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Hope Level and Life Satisfaction among Patients with Colostomy and their Family caregivers

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Abstract

Patients anticipating colostomy surgery have many concerns, needs, and fears. They may be physically debilitated and emotionally distraught with concerns about life changes after surgery, prognosis, as well as ability to perform in established roles and finances. This type of surgery which affects normal bowel function and necessitates bowel movements in a pouch that lies outside the body has a significant impact on hope level and life satisfaction among both temporary and permanent colostomy patients as well as their family caregivers. The aim of the current study was to assess hope level and life satisfaction among patients with colostomy and their family caregivers. A descriptive exploratory research design was utilized. A total of 76 colostomy patients and a same number of their family caregivers were recruited in the study from four general surgical wards at El Manial University Hospital affiliated to Cairo University. Three tools were utilized to collect data of this study namely: A structured Questionnaire sheet, Hope Scale (Synder, 1995), as well as Life satisfaction scale (Diener, Emmons, Larsen, & Griffin, 1985). The study findings revealed that temporary colostomy patients were complaining from low hope level and satisfaction with life than permanent colostomy patients. Regardless the type of colostomy and by time, hope level and satisfaction with life in family caregivers of both groups were decreased dramatically along the three assessments (at one week after colostomy surgery, ten days after discharge, and two months after discharge). No statistically significant differences were found in relation to life satisfaction among family caregivers of permanent colostomy patients in the second and third assessment. The same finding was observed between permanent colostomy patients and their family caregivers in the third assessment in relation to hope level. The study recommended that Hope Intervention program should be developed for colostomy patients especially temporary group. Further researches were also recommended focusing on needs assessment for family caregivers of temporary and permanent colostomy patients.

Key words: Hope level, life satisfaction, patients with colostomy, family caregivers.

1-Introduction

Regular elimination of bowel waste products is essential for normal body functioning. Elimination alterations may cause problems with the gastrointestinal and other body systems. These alterations can be embarrassing and frustrating. Patients face a variety of stressors when confronting surgery. Colostomy surgery leads to fear and anxiety since it is often associated with pain, possible disfigurement, dependence, and perhaps even loss of life. Family members often have fears of a disruption in life-style and experience a sense of powerlessness as the patient's approaches (Atkin & Northover,2009).

Incontinent surgical diversions that create stomas have been performed since the 1700s. It has been estimated that there are between 80,000 to 100,000 stoma surgeries performed every year in the United Kingdom. The number of individuals with an incontinent stoma in the United States in 2006 is estimated to be 450,000 to 500,000 (Daugherty & Hlubocky, 2008). Currently available estimates of the number of patients vary. One report estimates that 650,000 people in Egypt currently have a stoma and about 3000 new surgeries are performed each year (Jemal, Siegel, Ward, et al, 2010). According to El Kasr El Aini statistics in Egypt, about 476 patients had colostomy surgery during the first six months of 2010. The United Ostomy Association estimates that there were 900,000 ostomy patients in the United States of America in 2009, and that the number would grow at an annual rate of 3%. These same studies revealed an equal distribution between the three major types of ostomy surgeries: colostomy 36.1%, ileostomy 32.2%, and urostomy 31.7%. This was an interesting finding because it has long been assumed that ileostomy and colostomy surgeries outnumbered urinary stomas. Other types of sphincter-saving surgeries were not included in these surveys (American Cancer Society, 2010).

Ostomy is the surgical creation of a stoma for the evacuation of bodily waste, which is necessitated by a variety of disease processes. Since the creation of ostomy leads to bypassing the sphincter, which enables voluntary control, bowel movements and excretion become involuntary, requiring the use of an extracorporeal pouch for collecting waste products. (O'Connell, Maggard &, Ko, 2009). The most frequently created ostomy types are colostomy, ileostomy, and ureterostomy/ urostomy, which in turn can be divided into 2 groups which are transient/temporary and permanent. Temporary ostomies, as the name implies, can be closed after the resolution of the underlying disease process that required the ostomy, permanent ostomies are created to be permanent. Surgical formation of incontinent stoma is used to treat traumatic injury, cancer, Crohn’s disease, ulcerative colitis, perforated diverticulitis, anatomical malfunction, birth defect, and ischemia to the small or large intestine (Holtslander, & Duggleby, 2009). Ostomy surgery profoundly impacts patients, psychologically and physically. It is known to impact on a patient's hope level and life satisfaction. Concerns about colostomy include incontinence, rectal discharge, gas, difficulties in returning to work, decreased sexual activity, and travel and leisure challenges. Reports have described Quality of Life (QOL) outcomes in cancer patients with colostomies and inflammatory bowel syndrome with colostomies, but little has been written regarding hope and life satisfaction (Yu, & Wang, 2008).

