



# Effect of Teaching and Demonstration on Knowledge and Practices About Colostomy Care Among Mothers of Children with Colostomy Wound Admitted in Selected Hospital, Kolkata

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**Abstract-** A pre experimental study was conducted to evaluate the effect of teaching and demonstration on knowledge and practices about colostomy care among mothers of children with colostomy wound admitted in selected hospital , Kolkata . The objectives of the study were to assess the knowledge and practices among mothers of children regarding colostomy care and to determine the effect of teaching and demonstration regarding colostomy care of a child by pre and post-test knowledge and practice scores. The conceptual framework was adopted for the study is based on General System Model theory of Ludwing Von Bertalanffy .The study was conducted among 34 mothers of children with colostomy wound admitted in pediatric surgery ward , selected hospitals , Kolkata . Non Probability Purposive one group pre-test and post-test research design was selected for the study. Semi Structured Interview Schedule was prepared to collect the demographic characteristics . Semi Structured interview schedule and observation checklist was used (34) = 0.505} at 0.01 level of significance. The study has implications in different field of nursing . A similar study can be conducted on a larger scale sampling in different setting for generalization .

**Keywords:** In this study knowledge refers to the level of understanding of mothers regarding colostomy care to their children with colostomy wound as measured by semi-structured interview schedule.

## I. Introduction

Every child comes with the message that God is not yet discouraged of man.”  
– Rabindranath Tagore

When the family have a child their life changes forever. The child brought a whole new kind of love in their life that they could not imagine. As the child grows up they will start to understand all the things done by their parents with their possibilities for their health and well being. Kids grow up before a blink of the eyes. All the advice - care - love and attention given by the parents during this period will greatly affects them how they grown up to be. So keep the child well active with full attention and love and care. For the physical and mental health and fitness children need guidance and care at every stage of their life. Mounting evidence will help them during the childhood and set a healthy stage of adulthood.<sup>1</sup>



Some times the pleasure associated with childbirth turns traumatic and is filled with anxiety of the parents when the child born with some congenital deformities or suffers from severe illness. Cultural stigma, lack of confidence to manage the situation, financial pressure and inability to understand the medical condition are the reasons to develop the anxiety into the parents.

Congenital anomalies are one of the important causes for childhood death, chronic illness and disabilities. Sometimes babies are born with congenital malformation along the gastrointestinal (GI) tract which ranges from minor to serious illness and can occur anywhere from the esophagus to anus. The health of children with congenital anomalies needs primary prevention and care. Anomalies in gastrointestinal system can be surgically corrected with an excellent chance for normal development and functioning of GI tract later on as the baby grows from childhood to adulthood.

Common congenital defects of children in gastrointestinal tract are Anorectal Malformation, Imperforated Anus, Hirschsprung's disease, Recto Urethral Fistula and other lower abdominal abnormalities which need surgical correction. One of them is colostomy. Colostomy can be performed temporarily and needs time to allow a portion of colon to heal and rejoin at later, this could be weeks, months to years or it also can be permanent to solve the abnormal medical condition with congenital defect. Colostomy is a major surgery in new born that will require additional medical attention and constant observation by one of the parents or a caregiver.

The primary goal for colostomy care is to prevent complications around stoma, hygienic care to the child and adopt diet appropriately. Thus, unaware behaviour among caregivers regarding stoma care may develop complication around the stoma in children which results readmission of the child. Most commonly reported complications unnoticed by the caregivers on time are skin breakdown, ribbon-like stool, diarrhoea, stoma prolapse, failure to pass stools. This holistic care given to colostomy child is called family-centered care. For this reason constant parent education is needed. Proper health teaching among parents shows significant performance on assessments of complications by caregivers after colostomy in children. Maintaining the health of the child undergone colostomy surgery depends on thorough education and discharge planning is a combined effort of physician, nurse, enterostomal therapist, dietician to the caregivers and parents.<sup>2</sup>

## II. Review of Literature

A review of literature makes the researcher familiar with the existing studies, provides information about the topic, helps to focus on particular problems and give foundation to establish new knowledge. It provides accurate picture about the subject of research topic to the researcher.<sup>24</sup>

Review of literature has been organized under the following headings:

- Literature review related to Colostomy in children
- Literature review related to knowledge and practice of mother regarding Colostomy care
- Literature review related to structured education



## Part A

### Literature related to Colostomy in children

Massenga A, Chibwae A, Nuri AA et al. (2020) conducted a cross sectional study on “Indications for and complications of intestinal stomas in the children and adults” at a tertiary care hospital, Tanzania with 167 patients. Research study explored that stoma in children was mainly done due to Hirschsprung’s disease and Anorectal Malformation (110, 89.4%). The most common age for surgery was  $0.6 \pm 1.4$  years in children. Most frequent complication was Stoma prolapse (18, 41.9%).<sup>25</sup>

Mallik C, Pal S, Mohanta PK. (2019) conducted “A clinical study of colostomies in infancy and childhood in a tertiary centre” at JNM Hospital, Nadia, West Bengal. The study sample was 33 children with pediatric colostomy wound. Study revealed that a properly conducted temporary stoma was necessary and lifesaving for the children. But it was associated with post operative early complications. All were needed careful examination for early diagnosis and initiate management. The study also showed that colostomy causes psychological trauma for the child and parents.<sup>3</sup>

Dode CO, Gbobo LI. (2016) was conducted a study on “Childhood colostomy and its complications at Lagos” at University Teaching Hospital. The study result explored that, childhood colostomy was performed due to obstructive congenital lesions of the colon and anorectum. Among 66 childhood colostomies, Hirschsprung’s disease was 33, Anorectal Malformation was 28. 18 children suffered from several complications.<sup>26</sup>

Ahmad Z, Sharma A, Saxena P, Choudhary A, Ahmed M. (2013) conducted “A clinical study of intestinal stomas: its indications and complications”. A prospective study was carried out in surgical ward of Hamidia Hospital, Gandhi Medical College, Bhopal. 100 samples were selected for the study. The study revealed that 97 % stomas were formed in emergency situation and 3% were made electively. The most commonly performed stoma was loop ileostomy (64%), sigmoid colostomy (11%), transverse loop colostomy (9%). Most of the stomas were formed in males (76%).<sup>27</sup>

## Part B

### Literature related toknowledge and practice of mother regarding Colostomy care.

Rashed NI, Khalifa MI, El Dein NAZ, Omar TK (2020) conducted a descriptive research study on “Stoma care for children having colostomy in Menoufia University Hospital”. 60 children and their caregivers were selected for the study. The study was conducted to assess the knowledge and practice among care givers about colostomy care. Result showed that 100% caregivers had poor level of knowledge regarding colostomy care and maximum mean scores was 14.63, whereas maximum caregivers had also poor mean practice score, 1.67. The results of the study explored that there was a need for structured education program on knowledge and practices among caregivers related to colostomy wound care.<sup>28</sup>

Maia EMB, Assis GM (2019) conducted a cross sectional qualitative study on “Perception of the parents of children with intestinal stoma regarding the nursing orientations” at University Hospital, southern region, Brazil. Study revealed that the presence of a stoma causes anxieties and fears among the child and family members.



