

# Assessing Impact of Modular Induction Training (MIT) on Knowledge regarding Service Delivery Packages among Community Health Officers (CHOs) in a State of North India: By using Pre and Post-Test Model of Learning

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**Abstract:** ***Introduction:** According to World Health Organization (WHO), Universal Health Coverage (UHC) is to enable all people and communities to use promotive, preventive, curative, rehabilitative and palliative health care services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. It incorporates equity in access, quality and financial risk protection. In order to facilitate UHC, Indian government has launched an ambitious health care scheme called "Ayushman Bharat." **Material and methods:** A total of 370 CHOs (divided into twelve batches) attended the training and were enrolled for the study. In order to assess the knowledge, a questionnaire containing total of 35 questions was given to the trainees at the beginning and at the end of the training. Mean and Standard Deviation (SD) was calculated for quantitative data and proportions (percentage) for categorical data. Paired-t-test was used to assess the effect of training based on pre test and post test score. **Results:** A total of 370 candidates participated in the study. The mean score was 21.5 and 29.9 in pre-and post-test respectively. Mean pre and post test score showed improvement from 21.5 to 29.9. The improvement in the overall mean score was found to be statistically significant ( $p$  value=0.000). **Conclusion:** The overall performance was improved after getting the training. Mean pre and post test score showed improvement from 12.5 to 29.9. The improvement in the overall mean score was found to be statistically significant which was a result of the MIT imparted to the study participants in the RHFUTC Kangra at Chheeb.*

**Keywords:** Modular Induction Training (MIT), Universal Health Coverage (UHC), Ayushman Bharat, refresher courses, pre and post test score, didactic type

## 1. Introduction

India is one of the developing country in the world having 1.3 billion population, of which 66% of population resides in rural area and 34% resides in urban area<sup>(1)</sup>. According to World Health Organization (WHO), Universal Health Coverage (UHC) is to enable all people and communities to use promotive, preventive, curative, rehabilitative, and palliative health care services they need, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. It incorporates equity in access, quality, and financial risk protection<sup>(1)</sup>. In order to facilitate UHC, Indian government has launched an ambitious health care scheme called "Ayushman Bharat." The Ayushman Bharat scheme essentially has two components: Pradhan Mantri Jan Arogya Yojana (PMJAY) for improving access to hospitalization services at secondary and tertiary level health care facilities and Health and Wellness Centers (HWCs) to deliver comprehensive primary health care (PHC) services to the entire population<sup>(2)</sup>.

The HWC component aims to upgrade and make 1, 50, 000 existing health sub centres functional to deliver full primary care and strengthen the secondary and tertiary care facilities

to fulfill the aim of Universal Health Coverage (UHC)<sup>(2)</sup>. As we move ahead, the demographic and epidemiological transition necessitates a paradigm shift from selective to comprehensive care. The new paradigm of Ayushman Bharat-Health and Wellness Centres aims to address the rising burden of diseases including Non-Communicable Diseases (NCDs) like Hypertension, Diabetes and Cancers along with the services which aim at providing primordial and primary prevention. The implementation of AB-HWC entailed a set of multiple reforms, spanning all aspects of the health systems such as service delivery, human resources, financing, access to medicines and diagnostics, community participation and ownership, accountability and governance to ensure that all the three dimensions of universal health coverage (UHC) are addressed. Keeping in view Government of Himachal Pradesh has recruited 760 Community health officers in the state in two batches. The first batch of this bridge program has been introduced in September 2019 in seven designated institutes through Indira Gandhi National Open University (IGNOU) with batch size of 370 participants. All these aspirants have minimum of 4 year training as BSc Nursing Student in health care. They are supposed to be having some baseline knowledge of primary health care and may have developed a certain attitude toward primary health. The second batch of

Volume 12 Issue 3, March 2023

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370 Community health officers had only bridge course and for induction modular training they were trained in Regional Health and Family Welfare Training Centre Chheb, Distt. Kangra, (HP). CHOs of the second batch were appointed to HWC after the bridge course.

As this newly created cadre under Ayushman-Bharat has very limited data and published literature about their professional knowledge and efficiency regarding the service delivery, so we have planned this study. The study has objective of impact of Modular Induction Training (MIT) on knowledge regarding service delivery packages among Community Health Officers (CHOs) in Himachal Pradesh (H. P.).

