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QUALITY OF LIFE IN PATIENTS WITH STOMAS

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SUMMARY

Quality of life is theme that occupies attention of many authors from various areas, lately, because it is impossible to assess rehabilitation process without this aspect. Therefore the aim of our research is directing assess quality of life at patients with stoma through assessment of ability to achieve everyday activities and social parts achievement level.

The study was conducted in Digestive Surgery Clinic; First Surgical Clinic in Belgrade, Department V, where patients were stationed in the time of research. Research period was 08.04.2010. till 17.07.2011. Sample contained 33 patients having colostomy or ileostomy in time of research. Quality of life was assessed through assessment of 11 categories of life habits and achievement satisfaction level. Standardized questionnaire „Assessment of life habits-Life H“ (Fougeyrollas, 1998) was used.

Results indicated areas where our participants have lower achievement level and disharmony between life habits achievement level (objective) and Satisfaction with life habits achievement level (subjective). Examining demographic features that affect achieving life habits, we found age of patients significant, while gender and type of stoma showed no statistically significant differences.

Considering how many people are forced to live with chronic diseases and consequences of medical procedures, quality of life assessment and possibility for its improvement are very significant. By assessing quality of life we also assess social function level, respectively level of social involvement of individual, in this case stoma patient in social environment which is basic task for current issue social disability model.

Key words: colostoma, ileostoma, life habits, quality of life.

INTRODUCTION

Every man aims to live his life with as much pleasure and wellbeing as circumstances allow. Terms wellbeing and health status are often used as synonyms for quality of life, although those are just single aspects of much larger concept (Whalley & McKenna, 1998). At one hand quality of life is not clear concept, hard to define, many authors consider it undefinable. In the other hand it is widely used concept, demanding certain definition (Keith, 2001). One of the most comprehensive definitions was given by group of experts of WHO and it says that „The WHOQOL assesses individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns“ (WHO-QOL Group 1995, page 41).

Authors in different areas access defining quality of life from the perspective of their interests and their research goals. By reviewing available literature and also based on research conducted by group interview method Kane et al., (2003) define quality of life as a multidimensional assessment of life experiences and they define 11 major areas in quality of life. Those are: certainty, functional competence, relations, comfort, meaningful activities, dignity, individuality, privacy, autonomy and spiritual wellbeing. Some authors agree that quality of life concept implies combination of objective and subjective factors, thus Krizmanic and Kolesaric (1989) consider quality of life as subjective experience of our own life determined by objective living circumstances, personal features that affect experience of reality and specific personal life experience. Cummins (1997) agrees that quality of life is both subjective and objective whereby each domain is compound of seven areas: material wellbeing, health, productiveness, intimacy, certainty, communal wellbeing and emotional wellbeing. Objective domains contain culturally relevant measures of objective wellbeing. Subjective domains contain satisfaction measured by the importance it has for each individual (according to Pogorelec, 2004.). Felce and Perry (1995) define quality of life as general wellbeing that includes objective descriptors and subjective evaluation of physical, material, social and emotional wellbeing, together with personal development and meaningful activity, all evaluated through individual value system (according to Vuletic, 1999).

With regard to the chronic diseases or permanent conditions conceptual approach which defines quality of life by patients accessing of his own abilities in four areas: physical and professional ability, psychological status, social activities and interactions and somatic sensations, is more in use. Patient himself is his own controller, and comparison is performed regarding expected abilities of the patient (Zdravkovic et al., 2010). Thus for medical purposes more specific term of quality of life, primary determined by persons health is extracted from general, comprehensive term „quality of life. It is „health related quality of life“ (HRQoL) (Gvozdenovic et al., 1998). Shipper et al., (1990) define it as patient's personal experience of functional disease effect and effect of received therapy. Torrance (according to Zdravkovic et al., 2010) thinks that I assessment of quality of therapy procedure applied two different factors would be considered: life expectancy and quality of life. Health related quality of life is more specific term then quality of life, and it's more suitable for use with regard to certain diseases, because it reflects patient's access and satisfaction with current grade of function, compared to what he considers possible or ideal. This concept is used to describe patient's experience of his disease, respectively how severity of the disease can affect his quality of life (Raznatovic et al., 2012). Health related quality of life, in one hand, describes difficulties resulting bad health regarding psychological and physical function, partaking in areas of life, but „health status“ also (Trgovcevic et al., 2011).