The study also explore that the lack of knowledge among caregivers causes more complications in children, the study also revealed that maximum parents had no previous knowledge regarding care of the child with colostomy wound, they are unprepared and incapable in colostomy wound care.<sup>29</sup>

Anyanwu LJ, Mohammad A, Oyebanji T (2011) conducted a descriptive study on “Commonly used postoperative approaches to pediatric stoma care in a developing country”. The study was conducted among 44 mothers of children with colostomy wound to investigate the use of modern devices, accessories and peristomal skin protection care by mothers of children with colostomy wound. The investigator explored that caring for child with stoma was a challenging task for the parents in developing countries. The study revealed that Anorectal malformations were the most common indication for a colostomy (32), Hirschsprung’s disease (11) and 42 children had a divided sigmoid colostomy, 2 children had a right loop transverse colostomy. The study depicted that 9 mothers used two different collection methods. The diaper collection method (22 out of 53; 41.51%), wrap around waist bands (19; 35.85%), improvised colostomy bags (12; 22.64%).

Peristomal skin excoriations were seen in between the first 3 weeks of surgery and mostly disappeared by week 6 of postoperative follow up. Petrolatum jelly was most commonly used by mothers as barrier ointment which was also locally available, acceptable and affordable collection method for children in developing countries.<sup>30</sup>

### **Part C**

#### **Literature review related to effects of structured education in colostomy care among caregivers**

Shreef AMA, Abdallah HMA, Shaib SEM, (2022) conducted a quasi experimental study on “Effects of bowel stoma care education program on nurses’ practice at Khartoum State Governmental Hospitals – Sudan. Results of the study showed that the mean posttest practice score was changed after education program with highly significant difference at  $p < .001$ . The conclusion of the study was the education program on bowel stoma care improved the practices among caregivers and the study recommended that to improve nurse’s knowledge and practices, the in-service training and periodic education program among nurses was mandatory.<sup>31</sup>

Farrag JM, Khalil A, Elzaky AMM (2022) conducted a study on “Effect of health care program for mothers having children with stoma”. For this study a quasi experimental design was used among 52 mothers of children with colostomy wound. Result of the study was explored that mother’s knowledge and practices were improved after implementation of the planned teaching program 94.2% and 73.1% respectively. Statistical significance difference was high p value  $<0.001$  after intervention. The study concluded that health teaching program improved mother’s knowledge and practices. The recommendation of the study was, periodic health teaching program would improve the knowledge and practices among mothers of children with colostomy wound.<sup>32</sup>

Halemani K, Shashidhara YN, D’Souza SRB (2021) conducted a quasi experimental study on “An evaluative study to assess the effectiveness of a video-assisted teaching



module on knowledge and practice regarding home-based colostomy care of children among primary caregivers in selected hospital Lucknow, Uttar Pradesh” among 30 samples. The study explored that teaching program regarding colostomy care improved the knowledge and practice among care givers. Knowledge scores by Paired ‘t’ test was 19.60 ( $p < 0.05$ ) and practice score was (z)4.71, ( $p < 0.01$ ) regarding colostomy care after planned teaching program.<sup>33</sup>

Ali HA, Ali JS, Taha SH (2020) conducted a quasi experimental research study among 40 nurses on “Effect of educational program on nurses performance about colostomy care”. The result of the study revealed that before implementation of teaching program the majority (85%) had poor knowledge regarding colostomy care which was improved after implementation of teaching program. It also explored that after implementation of teaching program 52.5% nurses had improved their skills regarding colostomy care. The study concluded that, there was a positive effect of educational program in improving nurses’ knowledge and practices regarding colostomy care .<sup>34</sup>

Poonguzhali S, Maheswari N, Nagendran M (2016) conducted a study on “Effectiveness of instructional package on knowledge regarding colostomy care among care givers in pediatric post operative ward at institute of child health and research centre, Madurai”. A quantitative approach was adopted on 30 samples to evaluate the effectiveness of instructional package on knowledge regarding colostomy care among care givers. The study result showed that level of knowledge regarding pretest and posttest mean score was 47.00 and 65.33 respectively. The calculated paired “t” test was 5.98 which was statistically significant at  $p < 0.001$  level of significance. The study concluded that instructional package teaching programme was effective on improving the level of knowledge on colostomy care among caregivers of children with colostomy wound.<sup>35</sup>

Hashem SF, Abusaad FE (2016) conducted a quasi experimental study on “Improving nurses’ knowledge and practices regarding the care of children with intestinal stomas” among 35 nurses. The results showed that 82.9% nurses had poor knowledge before intervention but after teaching program 80% nurses had improved their knowledge regarding colostomy care. Also 80% nurses had poor practice skill before the program implementation and 94.3% nurses improved their practice about colostomy care after implementation of demonstration program. The study concluded that the educational program had positive effects in improving the caregiver’s knowledge and practices regarding care of children with colostomy wound.<sup>36</sup>

El-Wasefy S A M, Gileel Ouda W E S, et al, (2015) , conducted a quasi experimental research study among 40 mothers of children with colostomy wound on “Effect of an educational program for mothers regarding care of their children having intestinal stomas” . The study result shows that there was a high statistical significance between pre test and post test knowledge and practice scores among mothers after intervention of educational program. The study concluded that educational program was improve the knowledge and practices among mothers of children regarding colostomy care.<sup>37</sup>



### III. Research Methodology

Methodology means description and justification of methods, i.e. it is the orderly way to solve the research problem. The methodology of research indicates the general pattern for organizing the procedures for the research study together with the method for gathering valid and reliable data for the study. It includes research approach, research design, research variables, study settings, study population, sample and sampling technique, data collection tools and technique and plan for data analysis.

