

The Effectiveness of Implementing a Designed Educational Protocol Regarding knowledge among clients with Intestinal Ostomy

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Abstract: Education protocol is play a major role for enhancing, educating and improving clients knowledge self-care with stoma. **Design:** Quasi-experimental was used. **Setting:** The study was conducted at King Abdulaziz University Hospital and King Fahad General Hospital in the general surgical, medical department and outpatient clinic. **subjects:** A purposive sample of 50 clients were selected. **Tool:** One tool it consisted of two parts, part I: Socio –demographic and clinical history data, part II knowledge Assessment Questionnaire. **Results:** Revealed that there was a highly significant difference at $p < .001$ between pre and post immediate in all items of knowledge and there is no significant difference between post immediate and after one month of implementing an education protocol. **Conclusion:** There was a highly significant improvement in all knowledge items between pre and post immediate education protocol. **Recommendation:** Stoma education session should be held periodically.

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1. Introduction:

An intestinal stoma defined by [1] as a surgically created of bowel that is exteriorization from the anterior abdominal wall of the ileum or colon. the two main types of intestinal stoma are colostomy (large intestine) and ileostomy (small intestine) that permits waste to passages. Creation of intestinal stoma are performed for a variety reasons but the most common reasons including cancer, inflammatory bowel diseases, acute diverticulitis and ulcerative colitis [2]. A stoma may be temporary or permanent [3]. Research conducted by [4] has showed that formation of stoma Surgical is a major clinical procedure, need assessment of knowledge, self-care skills for independence, helping to minimize problems enhance confidence, and challenges accompanied with stoma approached in a holistic manner with psychological and emotional support provided with the development of practical stoma care skills [5].

1.2 Aim of the study

Measure the effectiveness of a designed educational protocol regarding knowledge among clients with intestinal ostomy.

1.3 Study Hypothesis

Clients who attend an educational protocol about intestinal ostomy have a positive effect on knowledge compared to those who are not.

2. Method and Material

2.1 Design

Quazi -experimental research design was undertaken.

2.2 Setting

The study was carried out at surgical, medical and outpatient Clinic in King Abdul aziz University Hospital and King Fahad General Hospital in Jeddah city.

2.3 Subject

A purposive sample of (50) clients from both gender was selected according to inclusion criteria as; adult clients who aged ≥ 18 , were able to communicate, who undergoing surgery involving the creation of a fecal ostomy during their hospital stay either temporary or permanent ostomy, be able and willing to return for follow-up visit 30 to 60 days post-operative, the exclusion criteria included clients without mental illness.

2.4 Tool

Tool (I): It consisted of two parts,

Part I; A. Socio-demographic Characteristics as age, gender, marital status, education level.... etc. **B. Clinical history data** as height, weight, Body Mass Index (BMI), kind of ostomy, types of ostomy, pouch types...etc. **part II; knowledge Assessment Questionnaire:** which was develop by researcher based on previous studied in order to assess clients' knowledge about intestinal ostomy self-care including the following;1. knowledge of stoma characteristics stoma e.g. Which of the following is an ileostomy /colostomy output after surgery? 2. Knowledge of

stoma self-care e.g. measure of stoma e.g. After surgery the stoma should be measured every?3. Knowledge of stoma nutrition e.g. food should be avoided after stoma surgery. Clients' responses were scored as (1) for correct answer and (zero) for incorrect answer. The total score was categorized into either satisfactory level from (60% and more) or unsatisfactory level (less than 60%).

2.5 Validity and Reliability

The content validity of the study tool was reviewed by of five experts to judge the appropriateness, accuracy and representativeness of the tool: Three academic staff from medical surgical and community health nursing field, one surgeon from a surgical medical department fields, and one statistician was selected to test the clarity, feasibility and applicability of instrument. Reliability was done by difficulty coefficient was 0.26 to 0.80.

2.6 pilot study

A pilot study was carried out on 10 % of the total number of a purposive studied sample. the researcher chooses 10 ostomy adult ostomy clients with eligible criteria. the tool was tested in order to be revised for clarity, understanding, relevance, comprehensiveness, applicability, feasibility and ease of implementation. A minor modification of the tool was done. the researcher has excluded the pilot section from the sample size participating in the study.

2.7 Ethical consideration

official approval was obtained from ethical committee in faculty of Nursing, King Abdul Aziz University. Additional two approval written were recruited from the unit of biomedical ethics of King Abdul Aziz University Hospital and the unit of Bio Medicals Ethics of (MOH) to conduct study from King Fahad General Hospital. After submitting the proposal, explain objectives and study methods of the study. each participant received a written informed consent with clear instruction, the objectives and aims of the study were explain. In addition, participants were informed that participation in the study as voluntary, they had right to choose whether to participate or withdraw from the study at any time, and their decision would not harm them the treatment or service they are offered in the centers. the researcher assures each participant read the consent carefully. Confidentiality and anonymity will be maintained for all participants.

