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Research Article

A Study to Assess the Impact of Training Program Regarding Hypertension on Level of Knowledge and Practice among Accredited Social Health Activist in Selected Rural Area of Mumbai

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Abstract

Aim: This study examines how training affects hypertension (HTN) knowledge and practice among Accredited Social Health Activists (ASHAs) in rural Mumbai.

Methods: Researchers employed quantitative evaluative research in this study. The researcher used a time series pre- and post-test. This study used random and selective sampling. Study sample size was 500. Frequency and percentage explained sample and all demographic characteristics. Mean and standard deviation explained variables' dimensions and t-test was used on paired data. Chi-square test was used.

Result: Most 317 (63.4%) had poor post-test 1 knowledge scores. Most 261 (52.2%) exhibited poor post-test 2 knowledge. 37.8% of 189 had an average knowledge score after test 3. 72.6% of 363 had poor post-test 1 practicing. 47.4% of 237 had bad post-test 2 practicing scores. 48.6% of 243 had an average practicing score after test 3 knowledge score "t" test value: 10.24, df 499, $P < 0.00001$. Results show considerable efficiency ($P < 0.05$). The t-test value for pre- and post-test 2 (O3) knowledge score was 13.02, df 499, $P < 0.00001$. Results show considerable efficiency ($P < 0.05$). The pre- and post-test 3 (O4) knowledge score t-test result was 21.34, df 499, and $P < 0.00001$. Results show considerable efficiency ($P < 0.05$). The pre- and post-test 1 (O2) practice score t-test was 9.68, df 499, and $P = 0.00001$. Results show considerable efficiency ($P < 0.05$) and pre- and post-test 2 (O3) practice score "t" test value: 16.925, df 499, and $P = 0.00001$. Results show considerable efficiency ($P < 0.05$). The t-test for pre- and post-test 3 (O4) practice score was 27.54, df 499, and $P = 0.00001$. Results show considerable efficiency ($P < 0.05$).

Conclusion: This study shows that the HTN training program improves ASHA knowledge and practice scores. ASHA knowledge and practice scores improve.

Keywords: Accredited Social Health Activist, hypertension, Mumbai, training program

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Introduction

Hypertension (HTN) causes 7.5 million premature deaths worldwide and is a major cause of sickness and mortality. The "silent killer" affects 31% of people worldwide. Accidental discovery is common.[1]

High blood pressure is the third-leading cause of sickness in South Asia, according to a 2010 study. HTN harms India's health-care system and CVS health. HTN causes 24% of CHD deaths and 57% of stroke deaths in India. The WHO lists HTN

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as a leading cause of premature death. HTN ranked second in South Asian attributable mortality and disease load after child underweight for age in the Global and Regional burden of Disease and RFs study (2001) utilizing population health data. 3 High blood pressure (140/90 mmHg or more) is called HTN. It is common, but unchecked it can worsen.[2]

HTN, a major public health issue in India, causes CVS morbidity and death in the elderly. This raises HTN diagnosis and treatment awareness. We have not increased HTN screening despite the Indian Government non-communicable disease preventive efforts. Much after being diagnosed with HTN, follow-up consultations can be tough and much worse.[3]

Therapy in rural India is challenging like diagnosis. Age, health-care access, and SEP affect HTN treatment. Medication availability and understanding and application of current treatment beginning recommendations may affect health system therapy. Low-resource settings may offer community-based health care. Accredited Social Health Activists (ASHAs), Women Collectives, local elected officials (Panchayati Raj Institutions), and ANMs can collaborate to provide community members with health guidance, basic testing, and peer support to adopt healthy habits.[4]

In 2005, India created ASHAs as non-physicians for the National Rural Health Mission. In India, ASHAs connect the public to the health system. They are village women paid to conduct primary health-care activities. Early ASHA assessments focused on maternal and child care. Since 2010, the NPCDCS has trained ASHAs from 100 pilot districts in 21 states to prevent and manage chronic diseases including diabetes and HTN and its RFs.[5]

ASHA workers, also known as CHWs, are vital to the health-care system, and training initiatives improve their knowledge and skills. Thus, this research will assess how a training curriculum affects ASHA HTN knowledge and practices.