Health related quality of life measuring is intensively conducted at patients with different diseases: chronic obstructive lung disease, heart failure, inflammatory bowel disease, allergic respiratory diseases etc (Maksimovic et al., 2005). With regard to stoma patients quality of life is important topic. Stoma is formed after surgical procedure which provides opening between bowel or bladder and abdominal wall. In most cases this opening or stoma is permanent, so patients have to use stoma pouch for collecting urine or/and feces (Marquis et al., 2003). There are numerous causes for

stoma creation. Many of patients undergoing stoma creation have cancer, so they have to face life threatening disease and to accept dramatic change in body image. Younger patients usually have diseases which are not direct life threat, like ulcerative colitis or Chron disease. They are usually undergoing ileostomy, where whole large intestine is removed and anus is closed (Marquis et al., 2003).

Ileostomies are artificial openings of ileum lumen derived on the front abdominal wall. There several types of ileostomies by the way of their creation. There are two types prevailing in digestive surgery today, and those are bipolar and terminal ileostomy. According to duration, stomas are divided in temporary and permanent type. Luckily for patients and surgeons, indications for terminal ileostoma creation as a permanent solution are significantly narrowed. In a great majority of cases terminal ileostomy performing is a part of complex procedures, but still it can be independent procedure (in Crohn disease caused colitis). The most common indications for terminal ileostomy creation are: after total colectomy or proctocolectomy for some of IBD forms (ulcerative colitis, Chron's disease or undetermined colitis), at patients with familiar adenomatous polyposis (FAP) after total colectomy or proctocolectomy where creation of anastomosis or ileac pouch is not technically feasible, in more rare situations with multiple synchronized cancers of colon and rectum, in cases where combined resections of terminal ileum and colon are performed (for Crohn disease caused perforation, ischemia, obstructive colon tumors), when performing primary anastomosis (ischemia, peritonitis or expressed hypovolemia), at ileoceca region trauma, in cases of ileac conduit construction in purpose of urinal diversion, at advanced forms of Hirschsprung disease, at some congenital anomalies (Krivokapic and Markovic, 2007).

The purpose for colostomy creation is to drain feces away through front abdominal wall. Surgeon's strategy in his patient's therapy determines if that function is to be permanent or temporary. Temporary colostomies are usually first phase in malignant obstruction care or some procedures on anal canal. Permanent colostomies are an outcome of some procedures on rectum, whether because of malignant disease or idiopathic incontinence (Krivokapic and Markovic, 2007).

Stoma patients may have difficulties in facing their stoma because of leakage which leads to skin irritation and rupture. Consequently, whole domain of stoma procedures may create spectrum of problems leading to patient's quality of life deterioration. Authors who researched effect of stoma on quality of life showed that stoma creation usually has negative affect on patient's functions and that it changes their way of life in many ways. Nordstorm and Nyman (1991) followed urostomy patients. Interview contained both opened and closed type of questions and it was directed on topics like supplies, routine stoma care, work, psychosocial and sexual life. Assessment of skin around stoma based on examination was added. Problems like the skin damage around stoma and complications with skin and stoma were seen as major negative effect on life quality of these patients. Large number of patients claim to be invalid, and half of them claim that stoma connected problems (leakage mostly) were the reason for leaving job. Major reason for social activity limitations were practical problems.