2.8 Data collection procedure

The researcher -initiated data collection process by conducting meeting with head nurse working in surgical ward, medical and outpatient clinical to explain the purpose of the study and process of work to facilitate data collection procedures. the researcher met 2 clients per week to conduct the pretest of

knowledge, after that conducted the educational session then collection post immediate and after one month of educational protocol which include three phases.

I: preparatory Phase:

The researcher designed an educational protocol to identified the ostomy clients' needs which consist of: 1. Anatomy and physiology of stoma creation, 2. Specific nutrition requirement to client with stoma, 3. Related medication, 4. Teaching regarding stoma activity as working, driving and traveling, 5. Home management and follow up care as (skin care, pouching and irrigation). In addition, the educational protocol has two sessions, session I include assessment for one (hour) pretest. Pretest (20 min), Session II after one week which include home management (30 min).

II. Implementation phase

Data collection started from January 2017- August 2017 The education protocol was undertaken surgical, medical ward and outpatient clinic for conducting education session of each participating in both hospitals setting as three phases pre -education, post immediate and after one-month researcher divided the participant four groups then distributed pretest which included knowledge assessment questionnaire. The education class conducted in outpatient clinic with two part the theoretical and practical part. the theoretical part carried out within 1hour in education class room provided by PowerPoint presentation, video display the content were prepared based on the literature review which include, definition of stoma, anatomy of intestinal stoma, indication for stoma, complication of stoma, the appropriate nutrient, self-care of stoma after one week the researcher carried out the education session related to, home management care then started posttest in order to assess clients difference on knowledge. The researcher after close education session distrusted the education material (booklet) in order to guiding, supporting and teaching of stoma self-care management.

III. follow up phase

The researcher after one month was conducted the test in order to assess retained of knowledge, by using the same tool for intestinal ostomy clients.

Analysis data

Data was entered into IBM® SPSS® (Statistical Package for Social Science) version 21. software. Descriptive analysis of central tendency (mean) and dispersion (standard deviation) were used to describe the continuous variables, frequency and percentage characteristics of studied sample, t-test pair was used.

3. Results:

Table (1): frequency and distribution of Socio demographic characteristics of the studied sample n= 50.

Socio demographic	NO.	%
1. Gender		
Male	43	86
Female	7	14
2. Age group		
31- 40 years	8	16
41- 50 years	27	54
> 50 years	15	30
3. Marital status		
Single	4	8
Married	37	74
Divorced	3	6
Widowed	6	12
4. Educational level		
Illiterate	4	8
Primary	10	20
Intermediate	15	30
Secondary	10	20
University.	12	24
5. Occupation		
Employee	48	96
House wife	2	4
Retried	2	4

Table (2): Clinical Characteristic distribution of the studied sample n=50.

Clinical Characteristics	No.	%
1. Body Mass Index		
< 18.5	2	4
18.5-25	19	38
>25	29	58
2. Present medical diagnosis		
Bowel or colon cancer	29	58
Trauma	12	24
Ulcerative colitis	4	8
Crohn disease	3	6
Diverticular diseases	2	4
3. Kind of Ostomy		
Ileostomy	17	34
Colostomy	33	66
4. Type of Ostomy		
Permanent	33	66
Temporary	17	34
5. Ostomy Surgery type		
Elective	43	86
Emergency	7	14
7. Pouch types		
One piece	47	94
Two pieces	3	6
11. Receive stoma instruction		
Yes	6	12
No	44	88

Table (3): Relationship between pre, post immediate and after one month of implementing an educational protocol regarding to knowledge characteristic of stoma among studied sample.

Stoma characteristic Knowledge Items		Pre Educational protocol	post Immediate Educational protocol	After one month Educational protocol
		No. %	No. %	No. %
1.An ileostomy /colostomy output after surgery. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	16 (32)	47 (94)	49 (98)
		34 (68)	3 (6)	1 (2)
		0.32 ± 0.47	0.94 ± 0.24	0.98 ± 0.14
	t	8.27		1.00
	p	0.00**		0.32
2. Emptying the pouch bag. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	20 (40)	7(14)	1 (2)
		30 (60)	43 (86)	49 (98)
		0.40 ± 0.50	0.14 ± 0.35	0.02 ± 0.14
	t	3.26		2.59
	p	0.00**		0.013*
3.The appearance of a healthy stoma. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	28(56)	45(90)	46(92)
		22 (44)	5 (10)	4 (8)
		0.56 ± 0.50	0.90 ± 0.30	0.92 ± 0.27
	t	4.63		0.44
	p	0.00**		0.66
4.The normal protrusion size of stoma. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	10 (20)	3 (6)	4 (8)
		40 (80)	47 (94)	46 (92)
		0.20 ± 0.40	0.06 ± 0.24	0.08 ± 0.27
	t	2.19		0.44
	P	0.03*		0.66
5.The normal color of stoma opening. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	20 (40)	41 (82)	45 (90)
		30 (60)	9 (18)	5 (10)
		0.40 ± 0.50	0.82 ± 0.39	0.90 ± 0.30
	T	4.88		1.07
	P	0.00**		0.29
6.The normal color of peristomal skin. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	24 (48)	45 (90)	47 (98)
		26 (52)	5 (10)	3 (94)
		0.94 ± 0.24	0.90 ± 0.30	0.94 ± 0.24
	t	5.96		0.70
	P	0.00**		0.49

