

# Comparison of the Effectiveness of Conventional Teaching Programme versus Information Booklet on Knowledge Regarding Prevention and Management of Swine Flu among Rural Population

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## Authors' contributions

*This work was carried out in collaboration between all authors. Authors MK, Kanika and YK designed the study and developed the methodology. Authors MK and Kanika collected the data, performed the analysis and wrote the first draft of the manuscript. All authors read and approved the final manuscript.*

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## ABSTRACT

**Background:** Swine flu is a major cause for concern among the common people of India and needless to say it has created fear across the various strata of the society.

**Aim and Objectives:** To assess and compare the effectiveness of conventional teaching programme (CTP) versus information booklet (IB) regarding prevention and management of swine flu in terms of knowledge among rural population residing at selected rural areas of Ambala, Haryana.

**Materials and Methods:** A quantitative research approach with Quasi-experimental: pre-test, post-test design was used for the study. The sample consisted of 400 rural population (200 in CTP group and 200 IB group) was selected using Convenience sampling technique from villages Mullana and Sohana respectively. Pre test was administered by using structured knowledge questionnaires on

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day one followed by administration of CTP and IB to both the groups. On 14<sup>th</sup> day the post test was conducted using the same structured knowledge questionnaires. The collected data was analyzed by using descriptive and inferential statistics.

**Results:** Findings revealed that there was a significant difference between the mean post test and pre test knowledge scores of rural population in CTP group and IB group with the paired “t” values of {“t”(199) = 44.50 (p≤0.05)} and {“t”(199) = 60.96 (p≤0.05)} respectively at 0.05 level of significance. Also there was significant association of knowledge score with gender, educational status, occupation, religion, sources of information both in CTP and IB groups.

**Conclusion:** CTP and IB both were effective with IB being more effective than CTP in enhancing the knowledge of rural population regarding prevention and management of swine flu.

*Keywords: Conventional teaching programme (CTP)/ information booklet (IB); prevention and management; swine flu; knowledge; rural population.*

## 1. INTRODUCTION

H1N1 Influenza (swine influenza or swine flu) is a respiratory disease of pigs caused by type A influenza virus that regularly causes outbreaks of influenza in pigs. H1N1 virus causes high levels of illness and low death rates in pigs (Centers for Disease Control and Prevention [CDC], 2009a). The classical swine flu virus (influenza type A H1N1 virus) was first isolated from a pig in 1930 (CDC, 2009a). Like all influenza viruses, H1N1 viruses change constantly. At this time, there are four main influenza Type A virus subtypes that have been isolated in pigs: H1N1, H1N2, H3N2, and H3N1 [1]. Most of the recently isolated influenza viruses from pigs, however, have been H1N1 viruses (2009 a) Flu viruses are spread mainly from person to person through coughing or sneezing by people with influenza. The symptoms of 2009 H1N1 flu virus in people include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue (WHO, 2009b). Some people may have vomiting and diarrhea (WHO, 2009) [2].

Swine flu disease was found in Mexico has spread over the world. The union agency reported more than 15,000 cases of swine flu worldwide. About 50 to 100 million people were killed worldwide. Mexico had 2 highest number of infection – nearly 5000 behind the United States with nearly 8000 cases [3].

According to U.S center for disease, children aged 5 to 14 become ill with swine flu, also known as H1N1, at a rate of 147 per 100,000 people [3]. According to a study by US centers of disease control and prevention 1,557 confirmed illnesses, including seven deaths, in Chicago from April to July, months when the flu virus usually doesn't spread [4]. The findings were reported by the U.S. Centers for Disease Control

and Prevention in Atlanta. In Maharashtra, which tops the chart for the maximum number of deaths and cases in the country as many as 112 people have suffered to the contagious virus while in Andhra Pradesh (43), Tamil Nadu (34), Haryana (25) and Gujarat (2) [5].

A pre-experimental study was conducted to assess the effectiveness of educational programme on knowledge on H1 N1 influenza among 100 school students in St. Thomas high school, Thrissur. Education program with help of informational booklet was administered to the subjects. The tool used were questionnaire to assess demographic variable and knowledge on H1N1 influenza. The findings of the study revealed that mean posttest knowledge score were significantly higher than mean pretest knowledge score on H1N1 influenza among school children at 0.001. The education programme was found to be effective in enhancing knowledge of school students regarding H1 N1 influenza [6].

