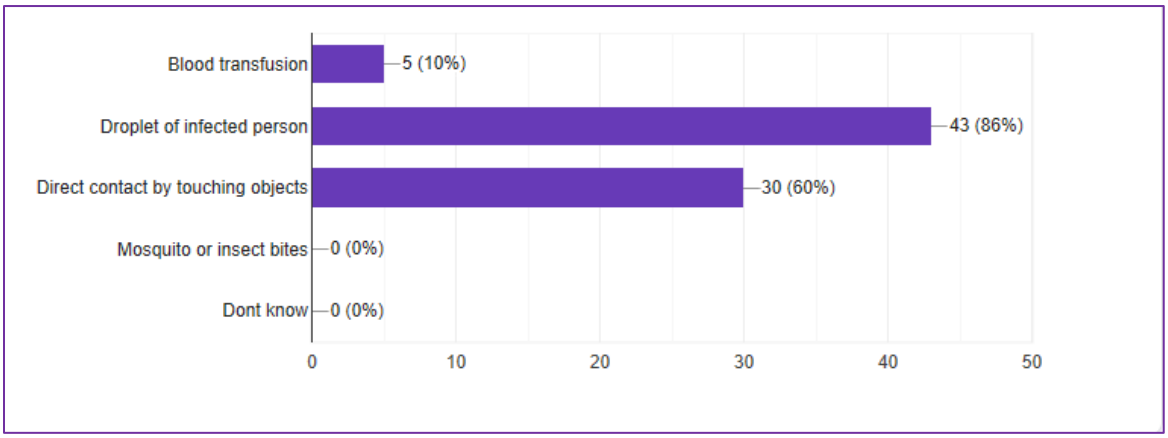


Figure 10 Distribution of CHOs knowledge on Covid-19 transmission

8.3.4 While working in the community the most important role of the CHO is to screen the community and find suspected cases who might be infected or at risk for getting infected. Elderly and people with underlying disease such as hypertension, diabetes etc are at the highest risk of getting infected by the disease. 84% participants knew that people with underlying disease are at

highest risk followed by elderly (62%) Young adults who are healthy are at least risk of getting infected, 6% marked young adults.

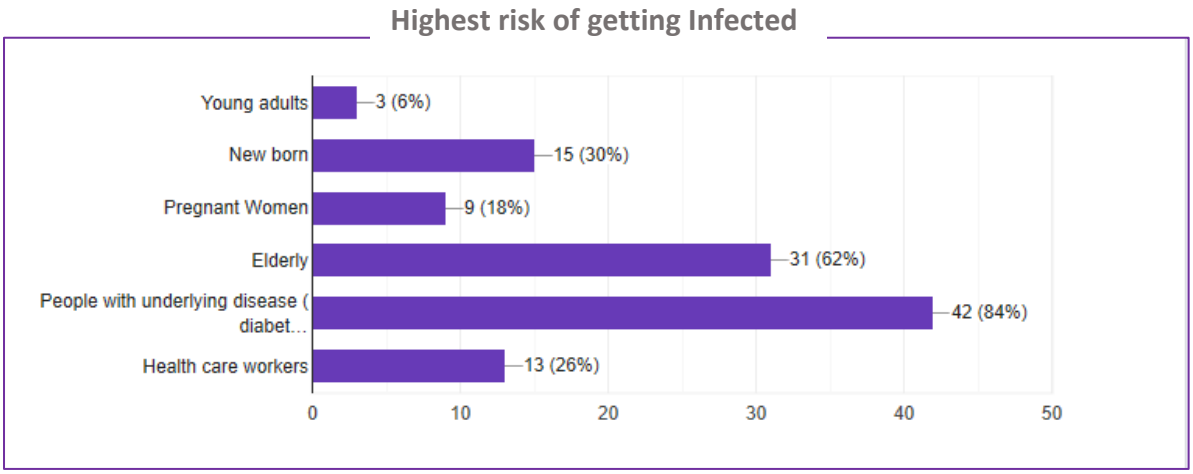


Figure 11 Distribution percentage of CHOs knowledge on highest risk to Covid-19

8.4 Importance of training of Covid-19 management

This was completely based on the participants experience after working on the field for 3 weeks. 89% (57 out of 64) participants felt the training was important and relevant to them and 6% (4 out of 64) felt it was somewhat important while remaining 5 % (3 out of 64) did not feel the importance of the training all, they felt it was useless.