#### Research Approach

In order to accomplish the objectives of the study, quantitative research approach was adopted for the present study.

#### Research Design

Pre experimental one group pre test & post research design was used to accomplish the objective of the study.

#### Symbolic presentation of the design

Pretest		Intervention	Posttest
K <sub>1</sub> P <sub>1</sub>		X	K <sub>2</sub> P <sub>2</sub>
K <sub>1</sub>	--	Pretest	
P <sub>1</sub>			
X	--	Teaching and demonstration on knowledge and practices about colostomy care.	
K <sub>2</sub>	--	Post test	
P <sub>2</sub>			

In this study independent variable were teaching and demonstration regarding **colostomy care**.

#### Dependent Variables

In this study dependent variables were

- Knowledge among mothers regarding colostomy care.
- Practices among mothers regarding colostomy care.

#### Demographic Variables

Demographic variables comprise of age of mother, education, occupation, number of children, monthly family income, residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care in days.

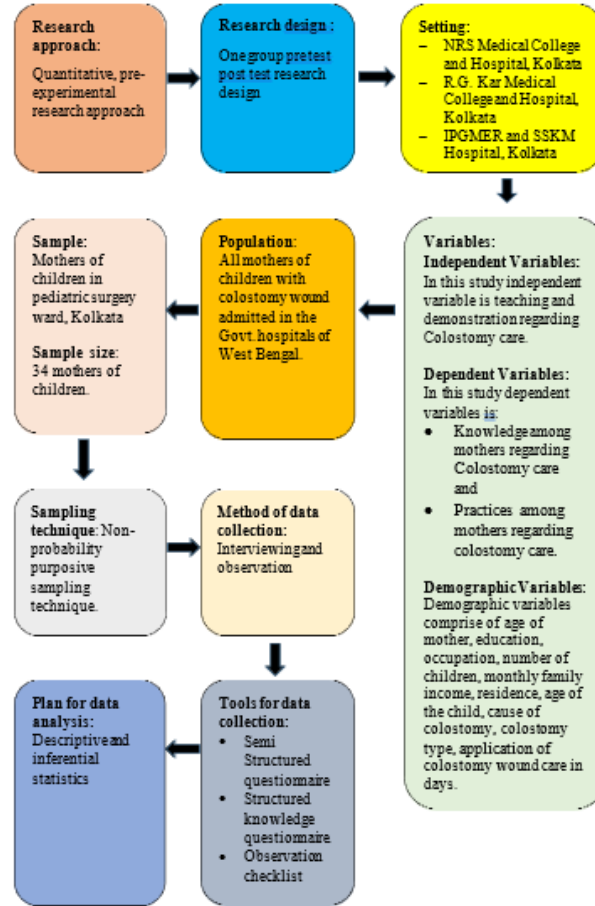


Figure 2: Schematic representation of research design

- Variables under study
- Independent Variables
- Setting of the study

The setting of the study was as follows  
 Pilot study  
 Medical College and Hospital, Kolkata.

**Final study**

NRS Medical College and Hospital, Kolkata  
 R.G. Kar Medical College and Hospital, Kolkata IPGMER and SSKM Hospital,  
 Kolkata

**Rational for selecting the setting**

- Availability of adequate number of subjects



- Familiarity with the setting
- Feasibility of conducting the study
- Easy accessibility
- Administrative approval and expectation of cooperation from various end
- Population of the study

All mothers of children with colostomy wound admitted in the Government hospitals of West Bengal.

#### **Sample**

Mothers of children with colostomy wound within 7 days of surgery admitted in pediatric surgery ward, in selected hospital, Kolkata.

#### **Sample size**

The present study comprises of 34 (Thirty four) mothers of children with colostomy wound.

#### **Sampling technique**

A non-probability purposive sampling technique was adopted for selection of samples.

#### **Sampling criteria**

##### **Inclusion criteria**

- Mother who are available during the period of data collection.
- Mother who are able to understand Bengali.
- Mother who are willing to participate.

##### **Exclusion criteria**

- Critically ill children with colostomy

##### **Ethical consideration**

- Ethical permission was taken from Institutional Ethical Committee of Burdwan Medical College, Purba Bardhaman.
- Informed consent was taken from each participant.

##### **Administrative permission**

- Principal of Government College of Nursing, Purba Bardhaman.
- Directorate of Health Services, West Bengal
- Joint Directorate of Health services (Nursing), West Bengal
- Deputy Director of Health Service (Nursing), West Bengal

##### **Formal Permission**

- Principal , Medical College and Hospital, Kolkata
- Principal , N.R.S Medical College and Hospital, Kolkata
- Principal, R.G. Kar Medical College and Hospital, Kolkata
- Principal, IPGMER and SSKM Hospital, Kolkata



### Data collection tools and techniques

After adequate literature review and discussion with experts the following data collection tools were developed by the investigator based on the objectives of the study.

Table 1: Data collection tools and techniques

Tool No.	Name of the tools	Variables	Technique
I	Semi-structured interview schedule	Socio-demographic variable	Interviewing
II	Structured Interview Schedule	Knowledge regarding Colostomy care among mother	Interviewing
III	Observation Check List	Practice regarding colostomy care among mother	Observation

### Selection, development and description of tools

Tools were comprised of three parts Part I: Socio demographic proforma

Part II: Structured Interview Schedule for assessment of knowledge Part III: Observation Checklist for assess the practices

### Development of the tools

Tools were developed by adopting the following steps

- Review of research and non-research literature.
- Consultation with guide and co-guide.
- A draft Interview schedule was developed.
- Validity of the tool was done and modification made as per suggestions.
- The language validity of both Bengali and English version of the tool was established with the help of language experts.
- Pre-testing of the tool was done.
- Final draft was made.

### Description of the tools Tool I

Semi Structured Interview Schedule was prepared for collecting information regarding demographic profiles of mothers.

The tool was developed by investigator to gather background information about the sample selected for the study. It includes 10 items - age of mother, education, occupation, number of children, monthly family income, residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care.



**Tool II**

Structured Interview Schedule was prepared to assess the knowledge of mothers regarding colostomy care.

The tool was developed by investigator to gather information about the knowledge of mothers selected for the study. It includes 20 items under which 1 item for concept of oral cancer, 1 item for indication, 1 item for purpose, 1 item characteristics of stoma, 1 item for diet, 2 items for daily activity, 2 items for clothing, 3 items for complications, 6 items for care of the stoma and skin, 2 items for prevention of infection.