A quasi-experimental study with one group pre-test, post-test design was conducted to assess the effectiveness of planned teaching programme (PTP) on knowledge regarding prevention and management of swine flu among 200 rural population in village Mullana, Haryana. The tools used were performa for demographic variables and questionnaire to assess knowledge on swine flu. The paired “t” value of rural population {“t”(199) = 44.50 (p<0.05)} was found to be statistical significant at 0.05 level of significance. The planned teaching programme was found to be effective in terms of enhancing the knowledge of rural population regarding prevention and management of swine flu [7].

Through review of literature the investigator realized that health risk of swine flu is one of the most prominent health problems among rural

population. Thus, present study was undertaken as felt need of assessing and improving knowledge of swine flu for helping them to control and manage the disease.

## 2. METHODS

This study was conducted among rural population residing at two selected villages Sohana and Mullana in Ambala District, Haryana (Mullana for CTP group Sohana for IB group). The inclusion criteria were rural population of age group of 18-55 years who were able to read & write in Hindi. The study excluded those who were mentally challenged. Sample size of 400 rural population (n=200 in CTP group & n=200 in IB group) were selected by using convenience sampling technique. Permission for conducting study was obtained from institutional ethical committee of Maharishi Markandeshwar University. Permission for final study was taken from the sarpanch of Mullana and Sohana village Ambala district, Haryana, Consent from was prepared for the study subjects regarding their willingness to participate in the research project., Purpose of the study was explained to sample subjects before data collection. Data was collected from 1<sup>st</sup> December, 2015 to 27<sup>th</sup> January, 2016. Written consent from the rural population was taken. For CTP group the rural population was divided into 40 groups, having 5 rural people in each. CTP was provided to 3 groups having 15 rural people (5 rural people in each group) each day in three sessions. On the first day, pre-test to assess knowledge regarding prevention and management of swine flu was conducted followed by administration of CTP of duration 30-45 minutes to the rural people on the same day and post-test was later conducted on 14<sup>th</sup> day for each of the group based on their pre-test dates. For IB group the rural population was divided into 40 groups, having 5 rural people in each. IB was distributed to at least 15 rural people per day. On the first day, pre-test to assess knowledge regarding prevention and management of swine flu was conducted followed by administration of IB to the rural people. Information booklet was taken back on 5<sup>th</sup> day and post-test was later conducted on 14<sup>th</sup> day for each of the group based on their pre-test dates.

### 2.1 Statistical Analysis

Statistical analysis was performed by using SPSS 20.0 for windows. The data was analysed using both descriptive and inferential statistics i.e., mean median and standard deviation, chi-

square test / yates and "t" test and one way ANOVA.

## 3. RESULTS

### 3.1 Description of Sample Characteristics

Table 1 indicates the sample characteristics of study participants in both CTP group and IB group. In CTP group less than half of rural population (38.5%) was in age group of 39-48 years in CTP group. Maximum of rural population (74%) were female. Less than half of rural population education (36%) was up to higher secondary, less than half of rural population (39.5%) was homemaker. Less than half of rural population (32.5%) were having monthly income of Rs.10,001-15,000. More than half of rural population (63.5%) were from joint family. Majority of rural population (93%) were Hindu. Almost all rural population (99%) had not seen any infected person with swine flu. Maximum of rural population (76%) had not received any information about swine flu. And very few (9.5%) had a source of information as Newspaper/magazines/books. Whereas in IB group, maximum of rural population (86.66%) were in the age group of 29-38 years. More than half of rural population (66%) were females. Less than half of rural population (32.5%) were educated up to higher secondary, less than half of rural population (40%) were homemaker. Nearly half of rural population (45%) had monthly family income of Rs.10, 001-15,000. Maximum of rural population (70.5%) were from joint family. Maximum of rural population (85.5%) were Hindu. Majority of rural population (97.5%) had not seen any infected person with swine flu. Maximum of rural population (78%) had not received any information about swine flu. And a meager of rural population (10%) had source of information as Newspaper/ magazines/books.

