

IMPACT OF THE LEVEL OF EDUCATION ON THE QUALITY OF LIFE OF COLOSTOMY PATIENTS

Gordana Repić^{1,2}, Sunčica Ivanović³

Colorectal cancer is the most common cancer of abdominal visceral organs. The basic principle of management is radical surgery, but an early detection while still asymptomatic is the only way to decrease the mortality rates.

The aim of this study was to assess some aspects of life of colostomy patients related to their level of education.

The study enrolled 67 patients of both genders who were followed up at the Specialist Polyclinic after colostomy surgery at the Clinical Center of Vojvodina. The quality of life for patients with colostomy questionnaire by M. Grant was used.

Most of the patients had health insurance which covered all the expenses for colostomy care. They were not sexually deprived after surgery; most of them did not change their clothing style, but they changed their diet which they did not practice regularly. They got used to daily colostomy care a few days after surgery, it took them less than 30 minutes for daily colostomy care, and the problems few patients had were due to carelessness. Despite the fact that stoma education is provided by health care professionals, it is necessary to encourage stoma patients to get involved in stoma centres or self-help groups, which would have a positive impact on their quality of life. *Acta Medica Medianae* 2017;56(1):75-81.

Key words: colostomy, educational level, patient education

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Introduction

Colorectal cancer is the third most common cancer in the world and the most common tumor of abdominal visceral organs. The primary treatment of colorectal cancer is surgical, while the mortality rates can successfully be reduced when cancer is detected in its early, asymptomatic stages (1).

The highest incidence rates can be found in North America, Australia, New Zealand, Europe, and Japan. The rates are low in Africa and South Central Asia, and are substantially higher in men than in women. The risk of colorectal cancer increases with age. In developed countries, more than 90% of cases are diagnosed in individuals

older than 50. The risk is also increased by certain inherited genetic mutations (i.e., the Lynch syndrome and familial adenomatous polyposis), personal or family history of colorectal cancer and/or polyps, or personal history of chronic inflammatory bowel disease. However, lifestyle factors are also important determinants of colorectal cancer risk. The modifiable factors associated with an increased risk of colorectal cancer are obesity, physical inactivity, a diet high in red or processed meat, heavy alcohol consumption, and smoking (2).

In Serbia, colorectal cancer is one of the most common tumors and represents about 30 percent of all cancers in our population. It is the third malignant tumor in men, after lung and prostate cancer. In is the second most common cancer in women, after breast cancer, and is one of the most frequent causes of mortality from malignant tumors. The incidence is similar, occurring mostly after the age of 50 years (3, 4)

Early stage colorectal cancer is often asymptomatic. Advanced disease may cause rectal bleeding, blood in the stool, a change in bowel habits, and cramping pain in the lower abdomen. In some cases, blood loss from the cancer leads to anemia, causing the symptoms such as weakness and excessive fatigue (5).

The current treatment for colorectal cancer is stage-oriented, combining surgical treatment, radiotherapy and chemotherapy. Staging for rectal

cancer should involve both the clinical stage (based on which subsequent treatment decisions are made) and final pathological stage, which may represent the most important prognostic factor in rectal cancer (6).

A number of surgical procedures involve the creation of a stoma. A stoma is a surgically created opening in the abdomen which allows stool or urine to be excreted. There are 3 main types of stoma – colostomy, ileostomy and urostomy. There are two main types of colostomy and ileostomy – loop and end. Either type of stoma may be a temporary or permanent one (6, 7).

Body image is the mental picture of one's physical being that develops from birth and continues throughout life and is related to different factors affecting its formation and dynamics. A crisis such as the creation of a stoma leads to alteration in body image and one's self-esteem because of potential focal leakage and unpleasant odor. Early rehabilitation starts in the preoperative period and it includes patient education about stoma care. The principal aim of this process is to enable stoma patients to assume their everyday activities as soon as possible. Rehabilitation can be physical (stoma care) and psychological (dealing with emotional issues) (7).

Although colostomy leads to higher survival rates and decreased mortality from colorectal cancer, very few patients have a positive attitude towards stoma creation. The negative reaction is caused by the changes that happen after stoma creation – an altered body image, everyday stoma care, nutritional and clothing changes. In some cases, creation of a stoma leads to social isolation, decrease in sexual activity, anxiety, depression and sometimes even suicide attempts (8).

Aim

The aim of this study was to determine if educational level influences certain aspects of life of colostomy patients.