Table 2: Scores of knowledge questioner regarding colostomy care

Level of knowledge	Scores	Percentage
Very high	17 – 20	81 – 100
High	13 – 16	61 – 80
Average	9 – 12	41 – 60
Low	5 – 8	21 – 40
Very low	≤4	≤20

Table 3: Domain wise distribution of knowledge questioners regarding colostomy care

Content	Knowledge	Understanding	Application	Total no.	Weightage
Area	Items	Items	Items	of	
				question	
Concept	1 (1)			1	1
Indication	1 (2)			1	1
Purpose	1 (3)			1	1
Characteristics	1 (4)			1	1
Diet			1 (5)	1	1
Daily Activity		2 (6,7)		2	2
Clothing		2 (8,9)		2	2
Complication	2 (10 , 12)	1 (11)		3	3
Care of stoma	4	1 (18)	1 (14)	6	6



	(13,15,16 ,1				
	7)				
Prevention of infection	2 (19 , 20)			2	2
Total	12 (60 %)	6 (30 %)	2 (10 %)	20	20

### Tool III

**Observation checklist was prepared to assess the practice among mothers regarding colostomy care.**

The tool was developed by investigator to assess the practices of mothers regarding colostomy care. It includes 18 items under - preparation of articles for stoma, preparation of the patient, preparation of the mother, preparation of the environment, care of stoma, termination of waste.

Table 4: Scores of practice among mothers of children regarding colostomy care

Level of Practice	Scores	Percentage ( % )
Very high	15 - 18	81 - 100
High	12 - 14	61 - 80
Average	8 - 11	41 - 60
Low	5 - 7	21 - 40
Very low	≤ 4	≤20

### Content Validity

The tools along with criteria checklist were given to 09 experts for content validation. The experts were chosen on the basis of their clinical expertise after consultation with advisors. Among them four were Professor from Dept. Of Pediatric medicine, two experts were Senior Lecturer from the field of Child Health Nursing, one expert was Clinical Instructor from the field of Child Health Nursing, one expert was Reader from the field of Medical Surgical Nursing, one expert was Senior Lecturer from the field of Medical Surgical Nursing . Few changes were made according to their suggestions.

Tool I : It comprises 10 items . There was 100 % agreement in 7 items , 90 % agreement in 1 items and 85 % agreement in 2 items.

Tool II : Tool II comprises 20 items . There was 100% agreement on 13 item , 80 % agreement on 1 item , 70 % agreement on 1 item , 60 % agreement on 3 items.



Tool III : It comprises 18 items . There was 100% agreement on 14 items, 94 % agreement on 4 items.

#### **Language validity**

The language validity of Bengali and English version of the tools was established with the help of language experts.

#### **Pretesting of the tools**

The pre testing of the tools was done to check the clarity of ideas, feasibility and practicability of the tool. The tools were administered at pediatric surgery ward, Medical College and Hospital to 10 mothers with similar characteristics of the population under study. 40 – 45 minutes of time was required to complete the interview schedule. No difficulties were felt during the interview. On the basis of pretesting, tools were revised and finalized for data collection.

#### **Reliability of the tool**

The reliability of Tool II and Tool III was done by using Split half Method . The reliability of tool II was 0.75 and Reliability of tool III was 0.82 .

#### **Pilot study**

Pilot Study was conducted at Medical College and Hospital , Kolkata from 10.01.2022 to 22.01.2022. The study was conducted in Pediatric Surgery Ward after getting necessary formal administrative permission. The objective of the pilot study was to assess the feasibility and practicability of conducting the research and also to assess availability of the study subjects. Sample size was 10. Samples were selected following the inclusion and exclusion criteria through non probability purposive sampling technique. Self introduction, the purpose of the study was explained to the subjects, consent was taken from them after explaining the terms of anonymity and confidentiality.

#### **Final data collection procedure**

The final study was conducted from 07.03.2022 to 02.04.2022 pediatric surgery ward of N.R.S Medical College and Hospital, Kolkata, R. G. Kar Medical College and Hospital, Kolkata, IPGMER and SSKM Hospital, Kolkata

- Ethical permission was taken from institutional Ethical Committee of Burdwan Medical College, Purba Bardhaman
- Administrative permission was taken from Principal of the N.R.S Medical College And Hospital, Kolkata, R.G.Kar Medical College and Hospital, Kolkata, IPGMER and SSKM Hospital, Kolkata
- 34 subjects were selected in respective area through non probability purposive sampling technique considering the inclusion and exclusion criteria.
- Self introduction was given to the sample to build interpersonal rapport .
- Explanation was given regarding the study and its objectives.
- The term of anonymity and confidentiality was addressed.
- Informed consent was taken from each subject.
- Separate code number was used for each participant like 1,2,3,.....34.
- Participant was allowed to sit in a calm and comfortable place away from distraction.



- Data were collected through interview technique.
- At first semi- structured interview schedule for demographic variables was asked and requested to answer all questions.
- Then each participant was explained Structured Interview Schedule on assessment of knowledge regarding colostomy care and requested to listen each item carefully and give response to the right one.
- To complete the interview schedule about 15- 20 minutes was required for each participant.
- Then each participant was observed by observation checklist to assess the practice of mothers regarding colostomy care to the children.
- It was taken another 15 - 20 minutes for each participant.
- After that 15 - 20 minutes was taken for teaching and demonstration.
- After five days again the interview was taken and demonstration technique was observed from mothers.
- At the end of data collection session, the investigator extended a grateful thanks to the subjects for their participation and co-operation.
- The investigator spent 5-6 hours per day to collect the data from the participants.
- It was taken 25 days to complete the data collection from 34 participants.
- The obtained data were tabulated, analyzed and interpreted by using descriptive and inferential statistics.

#### **Plan for data analysis**

Analysis of data was planned by using descriptive and inferential statistics .

The following analysis was developed to organize the data:

- Section I : Findings related to the demographic characteristics of mothers regarding colostomy care.
- Section II : Findings related to assess the level of knowledge among mothers regarding Colostomy care.
- Section III : Findings related to assess the level of practices among mothers regarding Colostomy care.
- Section IV : Findings related to evaluate the effect of teaching on knowledge presented by calculated 't' value
- Section V : Findings related to evaluate the effect of demonstration on practices among mothers regarding colostomy care.
- Section VI : Findings related to determine the association between knowledge among mother regarding colostomy care with selected demographic variables.
- Section VII : Findings related to find the association between practices among mother regarding colostomy care with selected demographic variables.
- Section VIII : Findings related to assess the co relation between post test knowledge and practice score among mothers regarding colostomy care.