Table (4): Relationship between pre, post immediate and after one month of implementing an educational protocol regarding to self-care knowledge of stoma among studied sample

Stoma self care knowledge Items		Pre Educational protocol	post Immediate Educational protocol	After one month Educational protocol
		No. %	No. %	No. %
1. After surgery the stoma should be measured every. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	18 (36)	41 (82)	44 (88)
		32 (64)	9 (18)	6 (12)
		0.36 ± 0.49	0.82 ± 0.39	0.88 ± 0.33
	t	5.31		0.77
	P	0.00**		0.44
2. After six weeks the stoma should be measured every. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	22 (44)	39 (78)	45 (90)
		28 (56)	11 (22)	5 (10)
		0.44 ± 0.50	0.78 ± 0.42	0.90 ± 0.27
	t	3.65		2.29
	P	0.00**		0.33
3. The appropriate way of cleaning stoma. <ul style="list-style-type: none"> • Correct answer • Wrong answer 	Mean±SD	29 (58)	42 (84)	44 (88)
		21 (42)	8 (16)	6 (12)
		0.58 ± 0.50	0.84 ± 0.37	0.88 ± 0.33
	t	3.07		0.70
	P	0.00**		0.49

Table (5): Relationship between pre, post immediate and after one month of implementing an educational protocol regarding to nutrition knowledge of stoma among studied sample

Nutrition knowledge items		Pre Educational protocol	Post immediate Educational protocol	After one moth Educational protocol
		No. %	No. %	No. %
1. Food should be avoided after stoma surgery • Correct answer • Wrong answer		34 (84) 16 (32)	42 (84) 8 (16)	48 (96) 2 (4)
	Mean±SD	0.68 ±0.47	0.84 ±0.37	0.96± 0.20
	t	2.06	2.41	
	p	0.044*	0.044	
2. Food is appropriate to thicken the stool. • Correct answer • Wrong answer		37 (74) 13 (26)	47 (94) 3 (6)	44 (88) 6 (12)
	Mean±SD	0.74± 0.44	0.94± 0.24	0.88± 0.33
	t	3.13	1.14	
	p	0.00**	0.26	
3. Food may loosen the stool. • Correct answer • Wrong answer		21 (42) 29 (58)	39 (78) 11 (22)	42 (84) 8 (16)
	Mean±SD	0.42± 0.50	0.78± 0.42	0.84± 0.37
	t	3.84	0.69	
	p	0.00**	0.50	
4. Food are considered as a gas producing. • Correct answer • Wrong answer		31 (62) 19 (38)	44 (88) 6 (12)	43 (98) 7 (14)
	Mean±SD	0.62± 0.49	0.88± 0.33	0.8±6 0.35
	t	3.26	0.30	
	p	0.00**	0.77	
	Mean±SD	0.54± 0.50	0.76 ±0.43	0.86 ±0.35
	t	2.53	1.30	
p	0.015*	0.20		

Table 1 Shows the sample characteristics, which revealed more than of the studied sample 54% range the age were 41- 50 years. Most of the sample were male and married with (84% & 74 respectively). In relation to the education level about one third 30% of them received intermediate education, while 24% were received a university education level. Concerning the occupation majority of the sample 96% were employee and the rest 4% were house wife and retired.

Table 2 Shows studied sample clinical characteristics, which revealed that more than half 58% as body mass index were overweight and 4% were under weight, most of sample 66%had creation colostomy and rest 34%were ileostomy, while 34% had temporary and 66%were permanent type of stoma. More than two third 86% had elective surgery where as 14% had emergency surgery. Most of the sample were94% one-piece pouch while6% were two pieces pouch. Most of patients88%weren't receive the instruction and 12% had received regarding stoma care.

Table 3 revealed that there is a highly significant differences $p < .001$ between pre-and post-immediate stoma educational protocol regarding to all items of stoma characteristic knowledge, as well as there is no

significant differences between post immediate and after one month of educational protocol in all knowledge items related to stoma characteristics knowledge.