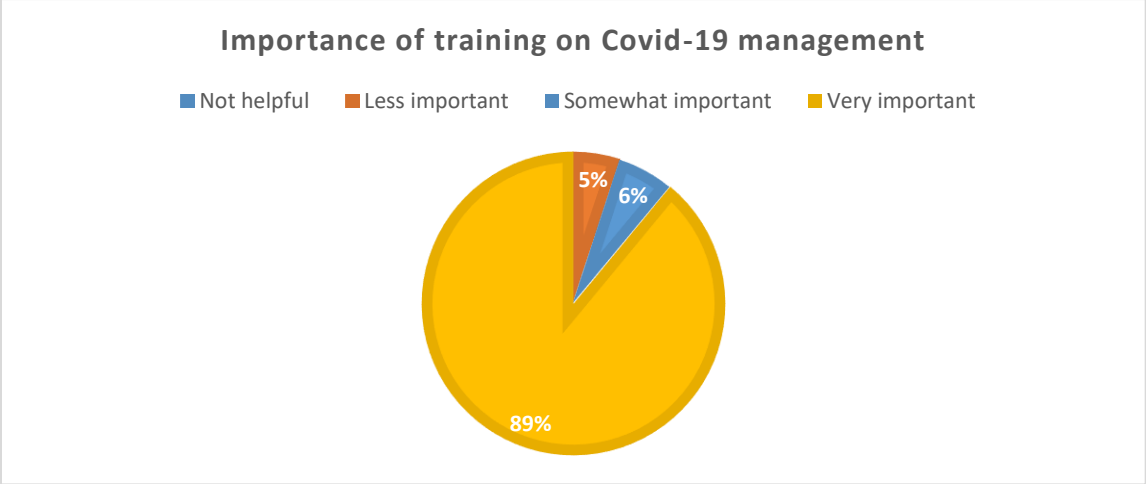


Figure 12 Distribution on the importance of Covid-19 management training

8.5 Increase in knowledge on Covid-19 after training

Post training 51% (33 out of 64) of participants strongly agreed that the training increased their overall knowledge on Covid-19 management and 45 % (29 out of 64) agreed the knowledge was

increased and 1 CHO completely disagreed that the training increased their knowledge and 1 CHO disagreed on the same. These might be those who did not practice Covid-19 management in the field and were not posted on Covid-19 duty.

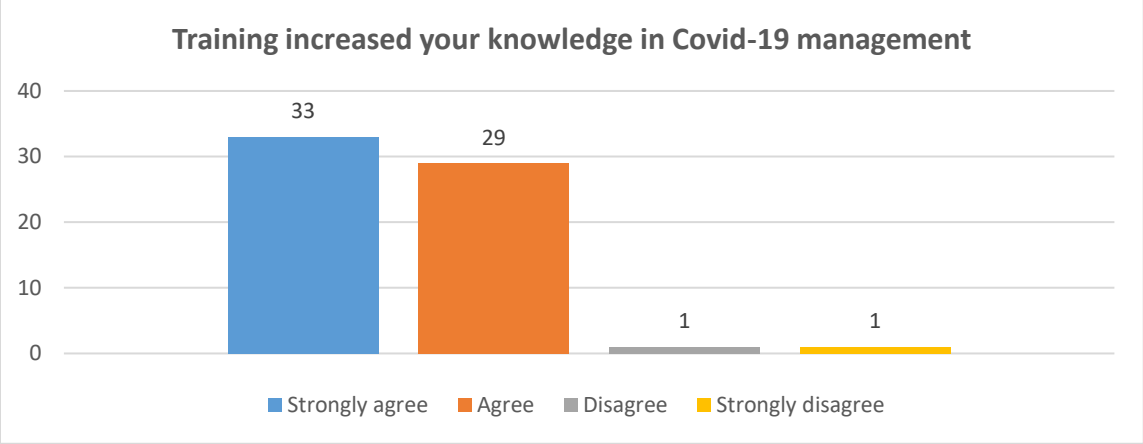


Figure 13 Distribution of CHOs based on their experience if the training increased their knowledge on COvid-19 management