#### **IV. Analysis and Interpretation of Data**

This chapter dealt with analysis and interpretation of data collected from 34 mothers of children admitted in pediatric surgery wards of NRS Medical College and Hospital, Kolkata, R.G. Kar Medical College and Hospital, Kolkata and IPGMER and SSKM Hospital, Kolkata. The data was collected, arranged, organized, evaluated and



interpreted by using descriptive and inferential statistics. Semi-structured interview schedule was used to collect demographic data, structured interview schedule was used to assess the knowledge among mothers regarding colostomy care and observation checklist was used to assess the practice among mothers regarding colostomy care.

#### **Objective of the study**

- To assess the level of knowledge among mothers regarding colostomy care.
- To assess the practices among mother regarding colostomy care.
- To evaluate the effect of teaching on knowledge among mothers regarding colostomy care by pretest and post test knowledge score.
- To evaluate the effect of demonstration on practices among mothers regarding colostomy care by pretest and post test practice score.
- To determine the association between knowledge among mother regarding colostomy care with selected demographic variables.
- To find the association between practice scores among mothers regarding colostomy care with selected demographic variables.
- To find the co-relation between knowledge and demonstration.

#### **Organization of the study findings**

- Section I: Findings related to the demographic characteristics of mothers regarding colostomy care.
- Section II: Findings related to assess the level of knowledge among mothers regarding colostomy care.
- Section III: Findings related to assess the level of practices among mothers regarding colostomy care.
- Section IV: Findings related to evaluate the effect of teaching on knowledge presented by calculated 't' value.
- Section V: Findings related to evaluate the effect of demonstration on practices among mothers regarding colostomy care by pre and post test practice score.
- Section VI: Findings related to determine the association between knowledge among mother regarding colostomy care with selected demographic variables.
- Section VII: Findings related to find the association between practices among mother regarding colostomy care with selected demographic variables.
- Section VIII: Findings related to assess the correlation between post test knowledge and practice score among mothers regarding colostomy care.
- Section I: Findings related to demographic characteristics of mothers regarding colostomy care.

Table 5: Frequency and percentage distribution of mothers regarding colostomy care in terms of age, education, occupation, number of children.



Demographic variables	Frequency	Percentage
<b>Age of mothers (In Yrs)</b>		
15-20	17	50
21-25	7	21
≥25	10	29
<b>Education</b>		
Primary education	13	38
Secondary education	19	56
Higher secondary education	2	6
<b>Occupation</b>		
Housewife	28	82
Self employed	6	18
<b>No. of children</b>		
One	24	70
Two	8	24
>Two	2	6

Data presented in table 5 shows that majority (50%) of mothers belonged to age group of 15-20 years, 29% were of above 25 years age group and 21% mothers belonged to the age group of 21-25 years.

It shows that majority (56%) of mothers had secondary level of education, 38% mothers had primary level of education and 6% mothers had higher secondary education.

It also depicts that 82% mothers were housewife and 18% mothers were self employed. It shows that 70% mothers had one child, 24% mothers had two children and 6% mothers had more than two children.

Table 6: Frequency and percentage distribution of demographic characteristics among mothers in terms of monthly family income, place of living, type of stoma, application of colostomy care.



Demographic variables	Frequency	Percentage
<b>Monthly income ( in Rupees )</b>		
≤5000	7	20
6000 - 10000	8	23
>10000	19	58
<b>Place of living</b>		
Urban	12	35
Rural	22	65
<b>Type of stoma</b>		
Temporary	34	100
Permanent	Nil	Nil
<b>Application of colostomy care</b>		
≤3 days of surgery	21	62
4-6 days of surgery	13	38

Data presented in table 6 depicts that majority (58%) of mothers' monthly family income was above Rs.10000, 23% of the mothers belonged to the monthly family income category of Rs. 6000 - 10000 and 20% mothers' were having monthly family income below Rs 5000.

It also shows that majority (65%) of mothers were living in rural area and 35% mothers were living in urban area.

It also depicts that all mother's children were having temporary stoma.

It also shows that 62% colostomy care was given within 3 days of surgery and 38% colostomy care was given within 4-6 days of surgery.

#### **Age group of children**

n = 34

Data presented in figure 3 depicts that majority (79%) of children belonged to age group of below 1 year, 21% children were belonged to above 1 year age group.

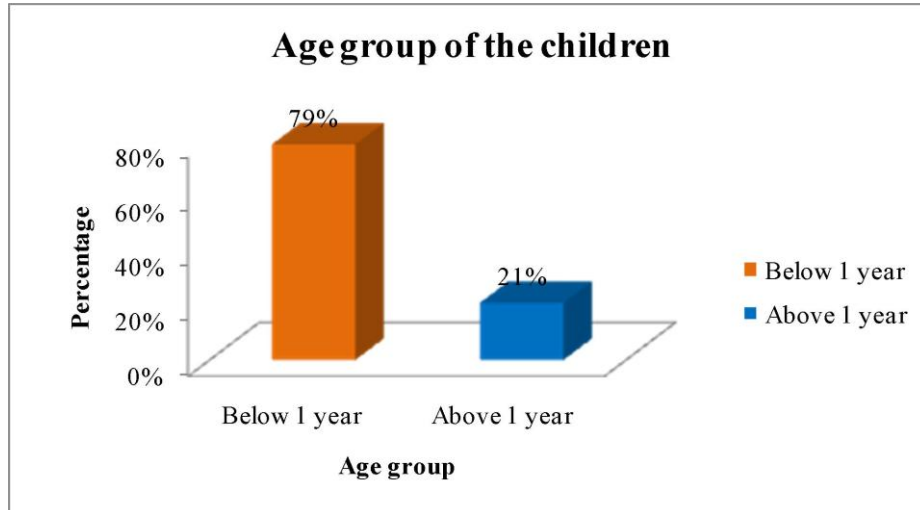


Figure 3: Bar diagram showing percentage distribution of age of child in year

**Causes of colostomy**

n = 34

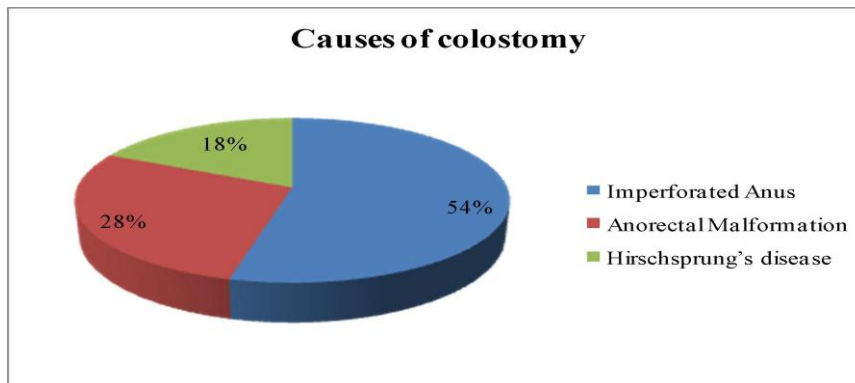


Figure 4: Pie diagram showing percentage distribution of cause of colostomy in children

Data presented in figure 4 depicts that majority (54%) of children had Imperforated Anus, 28% children had Anorectal Malformation and 18% children had Hirschsprung's disease.

