

## Educational Guidelines on Stress and Coping Strategies among Mothers Having Children with Colostomy

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### Abstract:

**Background:** Through surgery, a colostomy is a method of redirecting the flow of stool from the colon to a stoma by making an incision in the abdominal wall. The mothers who care for children with colostomies may experience physical, social, and psychological health problems as a result of providing high-quality care. Numerous stressors that moms face have an impact on their daily lives. Therefore, **this study aimed** to determine the effect of educational guidelines on stress and coping strategies among mothers having children with colostomy. **Method: Design:** This study employed a quasi-experimental research design. **Sample:** comprising fifty mothers who care for children with colostomy. **Setting:** The investigation was conducted at Sohag University Hospital (MUCH) in the pediatric surgery unit. **The tools of data collection** were; a structured questionnaire sheet, Parenting Stress Index-Short Form, and Coping Health Inventory for parents. **Results:** The study found that before educational recommendations, mothers' overall mean stress level was high; however, following educational guidelines, this score decreased. In addition, the overall mean score of mothers' coping strategies was low before educational guidelines but increased following them. Additionally, there was a statistically significant difference between the stress levels of mothers before and after the educational guidance, as well as between the coping strategies they used to lessen their stress. Additionally, it was shown that higher levels of coping strategies were associated with higher levels of parenting stress via positive correlations between parenting stress and coping strategies. **Conclusion:** Educational guidelines are useful in reducing mothers' stress levels and increasing the coping strategies employed by moms of children with colostomy. **Recommendations:** Mothers should be taught and advised on a variety of coping strategies and parenting techniques to reduce their stress levels. Additionally, nurses should be heavily involved in health education and counseling mothers regarding all facets of caring for their children who have colostomies as well as strategies for managing the stress that comes with this care.

**Keywords:** Colostomy, Children, Coping Strategies, Educational guidelines, Mothers, Stress.

### Introduction

A colostomy is a surgical operation in which an abdominal incision is made. Through this aperture, a stoma—a section of the large intestine placed outside the abdominal wall—can be formed. Partially digested food passes via this stoma and is collected using an external pouching device (**Wound, Ostomy Continence**

**Nurses Society, 2021**). Ostomies are necessary for a variety of pediatric surgical disorders in low-income nations. These disorders can be acquired, such as intestinal perforation brought on by typhoid or gangrenous ileocolic intussusception, or congenital, such as anorectal malformations (ARM) and Hirschsprung's disease (HD) (**Muzira et al., 2018**).

Colostomies are frequently performed on children to remove obstructions in the colon brought on by congenital anomalies such as imperforate anus and colon atresia. Colostomies are occasionally also used to treat tumors or rectal perforations. In surgery, ileostomy and colostomy are the most often used ostomy operations. Nevertheless, various changes can be made to relieve pressure, clean, and redirect the contents of the gastrointestinal tract, such as the less common jejunostomy (**Massenga, et al., 2019**).

In the abdominal wall, many stomas are formed; some are transient and others permanent. Stomas that come from the colon are called colostomies, and the names given to them depend on the area of the colon that is affected; examples of these are transverse and sigmoid descending colostomies. The terms "jejunostomies" or "ileostomies" refer to stomas that come from the small intestine. A gastrostomy is a stoma produced for feeding the patient through the stomach, whereas a urostomy is created for urine drainage. A multitude of problems was noted, some stemming from surgical technique failures and others from insufficient parental counseling. The patients were divided into two groups according to the type of colostomy that was performed and the reasons behind the procedure (**Abd-Elhay et al., 2019**).

In addition, a tertiary center hosted a clinical trial in 2019 by Mallik et al. that looked at 33 pediatric colostomy cases involving newborns and kids. The study found that wound infection and skin excoriation were the two most common sequelae among these individuals. According to a study by **Uslu et al., (2019)** on the efficacy of planned nursing interventions for parents of children with colostomies in Mumbai hospitals, carers' ignorance of the need for proper stoma care led to complications and infections in kids with colostomies, which in turn caused readmissions, especially when skin excoriation was a factor (**Peter et al., 2018**).

The study also brought attention to issues that are frequently disregarded but are frequently not reported, like the incapacity to

identify symptoms of skin deterioration and the existence of ribbon-like stools. For kids who have colostomies, stoma prolapse is an additional risk factor. The protrusion or telescoping of the stoma above the skin's surface is referred to as stoma prolapse. The colostomy equipment may become difficult to keep properly sealed as a result, which could cause leaks, skin discomfort, and possibly infection. In extreme circumstances, stoma prolapse could necessitate surgery to straighten the prolapsed stoma and guarantee optimal operation (**Tan Tanny et al., 2019**).

Children who have colostomies may also have stoma retraction as a potential consequence. Stoma retraction is the term used to describe the stoma sinking or drawing back below the surface of the skin. This may make it difficult to get a tight seal with the colostomy appliance, which could result in leaks and skin discomfort. According to **Townley et al. (2018)**, surgical revision can be required in certain circumstances to modify the stoma height and enhance appliance adherence.

