



## **EFFECT OF INFORMATION BOOKLET REGARDING HOME MANAGEMENT OF PATIENT WITH TRACHEOSTOMY AMONG THEIR CARE GIVERS ATTENDING SELECTED HOSPITAL OF KOLKATA, WEST BENGAL.**

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**ABSTRACT :** A pre experimental study was conducted to find out the effect of information booklet regarding home management of patient with tracheostomy among their care givers attending selected hospital of Kolkata, West Bengal. The objectives of the study were to develop and validate the information booklet, to determine the knowledge level of care givers, to determine the effect of information booklet in terms of change in knowledge level of care givers. The Conceptual framework of this study was based on Irwin Rosenstock's Health Belief Model. The one group pre-test post-test research design was adopted for this study .The non-probability convenient sampling technique was adopted to select 40 caregivers of patients with tracheostomy. The data were collected by using a structured knowledge interview schedule to assess the knowledge level of the caregivers. The study findings revealed that the mean post-test knowledge score (22) of care givers was higher than the mean pre-test knowledge score (11.82) with a mean difference of 10.18 which was statistically significant as evident from the 't' value of 6.32 [  $t = 4.32$  df (39) at 0.05 level of significance]. There was significant association present between pre -test knowledge score with age of the caregivers as evident by chi-square test where the calculated value was (6.38) [  $t = 3.84$  df(1) at 0.05 level of significance]. Therefore it can be concluded that the information booklet was effective in increasing the knowledge level of caregivers. The findings of this study has several implications in the field of nursing practice, education, administration and research. A similar study can be replicated with a larger population.

**Keywords :** Information booklet, home management, tracheostomy, care givers.

### **INTRODUCTION :**

Tracheostomy is one of the most frequently performed surgical procedures in the critically ill patient and it is life saving for the patient with upper airway obstruction. The etymological meaning of the word tracheostomy comes from two Greek word: the 'root stom' (from Greek τομή) meaning "to cut" and the word trachea. The word tracheostomy , including the root stom- (from Greek στόμα) meaning " mouth" refers to the making of a semi-permanent or permanent opening , and to the opening itself.

Asclepades of Persia is credited as the first person to perform a tracheostomy in 100 BC. The first successful tracheostomy was performed by Prasovala in the 15<sup>th</sup> century. In the 16<sup>th</sup> century, Guidi invented an original method of tracheostomy.

Many studies supported that improper care of tracheostomy may lead to various complications. The findings of the study, conducted by S.Kiran, S.Eapen and Vivek Chopra on February, 2015 on complications and long term outcomes of surgical tracheostomy and two techniques of percutaneous tracheostomy, among 30 tracheostomy patients revealed that 6.6% patients had minor bleeding, subcutaneous emphysema was noticed in 6.6% of patient, 3.3% of patient had excessive purulent exudates at stoma site, six patients were lost to follow up. A total 13 (14.4%) the patient had narrowing of trachea and excessive granulation at stoma site.

### **NEED OF THE STUDY :**

A growing trend in recent years has been observed that long-term management of stable but chronically ill and technology dependent patients were sent in the home. This may be a result of various factors, including increased economic pressures on acute-care medical facilities, which often result in shorter hospital lengths of stay and efforts to transition patients to less costly points of care.

Patients who have undergone a tracheostomy must be closely monitored for complications such as hemorrhage, edema, aspiration, accidental decannulation, tube obstruction and the entrance of free air into the pleural cavity. The focus of tracheostomy care is maintaining a patent airway, facilitating the removal of pulmonary secretions, providing humidified air or oxygen, cleansing the stoma, monitoring the patient ability to swallow and teaching while simultaneously preventing complication.

A descriptive study was conducted to assess the graduate nurses comfort and knowledge level regarding tracheostomy care. This study examined 104 new graduate nurses comfort level before and after a tracheostomy in-service educational session, findings revealed that graduate nurses can benefit significantly from in-service education and skill integration.