Hope, as a complicated concept, has received more attention and is regarded as an emotion or experience; it is a desire for individual expectation of future. Hope in life is very important, especially for patients experiencing loss, uncertainty, and pain. Hope is one vital factor to maintaining mental health and stability (Yuan, Qu, Zhang, & Wang, 2009). In previous studies, patients with ostomies have displayed relatively high and stable levels of hope. Westerners have conducted many studies to relate hope, coping style, and social support. Hope can interfere with a person's ability to adapt to their current situation. A Common wisdom tells us that it's good to nurture hope that things will get better. But a new study suggests that acceptance of an adverse situation, such as a serious health condition, is sometimes better for one's mental outlook than being hopeful the situation will change (Li, et al. 2010). Hope is often described as an elusive, mysterious and soft concept. It is one of several states of being which influence behavior, so it is placed at the heart and center of a human being. It is considered as fundamental to human life as food and water. Hope gives rise to a sense of well-being. It is a key factor in acquiring a state of optimal health, an essential positive phenomenon necessary for healthy coping (Zhou, Yang, & Xie, 2008). Hope is one aspect of affective responses to stressors that makes life bearable in times of stress or transition. The presence of hope fortifies the physiological and psychological defenses, while its absence has been correlated with an early demise in functioning. As a means of coping, hope enables individuals to surpass psychologically unpleasant, stressful situations by reinforcing the cognition that there is a way out of difficulty. The lack of an essential inner resource as hope may influence the success of a patient's response to prescribed interventions. Therefore, health care providers need to focus intervention development to enhance hope which effect well-being outcomes (Dougherty, 2008).

A multi-national study conducted in 2008 to examine the effects of time on satisfaction with life for patients with a permanent stoma highlighted that even as the time from surgery lengthened and satisfaction with life improved, time was not the only factor that contributed to that outcome. The study found three other factors that affected satisfaction with life in patients with a permanent stoma: satisfaction with the care given; confidence in self-care; and a trusting and therapeutic relationship with the stoma care nurse, so that nurses play a significant and vital role in promoting life satisfaction for these patients (Smyth, 2008) .

Care provided by a family member or friend rather than by a professional who is reimbursed for services can be stressful and burdensome. It creates physical and psychological strain over extended periods of time, accompanied by high levels of unpredictability and uncontrollability, has the capacity to create secondary stress in multiple life domains such as work and family relationships, and frequently requires high levels of vigilance. Recently, researchers have focused not only on providing care as a cause of distress, but also on the caregiver’s perception of how much the patient is suffering. Colostomy patient suffering is manifested in three related and measurable ways: overt physical signs, including verbal and nonverbal expressions of pain and physical discomfort, psychological symptoms of distress, such as depression and apathy; and existential or spiritual well-being, reflecting the extent to which religious or philosophical beliefs provide inner harmony, comfort, and strength or, alternatively, lead to despair (Schulz & Sherwood, 2008).Experiencing something bad naturally causes a decline in happiness. The longer the adversity lasts, the worse one's sense of wellbeing. Healthcare professionals play a significant role in enhancing hope and life satisfaction among colostomy patients, but sometimes they want to give their patients hope and may be reluctant to correct false hopes. But patients may be better off facing the truth . They have to teach their patients that while hopeful news may be easiest to deliver, it may not at all be in the interests of the recipients because it may interfere with emotional adaptation (Nutter, 2008).

Literature on the quality of life for individuals with stomas strongly suggests that factors associated with incontinent stomas affect sleep pattern, but studies to ascertain the relationship between incontinent stomas either temporary or permanent, hope level, and life satisfaction have not been conducted (National Sleep Foundation,2010). Studies also offers scant help to those who want to understand how age, sex, type of surgery, social support from family caregivers, and whether a stoma is permanent or temporary can impede or assist rehabilitation, and diminish or improve hope level and satisfaction with life. It is not unusual for the perception of what the patient is actually experiencing to differ from what the health care provider and relative assume the patient is experiencing. Because no one is able to get inside a patient's head or the patient is reluctant to share deepest concerns and fears, health care providers are frequently left to base their assessment of how the patient is adjusting to ostomy surgery on less than getting accurate information. Therefore, the aim of the present study was to assess hope level and life satisfaction among patients with colostomy and their family caregivers.

2-Subjects & Methods

2.1 Aim of the study

The aim of the present study was to assess hope level and life satisfaction among patients with colostomy and their family caregivers.

2.2 Research questions

Q1: What is the hope level and life satisfaction among temporary colostomy patients and their family caregivers?
Q2: What is the hope level and life satisfaction among permanent colostomy patients and their family caregivers??
Q3: Is there a difference in hope level and life satisfaction between temporary and permanent colostomy patients and their family caregivers?