Body image is important part of everyday life and society attaches great importance to attractive appearance (Selter, 1997). Change in appearance and presence of stoma can affect quality of life. Diseases that demand stoma creation cause changes in body

image and function. It is well documented in literature that stoma patients experience changes in body image as a direct result of their surgery (Selter, 1992; Jankins et al., 1997; Person and Hellstorm, 2002). Nordstorm and Nyman (1991) found that women more than men experience stoma as significant factor e.g. their body image violation. Phenomenological study by Person and Hellstorm (2002) about Swedish men and women experiences 6-12 weeks after stoma creation (colostomy, ileostomy or urostomy) identified several reasons to worry at new stoma patients. Seven topics were included in interview: body violation, disturbed body image, effect on sexual life, uncertainty about life with stoma, effect on social life, effect on taking part in sport and free activities and psychological problems connected to stoma. They all reported negative affect stoma has on their lives. Participants described feeling of body violation in terms of feeling different, less self – respected and certain after the surgery. Feeling of repulsion and shock are also identified, especially connected to the first sight of stoma.

As well as body image sexuality issue is very delicate theme for patients with stoma because those are closely related (Selter, 1992). Numerous stoma patients are worried about their attraction, thus Person and Hallstorm (2002) found that stoma patients (urostoma, ileostomy or colostomy) trust that their attraction decreased since stoma creation. Other studies confirmed those findings (Selter, 1992). However same author reports that partners of stoma patients do not share their opinion about sexual attraction decrease.

Job problems related to stoma are also present. Nudgent et al., (1999) in their study conducted on group of respondents in Great Britain, showed that over 50% of respondents had not almost any or any possibility to find a job. Over 20% of the rest participants with colostomy and 15% with ileostomy reported that existence of stoma caused complete change of their job. Approximately 10% respondents had serious diet and clothing problems related to stoma. Responds to questions about body image, travel and sports, dual effect was spotted-small or none affect in those areas.

METHODOLOGY

We can reach reports of particular organ status or the way they function using various clinical measurement, but we cannot find out how the person functions in everyday life. All previously shown research findings indicate that stoma affects life and functions of people who have one. Although this theme is in focus in the world, among experts like nurses providing basic care, doctor's stoma therapeutics, even producers of stoma equipment, there aren't many authors in our country who dealt with this theme. Consequently, the object of our research is people with stoma, their quality of life in particular.

The aim of research is objected to investigate quality of life for stoma patients, through assessment of their everyday activity realization ability and their social achievement level. Specific aims deriving from general are:

1. To assess accordance of achievement level with satisfaction grade of habits achieved.
2. Determine differences in investigated activities due to gender, age and type of stoma.

Sample description

Sample included 33 stoma patients of both gender, aged 19-91 years medial 59,3 years. Next table is showing our sample review by gender.

Table 1 Structure of the sample according to gender

Gender	N	%
Male	17	51,5
Female	16	48,5
Total	33	100

Relative to a gender there are 16 female participants which makes 48,5% of the sample, and there are 17 male participants making 51,5%. Groups are sexually uniformed ($\chi^2 = 0,03$; $df = 1$; $p = 0,862$).

Table 2 Sample structure according to age

Age	N	%
<= 54,00	12	36,4
55,00-68,00	10	30,3
69,00+	11	33,3
Total	33	100

Sample included patients age 19-91 years old (medial 59,3 years), 12 persons or 36,4% of the sample were 54 years old or younger, ten or 30,3% participants were 55-68 years old and 11 or 33,3% participants were 69 years old or older. Groups are age uniformed ($\chi^2 = 0,182$; $df = 2$; $p = 0,913$).

Table 3 Structure of the sample according to type of stoma

Type of stoma	N	%
Ileostomy	11	33,3
Colostomy	22	66,7
Total	33	100

Regarding type of stoma our sample included 11 participants (33,3%) with ileostomy and 22 participants (66,7%) with colostomy. Participants were not uniformed by the type of stoma there were more colostomists ($\chi^2 = 3,667$; $df = 1$; $p = 0,056$).

Research was conducted in Digestive surgery clinic; Fifth department of the First Surgical Clinic of Serbian Clinical Center, Belgrade, Serbia where patients were hospitalized in time of research. Research took time since 8.04.2010. till 17.07.2011.