Methodology

The survey was designed as a retrospective study of adult patients who underwent an elective stoma creation (colostomy, ileostomy, and urostomy) between January 2010 and June 2011 and had regular follow-ups at a Specialistic Polyclinic in the Clinical Center of Vojvodina. The questionnaires were given to 86 patients, but 67 of them agreed to participate (the response rate was 77.90%).

The instrument used in this study to assess the quality of life of patients with colostomy was a questionnaire designed by M. Grant (9). The questionnaire has two components. The first component consists of 47 forced-choice and open ended items that relate to the patients' sociodemographic characteristics, as well as the work-related issues, health insurance, sexual activity, psychological support, clothing, diet, and daily ostomy care. The

second component contains 43 QOL items using 10-point scales.

The study was approved by the Ethics Committee of the School of Medicine in Novi Sad. Participation in the survey was voluntary and anonymous. Before proceeding to complete the questionnaire, respondents were given written information about the research and signed their informed consent to participate in it.

The survey data was analyzed in SPSS 18.0. Statistical analysis involved descriptive and inferential analysis. Descriptive analysis included a total value expressed in absolute and relative numbers. The differences between the groups were tested using the Kruskal-Wallis test. The values were considered to be statistically significant at the level of $p < 0.05$.

Results

The study group included 67 patients aged between 36 and 86 years. There were 49.52% females and 50.75% males. Median age was 65.87 years (SD = 10.16). The majority of the patients (44.8%) were 70 years or older. There were 49 patients with colostomies, 47 patients with ileostomies, and 9 patients with urostomies. Regarding their educational level, more than half of patients (56.7%) completed high school education, while one quarter of them (25.4%) completed elementary school education. Their marital status did not change after surgery for any of the patients, remaining almost the same as it was prior to the operation (Table 1).

Two thirds of patients had permanent colostomy; 13.4% had urinary diversion, while 18% of patients had ileostomy. The majority of stomas

Table 1. Structure of respondents

No (%) of respondents		
Sex	Male	34 (57.7)
	Female	33 (49.3)
Age	≤ 49	5 (7.5)
	50-59	11 (16.4)
	60-69	21 (31.3)
	≥ 70	30 (44.8)
Educational level	Uncompleted elementary school	5 (7.5)
	Elementary school	17 (25.4)
	High school	38 (56.7)
	Bachelor degree or higher	7 (10.4)
Marital status before surgery	Single	2 (3,0)
	Married	45 (67,2)
	Divorced	0 (0,0)
	Widowed	20 (29,9)
Marital status after surgery	Single	3 (4,5)
	Married	43 (65,2)
	Divorced	0 (0,0)
	Widowed	20 (30,3)

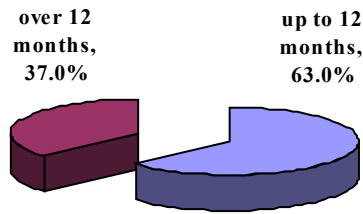


Figure 1. Time passed after surgery

(90.6%) were created due to malignant disease.

An important parameter in QoL assessment is the period of time after surgery, because patients need a time to accept the changes and adapt to the life with stoma, resocialize and return to their previous activities. About two thirds of patients underwent their surgery up to 12 months prior to the survey, while 37.0% had their surgery 12-24 months prior to the survey (Figure 1). The mean time elapsed from surgery was 11.52 months (2-24 months), SD = 5.06.

The age structure of patients reflected to the fact that 82.08% of them were retired, one tenth worked full-time or part-time, while 7.46% were on sick leave.

Table 2. Health insurance of patients

Health Insurance	Yes	No	Total	p
Do you currently have health insurance?	98,5%	1,5%	100,0%	0,401
Have you had difficulty getting health insurance?	8,2%	91,8%	100,0%	0,362
Have you had difficulty maintaining your health insurance?	13,8%	86,2%	100,0%	0,668
Does your insurance pay all costs for your ostomy supplies?	95,5%	4,5%	100,0%	0,324