2.3 Design

A descriptive exploratory design was utilized in this study to explore hope level and life satisfaction among temporary and permanent colostomy patients and their family caregivers. Descriptive studies are a means of discovering new meaning, describing what exists, determining the frequency with which something occurs and categorizing information (**William, 2008)**.

2.4 Setting

The present study was conducted at four general surgical wards, El-Manial University Hospital, affiliated to Cairo University. These wards manage all surgical cases including patients with colostomy free of charge for patients coming from all provinces of Egypt.

2.5 Subjects

A total of seventy-six inpatients with either temporary or permanent colostomy were recruited from different four surgical wards at El Manial University Hospitals as study subjects making equal groups of thirty-eight subjects each. One relative of each study subjects were enrolled making a total of seventy-six family caregivers. Inclusion criteria to be met by the study subjects are: adult male or female patients, aged from 20-50 years, scheduled for colostomy surgery either temporary or permanent caused by either trauma or disease. Exclusion criteria were: patients with chronic illness, and those scheduled for chemotherapy and/or radiotherapy.

2.6 Tools for Data Collection

Three tools were utilized to collect data: A structured Interview Questionnaire Sheet, Hope Scale (Synder, 1995), as well as Life satisfaction scale (Diener, Emmons, Larsen, & Griffin, 1985).

Tool I: A structured Interview Questionnaire Sheet:

A personal and background data sheet was developed by the researchers to collect demographic and background data pertinent to the study which were: age, sex, residence, level of education, employment status, and income per month.

Tool II: Hope scale:

Hope Scale was developed by Synder (1995). The purpose of this scale is to assess hope level. This scale is available for free to be used and modified by the researchers. It was translated into Arabic. It includes 8 items (questions), which are classified into two main subscales (willpower & waypower). The first four questions represented the agency subscale (willpower), while the second four questions represented the pathway subscale (waypower). Each item (question), is rated on eight grades ranged from definitely false (score 1), to definitely true (score 8). The total score is derived by summing the eight items. The range of the total score is from 8 to 64, with a higher score indicating a higher hope level. Rating scale is: total score from 8 to less than 40 is considered to be low hoper, 40 is considered as normal hoper, and more than 40 is considered as high hoper. A panel of seniors in Medical-Surgical Nursing Department, Faculty of Nursing, Cairo University established content validity for this tool. Stability through test-retest approach over 2-3 weeks was utilized to ascertain reliability of the tool.

Tool III: Life satisfaction

Life satisfaction was measured using life satisfaction scale (Diener, Emmons, Larsen, & Griffin, 1985). This scale is available for free to be used. It was modified and translated into Arabic by the researchers. This tool comprises five statements about respondents' general feelings and attitudes concerning their life. Respondents indicate how much they agreed or disagreed with these statements on a 1 to 7 scale ranging from “Strongly disagree (score 1)” to “Strongly agree (score 7).” Total score was considered to be 35. Scoring system was classified as follows: from 5-9 means extremely dissatisfied, from 10-14 means dissatisfied, from 15-19 means slightly dissatisfied, 20 means neutral, from 21-25 means slightly satisfied, form 26-30 means satisfied, from 31-35 means extremely satisfied. A panel of seniors in Medical-Surgical Nursing Department, Faculty of Nursing, Cairo University established content validity for this tool. Stability through test-retest approach over 2-3 weeks was utilized to ascertain reliability of the tool.

3- Pilot Study

A pilot study was carried out for the purpose of testing the tools, to determine clarity, applicability, objectivity and feasibility of conducting the study. To achieve that, the tools were tested over twenty patients and twenty family caregivers. During pilot study, it was observed that family caregivers who were in contact and cared for these patients reported that they were affected as well as patients by their condition and wanted also to ventilate but not in front of their patients, so the researchers decided to involve these family caregivers into the study. Content validity was reviewed and determined by a panel of five expert professors in Medical-Surgical Nursing specialty. Modifications after testing tools were done to develop final forms. Results obtained from the pilot study were not included in the main study. Data were collected for all patients who met the study criteria.

4-Procedure

An official permission was granted from the director of El-Manial University Hospital to proceed with the proposed study. Names of the potential subjects were obtained from head nurses of the department. It was assured that all subjects meet the inclusion criteria. The researchers contacted patients and their family caregivers individually. These family caregivers were patients' primary health care givers who also attend with these patients in each outpatient visit. Oral consent was obtained from them after explanation of the purpose and nature of the study. The researchers emphasized to the subjects that participation in the study is voluntary and the anonymity and confidentiality of responses were assured. All subjects were interviewed individually to collect data through Structured Interview Questionnaire Sheet. Each patient and his/her relative were assessed by the researchers utilizing the Hope Scale, and Life Satisfaction Scale three times. The first time was during hospitalization (one week after colostomy surgery), then at ten days after discharge in the outpatient clinics and the last one was at interval of two months after discharge. Reasons for selecting these intervals were: most patients are in the hospital from 7-10 days after an open colostomy, so that the researchers selected the first interval to be one week after surgery. It was also observed that at interval of ten days after discharge, there was an obvious change in patients' condition in which they started to focus on their psychological concerns more than on their physical problems. Two months after discharge interval was selected because literature review emphasized that after about 6-7 weeks after discharge, patients start to comply with their condition. The average time to fill out the tools was 15 minutes for each assessment. All collected data related to these three intervals was then tabulated to assess hope level and life satisfaction among temporary and permanent colostomy patients and their family caregivers.