8.6 Ability to practice Covid-19 management in the community after receiving training

Out of 64 CHOs who were trained 55 of them were posted on Covid-19 duty. This was collected only by those who were posted on the field (55 out of 64) 91% which 50 participants were able to practice Covid-19 management successfully based on the training that was provided to them. 9 % (5 out of 55) were somewhat able to practice and faced few challenges which will be discussed further along the study. None of the participants were not able to practice Covid-19 management in the field after gaining knowledge during the training.

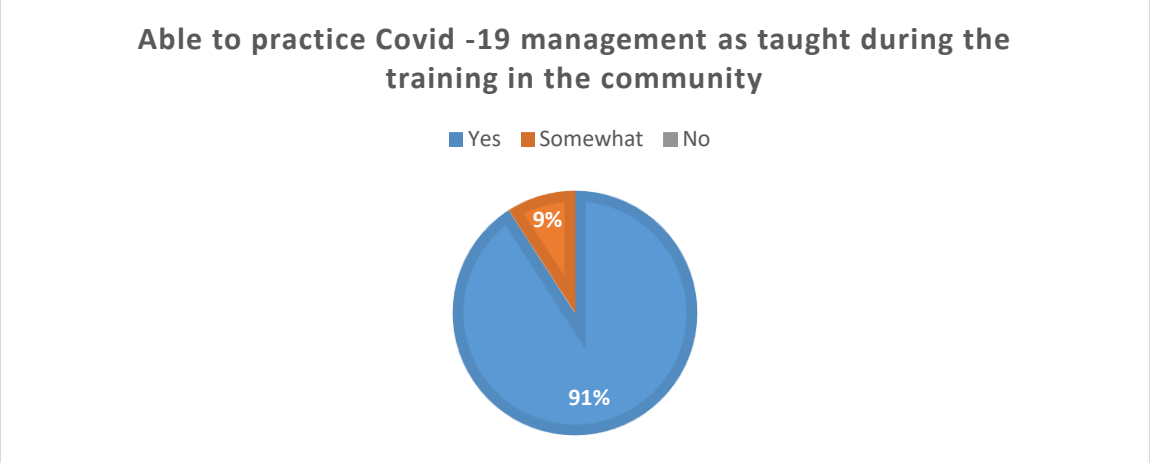


Figure 14 Distribution percentage of CHOs who successfully practiced Covid-19 Management in the field

8.7 Need for a refresher training

The participants felt the need for a refresher training to refresh their knowledge once again on the subject. 21% of participants did not answer correctly what Covid-19 stood for, 10% participants think that Covid-19 is transmitted via blood transfusion, only 89% and 64% participants knew that the highest risk of infection is among the people who have an underlying disease and elderly respectively and not everyone was clear about the symptoms of Covid-19 management. There are 5%(7 CHOs) participants who felt that the training was less important and 6%(8 CHOs) felt it was somewhat important and 9% of CHOs were not able to practice Covid-19 management in the community based on the training given to them, based on these data it can be concluded why 80% of CHOs felt the need for refresher training with 5 % considering somewhat need the training.