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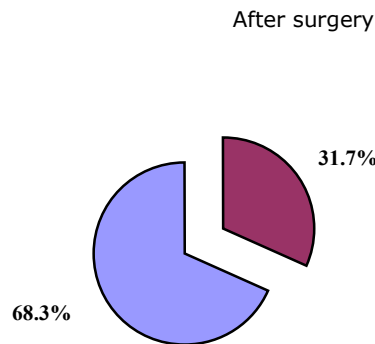
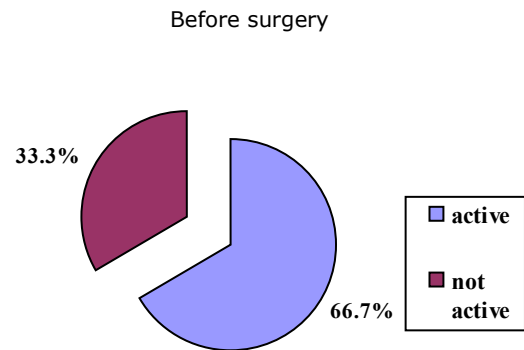


Figure 2. Sexual activity before and after surgery

The section of the questionnaire about health insurance gave some encouraging results regarding the maintenance of their rights on health insurance, with no statistically significant differences related to the educational level of the patients (Table 2).

Colostomy can affect sexual activity of the patients. Decreased libido cannot necessary be the consequence of surgery alone, but also of anxiety and depression as the result of a sense of shame and inferiority due to altered body image. In this study, sexual activity was almost at the same level before and after surgery (Figure 2).

Sexual activity was impaired predominantly among the patients with lowest educational level (KW H = 10,181, df = 3, p = 0,017) (Table 3).

The psychological support of patients with ostomy is a very important part of the treatment. It begins during the preoperative period when the patient is informed about the type of surgery and its benefits, in order to endow him with the power him to face body mutilations in a less traumatic manner. In the postoperative period, it is necessary to provide patient support for the process of social reintegration and also to provide them with information about stoma care and stoma-related lifestyle.

In this study, 3% of patients had suicidal thoughts or attempts, while every eleventh patient felt depressed (Table 4), with no statistically significant differences related to their educational level.

Table 3. Sexual activity before and after surgery by the factor of patient educational level

Educational level	Sexual behavior after ostomy		p
	No (%)	Yes (%)	
Uncompleted elementary school	100.0	0.0	0.017
Elementary school/uncompleted high school	40.0	60.0	
High school	28.6	71.4	
Bachelor or more	0.0	100.0	

Table 4. Psychological Concerns

Items	Yes	No	Total	p
Were you depressed after having your ostomy?	9,0%	91,0%	100,0%	0,632
Since having your ostomy, have you ever considered or attempted suicide?	3,0%	97,0%	100,0%	0,661

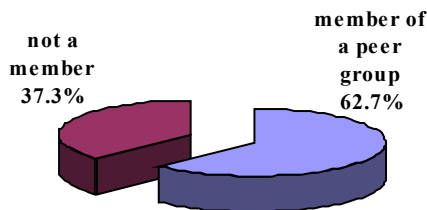


Figure 3. Participation in peer groups

The respondents recognized psychosocial support through participation in peer groups or the stoma center (Figure 3). Educational level did not have any statistically significant impact on the dis-

tribution of answers (Kruskal Wallis $H = 5,872$, $df = 3$, $p = 0,118$).

Stoma creation does not require major changes in clothing and the only principle that has to be emphasized during patients' education is to avoid tight clothes and belts that would press stoma. Although only 6% of patients reported that stoma location caused some problems, more than one quarter (28.8%) of respondents consequently changed their clothing style. It was observed that in the groups with higher education the number of respondents who changed their clothing style after colostomy significantly increased (Kruskal Wallis $H=10,075$, $df=3$, $p=0,018$) (Figure 4).

Colostomy requires dietary adjustments because of the changes related to the digestive system. The basic nutritional principles for colostomy patients are the sense of satisfaction, maintenance of body weight and reduction of symptoms, such as diarrhoea, opstipation and gases. During a nutrition education program, the patients learn to take several small meals per day, to avoid fasting and skipping meals and to take certain ingredients.

More than half of the patients (58.2%) changed their dietary habits after colostomy, without any statistically significant impact of their educational level (Kruskal Wallis $H = 5,001$, $df = 3$, $p = 0,172$).

Most of respondents (90.9%) adapted to regular stoma care during a month or less after surgery, with no statistically significant differences among the educational groups ($H = 7,753$, $df = 3$, $p = 0,051$). For 96.98% of patients, it took up to 30 minutes daily for stoma care, with no statistically significant differences in duration of this process among the educational groups (Kruskal Wallis $H = 0,827$, $df = 3$, $p = 0,843$).