5-Ethical consideration

An official permission to conduct the proposed study was obtained from general director of the hospital. The aim and nature of the study was explained to each study subject assuring the possibility to withdraw from the study at any time, and ensuring confidentiality of information. Participation in the study was voluntary and based on the patients and family caregivers' agreement to give informed consent.

6-Statistical analysis

Data were analyzed using Statistical Package for Social Science (SPSS version 12.0) program for data tabulation, presentation and statistical analysis. Descriptive statistics were calculated to determine the demographic characteristics and medical data of the subjects, hope level, and life satisfaction rating system scales in regarding colostomy patients and their family caregivers. Tests of difference by using T-test were done to assess the significant difference between colostomy patients and their family caregivers on three occasions. Significant level was accepted at $p<0.05$.

7-Results

Table 1: Frequency and Percentage Distribution of Interviewing Data among Temporary and Permanent Colostomy Patients and their Family caregivers (n=152)

	Temporary				Permanent			
	Patients (n=38)		Family caregivers (n=38)		Patients (n=38)		Family caregivers (n=38)	
	No	%	No	%	No	%	No	%
Age (years)								
30-< 40	13	34.2%	0	0%	6	15.8%	0	0%
40-< 50	25	65.8%	9	23.7%	32	84.2%	3	7.9%
50-60	0	0%	29	76.3%	0	0%	35	92.1%
Sex								
Male	23	60.5%	6	15.8%	27	71%	10	26.3%
Female	15	39.5%	32	84.2%	11	29%	28	73.7%
Marital Status								
Married	31	81.6%	23	60.5%	32	84.2%	19	50.1%
Widow	3	7.9%	15	39.5%	4	10.5%	11	28.9%
Divorced	4	10.5%	0	0%	2	5.3%	8	21%
Place of residence								
Urban	12	31.6%	12	31.6%	10	26.3%	10	26.3%
Rural	26	68.4%	26	68.4%	28	73.7%	28	73.7%
Educational status								
Illiterate	12	31.6%	18	47.4%	13	34.2%	20	52.6%
Read& write	11	28.9%	17	44.7%	7	18.5%	9	23.7%
Primary	9	23.7%	3	7.9%	10	26.3%	9	23.7%
University	6	15.8%	0	0%	8	21%	0	0%
Employment								
Unemployed	5	13.2%	27	71%	6	15.8%	30	79%
Farmer	17	44.7%	10	26.3%	13	34.2%	8	21%
Laborer	10	26.3%	0	0%	11	29%	0	0%
Private	6	15.8%	1	2.7%	8	21%	0	0%
Monthly income (LE)								
100- <500	22	57.9%	28	73.7%	21	55.3%	27	71%
500- <1000	16	42.1%	10	26.3%	17	44.7%	11	29%

Table 2: Frequency and Percentage Distribution of Total Life Satisfaction Scores Among Temporary and Permanent Colostomy Patients and their Family caregivers (n=152)

Observations	Temporary				Permanent			
	Patients (n=38)		Family caregivers (n=38)		Patients (n=38)		Family caregivers (n=38)	
	No	%	No	%	No	%	No	%
First assessment								
Extremely dissatisfied	0	0%	0	0%	10	26.3%	0	0%
Dissatisfied	3	7.9%	2	5.3%	23	60.5%	0	0%
Slightly dissatisfied	23	60.5%	3	7.9%	5	13.2%	15	39.5%
Neutral	5	13.2%	7	18.4%	0	0%	7	18.4%
Slightly satisfied	7	18.4%	23	60.5%	0	0%	16	42.1%
Satisfied	0	0%	3	7.9%	0	0%	0	0%
Extremely satisfied	0	0%	0	0%	0	0%	0	0%
Second assessment								
Extremely dissatisfied	33	86.8%	8	21%	0	0%	12	31.6%
Dissatisfied	5	13.2%	17	44.7%	0	0%	24	63.1%
Slightly dissatisfied	0	0%	13	34.3%	18	47.4%	2	5.3%
Neutral	0	0%	0	0%	6	15.8%	0	0%
Slightly satisfied	0	0%	0	0%	14	36.8%	0	0%
Satisfied	0	0%	0	0%	0	0%	0	0%
Extremely satisfied	0	0%	0	0%	0	0%	0	0%
Third assessment								
Extremely dissatisfied	36	94.7%	10	26.3%	0	0%	12	31.6%
Dissatisfied	2	5.3%	19	50%	0	0%	23	60.5%
Slightly dissatisfied	0	0%	9	23.7%	11	28.9%	3	7.9%
Neutral	0	0%	0	0%	9	23.7%	0	0%
Slightly satisfied	0	0%	0	0%	18	47.4%	0	0%
Satisfied	0	0%	0	0%	0	0%	0	0%
Extremely satisfied	0	0%	0	0%	0	0%	0	0%