Instruments

Quality of life questionnaires are divided by their specific properties in two groups: general and specific questionnaires. General questionnaires show general aspect of individual's subjective experience of his health while specific questionnaires are

objected on just one group of disease, one specific disease, group of patients (elderly for example), or specific function (sexual function, for example). In our research we chose general instrument, because it was already used in our country, while no specific instrument was used so far in population which was object of our research. We considered this good start for some further future researches.

For assessment of achievement level of 11 categories of life habits and satisfaction level standard questionnaire was used „Assessment of life habits – Life-H“ (Fougeyrollas, 1998). Instrument contained two parts:

- I Everyday activities: Diet; Body status; Personal care-habits related to body wellbeing of person (body care, excretion hygiene, clothing, health care); Communications-Personal habits related to information exchange with other persons or groups (signalization, verbal and physical communication, telecommunications); Habitation-personal habits related to living space (choice and setup, housekeeping, furniture and other house equipment use); Motion-habits relating motion in short and long distances, with or without vehicle (limited motion, transport);
- II Social parts: Responsibilities-habits related to taking responsibility (financial responsibility, civil responsibility, family responsibility); Human relations-habits related to relations with other people (social relations, affective relations, sexual relations); Communal life-habits related to persons activities in community (association, spiritual life and religion practice); Job-habits related to individual's basic job (unpaid work, job search, paid work, professional orientation); Fun-habits related to recreation and other activities during free time in pleasure and freedom context (sports and games, art and culture, socio-recreative activities) and other habits.

Each item is assessed in two aspects: 1: a) way the habit is usually achieved (evaluation was marked:1-worst to 4-best) and b) type of help required (1-worst to 4-best); 2. satisfaction with achieved habit level (1-best to 4-best).

In order to assess objectivity of questionnaire used we did reliability measure (Cronbach's α) which showed high reliability (table 4).

Table 4 Measurement reliability for test (Cronbach's α)

Cronbach's Alpha	N of Items
0,916	186

RESULTS

Quality of life might be observed as objective and subjective, as many authors showed. Instrument applied measures habits achievement level, but satisfaction with achieved habits also, whereby there is disharmony between achievement and expectation. In table 5 we can see that achievement level is much higher at our participants than satisfaction with habits achieved.

Table 5 Participants achievements in whole questionnaire, habits achieved level, satisfaction level and type of help required

Area	N	Mean	Std. Deviation	Minimum	Maximum
Whole questionnaire	33	3,3206	,34695	1,93	3,86
Achieved habits level	33	3,4803	,43931	2,12	4,00
Satisfaction with achieved habits level	33	2,7752	,33203	1,18	3,00
Type of help for habits achieving	33	3,7063	,44483	2,50	4,00

Examining connection between three aspects explored, we can see that the connection between achievement level and achievement satisfaction level expressed by Pearson's coefficient of linear correlation is $r=0,673$, $p<0,000$, between achievement level and type of help required $r=0,460$, $p<0,007$ and achievement satisfaction action level and type of help required $r=0,460$, $p<0,007$.

Next tables show achievements of participants in particular areas.

Table 6 Achievements of participants in level of habits achievement by items

Item	Mean	Std. Deviation	Minimum	Maximum
Diet	3,3788	,57663	1,75	4,00
Body status	3,7197	,55113	2,00	4,00
Personal care	3,7083	,62396	1,13	4,00
Communication	3,7348	,38242	2,00	4,00
Habitation	3,6616	,59290	1,33	4,00
Motion	3,3636	,62528	1,50	4,00
Responsibilities	3,6104	,74682	1,14	4,00
Human relations	3,9091	,36432	2,00	4,00
Communal life	2,7727	,91079	2,00	4,00
Job	3,6212	,76747	2,00	4,00
Fun	2,8030	,69318	1,75	4,00

Table 6 shows medial values of level certain life habit is achieved in. Thus we can spot the lowest level of achieving quality of life in community life area (AS=2,77), than fun (AS=2,8), motion (AS=3,36), diet (AS=3,37), responsibility (AS=3,62), job (AS=3,62), habitation (AS=3,66), personal care area (AS=3,7), body status (AS=3,71), communication (AS=3,73), while highest level our participants showed in area of human relations (AS=3,9).