Many studies indicate that the number of tracheostomy is increasing day by day due to various etiological factor, and the quality of life is adversely affected due to this illness. Based on these literatures and their statistical values researcher is felt that an information booklet regarding home management with tracheostomy is important guidelines for the care givers in that present situation.

This study will be beneficial in improving the knowledge level of the caregivers during home management of tracheostomy and will reduce the chances of developing complications. The researcher during her period of working found that tracheostomy had a negative impact and anxiety on patient as well as caregivers too and the caregivers were worried about how to take care of the patient in home set up. Hence, the researcher felt the need to assess the effect of an information booklet regarding home management of patients with tracheostomy, for their care givers thus it contributes or guide the care givers in taking care of the patient with tracheostomy in home setup.

### **ASSUMPTIONS :**

The study assumed that,

- care givers have knowledge regarding home management of patient with tracheostomy.
- care givers are willing to learn regarding home management of tracheostomy.

### **DELIMITATION :**

Study is delimited to care givers-

- Who can understand, read and write Bengali.
- Who are available during data collection period.

### **VARIABLES :**

**Independent variable** – Information booklet regarding home management of patients with tracheostomy.

**Dependent variable** - Knowledge level of care givers.

**Demographic variables**- Age (in years), sex, education, monthly family income (in rupees) and relationship with the patient.

### **HYPOTHESES :**

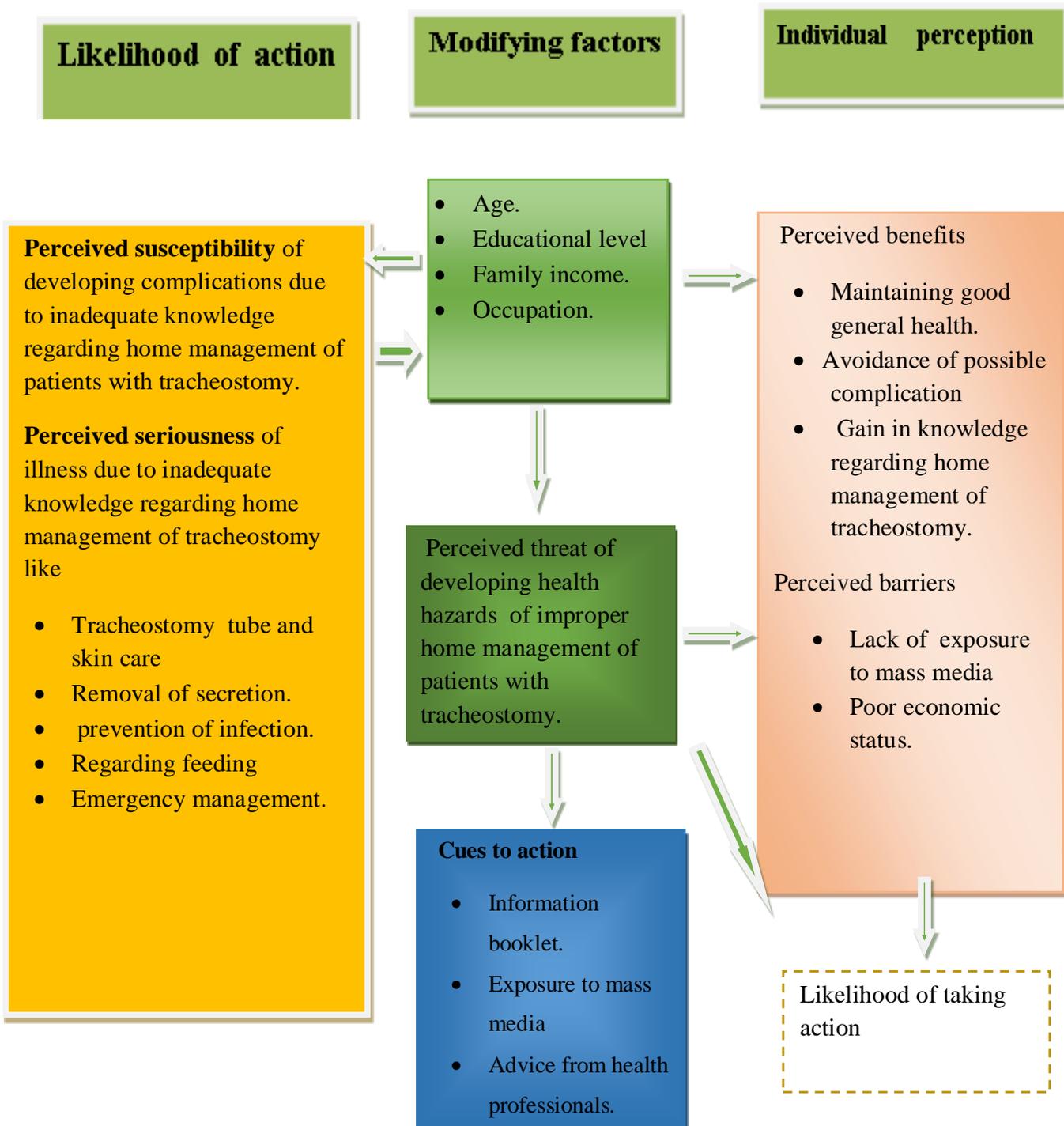
**H<sub>1</sub>** : There is a significant difference between the mean pre- test and post -test knowledge level of the caregivers regarding home management of patients with tracheostomy after introduction of the information booklet as measured by structured knowledge interview schedule at 0.05 level of significance.