Table 3 : Frequency and Percentage Distribution of Total Hope Scores among Temporary and permanent Colostomy Patients and their Family caregivers (n=152):

Observations	Temporary				Permanent			
	Patients (n=38)		Family caregivers (n=38)		Patients (n=38)		Family caregivers (n=38)	
	NO	%	NO	%	NO	%	NO	%
First assessment								
Low hoper	18	47.4%	10	26.3%	27	71%	6	15.8%
Normal hoper	5	13.2%	0	0%	2	5.3%	0	0%
High hoper	15	39.4%	28	73.7%	9	23.7%	32	84.2%
Second assessment								
Low hoper	30	78.9%	18	47.4%	20	52.7%	8	21%
Normal hoper	5	13.2%	2	5.2%	3	7.9%	2	5.3%
High hoper	3	7.9%	18	47.4%	15	39.4%	28	73.7%
Third assessment								
Low hoper	35	92.1%	27	71%	15	39.4%	26	68.4%
Normal hoper	1	2.6%	2	5.3%	5	13.2%	2	5.3%
High hoper	2	5.3%	9	23.7%	18	47.4%	10	26.3%

Table 4: T-test of Total Life Satisfaction Scores between every two assessments among Temporary and Permanent Colostomy Patients and their Family caregivers (n=152):

Interval of observation	Temporary						Permanent					
	Patients (n=38)			Family caregivers (n=38)			Patients (n=38)			Family caregivers (n=38)		
	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value
First and second assessment	18.421 7.605	20.439	0.000*	21.315 13.105	13.445	0.000*	11.500 19.815	16.034	0.000*	19.842 10.789	17.697	0.000*
Second and third assessment	7.605 6.921	5.707	0.000*	13.105 12.131	2.269	0.029*	19.815 20.184	3.026	0.004*	10.789 10.894	0.265	0.729
First and third assessment	18.421 6.921	23.828	0.000*	21.315 12.131	16.613	0.000*	11.500 20.184	16.924	0.000*	19.842 10.894	16.257	0.000*

* $p< 0.05$

Table 5: T- test of Total Life Satisfaction Scores in each assessment among Temporary & permanent Colostomy Patients and their Family caregivers (n=152):

Interval of observation	Temporary colostomy Patients (n=38) & their Family caregivers (n=38)			Permanent colostomy Patients (n=38) & their Family caregivers (n=38)		
	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value
First assessment	18.421 21.315	4.110	0.000*	11.500 19.842	12.618	0.000*
Second assessment	7.605 13.105	9.379	0.000*	19.815 10.789	18.833	0.000*
Third assessment	6.921 12.131	9.485	0.000*	20.184 10.894	18.896	0.000*

* $p< 0.05$

Table 6: T- test of Total Hope Scores between every two assessments among Temporary and permanent Colostomy Patients and their Family caregivers (n=152):

Interval of observation	Temporary						Permanent					
	Patients (n=38)			Family caregivers (n=38)			Patients (n=38)			Family caregivers (n=38)		
	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value
First and second assessment	39.947 35.763	7.178	0.000*	47.052 42.026	26.398	0.000*	35.368 38.815	3.441	0.001*	48.026 43.263	6.433	0.000*
Second and third assessment	35.763 34.473	3.035	0.004*	42.026 38.078	6.033	0.000*	38.815 40.298	2.751	0.009*	43.263 38.973	6.738	0.000*
First and third assessment	39.947 34.473	8.541	0.000*	47.052 38.078	13.460	0.000*	35.368 40.298	5.552	0.000*	48.026 38.973	9.429	0.000*

* $p < 0.05$

Table 7: T- test of Total Hope Scores in each assessment among Temporary & permanent Colostomy Patients and their Family caregivers (n=152):

Interval of observation	Temporary colostomy Patients (n=38) & their Family caregivers (n=38)			Permanent colostomy Patients (n=38) & their Family caregivers (n=38)		
	$\bar{X}$	T-test	P-value	$\bar{X}$	T-test	P-value
First assessment	39.947 47.052	5.625	0.000*	35.368 48.026	6.999	0.000*
Second assessment	35.763 42.026	4.644	0.000*	38.815 43.263	3.021	0.005*
Third assessment	34.473 38.078	3.419	0.002*	40.289 38.973	1.145	0.250