Although uncommon, complications including ischemia and stoma necrosis can happen to kids who have colostomies. These issues arise from insufficient blood flow to the stoma, which causes tissue death. Early detection and action are essential to stop more harm and potentially dangerous side effects. To stop more tissue necrosis and restore blood supply to the damaged area, surgical revision might be necessary. Nurses' supportive care of moms who are caring for their children with colostomies is essential to achieving the best possible patient outcomes and improving the mother's and child's general well-being. To meet these moms' physical, emotional, and educational requirements, nurses can offer them a variety of supports (**Kassa et al., 2019**).

Education is a key component of supportive care. According to **Carmel, Colwell, and Goldberg (2021)**, nurses can offer moms thorough and individualized instruction regarding colostomy care, including stoma hygiene, appliance maintenance, and identifying risk signals to reduce the likelihood of problems. Nurses provide moms with the

confidence and skills they need to confidently and effectively care for their child's colostomy. Additionally, education can help reduce worry and anxiety by giving moms a sense of competence and control over how to manage their child's illness. For moms caring for their colostomies, emotional support is also another crucial aspect of nursing care. It can be emotionally taxing for moms to care for a kid who has a colostomy because they may feel guilty, stressed, or worried (**Karadag & Dursun, 2019**).

Everybody encounters stress naturally at some point in their lives. It is a disordered emotional state that arises from negative outside factors and can have an impact on one's physical well-being. Additionally, parenting stress is a negative psychological state that can influence parenting behaviors and functions and is linked to feelings of anxiety, frustration, and self-blame (**Ostberg & Hagekull, 2000**) whereas coping refers to adaptive cognitive and behavioral strategies used to manage particular external and/or internal demands that are judged to be greater than the person's resources (**Glidden et al., 2006**).

Although the term "parenting stress" originates from "family stress," it describes a different kind of stress that results from parents' conceptions of their roles. **Abidin (1995)** produced the prevailing theory regarding parenting stress, which is based on three main concepts: difficult children, parent-child dysfunctional interaction, and parental distress. The overall stress that parents perceive is another general category that this author described.

Numerous studies examined the connection between stress related to parenting and the occurrence of colostomy or other related neurodevelopmental disorders within the family. Consistent findings indicated that parents were under a great deal of stress in carrying out their responsibilities. When compared to families whose children do not have this ailment, the level of stress experienced by them is greater or statistically significant (**Del Bianco et al., 2019**).

Coping strategies are essential to comprehending the idea of stress. Stress was described by **Lazarus and Folkman (1984)** as the inability or lack of resources to deal with a particular occurrence and as a subjective experience of it. As a result, people react to stress in different ways and utilize various coping mechanisms to keep a particular level of adjustment. Stress is thought to be determined by the coping strategies that people adopt, which helps to explain why there are variances in how different people cope with stress (**Mikulic & Crespi, 2018**). Coping strategies are thought to either raise or decrease stress. There are various ways to categorize coping strategies; however, created an excellent taxonomy, describing seven coping strategies and two general coping strategies: rational and emotional coping (**Sandín and Chorot, 2019**).

Previous studies' consistent findings showed that women tended to utilize coping strategies that were more frequently centered on planning, problem-solving, positive reappraisal, and seeking out social support. The majority of these active or rational coping techniques enable parents to plan future actions or solutions, identify potential solutions to issues, learn from setbacks, emphasize good aspects, address problems, or seek support. However, it was also discovered that parents, however less commonly, employ avoidance, passive, or emotional coping strategies (**González et al., 2020**).

Colostomy-affected children require long-term care, which can make it extremely difficult for mothers to deal with the psychological implications of the condition. A mother's low level of education, her ethnic origin, the severity of the sickness, and the increased caregiving obligations are some of the factors that typically affect how stressful having a colostomy is for parents. Thus, coping techniques ought to focus on reducing the load of day-to-day care, lowering hospital readmission rates, and directing suitable psychological assistance toward particular populations to alter the perspective of parents and lessen their stress and anxiety (**Martynov et al., 2019**).

Mothers can share their worries and emotions with nurses in a secure and accepting setting. Nurses can assist mothers in navigating the emotional components of colostomy care by actively listening, demonstrating empathy, and offering comfort. This can enhance mothers' mental health (**Chao et al., 2019**). Another essential component of helping women in their caring role is practical support. According to **Yeh and Chang (2018)**, nurses can help moms choose the right colostomy supplies, solve frequent appliance maintenance issues, and give them information on local services and support groups. Nurses can assist and empower mothers in their position as primary carers by providing them with tools and practical guidance (**Nam et al., 2019**).

For children with colostomies, mothers are the primary carers. The research emphasizes the value of empowering women in their position as carers by concentrating on their knowledge and practices. Better results and overall care can be achieved by giving mothers with thorough nursing instructions the confidence and skills to manage their child's colostomy. To provide children with colostomies with the nursing care they need, it is important to maintain skin integrity and safety, promote growth and development, train parents on how to take care of their kids, and ensure enough nourishment (**Sandy et al., 2019**).

Nurses can also help moms caring for children with colostomies to support one another. It can be quite beneficial to provide mothers with the opportunity to interact and share knowledge. Support groups, online forums, or planned get-togethers where moms can talk about their experiences, trade advice, and offer encouragement to one another might help achieve this. As moms become aware that they are not alone in their caring journey, peer support can help lessen feelings of loneliness and foster a sense of belonging (**Bezerra, et al., 2019**).