Table 7 Patient's achievement on satisfaction level assessment by items

Item	Mean	Std. Deviation	Minimum	Maximum
Diet	2,6439	,48425	1,00	3,00
Body status	2,7879	,47648	1,00	3,00
Personal care	2,7386	,44564	1,00	3,00
Communication	2,8674	,38138	1,00	3,00
Habitation	2,6818	,45902	1,00	3,00
Motion	2,6136	,52697	1,00	3,00
Responsibilities	2,8095	,46245	1,00	3,00
Human relations	2,9091	,35387	1,00	3,00
Communal life	2,8788	,41515	1,00	3,00
Job	2,9899	,45803	1,00	3,00
Fun	2,8030	,69318	1,00	3,00

Regarding satisfaction level on habits achievement participants reported lowest satisfaction with motion item (AS=2,61), diet (AS=2,64), habitation (AS=2,8), personal care (AS=2,73), body status (AS=2,78), responsibilities and fun (AS=2,8), communications (AS=2,86), communal life (AS=2,87), human relations (AS=2,9), and they reported highest satisfaction level on life habit achievement in job item (AS=2,98) (table 7).

Table 8 Connection between achievement level and satisfaction with habit achieved level

Item	Spearman's Correlation	Sig. (2-tailed)	N
Diet	0,621	0,000	33
Body status	0,865	0,000	33
Personal care	0,765	0,000	33
Communication	0,461	0,007	33
Habitation	0,889	0,000	33
Motion	0,696	0,000	33
Responsibilities	0,644	0,000	33
Human relations	0,490	0,004	33
Communal life	0,146	0,419	33
Job	-0,099	0,583	33
Fun	0,004	0,983	33

Comparing level of life habits achievement and level of satisfaction with habit achieved at our participants we can see great accordance (expressed by Spearman's linear correlation) in these areas: habitation ($r=0,89$, $n=33$, $p<0,0005$), body status ($r=0,86$, $n=33$, $p<0,0005$), personal care ($r=0,76$, $n=33$, $p<0,0005$), motion ($r=0,69$, $n=33$, $p<0,0005$), responsibilities ($r=0,64$, $n=33$, $p<0,0005$) and diet ($r=0,62$, $n=33$, $p<0,0005$) (where high levels of habit achievement are followed by high satisfaction of habit achieved level). Medial accordance was found in areas of communication ($r=0,46$,

n=33, p<0,0005) and interpersonal relations (ro=0,49, n=33, p<0,0005), while it's very low in community life (ro=0,5, n=33, p<0,0005) and job (ro=-0,09, n=33, p<0,0005) where we found negative correlation (achievement levels do not follow satisfaction levels).

Table 9 Participants achievement in assessment on type of help required for life habit achievement by items

Item	Mean	Std. Deviation	Minimum	Maximum
Diet	3,8030	,84111	1,00	4,00
Body status	3,6970	,68965	1,00	4,00
Personal care	3,5606	,60364	1,25	4,00
Communications	3,9924	,98719	2,25	4,00
Habitation	3,5657	,43289	2,50	4,00
Motion	3,5227	,56722	1,75	4,00
Responsibilities	3,7706	,40397	2,71	4,00
Human relations	3,8121	,72619	1,00	4,00
Communal life	3,6364	,99430	1,00	4,00
Job	3,9545	,26112	2,50	4,00
Fun	3,4545	,69318	1,25	4,00

Regarding help required, our participants report biggest need for one in fun aspect (AS=3,45), than motion (AS=3,52), habitation and personal care (AS=3,56), communal life (AS=3,63), body status (AS=3,69), and the smallest in area of responsibilities (AS=3,77), diet (AS=3,8) human relations (AS=3,81), job (AS=3,95) and communications (AS=3,99)(table 9).