* $p < 0.05$

As seen from table (1) it was obvious that about two thirds (65.8%) and most of the study sample (84.2%), either temporary or permanent colostomy patients aged from 40-50 years, males, married, and residing in rural areas. More than one third of them were illiterate, and farmers. The income of more than half of them ranged from 100-500 Egyptian pounds (LE). The majority and most of family caregivers of both temporary and permanent colostomy patients aged from 50-60 years (76.3% & 92.1%), and were females (84.2% & 73.7%). More than one half of them were married (60.5% & 50%), residing in rural areas (68.4% & 73.7%), and illiterate (47.4% & 52.6%). About three quarters of these family caregivers were unemployed (71% & 79%), and had monthly income less than 500 Egyptian pounds (73.7% & 71%).

Regarding total life satisfaction scores more than half of temporary colostomy patients in the first assessment were slightly dissatisfied (60.5%), while most of them (86.8%) were extremely dissatisfied in the second assessment, and reached 94.7% of them in the third assessment. The same percentage was observed in their family caregivers ((60.5%) in the first assessment, but they were slightly satisfied. In the second assessment more than one third of them (44.7%) and one half of them (50%) in the third assessment were dissatisfied. Permanent colostomy patients also in the first assessment (60.5%) were dissatisfied, while more than one third of them in the second assessment and about one half of them in the third assessment (36.8% & 47.4%) were slightly satisfied. More than one third of family caregivers in the first assessment were slightly satisfied (42.1%), while more than half of them (63.1% & 60.5%) were dissatisfied in the second and third assessment. (Table 2)

Regarding total hope scores, less than half of temporary colostomy patients were low hopers (47.4%) in the first assessment, and this percentage increased dramatically to reach 78.9% in the second assessment, and 92.1% in the third assessment. In the first assessment the majority of family caregivers were high hopers (73.7%), while equal percentages of low and high hopers (47.4%) were reported in the second assessment. In the third assessment, the percentage of low hopers increased reaching 71% of them. It was obvious that permanent colostomy patients were low hopers in the first and second assessment as represented by 71% & 52.7%. In the third assessment 47.4% of them were high hopers. In the first and second assessment more than two thirds of their family caregivers were high hopers (84.2% & 73.7%), while in the third assessment, more than half of them were low hopers as represented by 68.4%. (Table 3)

Table (4) revealed that the highest mean scores for both temporary colostomy patients and their family caregivers regarding total life satisfaction scores was observed in the first assessment (18.421 & 21.315). Data also revealed statistically significant difference for both patients and their family caregivers throughout the three assessments. Regarding permanent colostomy patients, the highest mean score was observed in the third assessment (20.184) and in the first assessment in their family caregivers (19.842). Statistical significant differences were observed for both patients and their family caregivers throughout the three assessments with an exception in the second and third assessment among family caregivers in which, no statistical significant difference was seen regarding these two assessments (p=0.729).

Comparing temporary and permanent colostomy patients to their family caregivers in relation to total life satisfaction scores it was obvious that the highest mean scores were observed in family caregivers of temporary colostomy patients in the first assessment and in permanent colostomy patients in the third assessment (21.315 & 20.184). Highly statistically significant differences were observed throughout the three assessments among both groups (p=0.000). (Table 5)

In relation to total hope scores among temporary colostomy patients and their family caregivers, it was observed that the highest mean scores were observed in the first assessment for both temporary colostomy patients and their family caregivers (39.947 & 47.052). Highly statistically significant differences were observed throughout the three assessments. In relation to permanent colostomy patients and their family caregivers, the highest mean scores were observed among permanent colostomy patients in the third assessment (40.298), and in the first assessment for their family caregivers (48.026). Statistically significant differences were observed throughout the three assessments for both of them. (Table 6)

Comparing temporary and permanent colostomy to their family caregivers in relation to total hope scores it was obvious that the highest mean scores were observed in family caregivers of temporary colostomy patients in the first assessment and in permanent colostomy patients in the third assessment (47.025 & 40.289). No statistical significant difference was observed regarding permanent colostomy patients and their family caregivers in the third assessment (p=0.250). (Table 7)

8-Discussion

People have an amazing ability to adapt to difficult circumstances. Surveys of people with seemingly severe disabilities, such as colostomy patients, find that people report levels of emotional well-being that are often higher than one might expect given their condition **(Davis & Stephanie, 2010)**.