### **Significance of the study:**

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**Uslu et al. (2019)** discovered in their study that parents of children admitted to

Mumbai hospitals with colostomies were ignorant of appropriate stoma maintenance. Due to difficulties and infections brought on by this ignorance, the youngsters had to be readmitted mostly for skin excoriation. Failure to identify symptoms of skin disintegration and the passing of ribbon-like stool are two common consequences that go unnoticed. Furthermore, the majority of materials concentrate on adult care, and **Dabas et al. (2020)** observed that there is a dearth of teaching aids that particularly address colostomy care for children and their carers.

According to the researcher's empirical experience, the majority of mothers who admitted performing colostomies on their children had inadequate knowledge and practice, which resulted in numerous issues for both them and their kids. These issues could have an impact on the outcome, lengthen the kids' hospital stay, or prolong their recuperation period. Furthermore, caring for a colostomy patient can be difficult and complex, particularly for moms who are also responsible for their child's daily care. The purpose of this study is to improve mothers' comprehension of colostomy care by examining the effect of nursing instructions on their knowledge. This research could provide mothers with the knowledge and confidence they need to give their children the best care possible for their colostomy by increasing maternal understanding (**Bezerra, et al., 2019**).

The purpose of this study is to assess the stress levels of mothers of colostomy-affected children, determine the most commonly employed coping mechanisms, and investigate the correlation between these factors. Researching parenting stress levels and coping mechanisms is practical as well; these resources offer crucial details that enable comprehension of family dynamics and functioning. Thus, investigating parents' stress levels and figuring out how they deal with it might yield data that is helpful for upcoming professional treatments (**Pérez et al., 2019**). Mothers who oversee their child's treatment plan should get health education that includes instruction in coping mechanisms in addition to health and disease management. The purpose of these skills is to

enhance the quality of life for parents by promoting approach-oriented coping strategies for handling the daily challenges and anxieties brought on by their child's illness. (Abidin, 1995). Stressful feelings can be reduced by using healthy coping strategies and tactics, such as learning various body and mind relaxation techniques and receiving the appropriate care and support (Mc Cubbin et al., 1983). These actions can help put situations in perspective.

### **Aim of the study:**

The study aimed to determine the effect of educational guidelines on stress and coping strategies among mothers having children with colostomy.

### **Research hypothesis:**

After the educational guidelines are implemented, mothers are expected to experience a significant stress reduction and be able to effectively apply coping strategies.

## **SUBJECTS AND METHODS**

**Design:** This investigation employed a quasi-experimental design with one group undergoing pre- and post-testing. Similar to real experimental design, except for one criterion, is a quasi-experimental design. Finding the intervention's or treatment's effect is a common goal of time series research. Previous to and following the intervention, several observations are made (Grey et al., 2018).

**Setting:** The investigation was conducted in pediatric surgical unit at the Sohag University Hospital.

**Subjects:** This study employed a convenience sample. It comprised fifty mothers, ages one to six years, with children with colostomy exclusively who attended the previously mentioned settings, regardless of their data.

### **Tools for data collection:**

The following three tools were used to collect the data:

**Tool I: Structured questionnaire sheet:** it was designed by the researchers based on a review of literature and consisted of two parts:

**Part (1):** Included personal characteristics of the studied mothers of children with colostomy such as age, educational level, mother occupation, and residence.

**Part (2):** Included personal characteristics of the studied children with colostomy such as age, gender, and birth order.

### **Tool II: Parenting Stress Index Short Form (PSI- SF):**

The 120-item parent self-report questionnaire with a Likert scale (Abidin, 1995) developed was a screening and diagnostic assessment tool designed to measure stress within the parent-child dynamic. Of the items, 54 were directed toward parents, 47 toward children, and the remaining items dealt with stressors in general life. The 36 items in this tool were divided into three subscales: challenging child, dysfunctional parent-child interaction, and parental distress.

**Parental distress (PD)** is a term used to describe a range of stressors, including disagreements with the child's other parent, limitations on one's ability to fulfill other responsibilities, a diminished sense of parental competence, and a lack of social support.

**b. Parent-child dysfunctional interaction (PCDI):** this measure provided insight into the degree of parental alienation and an indication of the strength of the parent-child bond.

**c. Difficult child (DC):** This section concentrates on the fundamental behavioral traits of the child that determine whether he is easy or difficult to manage, as well as the effects these traits have on the parents.

### **Scoring system:**

Parents who received a raw score of 90

or above the 90th percentile indicated that they were significantly stressed. Each subscale contained 12 items with a 5-point Likert scale, rated from (1) strongly disagree to (5) strongly agree, which can range from (36 to 180) points.

### **Tool III: The Coping Health Inventory for Parents(CHIP):**

This measure was created by (Mc Cubbin et al., 1983) to evaluate how parents cope with their significant or ongoing child's sickness and how useful they think specific coping mechanisms are. There were forty-five items on this scale, broken down into three subscales:

a. Family: Preserving the integration, cooperation, and positive assessment of the circumstances within the family.

b. Support: Preserving psychological stability, self-worth, and social support.

c. Medical condition: Gaining knowledge of the condition via interactions with medical experts and other parents.