Section II: Findings related to assess the level of knowledge among mothers regarding colostomy care.

Table 7: Frequency and percentage distribution of knowledge among mothers regarding colostomy care.



colostomy care.					n = 34
Knowledge	Score	Pretest		Post	test
		Frequency	Percentage	Frequency	Percentage
Very High (81-100%)	17 - 20	Nil	-	14	41
High (61 - 80 %)	13 - 16	Nil	-	12	35
Average (41 - 60 %)	9 - 12	9	27	8	24
Low (21-40 %)	5 - 8	12	35	Nil	-
Very Low ( $\leq 20$ %)	$\leq 4$	13	38	Nil	-

Table 8 : Actual and modified gain of different area of domains of knowledge among mothers regarding colostomy wound care

Content area	Maximum possible score	Pretest		Rank	Post test		Rank	Mean Gain (%)		Modified Gain
		Mean	Mean %		Mean	Mean %		Actual gain	Possible gain	
Concept	1	0.41	41	5	0.62	62	10	21	59	0.36
Indication	1	0.24	24	10	0.76	76	5	52	76	0.68
Purpose	1	0.50	50	3	0.85	85	4	35	50	0.70
Characteristics	1	0.50	50	2	0.85	85	2	35	50	0.70
Diet	2	1.26	63	1	1.76	88	1	25	37	0.68
Daily Activity	2	0.91	45.50	4	1.73	86.50	3	41	54.50	0.75
Clothing	1	0.35	35	6	0.73	73	6	38	65	0.58
Complication	3	0.85	28.33	9	1.91	63.67	9	35.34	71.67	0.49
Care of stoma	6	2	33.33	7	4.03	67.17	8	33.84	66.67	0.51
Prevention of infection	4	0.62	31	8	1.41	70.50	7	39.50	69	0.57



Data presented in table 8 depicts that the modified gain was maximum (0.75) in the area of daily activity and lowest(0.36) in concept.

It also depicts that mothers were having maximum (63%) pretest knowledge score in the area of diet where as mothers were having maximum (88%) post test knowledge score in the same area of domain.

It also shows that mean percentage of post test knowledge scores were higher as compared to mean percentage of pre test knowledge scores in all areas of teaching content and this shows a great increasing in knowledge of mothers after administering the teaching program regarding colostomy care.

Section III: Findings related to assess the level of practices among mothers regarding Colostomy care

Table 9 : Frequency and percentage distribution of practices among mothers regarding Colostomy care n=34

Colostomy care	Score	Pretest		Post	n=34
Practice	Score	Frequency	Percentage	Frequency	Percentage
Very high (81-100%)	15-18	Nil	-	20	58
High (61-80%)	12-14	Nil	-	9	27
Average (41-60%)	8-11	7	20	5	15
Low (21-40%)	5-7	19	56	Nil	-
Very Low ( $\leq 20\%$ )	$\leq 4$	8	24	Nil	-
Maximum Score - 18					

Data presented in table 10 shows that the mean post test knowledge score of mother was higher than the mean pre test knowledge score. The obtained mean difference was found 6.17. Paired 't' test was computed and 't' value was found 12.23 was found to be significant at 0.001 level of significance. Therefore it can be concluded that mothers were significantly gained knowledge on colostomy care after intervention of teaching programme.



Section V: Findings related to evaluate the effect of demonstration on practices among mothers regarding colostomy care by pre and post test practice score.

Data presented in table 11 shows that the mean post test practice score of mother was higher than the mean pre test practice score. The obtained mean difference was found 6.75. Paired 't' test was computed and 't' value was found 10.10, to be significant at 0.001 level of significance. Therefore it can be concluded that mothers were significantly gained practice skill on colostomy care after demonstration programme.

Section VI: Findings related to determine the association between knowledge among mother regarding colostomy care with selected demographic variables

Data presented in table 12 depicts that in the age of mother  $\leq 20$  years, 16 mothers had below median level of knowledge, 1 mothers had above median level of knowledge and in the age of mother  $> 20$  years, 10 mothers had below median level of knowledge and 7 mothers had above median level of knowledge. Chi-square computed between age of mothers and level of knowledge was 4.09. The calculated chi-square value was more than tabulated value at 0.05 level of significance with Yates correction. Thus the computed chi-square value is statistically significant at 0.05 level of significance. Hence, it can be inferred that the age of mothers is associated with knowledge.

It also depicts that in  $<$ Secondary education, 14mothers had below median level of knowledge, 2 mothers had above median level of knowledge and in  $\geq$ Secondary education, 10mothers had below median level of knowledge and 8 mothers had above median level of knowledge. Chi-square computed between education level of mothers and knowledge was 2.77. The calculated chi-square value was less than tabulated value at 0.05 level of significance with Yates correction. Thus the computed chi-square value is not statistically significant at 0.05 level of significance. Hence, it can be inferred that the education level of mother is not associated with knowledge.

Data also shows that in monthly family income  $\leq 10000$  Rs, 14 mothers had below median level of knowledge and 10 mothers had above median level of knowledge and for monthly family income  $> 10000$  Rs, 7 mothers had below median level of knowledge and 3 mothers had above median level of knowledge. Chi-square computed between the monthly family income and knowledge was 0.06. The calculated chi-square value was less than tabulated value at 0.05 level of significance. Thus the computed chi square value is not statistically significance at 0.05 level of significance. Hence, it can be inferred that monthly family income is not associated with knowledge.