It was obvious that more than half of temporary colostomy patients, and most of permanent colostomy patients aged from 40-50 years. Also, the majority of them in both groups were males. These results were consistent with the study conducted in 2009 by **Numico, Anfossi, Bertelli, et al,** which attempted to clarify the average age of someone with a stoma, as well as how the population was segmented by surgery type. The study revealed that the average age of a person with a colostomy to be 50.3 years, an ileostomy 67.8 years, and a urostomy 66.6 years. Another study conducted by **Harrington & Smith (2008)**, revealed that, no definitive gender data are currently available for the ostomy population. However, if the average age of the person with an ostomy is 50.3 years and the average life expectancy of Egyptian women is higher than that of men, it could be presumed that more women than men have an ostomy. In fact, a 1998 consumer survey of more than 1,400 people with an ostomy showed that 57% were female. This is congruent with data from the Centers for Medicare and Medicaid Services that the prototypical Medicare resident in either home care or a nursing home is female. Additionally, the American Cancer Society estimates that approximately 147,500 new cases of colorectal cancer will be diagnosed every year, affecting women slightly more than men (74,700 versus 72,800). However, after the age of 45, the incidence for men seems to increase slightly. Regarding place of residence, more than two thirds in both groups were residing in rural areas, it was obvious that they had a strong belief in the mercy of God among rural patients compared with urban patients regardless the type of colostomy, which is consistent with the perception that rural people are more fatalistic, perhaps because of the impact of their environment, i.e. they have a sense of independence **(Wright, Zhang, Ray, et al, 2008).**

Family caregivers who cared for either temporary or permanent colostomy patients were older than their patients, and most of them were females. More than one half of them were married, residing in rural areas, and illiterate. About three quarters of them were not working and had monthly income less than 500 Egyptian pounds. Although females by nature had a significant caring ability, the study conducted by **Harrington & Smith in 2008**, revealed that regardless of sex, health care providers should consider the persons' developmental stage and their monthly income when trying to assess their hope level. When persons became older and had low income, their caring capacity declined dramatically, and they became depressed by time in the presence of stressors.

Regarding total life satisfaction scores, it was obvious that more than half of temporary colostomy patient were slightly dissatisfied in the first assessment and became extremely dissatisfied in the second and third assessments. The same percentage of permanent colostomy patients was dissatisfied in the first assessment, and they were slightly dissatisfied in the second assessment, and slightly satisfied in the third assessment. These results were consistent with the study conducted In 2010, by **Thomas, Lindsay & Enid** who studied adjustment to ostomy among three groups of patients 30 years or older with fecal stomas: 1) temporary ostomies resulting from disease; 2) temporary ostomies resulting from trauma; and 3) permanent ostomies resulting from disease. The trauma group appeared to have had slightly more problems and used different coping mechanisms than the other two groups ."Sometimes knowing the adversity the patient face is permanent makes it easier to face that adversity," a study that found that people who had a temporary colostomy experienced no improvement in life satisfaction over time. But, people who had irreversible colostomies reported increased satisfaction with their quality of life. It might seem strange that patients who became better were less satisfied with their lives, yet the finding makes sense: “If the condition is temporary,” “the patient was thinking that he couldn't wait until he gets rid of this.” Thoughts like these keep the patient from moving on with his life and focusing on the many good things that remain. The researchers followed 74 patients who had just received either a permanent or temporary colostomy or ileostomy. The people with permanent colostomies, forced to reckon with the cards they were dealt, emotionally adapted to their situation. The people with temporary colostomies, by contrast, remained frustrated by their situation, waiting impatiently to trade their cards in, so to speak, for better ones. They suffered from the curse of high expectations.

"Happiness is not just a matter of circumstances, but also how circumstances compare to the person's experiences," "If the patient continue to hold out hope that things will get better, he will feel more frustrated." Results of our present study revealed that temporary colostomy patients were low hopers throughout the three assessments and their percentages increased reaching 92.1% in the third assessment. Contrary to this results, the percentage of permanent colostomy patients who were low hopers decreased from 71% in the first assessment to 39.4% in the third assessment. This could be explained in the light of observing that permanent colostomy patients didn’t give up hope completely – but were freed to hope for something else – to be able to deal effectively with the cards they’d been dealt and “get on with their lives”, as the researchers says. That’s why they were happier. They had more control **(Woodhouse, 2010).**

This result was consistent with the study conducted by **Sanatani, Schreier & Stitt (2008),** including 40 permanent and temporary colostomy patients , and revealed that even though both groups of people had the same disability, those who knew their condition was permanent adapted better to their situation over time. If the person hoping for something better, then he continually compare his current lot in life to what it could be, and the contrast hurts, "People who have a temporary condition think, 'Why do I have to live with this? I want to be better.' People with a permanent condition think, 'Things aren't perfect, but these are the cards I've been dealt.' This appeared to be the same mechanism as the "synthesized happiness" that happens when the person knew that he could not change his mind. This would prevent the brain from putting itself into "forcing himself to be happy with his decision/situation mode. These results were contrary to the study conducted by **Utne, Miaskowski, Bjordal, et al (2008**), who looked at colon cancer patients who had temporary and permanent colostomy. Over the next six months, the first group - the one with hope for the operation’s reversal – reported feeling happier than the other group. It’s about the conclusion of a new study about hope, which maintains (in the researchers's opinion, incorrectly), that seriously ill people are “happier” when they give up hope. ".