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### **CONCEPTUAL FRAMEWORK :**

The conceptual framework of this study is based on the Irwin Rosenstocks Health Belief Model (1988). Health behavior is modified through proper information and knowledge as it helps the individual to perceive the threat of unhealthy practices and increased awareness towards harmful practices. The Health Belief Model is directly more towards health preventive behaviors than health promoting behavior. It has four major concepts that are perceived susceptibility /perceived seriousness, perceived benefits, perceived barriers, perceived threat, modifying factors likelihood of action.





 Not included in the present study.

**Fig. 1: Schematic presentation of the conceptual framework based on Irwin Rosenstocks Health Belief Model.(1988)**

**REVIEW OF LITERATURE :**

Review of literature is the most important step in research work which tells us about the current scenario of the topic. It would help us to identify the problem, develop the conceptual frame work of the study, assess the feasibility, identify the methodology , select and develop the tools for data collection as well as plan for statistical analysis.

The literature review for this study has been organized and presented under the following sections :

Section I : Literature related to complications of tracheostomy .

Section II : Literature related to knowledge of caregivers regarding home management with tracheostomy.

Section III : Literatures related to effectiveness of information booklet and other teaching aids regarding management of tracheostomy.

**RESEARCH METHODOLOGY :**

The methodology of research indicates the overall pattern for organizing the procedure of gathering valid and reliable data for an investigation. This chapter is planned to present a brief description of the strategies used for data collection and their analysis.

