

# Association between Jordanian Ostomates' Knowledge about Intestinal Ostomy Care and their Ostomy Health-Related Problems

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## Abstract

**Introduction:** Patients with intestinal ostomy (IO) have several health-related problems and complications. This research is conducted to determine the correlation between the subjects' knowledge about IO care and the frequency of health-related problems and complications.

**Method:** A cross-sectional design and convenience sampling method were used to investigate 174 patients with IO (ostomates).

**Results:** Almost all of the subjects had at least one IO health-related problem. About half of the subjects had more than three IO health-related problems. The subjects' had low (poor) knowledge about IO care and management (mean $\pm$ SD = 52.2 $\pm$ 16.4, out of 100). The results showed negative correlation between ostomates' knowledge about IO care and their frequency of IO health-related problems and complications ( $r = -0.54$ ,  $p = 0.03$ ).

**Conclusion:** Continuing health education and training programs are recommended to all patients with IO to improve their knowledge about IO care and to prevent the negative health events and complications which are related to IO.

**Keywords:** *Intestinal ostomy, ostomates' knowledge, ostomy health-related problems.*

## Introduction

Colorectal cancer is considered the third most common type of cancer<sup>1,2</sup>. Worldwide, the surgical intervention rate for insertion of intestinal ostomy (IO) is

also increasing about 3% every year<sup>2-4</sup>. Previous studies have showed negative impact of IO on ostomates' quality of life (QOL). Also, most of the ostomates may have several ostomy-health related problems<sup>4</sup>.

Previous studies have showed negative relationship between patients' knowledge and their skills to care and manage their IO, and ostomy health-related problems. Also, the patients with IO who had high knowledge about caring for IO, they are more capable of managing their IO and prevent further health-related problems and complications<sup>4</sup>. Therefore, all patients are required to obtain health teaching and training about IO care and management and provide them pre-discharge instructions to prevent the negative health events and complications that related to IO<sup>5,6</sup>. Healthcare providers, specifically nurse educators, have a major role in providing health

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teaching about caring of IO and managing of IO health-related problems <sup>7</sup>.

Up to researcher knowledge, there is no published literature that investigate the Jordanian ostomates' knowledge about caring for their IO. Therefore, this current study was conducted to investigate the Jordanian ostomates' health-related problems and their knowledge about management of their IO. This important clinical research topic will be a baseline information for further research and for developing clinical guidelines for caring of IO and prevent its complications.

**Study Objectives:** This current study is aimed to identify: 1) the subjects' health-related problems of their IOs; 2) the subjects' exposure to health education and training about IOs caring 3) the subjects' knowledge about the characteristics and caring for IOs; and 4) the correlation between the subjects' knowledge about caring for their IOs and the frequency of having ostomy health-related problems.

## Research Method

**Research Design:** This cross-sectional study was conducted to address the objectives of this study.

**Research Sample and Setting:** A convenience sampling method was utilized to recruit the 174 patients with IOs. All the subjects in this study were recruited from two private hospitals in Amman city, Jordan. The subjects of the current study were adult patients with IOs for at least one year, admitted to the selected hospitals for medical care or follow up appointment, and Arabic language speaker.

**Data Collection Procedure and Ethical Considerations:** Before conducting this study, official approval was obtained from the ethical committee for health research at Al-Ghad International Colleges for Applied Medical Sciences. A written consent form was signed by all the eligible subjects who decided to participate in this research. The subjects were noted that their participation in the current research is voluntary and their personal information will be confidential and anonymous. The participants took between 10 to 15 minutes to complete filling the adopted questionnaire.

**Instruments:** A structured self-report questionnaire was used to address this study's objectives. The subjects' medical record was checked to identify their clinical data (e.g. types of stoma). The subjects' were asked to report

their IO health-related problems and the complications by answering either "yes" if they have any of the listed IO health-related problems or "no" if they have not. These IO health-related problems include 13 health problems such as abdominal gases, abdominal pain, and odor from the IO. This tool was adopted from City of Hope QOL–ostomy questionnaire (specifically physical well-being subscale), which is published in a previous study that investigated the QOL among the patients with abdominal ostomies <sup>8</sup>. The validity and reliability of this subscale is documented and used in several previous international studies.

The participants were asked to report any exposure to previous health education or/and training about caring for IO in a prior year of data collection. Also, they were asked to report their intention to have continuing health education or/and training program in the future about IO care and management of IO health-related problems and complications. This tool was adopted and modified based on the previous studies <sup>9,10</sup>.