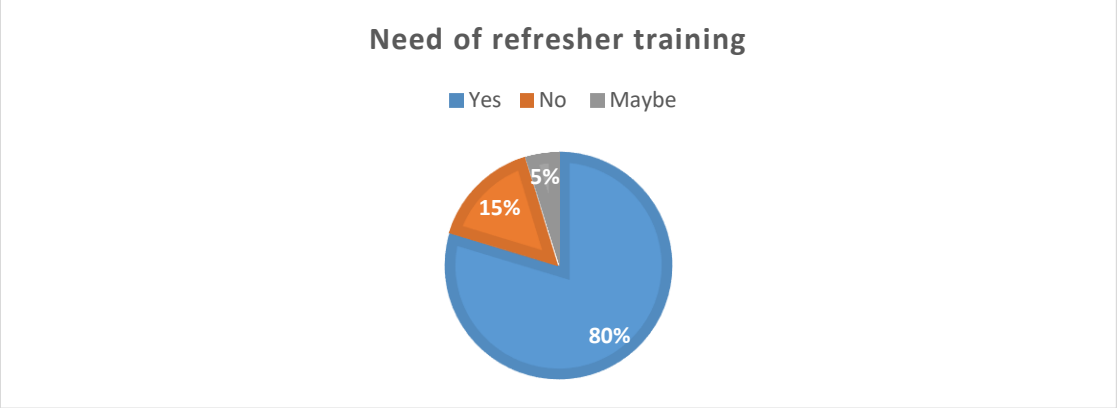


Figure 15 Distribution of percentage of CHOs who asked for a refresher training

8.8 Challenges faced by the participants in the field practicing Covid-19 management post training

There are various challenges faced by the CHOs in the field of various degrees. When asked what were the challenges faced in community while practicing Covid-19 management there were many responses the most common were:

1. Identifying Asymptomatic patients
2. Community has a phobia about Covid-19 screening
3. Management of fear of community people from healthcare workers
4. Convincing people to wear mask
5. People don’t cooperate with screening process specially in muslim community
6. People don’t give correct information and hide family members within the house

7. Unavailability of PPE kits

The challenges faced by the CHOs in the field the above were the most common out of which the training module included how to deal with the stigma associated with Covid-19 in the community but rest of the challenges can be addressed in the refresher training module and be incorporated in the learning resource package.

8.9 Things lacking in the training module according to the participants

Topics/things that were lacking in the training module. When asked this question the most common topics that were answered were:

1. Lack of videos for better understanding
2. How to correctly wear/remove PPE kits
3. In depth knowledge about the disease
4. Management of violent people in the community
5. Management of uncooperative people in the community

9. Recommendation

This study was done to assess the effectiveness of the training conducted by the organization to the CHOs on Covid-19 Management in the community in Bulandshahr district of Uttar Pradesh. As per the finding every CHO in the district received the training out of which 55 were practicing Covid-19 management in the community.

Based on the study conducted the training provided to the CHOs needs some improvement/addition in the learning resource package. Post analysis the Action taken was to suggest and recommend incorporation of a few things in the module such as:

Addition of topics:

1. Safely wearing/removing PPE gear like mouth masks and gloves
2. Identifying asymptomatic patients based on past history
3. Management of violent/uncooperative people in the community
4. Add videos on things like common symptoms of Covid-19, modes of transmission of the disease and infection prevention measures.

10. Conclusion

The training conducted in Bulandshahr District, UP to all the CHOs in the district on Covid-19 management has helped the CHOs perform effectively in the field and perform their duties. The CHOs felt the importance of the training and believed that it increased their knowledge on the topic and gave them confident to step on the field and practice Covid-19 management in the community with minimum hesitation. Their importance on the front line was unchallenged and the training acted a tool for their defense in the community. There is a need for refresher training with little modification and addition to it which will help the CHOs to refresh the topic and perform better. There were many challenges that the CHOs faced in the field in regards with the community and awareness of the people but every individual handles situation differently. Their work is imperative in fighting this pandemic which has crippled nations and engulfed the whole world. This training has successfully strengthened the Corona warriors of our country. Such capacity building sessions are necessary for continuous education and learning of the skilled manpower.