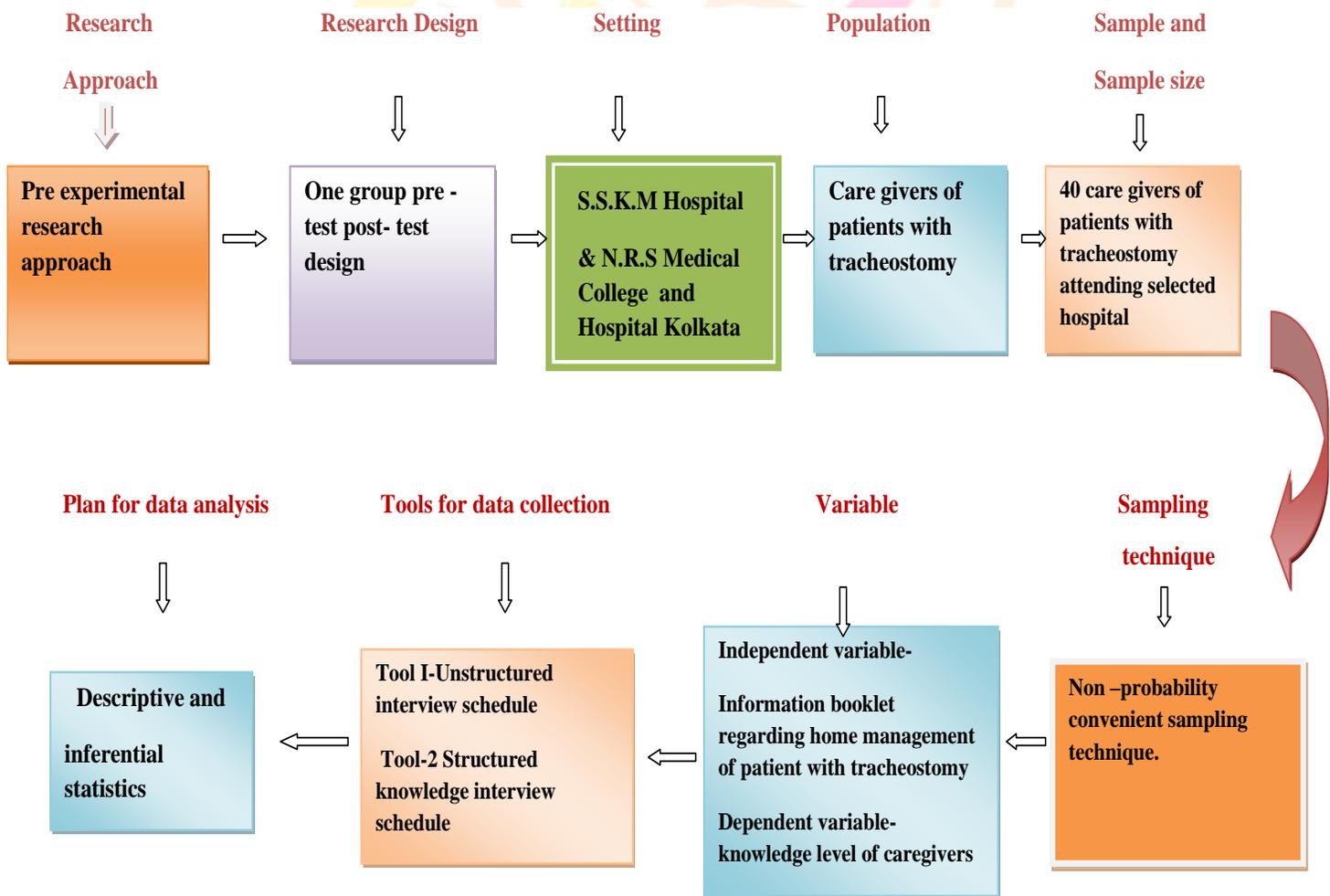


Figure2. Schematic presentation of the research design

**DATA COLLECTION TOOLS AND TECHNIQUES :****Table 1 :** Tool and techniques of data collection

<b>Tool</b>	<b>Variables to be measured</b>	<b>Technique</b>
TOOL-1 Un structured interview schedule	Demographic data	Interviewing
TOOL-2 Structured knowledge interview schedule	Knowledge level of caregivers	Interviewing

**ETHICAL CONSIDERATION :**

An ethical permission was taken from -

- i. Ethical committee of the IPGME &R, S.S.K.M Hospital. Kolkata.
- ii. A written consent from the care givers of the patient with tracheostomy.

Administrative permission was taken -

- i. From the Principal of the West Bengal Government College of Nursing ,S.S.K.M campus
- ii. Joint Director of the health sciences ( J.D.H.S) Swasthya Bhavan, Salt Lake ,Kolkata -91.
- iii. From the Medical Superintendent cum Vice Principal of the N.R.S medical college and Hospital and IPGME&R , S.S.K.M Hospital.
- iv. From the Dean of student affairs the S.S.K.M Hospital.
- v. From the Head of the department of E.N.T ward.
- vi. From the Nursing Superintendent of S.S.K.M and N.R.S Medical College and Hospital.
- vii. From the Sister in charge of the E.N.T department .