A Stoma-related Knowledge Scale was adopted from a previous Chinese study<sup>11</sup>. This tool is used to identify the perception of the subjects' knowledge about their IO care and management of its complications. The original tool was consisted of 14 items <sup>11</sup>. Six items, which are related to the characteristics of IO and management of IO health problems and complication, were added to this tool. The subjects' responses on this 5 points likert scale <sup>11</sup> were ranged between (1=not at all know) and (5=totally know). The highest total score of this scale (100) indicates the highest knowledge about caring of IO and management of its complications. Based on the previous Chinese study, the subjects' total score between 81 and 100 indicate a high (excellent) level of knowledge, subjects' score between 61 and 80 indicate middle (good) level of knowledge, subjects' score between 41 and 60 indicate low (poor) level of knowledge, and scores below 40 indicate very low (very poor) level of knowledge about IO care.

**Data Analysis:** SPSS software program was used for statistical analysis. Frequencies and descriptive statistics were used to identify the proportions and the averages of the collected data. Pearson's correlation test was also carried out to determine the correlation between the subjects' knowledge about caring for their IOs and the frequency of having ostomy health-related problems. The significant *p* value was preset as < 0.05.

## Results

Approximately, three fourth of the subjects had permanent IO (73%). The majority of the subjects had colostomy (67.2%). Approximately, 32.8% of the subjects had ileostomy. Reviewing the subjects' record showed a diagnosis of cancer in colon or rectum was the major (54.6%) reason for insertion of IO. Almost all of the subjects (97.1%) had ostomy-related health problem. High frequency of the subjects (48.3%) had four or more ostomy-related health problems. The mean of the subjects' ostomy health-related problems, prior two weeks of hospitalization, was 8.83 (out of 13 health problems) (Table 1).

**Table 1. Participants' Clinical Data and Ostomy Health-Related Problems**

Variables	n	%
<b>Types of stoma</b>		
Permanent intestinal ostomy	127	73.0%
Temporary intestinal ostomy	47	27.0%
<b>Location of ostomy</b>		
Colostomy	117	67.2%
Ileostomy	57	32.8%
<b>Reasons of ostomy insertion</b>		
Cancer colon or rectum	95	54.6%
Intestinal obstruction	22	12.6%
Inflammatory bowel disease	30	17.2%
Others*	27	15.5%
<b>Number of ostomy-related health problems during the last two weeks of hospitalization</b>		
No ostomy-related health problem	5	2.9%
One ostomy-related health problem	12	6.9%
2-3 ostomy-related health problems	73	42.0%
≥ four ostomy-related health problems	84	48.3%
<b>Total score of the participants' ostomy-related health problems (ranges from 0 to 13 ostomy-related health problems)</b>	<b>Mean</b>	<b>(±SD **)</b>
	8.83	± 2.41

\* Trauma, infectious enteritis, colonic polyp,.. etc., \*\* SD: Standard deviation

The findings showed that about 59% of the subjects had exposure to previous health education and training about IO care prior one year. Among them, about 63% of the subjects received their health education or training about IO care by nurses. Whereas about 37% of the participants received the health education and training by physicians. The majority of the subjects (82.2%) were intended to participate in continuing health education about IO care in the future (Table 2).

**Table 2. Participants' Exposure to Health Education and Training Program about Ostomy Care**

Variables	n	%
<b>Exposure to previous education or training about ostomy care during the last 12 months</b>		
Yes	102	58.6%
No	72	41.4%
<b>Sources of previous education or training about ostomy care during the last 12 months (n = 102)</b>		
Nurses	64	62.7%
Physicians	38	37.3%
<b>Willing to participate in continuing health education and training program about ostomy care in the future</b>		
Yes	143	82.2%
No	31	17.8%

The subjects believed that they were more knowledgeable about the definition of the stoma (Mean±SD= 3.8 ±1.2), the purpose of the stoma (Mean±SD= 3.6±0.9), and the amount of daily fluid intake (Mean±SD= 3.5 ±0.9) than other items regarding IO care and management (Table 3).