### **Scoring system:**

The scale employed a four-point Likert-type scale, where the total score for the parent's coping style was calculated by adding the scores from each subscale. from (0 being unhelpful) to (3) being very helpful.

### **Operational Design:**

#### **a) Preparatory phase:**

The study team examined relevant literature that addressed various aspects of stress and stressors related to colostomy, including management strategies and the impact on parents, particularly moms of children with colostomy in addition, the coping mechanisms that these mothers employ to lessen their stress. This was accomplished by familiarising oneself with the past and present literature and creating the necessary instruments for data collecting by employing accessible textbooks, papers, journals, and online searches.

### **Validity of the tools:**

Content validity of the study tools was assessed and ascertained by a panel of five experts including two in the pediatric nursing field, one in psychiatric nursing field, and two in the pediatric medical field to validate its format, layout, consistency, accuracy, and relevance. No modifications were made according to the panel judgment to ensure sentence clarity and content appropriateness. Examination of the validity index (CVI) showed that CVI = 89%.

### **Tools' reliability:**

Internal consistency reliability of all items of the tools was assessed using Cronbach's Alpha test. It was 0.89 for tool II and 0.88 for tool III.

### **Pilot study:**

To test the research instruments, a pilot study was done. The study strategy, tool feasibility, and practicability were assessed on 10% of the overall sample size. Included in the study were mothers who took part in the preliminary investigation.

### **Fieldwork:**

Between July 2023 to the end of December 2023, the study was conducted.

The study's goal was communicated to each mother by the researchers during the six-month data collection period.

### **Administrative Design:**

The Faculty of Nursing sent letters outlining the purpose, methods, and possible advantages of the study to the heads of the pediatric surgery departments (outpatient and in-patient) and the director of Sohag University Hospital to officially obtain permission to conduct the research.

### **Ethical Considerations:**

Official permission to carry out the study

was obtained from the research ethical committee at Sohag University and through **letter issued** from the Dean of the Faculty of Nursing, Sohag University to conduct this study. Once the mothers were informed of the study's purpose and the confidentiality of the data, the researchers got their oral agreement for each mother to participate. All mothers in the study had the freedom to leave the study at any moment and were not subject to any obligations.

#### **b) Planning phase:**

The information gathered and relevant literature was the basis for the researchers' development of the instructional guidelines. 45 minutes were allotted for interviews with the women under study to evaluate the impact of nursing intervention on the stress levels and coping mechanisms of mothers raising children with colostomy. For two days a week, the researchers were accessible for data collection in the morning and afternoon shifts. Under the guidance of the researchers, the mothers who took part in the study completed the Parenting Stress Index Short Form (PSI-SF) and the Coping Health Inventory for Parents (CHIP).

#### **c) The implementation phase:**

The researchers created the educational guidelines based on the requirements of the mothers under study, and they were presented to them in two 45-minute theoretical sessions covering the guidelines' content. These sessions used a variety of teaching techniques, including lectures, role acting, group discussions, demonstrations, and re-demonstration. Furthermore, a range of educational resources was employed; including a statistics display and a handout that provided information on the pressures and stresses that mothers of children with colostomy must deal with, as well as coping skills that help them manage their stress and get better at it. They also provided handouts in Arabic that were simple enough for them to understand, and they gave these to all the mothers post the conclusion of the educational guidelines.

Sessions: There were five sessions

covering the material in the educational guidelines:

Session one: An introductory session that emphasized establishing good relations between the researchers and the women participating in the study and an explanation of the purpose of the educational guidelines. Each session takes about 15–20 minutes on an individual basis and sometimes for a group of 3–5 mothers.

Session two: Included information on various aspects of colostomy such as definition, causes, risk factors, complications, and shape.

Session three: Included information on various aspects of colostomy involves 12 items related to colostomy routine care.

Session four: It was included information about diet, and physical activity and validated by re- demonstration by the mothers (two times).

Session four: It was included information about coping strategies that help mothers manage their stress and get better such as maintaining family integration, cooperation, and an optimistic definition of the situation, maintaining social support, self-esteem, and psychological stability, and understanding the medical situation through communication with other parents and consultation with medical staff.

**The general objectives of the educational guidelines** were to reduce stress and improve coping strategies among mothers having children with colostomy.

**Specific objectives:** At the end of the educational guidelines the studied mothers were able to:

- Know introduction about colostomy
- Identify the meaning of colostomy
- List the causes of colostomy
- Enumerate the risk factors of colostomy
- List complications of colostomy
- Know the shape of colostomy

- diet for children with colostomy
- physical activity for children with colostomy
- Apply colostomy care for children.
- List the coping strategies that help mothers manage their stress

#### **d) Evaluation phase:**

The impact of educational guidelines on stress and coping strategies among mothers of colostomy-affected children was evaluated using the same study instruments one week after the educational guidelines were put into practice.

#### **Statistical Analysis:**

The data was analyzed using Version 21, and a single sample Kolmogorov-Smirnov test was employed to verify the data's normalcy. Percentage and number were used to describe the qualitative data. The chi-square test was used to examine any associations between category variables. The standard deviation and mean were used to represent continuous variables. Using a paired t-test, associations between the continuous variables were found. The significance criterion for each of the statistical tests listed above is set at ( $p\text{-value} < 0.05$ ).