## 2. Materials and Methods

5-days Modular Induction Training (MIT) for each batch of Community Health Officers (CHOs) was planned at RHFRTC Chheb *wef* 13 December 2021 to 21 May 2022 covering 12 batches. A total of 370CHOs (divided into twelve batches) attended the training and were enrolled for the study. During the period of 5 days training, various topics as mentioned in the specially designed module were covered by the various qualified resource persons. The content of the training delivered to the study participants was not based on the typical didactic style but it was a two way communication which included demonstrations, blackboard teaching, playing related videos, asking and sharing experiences and addressing issues and queries solving, chart making, role play etc. . In order to assess the knowledge of the study participants, a questionnaire containing total of 35 questions was given, at the beginning and at the end of the training and 30 minutes were allotted to mention their responses for all the given questions. A set of semi-structured questionnaire prepared by a group of resource persons was used to assess the basic knowledge of service delivery packages which CHOs are actually supposed to deliver in HWC. Answers were assessed based on the answer key prepared and score was calculated. One mark was assigned to each correct response and total maximum marks were 35.

**Data analysis:** Data was entered in the Microsoft excel and analysed by SPSS 24. Mean and Standard Deviation (SD) was calculated for quantitative data and proportions (percentage) for categorical data. Paired-t-test was used to assess the effect of training on pre test and post test score.

The whole procedure was performed in accordance with the ethical standards and the Helsinki declaration of 1975 and permission was sought from the head of the institution prior to the commencement of the study.

## 3. Results

A total of 370 candidates participated in the study. The minimum score obtained was 11 (out of 35) in the pre-test and 14 (out of 35) in the post-test. The maximum score obtained was 30 and 34 in the pre-test and post-test respectively. The mean score was 21.5 and 29.9 in pre-and post-test respectively (Table 1).

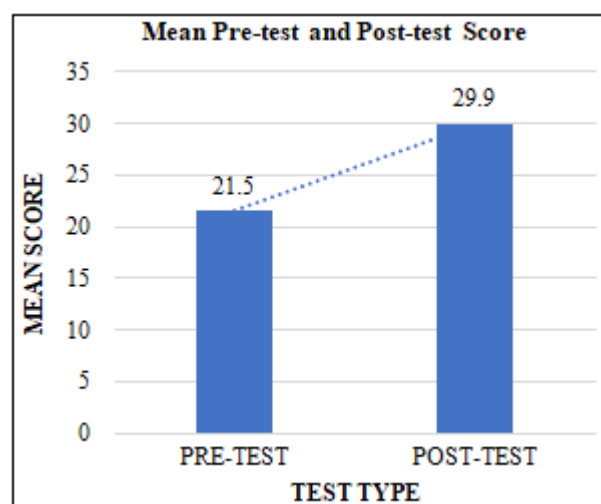
**Table 1:** Details of pretest and post test score among the study participants (n=370).

	Pre test score	Post test score
Mean (Standard deviation)	21.5 (3.7)	29.9 (2.9)
Minimum score	11	14
Maximum score	30	34

Mean pre and post test score showed improvement from 21.5 to 29.9 (Figure 1). The improvement in the overall mean score was found to be statistically significant (p value=.000) (Table 2) which was as a result of the training imparted to the study participants in the RHFRTC Kangra at Chheb.

**Table 2:** Comparison between pre test and post test score based on statistical analysis by T test (one sample test)

Test type	T test value	df	Sig (2 tailed)	Confidence interval
Pre test	105.8	368	.000	21.1-21.8
Post test	185.1	369	.000	29.6-30.3



**Figure 1:** Mean pretest and post test score among the study participants

## 4. Discussion

Developing countries like India has double burden of disease and community level health care services are very poor. To get over with health issues the country requires health care professionals and healthcare facilities for providing required healthcare support. In India, the government is working towards easy access of healthcare services for all<sup>(3, 4)</sup>. The community health officer is new step by Indian government which comes under mid-level healthcare providers. As per new NMC bill they are called community health providers. An ideal health workforce is multilayered and multi-skilled, with complementary roles delivering competent, comprehensive, continuous and compassionate care. Community health officers and frontline public health workers play a role to bridge the gap between community people and health care facilities. The services provided by them improve the quality of life in community and also empowers the community health care settings<sup>(5)</sup>. The CHO will identify the need of community and expand the healthcare facility with providing knowledge and support by organizing different programs<sup>(6)</sup>.