The computed chi square/yates value for the sample characteristics of CTP and IB groups for gender (0.012), monthly income of the family (16.23), type of family (11.30), religion (1.974), known any infected person with swine flu (0.052), received any formal education/information about swine flu (1.226), if yes, source of information swine flu (3.09) were found to be non-significant at 0.05 level of significance.

Hence it can be inferred from the findings that rural peoples in both groups were homogenous with regard to the selected sample characteristics before administration of CTP and IB.

**Table 1. Frequency and percentage distribution and chi-square<sup>Yates</sup> of rural population as per their sample characteristics in CTP group and IB group N=400**

Sample characteristics	CTP group (n=200)	IB group (n=200)	X <sup>2</sup> /Yates	df	p value
<b>Age</b>	<b>f (%)</b>	<b>f (%)</b>			
18-28	20 (10)	16 (8)			
29-38	75 (37.5)	104 (86.66)	21.2	3	0.001*
39-48	77 (38.5)	75 (37.5)			
49-55	28 (14)	5 (2.5)			
<b>Gender</b>					
Male	52 (26)	68 (34)	0.012	1	0.913 <sup>NS</sup>
Female	148 (74)	132 (66)			
<b>Educational status</b>					
Primary	39 (19.5)	26 (13)			
Secondary	43 (21.5)	60 (30)			
Higher Secondary	72 (36)	65 (32.5)			
Graduate	38 (19)	47 (23.5)	10.3	4	0.035*
Post Graduate and above	8 (4)	2 (1)			
<b>Occupation</b>					
Govt. Job	17 (8.5)	17 (8.5)			
Private Job	44 (22)	29 (14.5)			
Self employed	39 (25.35)	26 (13)			
Homemaker	79 (39.5)	80 (40)	31.57	4	0.011*
Student	21 (10.5)	48 (24)			
<b>Monthly Income of the family (Rs)</b>					
2000-5000	32 (16)	34 (17)			
5001-10000	40 (20)	32 (16)			
10001-15000	65 (32.5)	30 (45)	16.23	3	0.062 <sup>NS</sup>
> 15000	63 (31.5)	44 (22)			
<b>Type of family</b>					
Nuclear family	64 (82)	48 (24)			
Joint Family	127 (63.5)	141 (70.5)			
Single parent Family	5 (2.5)	-	11.30	3	0.107 <sup>NS</sup>
Extended family	4 (2)	11 (5.5)			
<b>Religion</b>					
Hindu	189 (93)	171 (85.5)			
Muslim	2 (1)	2 (1)	1.974	2	0.741 <sup>NS</sup>
Sikh	9 (4.5)	27 (13.5)			
<b>Have you ever seen any infected person with swine flu</b>					
Yes	2 (1)	5 (2.5)	0.052	1	0.820 <sup>NS</sup>
No	198 (99)	195 (97.5)			
<b>Received any information about swine flu</b>					
Yes	48 (24)	44 (22)	0.226	1	0.635 <sup>NS</sup>
No	152 (76)	156 (78)			
<b>If yes, source of information</b>					
Radio programs		1 (0.5)			
Television programs		9 (4.5)			
Newspaper/ magazine/ books	14 (7)	20 (10)			
Family Members/ relative/ friends	19 (9.5)	13 (6.5)			
Health Personnel	15 (7.5)	1 (0.5)	3.09	4	0.543 <sup>NS</sup>

\* Significant ( $p \leq 0.05$ ) <sup>NS</sup>: Non-significant ( $p \geq 0.05$ )

But for the age (21.2), occupational status (31.57), and educational status (10.3), the computed chi square values were found to be significant at 0.05 level of significance.

Hence it was revealed from the findings that rural population in both groups were heterogeneous with regard to the selected sample characteristics before administration of CTP and IB.