**Table 3. Perception of the subjects' knowledge about their intestinal ostomy care and management**

Variables	Mean (±SD)
<b>How do you rate your knowledge about the following items: (Mean out of 5)</b>	
1. Anatomy and physiology of the gastrointestinal tract	2.2 (±0.6)
2. Definition of the stoma	3.8 (±1.2)
3. Indication and purpose of the stoma	3.6 (±0.9)
4. Components of a pouching system and stoma care products	2.6 (±0.7)
5. Amount of daily fluid intake	3.5 (±0.9)
6. Proper foods to eat with a colostomy	2.8 (±0.8)
7. How to control gases	2.6 (±0.6)
8. How to control odor	2.7 (±0.8)
9. Bathing and personal hygiene	3.1 (±0.9)
10. Normal appearance of stoma and peristoma skin	2.8 (±0.8)
11. How often to change colostomy pouch	2.4 (±0.6)
12. Monitoring and managing of potential stoma complications	2.1 (±0.4)
13. Clothing style change	3.0 (±1.3)
14. Daily life change	3.1 (±1.2)
15. When should contact, follow up, and visit healthcare provider as instructed	3.4 (±1.5)
16. How to measure stoma	2.4 (±0.7)
17. Changing the stoma appliance	2.5 (±0.8)

Variables	Mean ( $\pm$ SD)
18. Ostomy irrigation	1.9 ( $\pm$ 0.3)
19. Applying the clean pouch	2.7 ( $\pm$ 0.6)
20. Peristomal skin care	2.3 ( $\pm$ 0.9)
<b>Mean for the total score of the subjects' perception about IO characteristics and management (Mean out of 100)</b>	52.2 ( $\pm$ 16.4)
<b>Overall mean of the subjects' perception about IO characteristics and management (Mean out of 5)</b>	2.64 ( $\pm$ 0.8)

The results of the correlation analysis also showed there is significant negative correlation between the perceived subjects' knowledge about IO care and their IOs health-related problems ( $r = -0.54, p=0.03$ ).

## Discussion

Unfortunately, almost all (97.1%) of the subjects reported that they have at least one IO health-related problem. Among them, slightly less than half (48.3%) of the subjects have more than three IO health-related problems. The subjects of this current research reported that odor and gases from IO and abdominal discomfort and pain are the most IO health-related problems that they were complaining prior two weeks. These findings regarding to IO health-related problems were reported in many studies<sup>12-14</sup>. The previous literature also showed that patients with IO had several ostomy health-related problems and complications. Moreover, the literature documented that these health problems have negative effect on ostomates' QOL, including social, psychological, physical and spiritual health status<sup>6</sup>.

The results of this study and previous studied showed that the patients with IO had lack of exposure to previous health education and training about IO care and management of ostomy health-related problems and complication<sup>5,9,15</sup>. While the majority of the ostomates in this study and the previous study reported that they are intended to participate in health education and training programs about IO care and management in the future<sup>9</sup>. So, the ostomy nurse specialists and/or nurse educators should provide continuing health education programs for ostomates to improve their knowledge and skills to care of IO and prevent further health problems and complications.

The result of this study showed that the mean for the total score of the subjects' perception about IO characteristics and management is low ( $52.2\pm 16.4$ ) (mean out of 100).

In the previous Chinese study, the mean of the subjects' level of knowledge about IO care is good ( $45.1\pm 13.3$ ) (mean out of 60)<sup>11</sup>. These results indicate that the subjects of this study have lower level of knowledge about IO care and management than the patients with ostomies in the previous Chinese study<sup>11</sup>.

The results of this study and the previous Chinese study<sup>11</sup> showed that there is significant correlation between ostomates' low level about IO care and high frequency of having IO health-related problems and complications. Moreover, many previous studies revealed negative association between the ostomates' level of knowledge about IO care and the level of QOL<sup>5,6,16</sup>. Therefore, improving the ostomates' knowledge and skills about IO care and management of its complications is very important. Distributing written materials such as handout, and utilizing multimedia and online resources about ostomy care is recommended for all the ostomates before they are discharged from the hospitals or when they visit the physicians clinics or other health care settings<sup>5,17</sup>.

**Study Limitations:** Conducting cross-sectional design is limited to determine cause and effect relationship and it dose not help in studying the subjects' perception and health-related problems over a period to time. Also, using convenience sampling method may lead to limit the generalization of the findings to Jordanian people in different regions.

## Conclusion

Patients with IOs have several health-related problems. The findings of this and previous literature revealed that there is significant negative association between lack of ostomates' awareness and knowledge about IO care and proportion of IO health-related problems and complications. Patients with IO should be provided with teaching and training about IO care management.

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