**FINAL DATA COLLECTION PROCEDURE :**

40 care givers of patients with tracheostomy were selected by non –probability convenient sampling techniques

- Before the final data collection , necessary permission was sought from the ethical committee of the IPGME&R ,SSKM Hospital, Kolkata and N.R.S Medical College and Hospital ,Kolkata
- Necessary permission was taken from the Director, Head of the Department of E.N.T Department , Medical Superintendent cum vice principal of SSKM Hospital and N.R.S Medical College and Hospital. Kolkata.
- The data collection continued from 16.11.15 to 12.12.15
- Researcher arranged a convenient place in the ENT Department indoor for pre-test and in OPD for post - test.
- Self introduction and establishment of rapport with the caregivers was done .To obtain the free and frank responses, the purpose and the objectives of the study were explained in easy language to each caregivers separately.

- Confidentiality of the information was assured to the caregivers.
- Each caregivers took 20 minutes time on an average to answer the structured knowledge interview schedule.
- Separate code number was used for each caregivers.
- The unstructured interview schedule to collect the demographic data and a structured knowledge interview schedule to measure the knowledge of caregivers regarding home management of patients with tracheostomy on day 1
- Information booklet was given to each care givers after pre-test was completed.
- The caregivers were motivated and requested to come on next follow up on day 8 and post-test was taken. This procedure of data collection was continued through out the time period. The all the caregivers of patients with tracheostomy were taken as sample who were willing to participate and fulfilling the inclusion criteria.

### PLAN FOR DATA ANALYSIS :

- Frequency and percentage distribution of the demographic characteristics of the care givers of patients with tracheostomy.
- Pre-test and post-test knowledge level was assessed by , mean, median, standard deviation, mean difference .
- Effects of information booklet in increasing knowledge was assessed by paired t test.
- Association of knowledge level with demographic variables was assessed by test of significance ( chi-square test)

### ANALYSIS AND INTERPRETATION OF DATA :

- **Section I : Knowledge level of care givers regarding home management of patients with tracheostomy.**

**Table 2** Frequency and percentage distribution of the pre-test and post- test knowledge level of care givers regarding home management of patients with tracheostomy.

n=40

Level of knowledge Level	Range of Score	Pre- test		Post –test	
		Frequency	Percentage(%)	Frequency	Percentage(%)
Very good	26-30 (80%- 100%)	Nil	-	23	57.5
Good	21-25 (60 % - 80 %)	Nil	-	17	42.5
Fair	16-20 (40% -60 %)	06	15	Nil	-
Poor	≤ 15 (<40%)	34	85	Nil	-

- Maximum possible score= 30.
- Minimum possible score= 0
- The data presented in the above table 2 show that in pre- test, majority of the care givers 34(85 %) had poor level of knowledge and rest of the care givers 6 (15 %) had fair level of knowledge. None of the care givers had good or very good level of knowledge.
- The data also revealed that in post –test, majority 23 (57.5 %) of the care givers had very good level of knowledge, 17 (42.5%) caregivers had good level of knowledge .None of the caregivers had fair or poor level of knowledge in post-test.

## Section II : Findings related to effect of information booklet in terms of change in knowledge score in post- test .

- $H_0$  There is no significant difference between the mean pre-test and post-test knowledge level of the caregivers regarding home management of patients with tracheostomy after introduction of the information booklet, as measured by structured knowledge interview schedule at 0.05 level of significance.
- $H_1$  There is a significant difference between the mean pre- test and post -test knowledge level of the caregivers regarding home management of patients with tracheostomy after introduction of the information booklet as measured by structured knowledge interview schedule at 0.05 level of significance.