Table 2 showed that in CTP group more than half (65%) of rural population had average knowledge in pretest whereas half (50%) of rural population had average knowledge in posttest. Same as in IB group most of rural population (75%) had average knowledge in pretest whereas as half (50%) of rural population had good knowledge in posttest. Findings further revealed that more than half of rural population (65%) had average knowledge in CTP group pretest compared as (75%) of rural population in IB group. In both CTP and IB groups, half (50%) of rural population had good knowledge in posttest as shown in Fig. 1.

Table 2 revealed that in CTP group the mean post-test knowledge score of rural population was (21.47) and mean pre-test knowledge score was (11.86) with the mean difference at 9.60. The computed t value (44.50) was found to be statistically significant at 0.05 level of significance. Thus it can be inferred that CTP was effective in increasing the knowledge of rural population regarding prevention and management of swine flu. Whereas in IB group the mean post-test knowledge score of rural population was (22.86) and mean pre-test knowledge score was (10.48) with the mean difference of (12.37). The computed t value (57.44) was found to be statistically significant at 0.05 level of significance from which it can be inferred that IB was effective in increasing the knowledge of rural population regarding prevention and management of swine flu. Further it was revealed that mean difference of IB group is (12.37) higher than the mean difference of CTP group (9.60). Thus, IB was more effective than CTP in enhancing the knowledge of rural population regarding prevention and management of swine flu.

Table 3 shows the area wise t values in CTP and IB groups. The findings revealed that in CTP group, computed 't' values for the area of

concept of swine flu (10.19), etiology of swine flu (18.46), mode of transmission/incubation period of swine flu (32.14), signs and symptoms/diagnostic evaluation of swine flu (29.16), management/ preventive measures and complications of swine flu were found to be statistically significant at 0.05 level of significance. This indicate that the difference between the pre-test and post-test knowledge score in each area was a true difference and not by chance.

In IB group, computed t' values for the area of concept of swine flu (19.16), etiology of swine flu (21.50), mode of transmission/incubation period of swine flu (40.54), signs and symptoms/diagnostic evaluation of swine flu (35.70), management/preventive measures and complications of swine flu were found to be statistically significant at 0.05 level of significance. This indicate that the difference between the pre-test and post-test knowledge score in each area was a true difference and not by chance.

Table 4 shows the ANOVA/t values showing association of posttest knowledge scores of rural population in both the CTP group in IB group with selected sample characteristics. In CTP group the findings suggested that the computed Anova/t value in rural population in CTP group of age (0.100), gender (0.553), educational status (0.358), occupation (0.561), monthly income of family (0.183), religion (0.203), have you ever seen any swine flu infected person (0.291), receive any information about swine flu (0.158), if yes source of information (0.423) were found to be statistically non-significant at 0.05 level of significance. Thus knowledge score of rural population in CTP group were independent of these sample characteristics except for type of family (0.012) denotes that these have associated with knowledge score.

**Table 2. Mean, mean difference, standard deviation of difference, standard error of mean difference and "t" value of mean pre-test and post-test knowledge Score of rural population in CTP group and IB group N=400**

Group	Mean	M <sub>D</sub>	SD <sub>D</sub>	SE <sub>MD</sub>	"t"	p value
<b>CTP group (n=200)</b>						
Pretest	11.86	9.60	3.052	0.216	44.50	0.001*
Posttest	21.47					
<b>IB group (n=200)</b>						
Pretest	10.48	12.37	3.046	0.215	57.44	0.001*
Posttest	22.86					