Data also shows that in number of one child, 16 mothers had below median level of knowledge and 8 mothers had above median level of knowledge and in number of child more than one, 7 mothers had below median level of knowledge and 3 mothers had above median level of knowledge. Chi-square computed between the number of children and knowledge was 0.04. The calculated chi-square value was less than tabulated value at 0.05 level of significance. Thus the computed chi-square value is not statistically significant at 0.05 level of significance. Hence, it can be inferred that the number of children is not associated with knowledge.



It is clear from the table 12 that the age of mother and education of mothers are associated with knowledge and monthly family income, number of children are not associated with knowledge.

#### **Findings related to association between knowledge among mothers with selected demographic variables**

Chi square findings revealed that age of mothers was associated with selected demographic variables at 0.05 level of significance among mothers, others variables like education, occupation, number of children, monthly family income, Residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care in days were not associated with demographic variables.

#### **Findings related to association between practice among mothers with selected demographic variables**

Chi square findings revealed that age of mothers was associated with selected demographic variables at 0.001 level of significance and education of mothers was associated with selected demographic variables at 0.05 level of significance, others variables like occupation, number of children, monthly family income, Residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care in days were not associated with demographic variables.

#### **Findings related to correlation between knowledge and practices among mothers regarding colostomy care**

Correlation coefficient revealed that there was a positive correlation (0.50) between knowledge and practice score of mothers regarding colostomy care which can be interpreted that as knowledge increases practice also increased. Hence it can be interpreted that obtained relationship is a true relationship and not obtained by chance.

#### **Discussion Discussion in relation to other studies**

Discussion comparing the findings of the present study with the findings of other related studies is given in the section.

Discussion related to assess the level of knowledge among mothers regarding colostomy care

The present study findings depicts that in pretest majority (38%) of mothers had very low level of knowledge scores, 35% mothers had low level of knowledge scores, 27 % mothers had average knowledge scores where as in post test knowledge score 41% mothers obtained very high knowledge scores, 35% mothers has high knowledge scores and 24% mothers obtained average knowledge scores after administration of teaching programme. Thus it was revealed that there was significant differences in the pretest and post test knowledge scores.

This present study findings is consistent with the study conducted by Shah P, Nyamika KC, Dhama K, Pokhrel K, Jha NK (2022), on “Effectiveness of structured teaching programme on knowledge regarding colostomy care among nurses of selected



wards in Nobel Medical College and Teaching Hospital, Biratnagar.” Pre experimental study design was adopted to assess the effectiveness of Structured teaching programme on knowledge regarding colostomy care among 45 nurses. The study result depicts that in pretest scores majority (86.7%) respondents had low level of knowledge, 13.3% respondents had moderate level of knowledge and none of the respondent had high level of knowledge Whereas, in post test knowledge scores 50.7% respondents had high level of knowledge, 33.3% of the respondents had moderate level of knowledge and 16% of the respondents had low level of knowledge regarding colostomy care after intervention. 37

This present study findings is consistent with the study conducted by Deshpande R. (2015), on “Effectiveness of planned intervention on knowledge and practice of selected aspects of care provided by care giver of children with colostomy admitted in hospitals of Mumbai”, Maharashtra, India supported the present study findings. The quasi experimental research study was conducted on 30 caregivers. The results showed that there was a significant improvement in post-test mean practice score (5.9) among the care givers compared to the pre-test mean practice score (1.2) with the mean difference (4.7), ‘t’= 42.72, which was found to be statistically significant at  $p < 0.01$  level of significance, on meaning and indication of colostomy. 2

Another research study conducted by Kadam A, Shinde MB. (2014), on Effectiveness of structured education on caregiver’s knowledge and attitude regarding colostomy care supported the present study findings. Experimental research study was conducted to assess the effectiveness of structured education on knowledge regarding patient care. The result of the study depicts that 60% caregivers obtained poor score, 26.67% subjects received average score, 10% subjects received the good score and one sample (3.33%) received very good score in pretest, where as in post test knowledge score maximum (60%)

subjects received good score and 36.67% subjects received very good score and only one sample (3.33%) got average score in the study. 39

#### **Discussion related to assess the level of practice among mothers regarding colostomy care**

The present study findings depicts that in pretest, majority (56%) of mothers had low level of practice score, 24% mothers had very low level of practice score and 20% mothers had average practice scores whereas in post test practice score 58 % mothers obtained very high practice scores, 27% mothers obtained high level of practice score and 15% mothers obtained average practice score.

This present study findings is consistent with the study conducted by Abdelmohsen SA (2020), on Effectiveness of structured education on patient's knowledge and practice regarding colostomy care. A quasi-experimental pretest post test design was conducted on 60 samples to fulfill the goal of the study. The study results depicts that the mean value of pretest practice score was  $41.9 \pm 12.6$  and the mean value of post test practice score was  $83.0 \pm 27.0$  which showed highly statistical significant differences in practice scores between pre and post-application after the structured education. 6



Discussion related to assess the effect of teaching on knowledge among mothers regarding colostomy care

The present study findings depicts that the mean of post test knowledge score of mother was higher than the pre test knowledge score. The obtained mean difference was found 6.17. Paired 't' test was computed and 't' value was found 12.23 was found to be significant at 0.001 level of significance. Therefore it can be concluded that mothers were significantly gained knowledge on colostomy care.

This present study findings is consistent with the study conducted by Shah P, Nyamika KC, Dhama K, Pokhrel K, Jha NK (2022), on "Effectiveness of structured teaching programme on knowledge regarding colostomy care among nurses of selected wards in Nobel Medical College and Teaching Hospital, Biratnagar." Pre experimental study design was adopted to assess the effectiveness of Structured teaching programme on knowledge regarding colostomy care among 45 nurses. The study result depicts that pre test mean knowledge score was  $9.67 \pm 1.30$  and at post test mean knowledge score was  $13.73 \pm 2.10$  with significant mean differences 4.06. The 't' value was 10.04 which was statistically significant at less than 0.05 level of significance. So it was revealed from the study that the nurses gained knowledge after intervention of teaching programme. 37

This present study findings is consistent with the study conducted by Abdelmohsen SA (2020), on Effectiveness of structured education on patient's knowledge and practice regarding colostomy care. A quasi-experimental pretest - post test design was conducted on 60 samples to fulfill the goal of the study. The study results depicts that the mean value of pretest knowledge score was 42.1 and the mean value of post test practice score was 75.7 which showed highly statistically significant differences in knowledge scores between pre and post-application after intervention with the mean difference of (33.6) which was found to be statistically significant at 0.001 level of significance after the intervention. 6