11. Annexure

Study instruments

The questionnaire that was used to analyse the effectiveness of the straining was the following:

1. 1. Were you given training on Covid-19 management in the community before you were posted on Covid-19 duty?
    a. Yes
    b. No
2. Are you practicing Covid-19Management in the community?
    a. Yes
    b. No
3. Do you feel you had sufficient knowledge on Covid-19 management before training?
    a. Yes
    b. No
    c. Maybe
4. What was the main source used to gain knowledge on Covid-19 before training?
    a. Google and other search engines
    b. Social Media (facebook/Instagram/linkdenetc)
    c. News channels on TV/You tube
    d. News papers and other reading material
    e. Friends/family
    f. Others
5. What do you understand by the term Covid-19?
    a. Corona Virus Disease-2019
    b. Corona Virus Disease-2020
    c. Corona Virus Influenza Disease-2019
    d. Corona Virus Influenza Disease-2020
6. How is Covid-19 transmitted (multiple choice)?
    a. Blood transfusion
    b. Droplet of infected person

c. Eating raw meat
d. Mosquito bites
e. Sexual activity

7. Who do you think is at **highest** risk to get infected by Covid-19?
    a. Young adults
    b. New born
    c. Pregnant women
    d. Elderly
    e. People with underlying disease (diabetes, hypertension, COPD etc)
    f. Health care workers
8. What are the most common symptoms of Covid-19?
    a. Dry cough
    b. Running nose
    c. Sore throat
    d. Diarrhea
    e. Difficulty in breathing
    f. Joint pain
    g. All of the above
9. According to you did the training give you sufficient knowledge on Covid-19 Management?
    a. Yes
    b. No
    c. Maybe
10. Did the training cover all the aspects of Covid-19 management?
    a. Yes
    b. No
    c. Maybe
11. How important do you feel was your training on Covid-19 Management?
    a. Very important
    b. Important

c. Somewhat important
d. Less important
e. Not helpful

12. Are you able to practice Covid -19 management as taught during the training in the community?
    a. Yes
    b. No
    c. Somewhat
13. Has the training increased your knowledge in Covid-19 management?
    a. Strongly agree
    b. Agree
    c. Disagree
    d. Strongly disagree
14. What were the challenges faced by you during practicing Covid-19 management in the community? (subjective)
15. What were the things lacking in the training that was required in the community during Covid-19 management(subjective)?
16. Do you feel the need of a refresher training?
    a. Yes
    b. No
    c. Maybe
17. Did the training cover all aspects of Covid-19 management?
    a. Yes
    b. No
    c. Maybe

12. References

http://www.jhpiego.org/

www.jhpiego.org/india

WHO: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

CDC: https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-home-care.html

CROI 2020: https://special.croi.capitalreach.com/

Coronavirus disease (COVID-19) technical guidance: Infection prevention and control / WASH

Infection Prevention and Control, Reference Manual for Health Facilities with Limited Resources

The Lancet. Fei Zhou, Ting Yu, Ronghui Du, Guohui Fan, Ying Liu, Zhibo Liu, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study.

https://www.sciencedirect.com/science/article/pii/S0924857920300674

Bruria Adini, A. G.-D. (April 2012). Impact of pandemic flu training on ability of medical personnel to recognize an index case of avian influenza . *European Journal of Public Health*, 169-173.

Jackson D, B.-J. C. (2020). Life in the pandemic: Some reflections on nursing in the. *Journal of clinical nursing Wiley*, 1-1.

Lishan Huang1, G. L. (2020). Special attention to nurses' protection during the COVID-19 epidemic. *Springer Nature*, 1-1.

NHSRC. (2017). *Ayushman Bharat Comprehensive Primary Healthcare through Health and Wellness Centres Operational Guidelines.* NHSRC NHM.

PhD, O. G. (2006). Effectiveness of continuing education programmes in nursing: literature review. *Journal of Advanced nursing*, 449-456.

Pragholapati, A. (2020). Self-Efficacy Of Nurses During The Pandemic Covid-19 . *Department of Nursing, Faculty of Sport Education and Health, Universitas Pendidikan Indonesia, Bandung, Indonesia* , 7.

Qian Liu, D. L. (2020). The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *Lancet Glob Health 2020*, 1-2.

RN, O. G. (2006). Effectiveness of continuing education programmes in nursing: literature review. *Journal of advanced nursing*, 449-456.