Materials and Methods

Research approach

In this context of the study, researcher adopted the quantitative evaluatory research approach.

Research design

The research design adopted by the researcher is the time series pre- and post-test research design.

Setting of study

The proposed research will be conducted in selected rural areas of Mumbai.

Population of study

The population for the research consisted of ASHA workers.

Sample technique

In this study probability, purposive sampling technique has been utilized.

Sample size

The size of sample for this study was 500 samples.

Description of tool

- Section A: Sociodemographic variable
- Section B: Structured Knowledge Questionnaire
- Section C: Practice Checklist.

Statistics

Descriptive

Frequency and percentage are to explain demographic variables of samples and all variables. Mean and standard deviation are to explain variables and their dimensions.

Inferential

Inferential statistics were utilized to test the hypothesis formulated for the study. This includes t-test and Chi-square test.

Results

Section I: Assessment of respondents according to the demographic variables.

Table 1 illustrates that most 249 (49.8%) responders are 25–30 years old, while 12 (2.4%) are 41 or older. Most 309 (61.8%) had secondary education and 29 (5.8%) had postgraduate degrees. The majority (41.4%) of 207 have over 20,001 Rs. Eleven families (2.2%) earn less than 10,000 Rs per month. All respondents understood HTN. Most of 492 (98.4%) had undergone HTN training, while 8 (1.6%) had not.

Section II: Assessment of pre-test knowledge regarding HTN among Accredited Social Health Activist before the training program.

Table 2 shows that most 467 (93.4%) respondents had poor knowledge, followed by 19 (3.8%) with average knowledge, 07 (1.4%) with very good knowledge, 06 (1.2%) with good knowledge, and 1 (0.2%) with exceptional knowledge.

Section III: Assessment of pre-test practice regarding HTN among Accredited Social Health Activist before the training program.

Table 3 depicts that majority of 444 (88.8%) have poor practice score and 56 (11.2%) have average practice score.

Section IV: Assessment of post-test knowledge regarding HTN among Accredited Social Health Activist after the training program.

Table 4 shows post-test 1 knowledge scores of respondents, with 317 (63.4%) having poor knowledge, 91 (18.20%) average, 48 (9.6%) good, 26 (5.2%) very good, and 18 (3.60%) excellent.

Table 5 shows post-test 2 knowledge scores. 261 (52.2%) had poor knowledge, 123 (24.6%) had average, 63 (12.6%) had good, 33 (6.6%) had very good, and 20 (4%) had excellent knowledge score.

Table 6 depict the post-test 3 knowledge score, majority of 189 (37.8%) having average knowledge score followed

by 115 (23%) having poor knowledge score, 93 (18.6%) having good knowledge score, 60 (12%) having very good knowledge score, and 43 (8.6%) having excellent knowledge score.

Table 1: Distribution of respondents according to the demographic variables *n*=500

Demographic variables	Frequency	Percentage
1. Age in years		
a) 25–30 years	249	49.8
b) 31–35 years	212	42.4
c) 36–40 years	27	5.4
d) 41 years and above	12	2.4
2. Educational qualification		
a) Secondary	309	61.8
b) Undergraduate	162	32.4
c) Postgraduate and above	29	5.8
3. Family monthly income		
a) <10,000 Rs.	11	2.2
b) 10,001–15,000 Rs	99	19.8
c) 15,001–20,000 Rs.	183	36.6
d) More than 20,001 Rs.	207	41.4
4. Do you know about hypertension?		
a) Yes	500	100
b) No	0	0
5. Have you attended any training program related to hypertension?		
a) Yes	492	98.4
b) No	08	1.6

Table 2: Distribution of pre-test knowledge score regarding hypertension among Accredited Social Health Activists before the training program *n*=500

Knowledge score	Pre-test score	
	Frequency	Percentage
Excellent (21–28)	01	0.2
Very good (16–20)	07	1.4
Good (11–15)	06	1.2
Average (6–10)	19	3.8
Poor (0–5)	467	93.4

Table 3: Distribution of pre-test practice score regarding hypertension among Accredited Social Health Activist before the training program *n*=500

Practice score	Pre-test score	
	Frequency	Percentage
Good (9–12)	00	00
Average (5–8)	56	11.2
Poor (0–4)	444	88.8

Table 4: Distribution of post-test 1 (O2) knowledge score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Knowledge score	Post-test score (O2)	
	Frequency	Percentage
Excellent (21–28)	18	3.6
Very good (16–20)	26	5.2
Good (11–15)	48	9.6
Average (6–10)	91	18.2
Poor (0–5)	317	63.4

Section V: Assessment of post-test practice regarding HTN among Accredited Social Health Activist after the training program.