Another research study conducted by Kadam A, Shinde MB. (2014), on 'Effectiveness of structured education on caregiver's knowledge and attitude regarding colostomy care to assess the effectiveness of structured education on caregiver's knowledge and attitude regarding colostomy care of patient'. The study population consisted of 30 caregivers. The study results depicts that the pre test mean value of knowledge score was 7.43 and the post test mean value of knowledge score was 13.77 with mean difference of 6.34. Calculated 't' value was 13.9 which was significantly significant at less than 0.05 level of significance. The study result revealed that the teaching programme was effective for improving knowledge among caregivers. 39 Discussion related to assess the effect of demonstration on practices among mothers regarding colostomy care

The present study findings depicts that the mean of post test practice score of mother was higher than mean pre test practice score. The obtained mean difference was found 6.75. Paired 't' test was computed and 't' value was found 10.10, to be significant at 0.001 level of significance. Therefore it can be concluded that mothers were significantly gained practice skill on colostomy care.



This present study findings is consistent with the study conducted by Abdelmohsen SA (2020), on Effectiveness of structured education on patient's knowledge and practice regarding colostomy care. A quasi experimental pretest post test design was conducted on 60 samples to fulfill the goal of the study. The study results depicts that the mean value of pretest practice score was 41.9 and the mean value of post test practice score was 83.0 which showed highly statistically significant differences in practice scores between pre and post-application after the structured education with the mean difference of (41.8) which was found to be statistically significant at 0.001 level of significance after the intervention. 6

Another study conducted by Deshpande R. (2015) on “Effectiveness of planned intervention on knowledge and practice of selected aspects of care provided by care giver of children with colostomy admitted in hospitals of Mumbai”, Maharashtra, India. The quasi experimental research study was conducted on 30 caregivers. The results showed that there was a significant improvement in post-test mean practice score (22.93) among the care givers compared to the pretest mean practice score (8.73) with the mean difference (14.2), ‘t’=22.9 on stoma and skin care performed by the caregivers, which was found to be statistically significant at  $p < 0.01$  level of significance. 2  
Discussion related to association between knowledge among mother regarding colostomy care with selected demographic variables

The present study findings revealed that age of mothers are significantly associated with knowledge scores at 0.05 level of significance and remaining demographic variables such as education, occupation, number of children, monthly family income, Residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care in days are not significantly associated at 0.05 level of significance with knowledge scores of mothers.

This present study findings is consistent with the study conducted by Ahmed MM, Mohammed AR, Bayoumi MH, Zaki AM (2020), on “Self Management Program for Mothers of Children with Stoma.” Quasi experimental pretest post test research approach was adopted on 70 mothers of children to assess the knowledge and practice level among mothers regarding colostomy care and to evaluate the effect of self management programme regarding stoma care among mothers. The study findings depicts that mother’s level of education was significantly associated with knowledge scores at  $< 0.002$  level of significance, family income was significantly associated with knowledge scores at  $< 0.01$  level of significance where as mother’s age and job are not significantly associated with knowledge scores. 3

Above findings related to association between knowledge among mother regarding colostomy care with selected demographic variables were quite similar with the experimental research study conducted by Kadam A, Shinde MB. (2014), on Effectiveness of structured education on caregiver’s knowledge and attitude regarding colostomy care to assess the effectiveness of structured education on caregiver’s knowledge and attitude regarding colostomy care of patient. The study population consisted of 30 caregivers. The study results revealed that education and residence of mothers were statistically significant with knowledge score at  $< 0.05$  level of



significance where as age, sex, Income and marital status of caregivers were not significantly significant with knowledge. 39

Discussion related to association between practice among mother regarding colostomy care with selected demographic variables

The present study findings revealed that age of mothers is significantly associated with practice scores at 0.001 level of significance, education of mother is significantly associated with practice scores at 0.05 level of significance and remaining demographic variables such as education, occupation, number of children, monthly family income, residence, age of the child, cause of colostomy, colostomy type, application of colostomy wound care in days are not significantly associated at 0.05 level of significance with practice scores of mothers.

This present study findings is consistent with the study conducted by Ahmed MM, Mohammed AR, Bayoumi MH, Zaki AM (2020), on “Self Management Program for Mothers of Children with Stoma.” Quasi experimental pretest post test research approach was adopted on 70 mothers of children to assess the knowledge and practice level among mothers regarding colostomy care and to evaluate the effect of self management programme regarding stoma care among mothers. The study findings depicts that mother’s job was significantly associated with practice at 0.02 level of significance, family income was significantly associated with practice at <0.01 level of significance where as mother’s age and education are not significantly associated with practice. 38

Above findings related to association between knowledge among mother regarding colostomy care with selected demographic variables were quite similar with the experimental research study conducted by Kadam A, Shinde MB. (2014), on Effectiveness of structured education on caregiver’s knowledge and attitude regarding colostomy care to assess the effectiveness of structured education on caregiver’s knowledge and attitude regarding colostomy care of patient. The study population were consisted with 30 caregivers. The study results revealed that education of mothers were statistically significant with attitude score at <0.05 level of significance where as age, sex, Income, place of living and marital status of caregivers were not significantly significant with attitude. 39

#### **Discussion related to correlation between knowledge and practice among mother regarding colostomy care**

The present study findings depicts that there was a positive relation (0.50) between knowledge and practice among mothers regarding colostomy care at 0.001 level of significance which can be interpreted that as knowledge increases practice also increased. Hence, it can be interpreted that obtained relationship is a true relationship and not obtained by chance.

This present study findings is consistent with the study conducted by Shanmugam RS, Anandhi D (2016), on “Assess the knowledge, attitude and practice on ostomy care among ostomates attending stoma clinic, Asia Pacific Journal of Research.” A non experimental descriptive research study was conducted on 60 samples to assess the



knowledge, attitude and practice on Ostomy care among ostomates attending stoma clinic. The study results depicts that there is a significant correlation between the level of knowledge and practice (0.39), which was significantly significant at <0.005 level of significance. So it was concluded from the study results that the high level of knowledge increases the practice among sample regarding colostomy care. 13

## V. Conclusion

Thus the study results confirmed a significant differences between the pretest and post test knowledge and practice scores among the caregivers regarding colostomy care. Therefore the results indicating a positive impact of the planned teaching and demonstration programme on knowledge and practices among caregivers for enhancing their efficiency regarding stoma care.

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