**Table 3.** Mean, Median, Mean difference , Standard deviation, and “t “ value of pre test and post test knowledge score of care givers regarding home management of patients with tracheostomy.

Knowledge score	Mean	Median	Mean Difference	Standard Deviation	‘t ’
Pre- test	11.82	12	10.18	1.85	6.32*
Post –test	22	24		1.27	

n=40

- $t = 2.02$  df( 39 ),  $p < 0.05$  level of significance.
- The data presented in the above table 3 indicate that the mean post test knowledge score (22) of care givers was significantly higher than their mean pre -test knowledge score(11.82 ) with a mean difference of 10.18 which was found to be statistically significant as evident from the t value of 6.32 for df (39 ) at 0.05 level of significance as calculated by paired t –test.
- The calculated value was higher than the table value[  $t = 2.02$  at the df (39) at 0.05 level of significance].
- Hence the null hypothesis ( $H_0$ ) was rejected and the research hypothesis ( $H_1$ ) was accepted which indicating that the gain in knowledge score was not by chance. Thus ,the information booklet was effective in increasing the knowledge level of care givers regarding home management of patients with tracheostomy.

## Section III : Findings related to association of pre-test knowledge score with selected demographic variables.

- **Table 4 :** Chi-square value showing association between knowledge score of caregivers with their age ( in years), sex, educational status.

Selected variables	Knowledge Score		Total	Chi –square
	≤Median	> Median		
n =40				
Age ( in years)				
20-40	21	06	27	6.389*
Above 40	04	09	13	
Total	25	15	40	
Gender				0.04
Male	10	07	17	
Female	16	07	23	
Total	26	14	40	
Education				1.442
Below secondary	20	10	30	
Above at secondary	04	06	10	
Total	24	16	40	

$X^2$  at  $df(1) = 3.84, P > 0.05$

- The data presented in the table 4 also revealed that the chi-square test was done to find out the association between pre-test knowledge score with age (in years) of the caregivers. The calculated value of  $x^2$  was (6.398) after Yates correction was higher than the table value.
- [  $t=3.84$   $df(1)$ ] at 0.05 level of significance .So it can be concluded that there was significant association between knowledge level of the caregivers and with their age (in years)
- The data also revealed that 10 care givers were male who scored below and at median and 7 male care giver scored above median, and 16 care givers were female who scored at and below median and 7 female caregivers scored above median. Chi square value was calculated between the pre-test knowledge score and gender of the respondent. The calculated  $x^2$  value was (0.04) less than the table value [  $t=3.84$   $df(1)$  at 0.05 level of significance].So it can be concluded that there was no significant association present between knowledge level and gender of the caregivers
- The data also revealed that 20 caregivers had educational status in below the secondary level who scored at and below median and 10 care givers with the below secondary level of education, scored above median. 4 caregivers who had at and above secondary level of education scored within at and below median and 6 caregivers who had at and above secondary level of education scored above median. Chi square value was calculated between the pre-test knowledge score and educational status of the respondent. The calculated  $x^2$

value was (1.442) less than the table value [ $t=3.84$  df(1) at 0.05 level of significance]. So it can be concluded there was no significant association present between knowledge level and educational status of the caregivers.

**Table 5 :** Chi square value showing association between knowledge level with monthly income ,occupation.  
n=40

Selected demographic variables	Knowledge level		Total	Chi - square
	≤Median	> Median		
Monthly income(in Rupees)				
Below and at 5000	12	09	21	0.015
Above 5000	11	08	19	
Total	23	17	40	
Occupation				
Working	15	08	23	0.011
Not working	11	06	17	
Total	26	14	40	