Regardless the type of colostomy the highest percentage of family caregivers in both temporary and permanent colostomy patients in relation to total life satisfaction were slightly satisfied in the first assessment, but dissatisfied in the second and third assessment, and the degree of dissatisfaction increased by time in the third assessment. The highest percentages of them in both groups were high hopers in the first assessment and became low hopers in the third assessment. Patients' spouses or significant others experience even more distress and anxiety. After ten days at home, while the patient was coping relatively well as the patient at the beginning focused on his physical condition and when he became better he focused on his psychological concerns, the spouse's ability to cope effectively dropped. After two months the anxiety level reached its peak level which in turn affects their hope level and satisfaction with their life. Regarding total hope scores, no statistically significant differences were observed between the second and third assessment in family caregivers of permanent colostomy patients (p=0.729), and between permanent colostomy patients and their family caregivers in the third assessment (p=0.250). It was observed that by time, family caregivers of permanent colostomy patients stayed at the same relatively low hope levels in the second and third assessment as they reported that they became more depressed than their patients.

These results were consistent with the study conducted by **Kotronoulas & Grigorios (2009),** on spouses of patients who underwent ostomy surgery after a diagnosis of rectal cancer, reporting that the spouses have problems related to feelings of uncertainty while learning and adapting to a new life and a changing body. Ostomy has been shown to affect and restrict both family and social life. In another study conducted by Rowland & Julia (2009), revealed that anxiety level in spouses of ostomy patients decreased to its lowest levels ten days after the patients come home from the hospital, however, there was a high risk of subsequent conversion to depression by the 90th and 180th day.

In addition, **Varma (2009), stated** that a range of life factors can affect how people deal with a chronic illness, including their psychological state before the illness, their social networks and support systems, and their sense of spirituality, and none of those factors were considered in the study. "A lot of it has to do with people's sense of: 'I have a place and worth in the world. I'm safe and taken care of. I have plans and expectations for my life. I have control over things in my life. I have some kind of secure inner peace,' "These are things that go on in someone's inner psyche and help in the healing process." If people have support and a sense of spirituality, she said, they may not be cured but they can be healed. "You need to look at curing versus healing,". "Cure is cure of an illness. Healing is a feeling of wholeness of an individual." "I don't think that you necessarily give up hope," Berger said. "When you are chronically ill, you may hope for other things. Hope just changes so that rather than hoping for a cure, you hope to get to somebody's wedding or you hope to see the sunset the following day. You don't hope for the same things as hoping for a cure. That's not losing hope. It's very different, and they can still feel healed."

9-Conclusion

It was surprising to conclude that when comparing temporary colostomy patients to permanent ones, temporary colostomy group were more affected by their colostomies than the permanent colostomy group. As the time passed and the period of having this ostomy prolonged, their satisfaction with life as well as their hope level decreased along the three assessments. Contrary to this result, permanent colostomy group reported gradual increase hope level and satisfaction with their life through the three assessments. Family caregivers of both groups were also affected as their colostomy patients, it was obvious that regardless the types of colostomy and by time their hope level and satisfactions with their lives were decreased dramatically along the three assessments.

The study also concluded that life satisfaction may be affected by and related with hope level. It was obvious that in both groups as the patient's hope level increased, satisfaction with life also increased. While there was an exception in family caregivers of permanent colostomy patients in which the higher percentage of them were dissatisfied as well as high hopers in the second observation. Statistically significant differences were observed between both temporary and permanent colostomy as well as their family caregivers throughout the three assessments with some exceptions in which no statistically significant differences were observed in relation to life satisfaction among family caregivers of permanent colostomy patients in the second and third assessment. The same was found between permanent colostomy patients and their family caregivers in the third observation in relation to hope level.

10-Recommendations:

Based on the results of the present study, it is recommended that:

1- Hope Intervention program should be developed for colostomy patients especially temporary group.
2- Assessment of needs of family caregivers of colostomy patients should be done as well as involve them in the Hope Intervention program.

3- Assessment and identification of other intervening factors which could affect hope level and satisfaction with life such as spirituality, personality traits and past experience should be done.
4- Health care providers specially nurses and physicians are an integral part in promoting life satisfaction and enhancing hope which affect well-being outcomes, they have to give honest information and not to give false hope to their patients.
5- Replication of the study on a larger probability sample.
6- Further researches should be done focusing on family caregivers of colostomy patients.

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