"t" (199) = 1.98 (P<0.05) \*Significant <sup>NS</sup>: Non significant

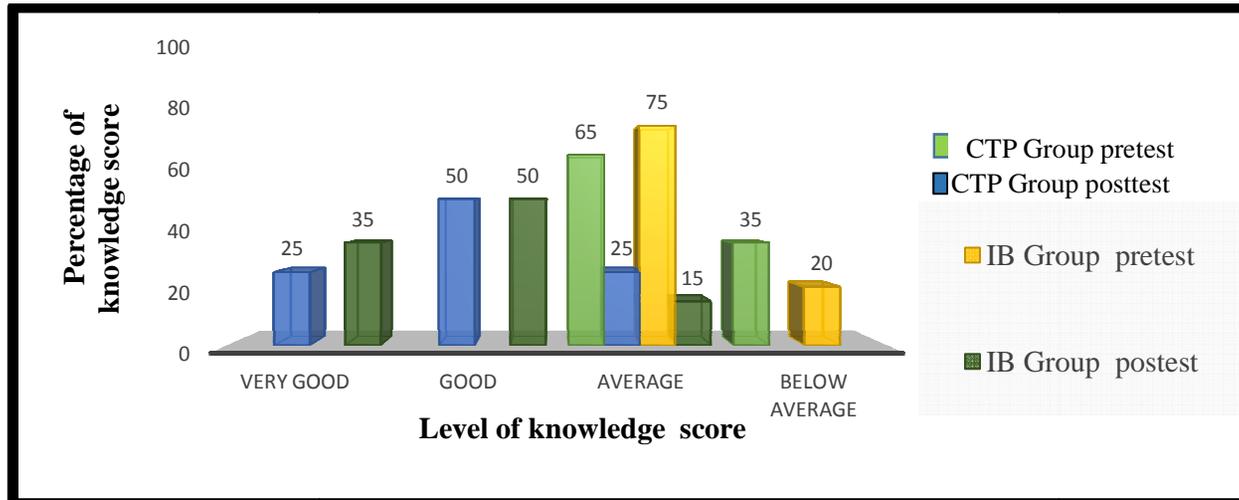


Fig. 1. Level of knowledge score in CTP group and IB group

**Table 3. Area wise Mean, Mean difference, standard deviation of difference, standard Error and “t” value of pretest and posttest knowledge score of rural population in CTP group and IB group N=400**

Area	Pretest mean	Posttest mean	M <sub>D</sub>	SD <sub>D</sub>	SE <sub>MD</sub>	“t” value	p value
<b>CTP group (n=200)</b>							
Concept	1.98	3.96	1.98	1.051	0.074	26.63	0.001*
Etiology	1.09	1.58	0.490	0.680	0.048	10.19	0.001*
Mode of transmission / incubation period	1.25	2.21	0.965	0.739	0.52	18.46	0.001*
Sign and symptom/ diagnostic evaluation	3.91	6.09	2.89	1.27	0.090	32.14	0.001*
Management/ preventive measure and complication	4.36	7.64	3.27	1.588	0.112	29.16	0.001*
<b>IB group (n=200)</b>							
Concept	1.91	4.20	2.29	1.049	0.074	30.85	0.001*
Etiology	0.90	1.73	0.835	0.616	0.044	19.16	0.001*
Mode of transmission / incubation period	1.01	2.34	1.33	0.875	0.062	21.50	0.001*
Sign and symptom / diagnostic evaluation	2.85	6.58	3.72	1.299	0.092	40.54	0.001*
Management/ preventive measure and complication	3.82	8.02	4.195	1.662	0.117	35.70	0.001*

\* (199) = 1.98 ( $P \leq 0.05$ ) \* Significant <sup>NS</sup>: Non significant

In IB group the findings suggested that the computed anova/t value in rural population in IB group of age (0.236), gender (0.424), educational status (0.697), occupation (0.087), monthly income of family (0.106), type of family (0.140), religion (0.714), Have you ever seen any swine flu infected person (0.330), receive any information about swine flu (0.460), if yes source of information (0.230) were found to be statistically non-significant at 0.05 level of significance.

#### 4. DISCUSSION

The CTP and IB were effective in enhancing the knowledge of rural people. Most (75%) of rural population had average knowledge in pretest whereas as half (50%) of rural population had good knowledge in posttest. More than half (65%) of rural population had average knowledge in pretest compared as (75%) of rural population in IB group. Whereas as in CTP group and IB group half (50%) of rural population in good knowledge. Similar findings were reported in a quasi- experimental study conducted by Nandkumar R. Kakade S et al. [8] in 2012 to evaluate the effectiveness of structured teaching programme regarding preventive management of swine flu among the school going children. The study finding Reveals that in pre-test 18 (20%) student are had poor knowledge, the majority

31(62%) had average knowledge and 9(18%) had good knowledge regarding knowledge of swine flu and its protective measures. Where as in post-test majority 29(58%) student had average knowledge, 16 (32%) had good knowledge and 5(10%) student had poor knowledge regarding knowledge swine flu and protective measures [8].