Table 10 Achievement comparation regarding gender of patients

Aspects	Gender		Man-Whitney's
	Male (Md)	Female (Md)	U test
Achievement level	17,24	16,75	U = 132,000, z = -,144, p = 0,885
Type of help required	17,62	16,34	U = 125,500, z = -,379, p = 0,705
Satisfaction level	16,53	17,50	U = 128,000, z = -,290, p = 0,790

In two groups of participants (male and female) comparison using Man-Whitney's U test, no statistically significant differences were found in all three aspects assessment. Male patients with stoma achieve a bit higher level of life habits and they require less help for that compared to female stoma patients, female patients are more satisfied with achieved habits than male patients (table 10).

Table 11 Achievement comparison regarding age of patients

Aspects	Age			Man-Whitney's U test
	<= 54 (Md)	55-68 (Md)	69+ (Md)	
Achievement level	11,38	11,65	9,05	U = 58,500, z = -0,099, p = 0,262 (between groups 1 i 2); U = 33,500, z = -2,001, p = 0,045 (between groups 1 i 3); U = 27,000, z = -1,972, p = 0,049 (between groups 2 i 3); U = 43,000, z = -1,123, p = 0,008 (between groups 1 i 2);
Type of help required	13,33	14,25	10,55	U = 50,000, z = -0,986, p = 0,324 (between groups 1 i 3); U = 22,500, z = -2,289, p = 0,022 (between groups 2 i 3); U = 50,000, z = -0,667, p = 0,505 (between groups 1 i 2);
Satisfaction level	10,67	12,50	9,95	U = 43,500, z = -1,399, p = 0,162 (between groups 1 i 3); U = 29,500, z = -1,803, p = 0,071 (between groups 2 i 3);

Using Man Whitney's test in comparing quality of life in three age groups of patients, some statistically significant differences between different groups were found. Precisely, comparing groups of patients of 55-68 years and of 69 years and older, there was statistically significant difference in favor of younger group in $p < 0,05$ level in achieved habits level and type of help required, while there's just tendency for statistically significant difference in assessment of satisfaction with habits achieved level (table 11). Comparing youngest (54 years and younger) and the oldest (69 years and older) group there was statistically significant difference in achievement of life habits level $p < 0,05$, and there was none in other three aspects. There was no statistically significant difference between groups of 54 years and younger and 55-68 year. The best of three age groups was one of 55-68 years.

Table 12 Achievement comparison regarding type of stoma

Aspects	Type of stoma		Man-Whitney's U test
	Ileostomy (Md)	Coleostomy (Md)	
Achievement level	14,14	18,43	U = 89,500, z = -1,203, p = 0,229
Type of help required	15,27	17,86	U = 102,000, z = -0,726, p = 0,468
Satisfaction level	14,91	18,05	U = 98,000, z = -0,885, p = 0,376

Colostomal patients had a bit higher achievement of life habits level, they need less help in achieving them and were more satisfied with habits achieved than ileostomal patients, but the difference had no statistical significance (table 12).

CONCLUSION

Considering that many people are forced to live with chronic diseases and consequences to medical procedures quality of life assessment and possibility of its improvement are very significant. We can follow relation between health and quality of life in social development strategies context, as health is important component of life quality. It is important that availability, social and health service rights fulfillment and social elements part are adequate, because they directly affect level of satisfaction with life.

Research we conducted on sample of patients with colostomy and ileostomy showed that our participants have some difficulties in achieving their life habits. Lower level of achievement was found in these areas: community life, fun, motion habits, diet habits, responsibility and job, while least problems appeared in human relations. These findings match findings of other authors (Nordstorm and Nyman, 1991; Person and Hellstorm, 2002; Selter, 1992; Nudgent et al., 1999). Our results also showed disharmony between achievement levels of activities examined (objective) and satisfaction with habit achievement level (subjective). Thus disharmony is highest in communal life and job, medial in communications and human relations, and high in other areas.

Examining demographic characteristics that may affect achieving life habits we found male patients with stoma achieve higher level of life habits and require less help compared to female patients. Female patients are more satisfied with achieved life habits than male, but this has no statistical relevance. Pinowka and Merino (1999) also found differences regarding gender in their research.