Table 4 demonstrated that there is a highly significant differences $p < .001$ between pre and post immediate stoma education protocol regarding all items of stoma self-care knowledge. However, there is no significant differences between post immediate and after one-month of educational protocol to all Items related to stoma self-care knowledge.

Table 5 indicated that there is a highly significant differences $p < .001$ between pre and post immediate stoma education protocol regarding all items of stoma nutrition knowledge. However, there is no significant differences between post immediate and after one-month of educational protocol to all Items related to stoma nutrition knowledge.

4. Discussion:

The overall aim of this study is to measure the effectiveness of implementing an educational protocol regarding to knowledge, clients with intestinal ostomy. Results are discussed The socio -demographic findings of the study revealed that the majority of respondents

were predominantly male, this findings were similar to study performed by [6] who reported 89% were male performed among clients with bowel cancer resulting in ostomy, also inconsistent with [7] who stated that men have a higher incidence 85 % of stoma surgery caused by colorectal cancer. The majority of studied sample age were 41-50 years. This finding supported by [8] who reported that ostomy creation tends to strike in middle age between 40-50 age with 65 % were require more support in adapting to life with a stoma physically and mentally.

As regard to marital status three quarter were married this agree with previous reports of [9] which found that an ostomy creation mostly performed within a marital relationship. As it comes to level of education the majority of education level were intermediate level this contractor with other literature [10] who reported that 40% were high education level. As regard to BMI more than half were < 25 this finding supported by [11] who reported that BMI were 58% which lead to develop a several ostomy complications such as retraction, stomal necrosis, bleeding leakage, peristomal irritant dermatitis, pain, and mucocutaneous separation. Also, of interest more than half of the reason for ostomy creation for bowel or colon cancer cancer the finding of this study also consistent with [12] who reported 65% had an ostomy for bowel and colon cancer reasons.

In this study around one two third had colostomy and most of the studied sample had wear one pieces pouch. This finding agrees with study done by [13] of 67% were had a colostomy and with one pieces pouch. another finding of the study were approximately one third of studied sample who had stoma created had a permanent stoma similar to [14] stated 70% of ostomate clients had a permanent stoma that they will have effect of their life.

The present study indicated that the majority of the studied sample did not received any education instruction regarding ostomy care by Enterstomal Therapy and were solely by nurses on the other hand this finding similar to [15] study which found 40% of nurses were more effective at giving information, while the study performed by ([16] who stated that ostomate clients did not receive any educational counseling from Enterstomal Therapy this support the current study, in contrast according to [17] study who stated only 79% of all ostomy clients received information from doctors before and after the surgery. Furthermore, has shown that all of the clients were informed about the stoma and this was beneficial for them.

Another findings in the current study measures the knowledge items regarding to stoma characteristics before, post immediate and after a completing of educational protocol, these includes knowledge of

ileostomy/colostomy output, proper way of emptying a pouch bag, healthy appearance of stoma, normal size of stoma protrusion, the normal color of stoma and peristomal skin revealed that there are a highly significant difference at $p < .01$ between pre and post immediate, whereas there are no significant difference between post immediate and after one month of receiving an educational session this supported by [18] who clarify that there is a highly statistical differences at $p < .01$ relate to knowledge of stoma characteristic between pre and post immediate, in addition there are no significant relationship between post immediate and after one month of implementing educational protocol.

In relation to knowledge items regarding to stoma self-care before, post immediate and after a accomplishing of educational protocol, these includes duration of measure stoma after surgery, after six week and the appropriate way of cleaning stoma the present study indicated that there is a highly statistical differences at $p < .01$ between pre and post immediate and there is no differences relationship between post immediate and after one month of implementing an educational protocol, in contrast with [19] who compare that ostomy clients who received an educational counseling between post and after one month showed there was a significant differences at $p < .005$ which indicated that individuals gain positive self-care behaviors.

Also, the current study showed there was a highly statistical differences at $p < .01$ between pre and post immediate regarding to knowledge items of nutrition which include food should be avoided after stoma surgery, the appropriate food lead to thicken the stool, food may loosen the stool, food are considered as a gas producing, as well as there was no statistical significant between post immediate and after one month of implementing an educational protocol, this finding disagree by [20] who stated there was a statistical differences related to knowledge of nutrition after one month of completing the education protocol which help ostomy clients to cope and improve their quality life.

5. Conclusion:

The current study illustrates that there was a highly significant difference of all items of knowledge between pre and post immediate and there were no statistical differences between post immediate and after one month of a completing an education protocol, furthermore ostomy education protocol is essential to ensure clients knowledge needs are met, as well as can enhance patient behavior which lead to improve quality of life.

6. Recommendation:

Stoma education session should be held periodically. enterstomal therapy need a skill technical l training

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