$X^2$  at df (1)= 3.84,  $P > 0.05$

- The data presented in the above table 5 show that 12 of the caregivers were scored at below median who had monthly family income at and below 5000/ Rs and 9 of the care caregivers were scored above median who had above 5000 Rs of monthly . And 11 of the care caregivers scored at and below median who had monthly family income 5000 Rs and 8 of the care caregivers scored above median who have 5000 Rs of monthly family income.
- The chi-square test was done with monthly family income of the caregivers with their pre-test knowledge score. The calculated value was (0.015) less than the table value [ $t=3.84$  df(1) at 0.05 level of significance]. So it can be concluded that, the knowledge level of the care givers was not significantly associated with their monthly family income.
- The data presented in the above table 9 also show that 15 care givers scored at and below median who were working and 08 care givers scored above median who were working, and 11 care givers scored at and below median who were not working and 06 care givers scored above median who were not working.
- Chi-square test was done to find out the association between pre -test knowledge score with occupational status .The calculated value of  $X^2(0.011)$  was less than the table value [ $t=3.84$ df(1) at 0.05 level of significance]. So it can be concluded that the occupation of the caregivers was not significantly associated with the knowledge level of the caregivers.

## **IMPLICATIONS :**

The findings of the study have several implications for nursing practice , nursing education ,nursing administration and in nursing research.

## **NURSING PRACTICE :**

Nurse act as the primary caregivers in the hospital setting as well as in the community setting and they act to prevent illness, promote and maintain health. Active participation of nurses is needed in the care of tracheostomy patients during their hospitalization period as well as the nurses only can guide the care givers of patients with tracheostomy in imparting knowledge in home management and prevention of complication and emergency management . The care givers deficit of knowledge shows the need for arrangement of health teaching pogrammes, information booklet for care givers to improve their knowledge regarding this matter which is an important nursing consideration.

## **NURSING EDUCATION :**

Education is acquisition of knowledge which leads to behavior modification . Nursing as a profession requires the behavior modification of the professionals so that they can accept their clients irrespective of their age, sex, cast ,creed, ethnicity ,social status and disease pattern . More emphasis should be given regarding tracheostomy its different aspects like indication, management, dressing, in the nursing practical topics. So tha the new nursing student get ample opportunity to enhance their knowledge in this aspect. The nursing personnel when equipped with proper knowledge will prepare students and also care givers about home management of tracheostomy. More emphasis should be given on practical aspect of different procedures like tracheostomy care.

## **NURSING ADMINISTRATION :**

Nurse as an administrator has a special role in planning and organizing health care services to the client in need. Nurse administrator must use multidisciplinary approach from identification and home management of tracheostomy patients and proper involvement of caregivers in providing care. The nurse administrator must arrange for seminars, workshop, health teaching programs in this aspects. Planning of these works require effective team spirit , experienced planning , material, adequate money , manpower, method and goodwill. Moreover, nurse administrator can make recommendations to the respective authority regarding inclusion of tracheostomy management as an important topic in nursing education program. Making a protocol for tracheostomy care. Arrange a special hands on program or in-service education for nursing staffs taking care of tracheostomy patients. Role of infection control nurse plays an important role in the prevention of tracheostomy related complication. Prepare a checklist, and protocol regarding tracheostomy care in ward settings.

## **NURSING RESEARCH :**

Nursing research is a way to find out new knowledge, improve professional education and practices and use of resources effectively. Scarcity of nursing research is found in the areas of tracheostomy management in home set up. The findings of the present study can be used by the nurse researcher to conduct extensive researchers in this field . Also plan for planned teaching program for care givers of patients regarding this topic. Research on using different other educational aids like (PPT, Video Assisted learning).

## **LIMITATION :**

- The sample size was less so that the study findings were unable to generalize.
- The study was restricted to the selected government hospitals of Kolkata only.
- Knowledge of the care givers were assessed through structured knowledge interview schedule.

- The patients who had temporary tracheostomy were not included in this study.

## RECOMMENDATION :

- Similar study can be conducted with large sample across the other tertiary level hospitals for generalization of the study findings.
- A study could be planned to assess the knowledge and attitude with a view to develop an information booklet.
- A study can be undertaken to assess the knowledge and attitude of nursing staff regarding management of tracheostomy.

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