The CTP and IB was effective in enhancing the knowledge of rural people. In presents study, the mean posttest knowledge were significantly higher than mean pretest knowledge score among rural population regarding prevention and management of swine flu at 0.05 level of significance. Similar findings were reported in an quasi- experimental study conducted by Komalavalli et al. [9] in 2009 to assess the effectiveness of education programme in terms of knowledge among rural population this study concluded and clearly highlighted that the educational programme was effective in improving knowledge of mothers in vaccination for flu and thus improving the children survival.

The result of study revealed that in CTP group (65%) rural population had average knowledge. For IB group (75%) rural population had average knowledge. Similar findings were reported in a study conducted

**Table 4. One way ANOVA and t value showing association of post-test knowledge score with selected sample characteristics in CTP group and IB group N=400**

Sample characteristics	Knowledge score CTP group (n=200)			Knowledge score IB group (n=200)		
	df	F/t value	P value	df	F/t value	P value
<b>Age</b>						
18-28	3/196	2.111	0.100 <sup>NS</sup>	3/196	1.428	0.236 <sup>NS</sup>
29-38						
39-48						
49-55						
<b>Gender</b>						
Male	198	1.95	0.553 <sup>NS</sup>	198	0.800	0.424 <sup>NS</sup>
Female						
<b>Educational status</b>						
Primary	4/195	1.100	0.358 <sup>NS</sup>	4/195	0.553	0.697 <sup>NS</sup>
Secondary						
Higher Secondary						
Graduate						
Post Graduate and above						
<b>Occupation</b>						
Govt. Job	4/195	0.746	0.561 <sup>NS</sup>	4/195	2.068	0.087 <sup>NS</sup>
Private Job						
Self employed						
Homemaker						
Student						
<b>Monthly income of the family (Rs)</b>						
2000-5000	3/196	1.631	0.183 <sup>NS</sup>	3/196	2.066	0.106 <sup>NS</sup>
5001-10000						
10001-15000						
> 15000						
<b>Type of family</b>						
Nuclear family	3/196	3.775	0.012*	3/197	1.983	0.140 <sup>NS</sup>
Joint Family						
Single parent Family						
Extended family						
<b>Religion</b>						
Hindu	2/197	1.606	0.203 <sup>NS</sup>	2/197	0.338	0.714 <sup>NS</sup>
Muslim						
Sikh						
<b>Have you ever seen any infected person with swine flu</b>						
Yes	198	1.059	0.291 <sup>NS</sup>	198	0.976	0.330 <sup>NS</sup>
No						
<b>Received any information about swine flu</b>						
Yes	198	1.417	0.158 <sup>NS</sup>	198	0.740	0.460 <sup>NS</sup>
No						
<b>If yes, source of information</b>						
Radio programs						
Television programs						
Newspaper/ magazine/ books						
Family Members/ relative/ friends	2/45	0.877	0.423 <sup>NS</sup>	4/39	1.470	0.230 <sup>NS</sup>
Health Personnel						

\*significant ( $p \leq 0.05$ ) Not significant ( $p \geq 0.05$ )

by Gupta, Kumar Rajiv et al. [10] in 2014 among rural population in Jammu region to assess knowledge regarding prevention and management of swine flu. findings show that

overall knowledge score was (62.9%). more than (90%) had heard of swine flu, towards prevention and management of swine flu.

## 5. LIMITATIONS

Sample taken for the study was only from two villages because of time constraints. This limits the generalization of the study. Study subjects were not selected by randomization.

## 6. CONCLUSION

Both CTP and IB were effective in terms of enhancing the knowledge of rural population regarding prevention and management of swine flu. But IB was more effective than CTP in enhancing the knowledge of rural population regarding prevention and management of swine flu.

Nursing personnel's working in the community should be equipped with adequate knowledge and skill to educate the rural population on breast Prevention and management of swine flu. Community health nurses should also conduct and organize teaching program to community members regarding healthy practices.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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