In most cases, respondents did not face difficulties with the ostomy pouching system (90.8%), but 9.2% reported problems, mostly as the result of an inappropriate application and thus leakage of the appliance. Different educational groups experienced similar problems (Kruskal Wallis $H = 2,651$, $df = 3$, $p = 0,449$).

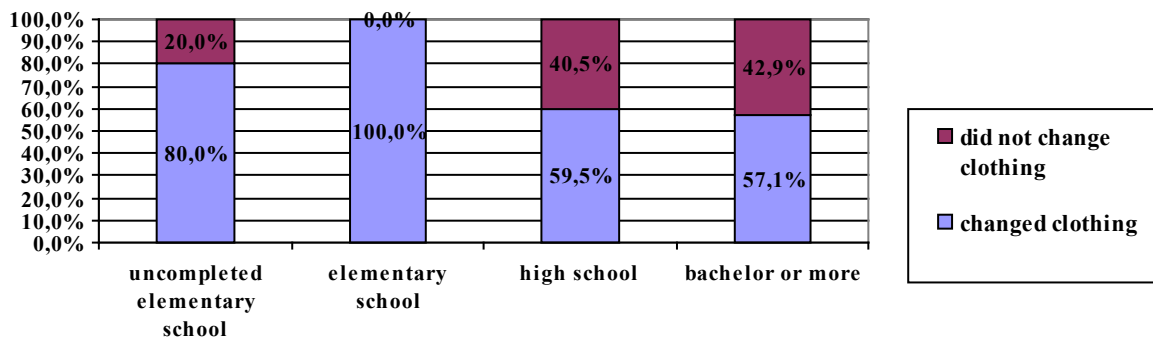


Figure 4. Changes in clothing and educational level of respondents

Discussion

The review of literature about quality of life of stoma patients shows that ostomy patients face numerous challenges in relation to their quality of life. Creation of a permanent ileostomy or colostomy is a surgical procedure that is undertaken for a number of conditions, with the aim to improve bowel function and to prevent progression of the underlying disease, but the inevitable associated physical changes produce the challenges that patients need to overcome in terms of everyday life and functioning.

Most frequent physical problems related to ostomy include irritated peristomal skin, unpleasant odor, and noise from the appliance. Emotional and mental issues as a result of pouch leakage, odor and sounds lead to embarrassment, which can cause anxiety, depression and social isolation of the patients (10).

Coons et al. (11) assessed the economic challenges related to the quality of life of patients with colostomy, while Nichols and Riemer underlined the loss of job to be related to colostomy (12). In the study performed by Husein and Fadl, it was found that 61% of male participants lost their jobs or were not able to work after stoma creation (13). Considering the age structure of the patient sample studied here, the majority of participants were retired (82.08%) and therefore did not face such difficulties.

Sexuality is a complex phenomenon affecting the body image, feelings and interpersonal relationships (14). About two-thirds of respondents reported to be sexually active before and after surgery in almost the same degree, and only the patients with the lowest educational level suspended their sexual activity after colostomy creation, compared to Symms et al. who found that almost half of participants with usual sexual activity prior to colostomy became inactive after the procedure (15). Shaffy et al. concluded that in more than half of ostomy patients sexual desire and sexual behavior were altered, and one fourth had the feeling of embarrassment, anxiety and refrained from sexual activity (16)

Body image is usually defined as someone's perception of physical appearance and function, and it forms from birth, through one's lifetime. It can be impaired in cases of certain diseases, especially in those treated by colostomy. It is therefore necessary to provide patients with appropriate assistance to accept the new circumstances and to adapt to them successfully. Johansson et al. stressed that self-management programs have a significant impact on patient outcome, especially when these are tailor-made and involve more actively the patients themselves (17). Pittman et al. reported in their study that many factors, such as age, socioeconomic status, educational level, preoperative care (including education) and time elapsed since surgery correlated to the severity of colostomy complications. Adequate care helps patients to cope with colostomy and to regain their

independence as early as 2–3 weeks after surgery. One of the major problems that patients have to overcome consists in their inadequate skills in skin self-care, so it is necessary to provide continuing education during hospital stay and after discharge to their homes (18).

Despite the fact that participation in stoma centers or peer-groups has a positive impact on the quality of life, only 62.7% patients reported to be engaged in such activities. On the other hand, the evidence of appropriate education for stoma self-care lies in fact that 90.9% adapted to stoma care in the period of just a few days to a month after surgery and that the majority of patients (96.9%) need from just a few minutes to half an hour for daily stoma manipulation. Nevertheless, every eleventh patient (9.2%) reported difficulties with the pouching system, eg. with fecal leakage.