Table 7 depicts that post-test 1 practice score, where majority of 363 (72.6%) having poor practice score followed by 109 (21.8%) having average practice score and 28 (5.6%) having good practice score.

Table 5: Distribution of post-test 2 (O3) knowledge score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Knowledge score	Post-test score (O3)	
	Frequency	Percentage
Excellent (21–28)	20	4
Very good (16–20)	33	6.6
Good (11–15)	63	12.6
Average (6–10)	123	24.6
Poor (0–5)	261	52.2

Table 6: Distribution of post-test 3 (O4) knowledge score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Knowledge score	Post-test score (O4)	
	Frequency	Percentage
Excellent (21–28)	43	8.6
Very good (16–20)	60	12
Good (11–15)	93	18.6
Average (6–10)	189	37.8
Poor (0–5)	115	23

Table 7: Distribution of post-test 1 (O2) practice score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Practice score	Post-test 1 (O2) score	
	Frequency	Percentage
Good (9–12)	28	5.6
Average (5–8)	109	21.8
Poor (0–4)	363	72.6

Table 8: Distribution of post-test 2 (O3) practice score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Practice score	Post-test 2 (O3) score	
	Frequency	Percentage
Good (9–12)	73	14.6
Average (5–8)	190	38
Poor (0–4)	237	47.4

Table 9: Distribution of post-test 3 (O4) practice score regarding hypertension among Accredited Social Health Activist after the training program *n*=500

Practice score	Post-test 3 (O4) score	
	Frequency	Percentage
Good (9–12)	153	30.6
Average (5–8)	243	48.6
Poor (0–4)	104	20.8

Table 8 depicts that, the post-test 2 practice score, majority of 237 (47.4%) having poor practice score followed by 190 (38%) having average practice score and 73 (14.6%) having good practice score.

Table 9 depicts that, the post-test 3 practice score, majority of 243 (48.6%) having average practice score followed by 153 (30.6%) having good practice score and 104 (20.8%) having poor practice score.

Section VI: Evaluating the impact of training program on the level of knowledge score regarding HTN among ASHA.

Table 10 shows the impact of training program on ASHA HTN knowledge score: Pre-test mean 4.012 and SD 2.48 and post-test 1 (O2) mean 6.65 and SD 5.208. The "t" test value was 10.24, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Table 11 illustrates the influence of training program on ASHA HTN knowledge score: Pre-test mean 4.012 and SD 2.48 and post-test 2 (O3) mean 7.55 and SD 5.54. The "t" test value was 13.02, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Table 12 illustrates the influence of training program on ASHA HTN knowledge score: Pre-test mean 4.012 and SD 2.48, post-test 3 (O4) mean 10.46 and SD 6.28. The "t" test value was 21.34, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Section VII: Evaluating the impact of training program on the level of practice score regarding HTN among ASHA.

Table 13 shows the impact of training program on ASHA HTN level of practice score: Pre-test mean 2.95 and SD 1.68 and post-test 1 (O2) mean 4.15 and SD 2.21. The "t" test value was 9.68, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Table 14 shows the impact of training program on ASHA HTN level of practice score: Pre-test mean 2.95 and SD 1.68 and post-test 2 (O3) mean 5.35 and SD 2.68. The "t" test value was 16.925, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Table 15 shows the impact of training program on ASHA HTN level of practice score: Pre-test mean 2.95 and SD 1.68 and post-test 3 (O4) mean 6.84 and SD 2.67. The "t" test value was 27.54, df 499, and $P < 0.00001$. Results indicate significant effectiveness ($P < 0.05$).

