Effect of Colostomy Care Teaching and Demonstration on Knowledge and Practice among Colostomy Child Caregivers: A Hospital-based Study

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Abstract

Caregiver's knowledge is important for colostomy care of child. A pre-experimental one group pre-test and post-test study was conducted to evaluate the effect of colostomy care teaching and demonstration on knowledge and practice among colostomy child caregivers at paediatric surgery ward in selected hospitals of West Bengal. The purpose of the study was to improve the knowledge and practice of caregiver on colostomy care. Non-probability purposive sampling technique was used to select the 35 caregivers of colostomy child. Semi structured interview schedule was used to collect demographic data. Structured interview schedule and observation checklist was used to assess knowledge and practice of caregiver on colostomy care respectively. The study findings revealed that after administration of teaching and demonstration among caregiver mean post-test knowledge score (13.86) was higher than the mean pre-test knowledge score (4.46) with significant difference between pre-test and post-test knowledge score ('t' 34= 23.46, p<0.05) and mean post-test practice score (6.80) was higher than mean pre-test practice score (2.51) with significant difference between pre-test and post-test practice score ('t' 34= 20.67, p<0.05).

Key words: Caregiver, Knowledge & practice, Teaching

Colostomies in children are performed to relieve colonic obstructions resulting from congenital anomalies such as colonic atresia, Hirschsprung's disease, imperforate anus, pelvic and perineal tumours, Crohn's disease, rectal perforation etc. Anorectal malformation occurs approximately in 1/5000 live births. It more commonly occurs in males (1.2 to 1). Majority of male patients with an anorectal malformation have recto-urethral fistula (approximately 70% of this patient population). Recto-vestibular fistula is most common type of anorectal malformation in female patients (Smith & Avansino, 2023). Imperforate anus is common in 1 in every 4000-5000 new-borns (Bischoff et al, 2021). The incidence of Hirschsprung's disease is approximately one in 5,000 live born infants (Langer, 2011). In Hirschsprung's disease colostomy is done as first stage surgical repair and later a pull through procedure is performed.

There are various complications of stoma like hernia, trauma due to injury or laceration, separation at the junction of skin and intestine due to malnutrition, steroid therapy, diabetes, infection, tension of suture line, necrosis due to hypovolemia, prolapse due to large abdominal wall opening, inadequate bowel fixation, increased abdominal pressure, obesity, poor muscle tone, retraction, stenosis due to hyperplasia, sepsis, adhesion, local inflammation etc. (Jordan & Burns, 2013).

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Need of the study: Colostomy affects children and their families extremely due to odour, stool leakage, skin irritation, and gas, psychological and socio-cultural aspects like carrying the bag. The children may experience psychosocial changes, physical restrictions, body image changes, depression, eating, sleeping disturbances, motivational and concentration problem. In a study by Ni et al (2022) the experience of caregiver was described as complex emotional responses, uncertainty about everything, lack of confidence, anxiety, helplessness, eagerness for professional support. The investigator felt that the incidence of colostomy increasing day by day and the child with colostomy in every time needs guidance and constant supervision by the caregiver for the prevention of injury and infection related to stoma. To avoid complication effective colostomy care should be performed. For the development of caregivers' knowledge and skill regarding colostomy care, teaching is quite essential.

Objectives

The study was set out with following objectives.

i. To assess the pre-test and post-test (a) knowledge and (b) practice scores regarding colostomy care among caregiver of child with colostomy.

ii. To determine the effect of (a) teaching demonstration regarding colostomy care among caregiver having child with colostomy by pre- and post-test practice scores.

Hypothesis

H_1: The mean post-test knowledge score of caregiver of child with colostomy is significantly higher than the mean pre-test knowledge score after implementation of teaching regarding colostomy care at 0.05 level of significance.

H_2: The mean post-test practice score of caregiver of child with colostomy is significantly higher than the mean pre-test practice score after demonstration regarding colostomy care at 0.05 level of significance.

Methodology

The study has a pre-experimental one group pre-test & post-test research design. It was set in paediatric surgery wards of two different Government hospitals of West Bengal.

Sample size: Based on the data from literature (Halemani et al, 2021) and considering 5 percent level of significance and 80 percent power of the study, the sample size was determined by the sample size calculation formula. The present study comprised of 35 caregivers of children with colostomy wound excluding the child who came for colostomy closure. Method of selection was non-probability purposive sampling technique.

Tool used: Semi-structured, structured interview schedule and observation checklist; 10 questions were prepared for semi-structured interview schedule to know about the demographic variables like age, education, occupation, type of family, monthly family income, residential area of caregiver, 18 questions for structured interview schedule to assess the knowledge, and 10 steps for observation checklist to assess the practice of caregiver regarding colostomy care.

The content of teaching and the tools were validated by nine experts. The reliability of structured interview schedule was 0.84 established by using split half method and the reliability of observation checklist was 0.88 established by using Kuder-Richardson 20. The total content of teaching regarding colostomy care was focused on concept, purpose, types of colostomy, signs of healthy stoma, steps of colostomy care, time of changing colostomy dressing, clothing, diet, activities, personal hygiene, prevention of infection, follow-up, medication and immunisation, situation necessary to go to hospital for child with colostomy.