#### **Results:**

Table (1): shows that half of the studied mothers' ages ranged between 25- and 30 years old with a mean of  $28.3 \pm 6.6$ . Regarding level of education, two-fifths (40%) of mothers were secondary school graduates and three-quarters (75%) of them were housewives. Regarding place of residence, three-fifths of mothers (60%) were from rural areas.

Table (2) reveals that two fifths 40 % of the studied children their age from  $1 > 3$  with a mean of  $5.44 \pm 2.5$  years and 70% of them were male. Regarding diagnosis, 58 % of children were diagnosed with Hirschsprung's disease. Concerning the rank of the child in their family; half of them (50% ) of them were 4<sup>th</sup> or more.

Table 3 displays the mothers' stress mean scores according to the parent's stress index, which is a short form. The study found that mothers' stress resulting from challenging children had a mean score of  $47.66 \pm 9.67$ , making it the primary cause of stress among mothers. Parental distress accounted for the second-highest mean score of  $42.14 \pm 8.99$ , and dysfunctional parent-child interactions accounted for the third-highest mean score of  $40.56 \pm 8.44$ . Following instructional suggestions, the moms' stress scores dropped from their earlier levels. Additionally, the mean score for mothers' stress across all subscales was as high as  $129.44 \pm 22.31$  before educational guidelines, However, it decreased to  $104.65 \pm 14.22$  after following the instructions. Also, there were statistically significant variations between the stress levels of mothers before and after educational guidelines related to parental distress, dysfunctional parent-child interactions, and challenging children.

The coping health inventory for parents' mean scores on coping patterns by the moms under study is shown in Table (4). Before educational recommendations, mothers' coping strategies were primarily measured by mean scores of  $25.23 \pm 9.77$  for sustaining social support, self-esteem, and psychological stability; following educational standards, these scores increased to  $35.04 \pm 4.33$ . Furthermore, before educational guidelines, the overall mean scores and standard deviation of mothers' coping across all domains were ( $58.88 \pm 25.67$ ); after educational guidelines, these scores climbed to ( $86.55 \pm 8.46$ ). Mothers' strategies for coping included preserving family integration, cooperating and providing an optimistic assessment of the situation; preserving social support, psychological stability, and self-esteem; and comprehending the medical situation through talking to other parents and seeking advice from medical professionals before and after the educational guidelines. Significant statistical differences were found between these strategies.

Regarding the associations between the characteristics of mothers and their stress, **table (5)** indicates that the mean and standard deviation of mothers' stress were highest among



those who were 30 years of age or older, divorced, lived in rural areas, and had only a secondary education or diploma before educational guidelines, but these scores were lowest after educational guidelines. Additionally, before educational recommendations were implemented, moms who were employed and had two children had higher mean and standard deviation ratings for stress; however, these scores decreased after the guidelines. The stress levels of mothers and their pre-and post-educational guidelines features differed statistically significantly.

The association between a mother's stress and the characteristics of their colostomy-affected children is made clear in **Table (6)**. This table shows that, before to educational guidelines, women with male children in the third birth order and children aged six or younger had high mean and standard deviation ratings for their stress levels; however, following the guidelines, these scores decreased. Furthermore, a statistically significant difference was observed between the stress levels of mothers and the age, gender, and birth order of their children before and after the implementation of educational guidelines ( $p$ -value  $< 0.05$  &  $< 0.001$ ).

**Table (7)** illustrates the relationship between mothers' coping strategies and their characteristics. Before educational guidelines, mothers who were housewives, widows, or had a university education had lower mean scores and standard deviations for their coping strategies. However, following the implementation of educational guidelines, these scores increased. Additionally, before educational guidelines, mothers with one child

and an age under thirty had lower mean and standard deviation scores for their coping techniques; however, following the guidelines, these scores climbed. Furthermore, a statistically significant difference was seen between the coping techniques and features of mothers before and after the educational guidelines were implemented ( $p$ -value  $< 0.001$ ).

The relationship between the mothers' coping strategies and total stress is made clear in **Table (8)**. The study's findings demonstrated that coping strategies and parenting stress were shown to be positively and negatively correlated. Parental discomfort was adversely and statistically significantly correlated with Maintaining family integration, cooperation, and an optimistic definition of the situation coping strategies, and seeking out social assistance. Along with being statistically significantly and adversely correlated with the overall stress and all of its subscales (parental distress, parent-child dysfunctional interaction, and difficult child), Maintaining social support, self-esteem, and psychological stability also. Conversely, Understanding the medical situation through communication with other parents and consultation with medical staff was found to positively and significantly correlate with both overall stress and parental discomfort. Furthermore, there was a statistically significant positive correlation between religious coping and parental distress. Parental distress, parent-child dysfunctional interaction, and difficult child subscales of stress were all positively and statistically significantly correlated with negative auto-focused Understanding of the medical situation through communication with other parents and consultation with medical staff.