Schmidt et al., (2005) emphasize that quality of life dynamics change through time, so age affects quality of life and sexuality. Our results match quotes of these authors because we found significant differences in life habits examined in different age groups. Medial age group, participants of 55 to 68 years secludes as those who achieved highest level of life habit examined, who are the most satisfied with their achievement level and require least help in achieving those. Those participants showed better results than younger group (54 years and younger), and also older group (69 and older) which had worst results.

Colostomal patients had higher level of achieving life habits, required less help and were more satisfied with achievement level than ileostomal patients, but the difference has no statistical significance. Other authors differ in their findings: Nudgent et al., (1999) in their big study in Great Britain found no difference in quality of life for colostomists and ileostomists, while Silva et al., (2003) found more satisfaction with quality of life at ileostomists than colostomists.

All conclusions should give guidance for further research to experts in defining specific goals for rehabilitation as well as frame for individual intervention plan that can affect improvement of social participation and change of personal reality perception

due to stoma surgery. Social function is part of individual's life quality, so by assessing it, we also assess level of social involvement of the individual, in this case, stoma patient in social environment.

Many studies concluded that after undergoing stoma creation patients are in need for psychological and social adjustment to a new condition. Pinovka and Merino (1999) collected data on adjustment of 60 Chilean people who were subjected to stoma creation. Interview analysis showed low level of body image satisfaction among participants. Some of them reported that their adjustment was based on family and friends support. But more than a half of participants reported marital problems related to colostomy. Socio demographic variables significant as stoma adjustment predictors are: age, education, professional level and availability of social secure coverage. Three significant disease related variables were determined: type of surgery, time since the surgery and stoma self – care level. Additionally, significant psychological variables were: body image satisfaction due to stoma creation, friends and family support received and social, professional and family affects that patient attribute to surgery.

In an attempt to identify predictor areas for stoma adjustment Pinowka and Merino (1999) created a model of major factors that predict adjustment to colostomy creation. They found that stoma patients who experienced less change in their body image after colostomy were more ready to adjust on living with stoma than those who experienced dramatic change of their body image. Patients who received less social support had harder time to adjust than those with more support. Time since the surgery correlated with adjustment level: adjustment varied in proportion with time passed. Age and gender affected adjustment. Self-care, body image, social support and socio-economic status were significant predictors among men. Ostomy self-care, time since surgery and social supported overcome as significant amongst women. Sample was divided in two groups to analyses affect of age to adjustment: over 62 years and 62 and younger. Significant predictor in younger group were time since surgery, body image, social support and post – surgical complications. Only significant factors in older group were ostomy self-care and body image.

Wade (1990) researched psychological adjustment of stoma patients 10 weeks and one year after surgery in regions which employed stoma therapists and those which did not. Adjustment scale was used in both levels of data collecting. Patients who received specialized stoma care were less likely to develop affective disorders ten weeks after surgery then those from other regions. 23% patients were anxious and depressed in regions with stoma nurses. 30% of patients in other regions were anxious and depressed. Depressed and anxious patients after ten weeks were more likely to be the same after a year. One year after surgery there was no difference in affective disorders prevalence at patients from regions with specialized stoma care and patients from other regions.

Limitations and Contributions

Results of this study gave us some conclusions, but interpretation of results was made difficult because of many limitations of this study. The first lack of research design applied could refer control group absence, though it's only conditionally lack, considering there's no need for control group if standardized instrument is used. The

instrument we used is not designed just for examined group, it represents general questionnaire. It can be limitation and contribution at the same time, because it shows us way in creating new instruments for this group of participants. The fact that participants were not sorted regarding some other demographic characteristics such as time since stoma surgery and their results were not analyzed from this point, can be considered limitation, too. Furthermore, relatively small sample size that is significant for adequate results interpretation, demands making subsamples by several criteria, which minimizes sample, was limitation factor. Regardless these limitation the biggest contribution of this study is that it is one of the first of its kind in Republic of Serbia. It also gives guidance for some further and more complete research on this population, that is certainly one big contribution.

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