Section VIII: Determine the association of pre-test knowledge and practice score with the selected demographic variables.

Table 16 shows the Chi-square value of demographic variables such as age in years, educational qualification, family monthly income, and have you attended any HTN training program showed significant association with pre-test knowledge score at 0.05 level of significance. The null hypothesis was rejected and the alternative hypothesis accepted.

Table 17 demonstrates the relationship between practice score and demographic variables, at 0.05 significance level, and the Chi-square value of demographic variables such as age in years, educational qualification, and family monthly income showed a significant association with pre-test practice score. The null hypothesis was rejected and the alternative hypothesis was accepted.

Table 10: Impact of training program on the level of knowledge score (post-test 1) regarding hypertension among Accredited Social Health Activist *n*=500

Test	Mean	SD	T-test	DF	*P*-value	Result
Pre-test	4.012	2.485	10.24	499	<0.00001	S
Post-test 1 (O2)	6.65	5.208				Significant

Table 11: Impact of training program on the level of knowledge score (post-test 2) regarding hypertension among Accredited Social Health Activist (ASHA) *n*=500

Test	Mean	SD	T Test	DF	*P*-value	Result
Pre-test	4.012	2.485	13.02	499	<0.0001	S
Post-test 2 (O3)	7.55	5.543				Significant

Table 12: Impact of training program on level of knowledge score (post-test 3) regarding hypertension among Accredited Social Health Activist (ASHA) *n*=500

Test	Mean	SD	T Test	DF	*P*-value	Result
Pre-test	4.012	2.485	21.34	499	<0.0001	S
Post-test 3 (O4)	10.46	6.28				Significant

Table 13: Impact of training program on the level of practice score (post-test 1) regarding hypertension among Accredited Social Health Activist *n*=500

Test	Mean	SD	t-test	DF	*P*-value	Result
Pre-test	2.95	1.68	9.68	499	<0.00001	S
Post-test 1 (O2)	4.15	2.21				Significant

Table 14: Impact of training program on the level of practice score (post-test 2) regarding hypertension among Accredited Social Health Activist *n*=500

Test	Mean	SD	T Test	DF	*P*-value	Result
Pre-test	2.95	1.68	16.925	499	<0.00001	S
Post-test 2 (O3)	5.35	2.68				Significant

Table 15: Impact of training program on the level of practice score (post-test 3) regarding hypertension among Accredited Social Health Activist *n*=500

Test	Mean	SD	t-test	DF	*P*-value	Result
Pre-test	2.95	1.68	27.54	499	<0.00001	S
Post-test 3 (O4)	6.84	2.67				Significant

Table 16: Association between the knowledge level regarding hypertension among the ASHA with selected demographic variables *n*=500

Socio-demographic Variables	Total no of Samples	Level of knowledge score					Df	*P*-value	Chi-square value	Result
		Excellent	V. Good	Good	Average	Poor				
1. Age in years							12	0.0000	58.47	S
a) 25–30 years	249	01	03	02	06	237				
b) 31–35 years	212	00	02	02	04	204				
c) 36–40 years	27	00	01	01	06	19				
d) 41 years and above	12	00	01	01	03	07				
2. Educational qualification							8	0.0039	22.54	S
a) Secondary	309	00	03	02	09	295				
b) Undergraduate	162	01	02	02	07	150				
c) Postgraduate and above	29	00	02	02	03	22				
3. Family monthly income							12	0.000	117.79	S
a) <10,000 Rs.	11	00	01	02	06	02				
b) 10,001–15,000 Rs.	99	00	02	01	03	93				
c) 15,001–20,000 Rs.	183	00	01	01	04	177				
d) >20,001 Rs.	207	01	03	02	06	195				
4. Do you know about hypertension?							-	-	-	-
a) Yes	500	01	07	06	19	467				
b) No	0	00	00	00	00	00				
5. Have you attended any training program related to hypertension?							4	0.000	118.05	S
a) Yes	492	00	05	04	17	465				
b) No	08	01	02	01	02	02				

Table 17: Association between the practice score regarding hypertension among the ASHA with selected demographic variables