Tool was prepared in Bengali and then translated to English by the language experts. On Day 1, structured, semi-structured interview schedule and observation checklist was administered and then teaching and demonstration was given regarding colostomy care. On Day 7 post-test knowledge and practice was assessed by administering same tools.

A pilot study was conducted before conducting final study and found feasible.

Data collection: Data were collected from 6 to 31 March 2023. It was analysed.

Data analysis: It was done using IBM SPSS Statistics 20 software.

Ethical consideration: Ethical permission was taken from Institutional Ethics Committee, NRS MC&H for data collection time period. Administrative permission was obtained from Principal of College of Nursing, NRS MC&H, Director of Health Services, OSD (Nursing), West Bengal, MSVP, HOD of paediatric surgery ward of selected hospitals. Informed consent was taken from each participant. Anonymity and confidentiality were maintained.

Results

Demographic Pattern of the Caregiver and Colostomy Child

Age duration of most of children (88.57%) were between 1 day - 3 months. Majority (51.43%) of children were male. Maximum (85.71%) caregivers belonged to the age group of 19-29 years 40 percent caregivers were between class I-IX passed group. Most of caregivers (94.29%) were home maker. Maximum (57.14%) caregivers had one child. Majority (54.29%) caregivers belonged to the nuclear family. Monthly income of most (65.71%) caregivers was ≥Rs 10,000. Maximum (88.57%) caregivers lived in rural areas.

Calculated 't' value (23.46) at df 34, much higher than the table value (2.03) at 0.05 level of significance, was found statistically significant. So the teaching regarding colostomy care significantly increased the knowledge level of caregiver and was effective.

Table 1: Paired t test values computed between the pre-test and post-test knowledge score on colostomy care (n=35)

Knowledge score on colostomy care	Mean	Mean difference	Median	Standard deviation	't' value
Pre-test	4.46	9.4	4	1.75	23.46*
Post-test	13.86		14	1.59	

't'(34) =2.03, p<0.05, * Significant

Table 2: Paired t test value computed between the pre-test and post-test practice score on colostomy care (n= 35)

Practice score on colostomy care	Mean	Mean difference	Median	Standard deviation	't' value
Pre-test	2.51	4.29	2	0.95	20.67*
Post-test	6.80		7	0.68	

't'(34) = 2.03, p<0.05, * Significant

Calculated 't' value (20.67) at df 34 was higher than the table value (2.03) at 0.05 level of significance and found statistically significant (Table-2).So the demonstration regarding colostomy care significantly increased the level of practice score of caregivers and was effective.

Discussion

The present study results revealed that the mean post-test knowledge score of caregivers regarding colostomy care was 13.86 with SD 1.59, which was significantly higher than the mean pre-test knowledge score 4.46 with SD 1.75. The mean difference between the pre-test and post-test knowledge score regarding colostomy care was 9.4. There was a statistically significant difference between pre-test and post-test knowledge score regarding colostomy care among caregiver as evidenced by 't' value (23.46) at df (34) at 0.05 level of significance was greater than the table value (2.03). This signifies that the teaching programme was effective for improving the knowledge among caregiver regarding colostomy care.

The findings of the study are consistent with a quasi-experimental study conducted by Halemani et al (2021). After video-assisted teaching module the mean pre-test knowledge score regarding home-based colostomy care among primary caregiver was 14.20, SD 4.046 and mean post-test knowledge was 28.37, SD 1.474, p <0.01. So, the video-assisted teaching module was effective to increase the knowledge score of caregivers.

The present study found that mean post-test practice score regarding colostomy care (6.80) was higher than mean pre-test practice score 2.51 among caregiver. There was a statistically significant difference between pre-test and post-test mean practice score regarding colostomy care among caregiver as evidenced by 't' value (20.67) at df (34), which was greater than the table value (2.03) at 0.05 level of significance. This signifies that demonstration was effective for improving the practice regarding colostomy care. The findings of the study are consistent with those of Halemani et al (2021). The mean pre-test practice score regarding colostomy care among caregiver was 12 and after administration of teaching module mean post-test practice was 18 and the p value <0.01. So, the video-assisted teaching module was effective to increase the practice score of caregivers.

Implication

- Based on the findings nurse educators can conduct periodic in-service education programmes for nurses to make them aware about the prognosis related to colostomy care and nurse administrator can organise orientation programme regarding colostomy care for new staff nurses.
- A nurse researcher can conduct research in the area of colostomy care to make a remarkable change about knowledge, practice and attitude of caregiver by using the research findings.

Limitations: Age and educational level of caregiver were not under the control of researcher.

Recommendations

- A similar study can be replicated by using mixed method research or by using randomised controlled trial.
- A comparative study can be done between caregivers of rural and urban hospital, between male and female caregiver or between effects ofteaching and other methods like video-assisted teaching.

Acknowledgment: The investigators express cordial thanks to MSVP, Nursing Superintendent, Paediatric surgery staff nurse of selected Govt. Hospitals of West Bengal for their permission and support. The investigator expresses her gratitude to study participant for extending their co-operation. We are thankful to the West Bengal University of Health Sciences for facilitating this work.

Conclusion

The present study findings showed that teaching and demonstration regarding colostomy care had a positive effect on caregivers' knowledge and practice skills. The findings justified the research hypothesis.

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