In our study, first of all a base line survey regarding knowledge related to the preventive, promotive, curative and rehabilitative services along with administrative and supervision services, through Pre-test was conducted among 370 candidates before the start of five days induction training and post training assessment was done in the form of Post-test. For the purpose of training, the participants

were divided into twelve (12) batches of average 30 CHOs in each batch. First batch of the training was started in the month of December 2022 and the last batch was completed in the month of May 2022. All the participants were female of age group 20-35 years. In our study, summary of 12 batches scores is as under:

Batches	Dates	Participants (370)	Average Percentage Score for Pre-Test	Average Percentage Score for Post-Test	Percentage Improvement
Batch-I	13-17 Dec, 2021	27	56.25	76.85	20.60
Batch-II	20-24 Dec, 2021	29	54.09	78.13	24.04
Batch-III	3-7 Jan, 2022	23	63.73	83.48	19.75
Batch-IV	14-18 Feb, 2022	25	58.21	83.20	24.99
Batch-V	21-25 Feb, 2022	37	58.46	88.57	30.12
Batch-VI	1-5 Mar, 2022	35	65.55	92.24	26.69
Batch-VII	14-18 Mar, 2022	35	59.35	89.06	29.71
Batch VIII	21-25 Mar, 2022	18	66.67	89.37	22.70
Batch-IX	4-8 April, 2022	37	64.09	92.36	28.26
Batch-X	18-22 April, 2022	33	62.16	80.87	18.70
Batch-XI	9-13 May, 2022	38	63.08	82.03	18.95
Batch-XII	17-21 May, 2022	33	60.00	81.30	21.30

The average percentage improvement varies between 18.70% and 30.12%. This clearly indicates that after completion of six month bridge course from certified IGNOU centre, a refresher course of short duration in the form of Modular Induction Training (MIT) significantly improves the knowledge of the study participants and same applies to all the categories of medical professionals. If we plan to organise and conduct regular refresher courses of all the medical and paramedical staff working in various health institutions once in a gap of 2-3 years, definitely the scope of service delivery will improve.

Our study is in line with previous studies which demonstrated improvement in the knowledge score followed by training to the medical staff. Post score has shown improvement as pretest conducted sensitised the candidates for their existing knowledge, made them oriented to the topics going to be covered in the training course and created interest in them to grasp the knowledge so that post test score could be improved at the end of the training<sup>(7)</sup>.

In our study the overall mean score in the pretest was 21.5 (S. D=3.7) and 29.9 (S. D=2.9) in the post test (out of 35) and the improvement in the overall mean score was found to be statistically significant (p value=.000). In a study by Neelavathi D<sup>(8)</sup> done on 60 nurses a significant difference was found between the pretest practice scores (M=17, SD=3.99) and post test practice scores (M=28.36, SD=3.8) (out of 30) with p <0.001. A study by Hartley S et al<sup>(9)</sup> done among student nurses showed statistically significant improvement in their overall knowledge scores from pretest to post test (p <0.01). A study by Rastogi A et al<sup>(10)</sup> done on in-service nurses showed significant mean improvement in knowledge score (p<0.001) with mean knowledge score of 19.3 (SD=4.4) in pretest and 25.7 (SD=3.9) in the post test (out of 30).

In a study by Sood A et al<sup>(11)</sup>, knowledge of prospective community health officers regarding primary health care in a designated IGNOU centre in sub Himalayan region was assessed and the mean score was found to be 52.8 with

standard deviation of 11.4. Mean knowledge score among younger aspirants (20-25 Years) was observed to be statistically higher than the participants of the rest of the age groups (p-value 0.02). Another study done by Mackey et al<sup>(12)</sup> in Australia among nursing student found mean knowledge score to be 69.2% +/-9.4% which is slightly better than what we observed in current study.

Our study is a novel study which had not been conducted in the past under similar settings. The training had covered multiple topics, involved multiple resource persons and teaching method had variety (not typical didactic type). There are certain limitations of the study also. There were only female staff nurses in the study so comparison among the male and female candidates could not be done. Also the study was not able to record certain demographic characteristics like length of service, place of posting, marital status etc. A bigger sample size and prospective study design may be needed for countrywide external validity.

## 5. Conclusion

The overall performance was improved after getting the Modular Induction Training (MIT). Mean pre and post test score showed improvement from 12.5 to 29.9. The improvement in the overall mean score was found to be statistically significant (p=0.000) which was the result of the training imparted to the study participants in the RHFWTC Kangra at Chheb. The RHFWTC should continue such type of trainings and the trained CHOs can be utilised for achieving Universal health coverage (UHC) in the country. The same study can be conducted on larger samples for better generalization.

**Conflicts of interest:** None declared

**Funding:** No external funding

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