Dabrian et al. conducted a qualitative study to explore the quality of life and its dimensions in ostomy patients. The study enrolled 14 participants (six women and eight men), aged 14–57 years, with varying sociodemographic characteristics, but all of them with permanent colostomy. After data analysis, several issues emerged:

- Physical problems. Most participants complained of irritation and rash around the ostomy site, with sleep disturbances, bad breath, and gas emission in the presence of other people. They also reported that they could not lift objects weighing more than 5 kg.

- Psychological problems. Patients in this study had some disturbing cognitive and mental problems. For example, one of the patients expressed his concern about how his disease could affect his wife and children in the future. Participants emphasized the importance of stoma association as the place to get assistance and support.

- Social and family relationships. Participants reported having encountered family problems for a few months after their colostomy, which gradually improved with time. If a patient accepts his illness, his family will learn how to cope with it as well. On the other hand, some participants expressed a preference to avoid any family gatherings because of the fear of an offensive gas emission. Some of them did not engage in any social activities for more than two years after colostomy.

- Economic challenges. Most patients reported that they had to change or leave their job after the disease and ostomy creation, and that this affected their income. Moreover, disease-related costs, eg. buying bags and gloves, caused additional financial problems.

- Physical activity. Most participants reported limited physical activity after their ostomy, particularly while lifting heavy objects.

- Sexual functioning. In this study, married participants encountered some sexual problems, particularly early on in the course of their disease or after surgery, which can affect the quality of relationship between the partners (19).

Conclusion

In our study, the majority of respondents were retired, more than half of them had high school degrees and about two-thirds were married. Most of respondents had permanent colostomy, due to colorectal cancer. Almost all of respondents had health insurance which covered all stoma-related expenses. About two-thirds were sexually active, with significant decrease in sexual function among the patients in the lowest educational groups. Although the stoma site itself did not cause problems, about one quarter of respondents changed their clothing style, mainly the patients with higher educational levels. About half of respondents changed their dietary habits after colostomy. Respondents adapted to everyday stoma care within a few days after surgery, it took them less than 30 minutes for stoma care per day, but some reported problems due to bad manipu-

lation of the pouching system. Despite the fact that health care providers gave adequate education about stoma care, it is necessary to encourage patients to actively participate in stoma centers or peer-groups, which would certainly have a beneficial impact on their quality of life.

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Transparency declarations

Competing interests: none to declare.

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UTICAJ ŠKOLSKE SPREME NA POJEDINE SEGMENTE ŽIVOTA KOD BOLESNIKA SA KOLOSTOMIJOM

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Karcinom debelog creva najčešći je maligni tumor visceralnih organa trbušne duplje. Osnovni princip lečenja ovog oboljenja je radikalna hirurška intervencija, dok je rano otkrivanje bolesti u njenoj asimptomatskoj fazi još uvek jedini način za smanjenje mortaliteta.

Cilj istraživanja bio je procena pojedinih segmenata života bolesnika sa kolostomijom u odnosu na stepen njihove stručne spreme.

Istraživanjem je bilo obuhvaćeno 67 bolesnika oba pola, koji se nakon operativnog zahvata na kolonu sa izvedenom kolostomijom ambulantno prate u Specijalističkoj poliklinici Kliničkog centra Vojvodine. Za potrebe istraživanja korišćen je upitnik za procenu kvaliteta života kod osoba sa kolostomijama autora M. Granta.

Gotovo svi ispitanici ostvaruju pravo na zdravstveno osiguranje koje pokriva sve troškove nege stome. Seksualna aktivnost im nije narušena nakon operacije, većinom nisu promenili način oblačenja, ali su promenili način ishrane, kojeg se ne pridržavaju u potpunosti. Ispitanici su se na svakodnevnu negu stome navikli nekoliko dana nakon operacije, dnevno im za samostalnu negu treba manje od pola sata, a problemi sa stomom dešavale su se usled nepažnje. Uprkos adekvatnoj edukaciji o nezi stome od strane zdravstvenih radnika, potrebno je aktivnije animirati bolesnike za članstvo u Stoma centre ili grupe za samopomoć, što bi imalo pozitivan efekat na njihov kvalitet života. *Acta Medica Medianae 2017;56(1):75-81.*

Ključne reči: kolostomija, obrazovni nivo, edukacija bolesnika

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