**Table (1): The studied mothers' distribution according to their personal characteristics (n=50).**

Mothers' personal data	N	%
<b>Age /years:</b>		
<20	2	4.0
20-25	6	12.0
25-30	30	60.0
30-35	10	20.0
>40	2	4.0
X <sup>-</sup> +SD	28.3 + 6.6	
<b>Level of education:</b>		
Not read and write	5	10.0
Just read/write.	7	14.0
Basic education	15	30.0
Secondary school education	20	40
University education	3	6.0
<b>Occupation: -</b>		
Housewives	40	80
Working mothers	10	20
<b>Place of residence:</b>		
Urban	20	40.0
Rural	30	60.0

**Table (2): The studied children's distribution according to their personal characteristics (n=50).**

Children's personal Characteristics	N	%
<b>Age / years</b>		
> 1	18	36.0
1 > 3	20	40.0
3 > 6	12	24.0
X <sup>-</sup> +SD	5.44 + 2.5	
<b>Gender</b>		
Male	35	70.0
Female	15	30.0
<b>Diagnosis: -</b>		
Hirschsprung's disease	29	58.0
Imperforated Anus	21	42.0
<b>Rank within the family: -</b>		
2 <sup>nd</sup>	5	10.0
3 <sup>rd</sup>	20	40.0.
4th and more	25	50.0

**Table (3): Mothers' stress mean scores by Parents Stress Index-Short Form (PSI-SF)**

PSI-SF	Pre of educational guidelines (n=50)		Post one week of educational guidelines (n=50)		Paired t-test	P value
	Mean	SD	Mean	SD		
Parental Distress	42.14	8.99	32.32	6.20	9.33	≤ 0.001*
Parent-Child Interaction	40.56	8.44	32.14	5.33	8.55	≤ 0.001*
Difficult Child	47.66	9.67	38.29	7.12	7.22	≤ 0.001*
Total stress score	129.44	22.31	104.65	14.22	8.57	≤ 0.001*

Table (4): Mean scores of mothers' coping by Coping Health Inventory for Parents (CHIP)

CHIP	Pre of educational guidelines (n=50)		Post one week of educational guidelines (n=50)		Paired t-test	P value
	Mean	SD	Mean	SD		
Maintaining family integration, cooperation, and an optimistic definition of the situation	24.85	13.34	36.67	4.33	9.22	≤ 0.001*
Maintaining social support, self-esteem, and psychological stability	25.23	9.77	35.04	4.33	12.31	≤ 0.001*
Understanding the medical situation through communication with other parents and consultation with medical staff	9.89	4.07	13.99	2.02	9.45	≤ 0.001*
<b>Total coping score</b>	<b>58.88</b>	<b>25.67</b>	<b>86.55</b>	<b>8.46</b>	<b>13.07</b>	<b>≤ 0.001*</b>

\*\*A highly statistically significant difference

Table (5): Association between mothers' stress and their characteristics

Mothers' Characteristics	Mothers' Stress				Paired t-test	P value
	Pre (n=50)		Post 6 months(n=50)			
	Mean	SD	Mean	SD		
<b>Age in years:</b>						
• <30 years	136.0	19.3	105.2	12.9	8.9	<0.001*
• 30 - <40years	127.6	17.3	106.4	13.2	6.8	<0.001*
• ≥40years	107.4	26.3	97.5	24.4	2.01	0.34
<b>Residence:</b>						
• Urban	126.1	18.4	105.3	15.8	4.3	0.006*
• Rural	125.7	22.8	104.6	16.2	7.2	<0.001*
<b>Educational level:</b>						
• Illiterate	126.2	24.6	94.5	13.1	9.3	<0.001*
• Read and write	124.4	23.2	106.2	14.8	3.5	0.03*
• Primary & Preparatory	122.0	26.0	108.4	16.7	4.8	0.03*
• Secondary/diploma	134.2	17.8	107.4	15.1	6.5	<0.001*
• University educations	127.4	16.9	102.8	17.6	5.7	0.02*
<b>Mothers' work:</b>						
• Housewife	128.4	22.1	104.8	19.1	7.7	<0.001*
• Working	137.2	23.9	105.4	18.1	6.4	<0.001*

Statistical significant at  $p < 0.001$  &  $p < 0.05$

Table (6): Association between the mothers' stress and their children's characteristics

Children's characteristics	Mothers' Stress				Pairedt-test	P value
	Pre (n=50)		Post 6 months(n=50)			
	Mean	SD	Mean	SD		
<b>Age:</b>						
• ≤6years	133.3	23.7	103.9	13.0	14.8	<0.001*
• >6years	126.4	24.9	104.5	16.2	4.3	0.003*
<b>Gender:</b>						
• Male	127.0	18.2	104.0	14.4	8.3	<0.001*
• Female	124.9	29.1	106.2	14.9	5.3	0.003*
<b>Birth order:</b>						
• The first	125.7	17.8	106.2	15.4	5.8	<0.001*
• The second	134.7	27.9	106.6	12.8	5.2	0.001*
• The third	138.2	27.9	104.4	16.3	6.0	0.001*
• Other	136.0	17.5	102.5	13.9	8.1	<0.001*

Statistical significant at  $p < 0.001$  &  $p < 0.05$

Table (7): Association between the mothers' coping strategies and their characteristics