Socio-demographic variables	Total no of samples	Level of practice score			Df	*P*-value	Chi-square value	Result
		Good	Average	Poor				
1. Age in years					3	0.000	69.75	S
a) 25–30 years	249	00	33	216				
b) 31–35 years	212	00	06	206				
c) 36–40 years	27	00	15	12				
d) 41 years and above	12	00	02	10				
2. Educational qualification					2	0.000	46.89	S
a) Secondary	309	00	17	292				
b) Under graduate	162	00	26	136				
c) Postgraduate and above	29	00	13	16				
3. Family monthly income					3	0.000005	27.23	S
a) <10,000 Rs.	11	00	04	07				
b) 10,001–15,000 Rs	99	00	23	76				
c) 15,001–20,000 Rs.	183	00	12	171				
d) More than 20,001 Rs.	207	00	17	190				
4. Do you know about hypertension?					-	-	-	-
a) Yes	500	00	56	444				
b) No	0	00	00	00				
5. Have you attended any training program related to hypertension?					1	0.2121	1.556	NS
a) Yes	492	00	54	438				
b) No	08	00	02	06				

Discussions

Sengwana and Puoane (2004) conducted a study in the Cape Peninsula, South Africa on community health workers' knowledge, beliefs, and attitudes about HTN and found that CHWs had little information about lifestyle-related chronic diseases. Meanwhile, they should involve community members in preventative health maintenance and follow-up. This research can inform health promotion efforts. Avoiding HTN and enhancing patient care is important. Community nurses at primary health-care facilities must identify these beliefs and attitudes because they work closely with CHWs and may differ from their own.[6]

Vedantha *et al*. (2019) studied community health workers to increase HTN care linkage in Western Kenya and found that 1,460 people (58% women) were registered (491 usual care, 500 paper-based, 469 smartphones). Average baseline SBP was 159.4 mmHg. Linkage follow-up was available for 1,128 (77%) and BP for 1,106 (76%). Overall connection to care was 49%, with higher rates in the usual care and smartphone arms. Overall follow-up SBP averaged 149.9 mmHg. Smartphone participants had a slightly higher SBP reduction than conventional care (13.1 mmHg vs. 9.7 mmHg), but the difference was not statistically significant. Linkage to care changed SBP, according to mediation analysis.[7]

In Abdel-All *et al*., (2018), the study on HTN training for ASHA in rural India found that ASHAs' understanding of HTN improved from 64% at baseline to 76% post-training and 84% after the 3-month intervention. Research officers who attended community meetings said ASHAs conveyed self-management information well without assistance. ASHAs found the training materials simple and beneficial for community education. ASHAs can teach community-based groups about high blood pressure and help people control it.[8]

In Lukitasari *et al*., (2021), an intervention study on the impact of empowered community health professionals' health education on HTN treatment and diet adherence found that, research indicates that hypertensive individuals in the intervention group had improved knowledge about HTN compared to the control group ($P < 0.05$). The intervention group showed considerable improvement in patient satisfaction following health education ($P < 0.01$). Patient medication adherence increased considerably ($P < 0.01$) from 20% to 70% in the intervention group following health education. In addition, patients' compliance with low-salt diets increased dramatically ($P < 0.01$) from 39% to 85%. In contrast, control group medication and low-salt diet adherence were similar pre- and post-test. This study found that community health worker education increased HTN patients' medication and low-salt diet behavior.[9]

Shah *et al*., (2018) conducted a study on how mHealth improves the knowledge and abilities of accredited social health advocates in tribal Gujarat, India: Nested studies in implementation research trials indicate that the intervention arm had significantly higher knowledge of ASHA on pregnancy and newborn problems (Odds Ratio [OR]: 2.51, confidence interval [CI]: 1.12–5.64) than the control arm. Similar knowledge of birth and postpartum problems was found in both groups. The intervention group activists measured newborn temperature better (OR: 4.25, CI: 1.66–10.89) than the control group.[10]

Conclusion

The research's conclusions confirm that the training program has a positive impact on the ASHA's knowledge and practice score for HTN. Both the practice score and the knowledge score on the ASHA increased.

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