Mothers' characteristics	Mothers' coping strategies				Pairedt-test	P value
	Pre (n=65)		Post 6 months(n=65)			
	Mean	SD	mean	SD		
<b>Age of mother in years:</b>						
• <30 years	62.3	25.4	86.3	8.1	-6.1	<0.001*
• 30 - <40years	52.1	24.7	84.1	8.4	-7.7	<0.001*
• ≥40years	62.0	27.5	85.6	8.7	-3.7	0.005*
<b>Residence:</b>						
• Urban	64.7	28.7	87.4	7.4	-4.1	0.001*
• Rural	57.4	25.2	84.8	7.5	-9.1	<0.001*
<b>Educational level:</b>						
• Illiterate	48.2	26.1	83.9	9.3	-5.2	<0.001*
• Read and write	46.0	22.8	76.3	6.4	-5.9	<0.001*
• Primary/preparatory	66.9	24.9	87.1	7.6	-2.6	0.04*
• Secondary/diploma	63.4	22.6	84.5	7.1	-6.5	<0.001*
• University education	72.8	39.8	85.4	9.1	-1.3	0.26
<b>Mothers' work:</b>						
• Housewife	58.1	25.6	85.2	8.6	-8.1	<0.001*
• Working	54.9	27.7	87.8	9.7	-6.5	<0.001*

Statistical significant at  $p < 0.001$  &  $p < 0.05$

Table 8: Correlations between parenting stress and coping strategies

Variables	Parental Distress	Parent-child dysfunctional interaction	Difficult child	Total stress
Maintaining family integration, cooperation, and an optimistic definition of the situation	-.225**	-.146	.008	-.157
Maintaining social support	.472***	.353***	.374***	.487***
Self-esteem and psychological stability	-.351***	-.387***	-.324***	-.427***
Understanding the medical situation through communication with other parents and consultation with medical staff	.334***	.238**	.224**	.323***
	.475**	.359**	.312**	.403**

Note: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$  (bilateral).

### Discussion:

The moms of newborns with colostomies in this study received three sessions of education on colostomy care. Upon mothers' request, educations were continued until they attained a satisfactory degree of self-determination. To help with verbal instruction retention, the women were also given an educational booklet with resources for caring for their colostomies. According to study results, moms' stress levels were effectively reduced by the empowerment program. Health information regarding their children's disorders is greatly needed by the parents and carers of children with colostomies (Sandy et al., 2020).

The present study's conclusions shed light on the traits of the mothers under investigation that half of the studied mother's ages ranged between 25- 30 years old with a mean of  $28.3 \pm 6.6$ . Regarding the level of education, two-fifths of mothers were secondary school graduates and three-quarters of them were housewives. Regarding place of residence, three-fifths of mothers were from rural areas. These findings roughly align with the findings of the study (Nevil, 2017) which reported that mothers' ages ranged from 17 to 58 years old, with a mean age of 32.5 years ( $SD \pm 7.97$ ). However, the findings differed from those of the study (Dambi et al., 2019) which reported that all mothers who took part in the study were between the ages of 20 and 40. Additionally, in this study, three-quarters were housewives. From the researcher's point of view, it may be the cause of the knowledge deficit due to little contact of mothers with others due to their not

being employed.

The current study's findings revealed that more than three fifths of the studied children were male and less than three fifths of children were diagnosed with Hirschsprung's disease. These results are matched with the result of Nasar, (2017) in their study to evaluate indications of colostomy and its complications among 80 children, who found that the majority of studied children participated in the study, were males. The higher incidence of Hirschsprung's disease in males compared to females may account for the study's preponderance of male participants. As a result, the majority of children with Hirschsprung's disease who require colostomy care are more likely to be male (Kyle, & Carman, 2019).

The current study's findings suggest that following instructional guidelines, the mothers' stress scores dropped from their earlier levels. Additionally, the mean score for mothers' stress across all subscales was as high as  $128.34 \pm 21.16$  before educational guidelines; however, it decreased to  $103.74 \pm 13.46$  after following the instructions. Also, there were statistically significant variations between the stress levels of mothers before and after educational guidelines related to parental distress, dysfunctional parent-child interactions, and challenging children. From the researcher's point of view, it reflected the effectiveness of the educational guidelines. It was also because these mothers experienced feelings of inadequacy in their duty as parents, sadness, and stress from their child's demands, which limited their social engagement. The study findings

revealed that the empowerment program was effective in alleviating mothers' stress (Goudarzi et al., 2019).

Ameh et al., (2019) found that the parents and the caregivers of neonates who had colostomy sorely needed health information about their neonates' diseases. They recommended that education should be planned and provided based on mothers' educational status and socioeconomic background.

This results are similar with Aite et al., (2018) also emphasized the necessity for parents to be informed about the illnesses affecting their children. According to Sheikh et al., stoma care clinics can aid in preventing the various issues and consequences that children with colostomies may experience. By giving the mothers of the newborns receiving colostomy more power, the current study aimed to lower complications connected to colostomy. According to Hassink et al., (2020), parents of children with anorectal abnormalities typically struggle to raise their children. They added that supporting parents in taking care of their children allows them to offer their children better care services (13). However, they did not educate parents or take any other action to lessen the stress and challenges that parents face. According to Hassink et al., (2018), mothers of children also reported high levels of stress. Thus, it appears that educational guidelines must be put into place.

The current study showed that the educational guidelines mean scores of coping strategies utilized by the mothers were lower before educational guidelines. Significant statistical differences were found between these strategies, but these scores improved and rose following educational guidelines, according to the Coping Health Inventory for Parents (CHIP). The mothers in our study employed various coping strategies to manage their stress levels. The first strategy involved maintaining social support, self-esteem, and psychological stability. The second strategy involved family integration, cooperation, and an optimistic outlook on the situation. Finally, the least effective coping strategy comprehended the medical situation through communication with

other parents and consultation with medical staff. This result is consistent with a study provide teaching through video to enhance mothers' knowledge of colostomy care conducted among 30 mothers attending pediatric surgery departments hence, and changed the mother's knowledge from  $10.9 \pm 2.5$  to  $16.4 \pm 1.67$  and  $15.9 \pm 4.02$ ,  $P = 0.001$  (Dabas et al., 2020). So, this result agrees with the first hypothesis of the current study.

Reference to the associations between the characteristics of mothers and their stress indicated that the mean and standard deviation of mothers' stress was highest among those who were 30 years of age or older, divorced, lived in rural areas, and had only a secondary education or diploma before educational guidelines, but these scores were lowest after educational guidelines. Additionally, before educational recommendations were implemented, moms who were employed and had two children had higher mean and standard deviation ratings for stress; however, these scores decreased after the guidelines. The stress levels of mothers and their pre-and post-educational guidelines features differed statistically significantly. The research showed that, before educational guidelines, women under 30 years old had mean stress levels that were greater than those of mothers over 40, but that these mean scores fell following nursing intervention. This result did not align with the findings of (Sukumaran et al., 2019) who stated that the mothers in the middle-aged and younger age groups did not significantly differ in the amount of stress they experienced. Their investigation, (Chiluba, & Moyo, 2017) also concluded that the carers' ages had no bearing on the stress score levels. The current study's findings showed that, before educational guidelines, the mean stress scores of over 25% of the women who were evaluated had high levels; however, these scores dropped following educational guidelines. The mothers also had secondary or diploma education. These results contradict those of (Badia et al., 2019) who found no significant relationship between the level of stress and the carers' educational attainment.

The current research revealed a strong correlation between the mother's stress and the characteristics of their colostomy-affected children with a statistically significant difference observed between the stress levels of mothers and the age, gender, and birth order of their children before and after the implementation of educational guidelines. These opinions can point to the necessity of a more thorough evaluation of children with colostomy which would allow for the prediction of the potential influence on mothers' psychological well-being and the intensity of related issues. The current study demonstrated that, before the implementation of educational guidelines, mothers of children with colostomy who were male, aged  $\leq 6$  years, and third siblings in their family, had higher mean scores of stress; however, following nursing intervention, these mothers' stress levels decreased. The current findings confirmed the findings which explained that the mothers' coping strategies that enable them to adapt to the various circumstances and demands of caring for their children. In addition, mothers who successfully adjust to the difficulties require information access, the ability to turn to family, friends, and financial as well as physical and emotional resources, or the capacity to create effective coping mechanisms for particular demands.

The study's findings showed that there was a relationship between mothers' coping strategies and their characteristics. Before educational guidelines, mothers who were housewives, widows, or had a university education had lower mean scores and standard deviations for their coping strategies. However, following the implementation of educational guidelines, these scores increased. Additionally, before educational guidelines, moms with one kid and an age under thirty had lower mean and standard deviation scores for their coping techniques; however, following the guidelines, these scores climbed. Furthermore, a statistically significant difference was seen between the coping techniques and features of mothers before and after the educational guidelines were implemented. From the researcher's point of view, it reflected the positive effects of educational guidelines which

showed that mothers who were over 40, widowed, lived in cities, had a university degree, were employed, had one child, made a sufficient living, had health issues, and had an extended family all had high total mean scores for their coping strategies following educational guidelines.

The current results revealed that there was a negative relationship between the mothers' coping strategies and total stress is made clear **with** statistical differences noted between the stress levels and coping strategies of mothers before and following the implementation of the educational guidelines. The findings of a study (Bawalsah, 2020) did not align with the findings of this investigation, which showed that the dimensions of the coping strategies inventory and stress levels had a predictable and acceptable high positive connection. The study's earlier results made it clear that mothers' capacity to employ coping mechanisms declined as their stress levels rose. This might be attributed to a variety of factors, including the mothers' children, experience, expertise, and social background.

### **Conclusion:**

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The study concluded from the current results and research hypothesis that, educational guidelines are useful in reducing mothers' stress levels and increasing the coping strategies employed by moms of children with colostomy.

### **Recommendations:**

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Based on the results of the present study, we recommended that:

- Mothers should be taught and advised on a variety of coping strategies and parenting techniques to reduce their stress levels.
- Nurses should be heavily involved in health education and counseling mothers regarding all facets of caring for their children who have colostomies as well as strategies for managing the stress that comes with this care.
- Future research includes replication of the current study on a large group and another setting for generalization.

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