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COLORECTAL CANCER AND NUTRITION IN RELATION TO A NURSING MODEL BY M. E. LEVINE

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Abstract

Aim: The research subject was to determine the changes in diet and nutrition in patients with colorectal cancer with respect to the M. E. Levine Model.

Methods: The research was implemented by quantitative survey through a non-standardized questionnaire. The research file was formed of 300 respondents who had suffered colorectal cancer.

Results: The respondents most often drink 1.5 to 2 litres of fluids. They mostly consume 1 to 2 glasses of beer (38.3%), 1 to 2 glasses of wine (38%) and most of them (52.6%) do not consume any spirits during the week. The results show that 32.9% of the respondents do not have any problems with diet and 33.3% of the respondents are slightly limited by diet measures. The patients who have no problems with diet significantly more frequently mention that they are not limited by current diet measures.

Conclusion: Nutritional problems of patients with colorectal cancer occur in the principles of maintenance of structural integrity and energy conservation. As the research survey shows, the patients did not adhere to these two principles when it comes to nutrition and especially diet problems because they have to change their eating habits.

Key words: *colorectal cancer; model of energy fields; M. E. Levine Model; stoma; nutrition*

ORIGINAL ARTICLE

INTRODUCTION

Nursing models enable nurses to improve nursing care, especially concerning a disease such as colorectal cancer. This tumour disease has been newly diagnosed in 471,240 people all over Europe. In colorectal cancer incidence, the Czech Republic takes sixth place, behind South Korea, Slovakia, Hungary, Denmark and the Netherlands. Worldwide colorectal cancer takes third place concerning frequency of the disease (Globocan 2012).

The nursing model of M. E. Levine or "The four conservation principles" is ranked among the models of energy fields (Pavlíková 2005). In this model an adaptation of an individual is stressed and it includes four so-called conservation principles: (1) energy conservation, (2) conservation of structural integrity, (3) conservation of personal integrity and (4) conservation of social integrity. The principle of energy conservation focuses on the ability of each individual to use natural energy and to interchange of energy. Energy conservation is a natural protection against a disease. Within the principle of conservation of structural integrity, a nurse focuses on changes of body functions that can break this integrity (e.g. surgery). Within the principle of personal integrity a nurse focuses on the emotions and psyche of an individual.

When a person is ill, their most disturbed feelings are self-identity and self-respect. Within the last principle (social integrity) the author deals with social perception and integration of an individual to a society when a disease isolates a patient from their surroundings (Levine 1967). It can be said that the diet problems can be found not only in the first but also in the second principle.

Human lifestyle, consumption of fat, alcohol and red meat are connected with an increased risk of colorectal cancer occurrence (Watson and Collins 2011). Nutrition closely relates to the health condition of the whole population. According to the recommendation of Dostálová et al. (2006), an individual should consume a balanced diet, divided into 4 to 5 servings, with the observance of correct preparation. One should also have a higher intake of fruit and vegetables, which leads to markedly lower occurrence of tumours (Vyzula 2001). Some foods are restricted to a great extent for the patients with colostomy.

The aim of this survey is to present partial results resulting from the grant project "Utilization of conceptual models in clinical and community practice" (GAJU 048/2015/S), which deals with the effect of diet on a patient with colorectal cancer with respect to the model of energy fields. Another aim of this project is to create a modified nursing documentation resulting from the M. E. Levine Model.

MATERIALS AND METHODS

The research was implemented through a quantitative survey, by means of our own non-standardized questionnaire, which was handed out to patients with colorectal cancer to be filled in. The above-mentioned questionnaire was chosen because of the need to include a conceptual model by M. E. Levine in this problem. The questionnaire consisted of 104 questions and was generally structured into seven domains (identification data, anamnesis, health condition, information, social support, perception, stoma). The questionnaires with most of the respondents were filled in as a controlled interview because of the sensitivity of the topic.

The research sample was represented by 300 individuals with a diagnosis of colorectal cancer. The selection was executed through sampling when the colorectal cancer quota was set.

The research survey took place in the period from February to December 2016. The questionnaire was handed out by the Stoma club of the Czech ILCO, stoma nurses and through the snowball sampling method. The obtained data were rewritten into an electronical form via the SASD programme (statistical analysis of social data), where the calculation of absolute and relative numbers (with its calculation of middle value and variability rate) were executed. Pearson's chi-squared test and a test of independence were used in the second classification. The significance level was set at the value $\alpha = 0.05$; 0.01 and 0.001.

RESULTS

Considering diet, we have focused on drinking regime, alcohol consumption, diet problems and current diet measures. The respondents could choose their answers from a 5-point Likert scale in each selected area. In the research survey, more than half of the respondents (56.1%) had stoma of the small or large intestine, and the rest of the respondents (43.9%) had not undergone any stoma. The answer concerning the amount of fluid intake was most often answered by the respondents as "2 l" (36.6%) and "1.5 l" (32.2%); 17.1% of the respondents answered that they drink 1 l and 12.8% of the respondents drink more than 2 l of fluid. 1.3% of the respondents drink less than 0.5 l of fluid. The next question was connected with alcohol consumption. More than half of the respondents (52.9%) do not consume alcohol, while 47.1% of the respondents do. The respondents could choose between a glass of beer (0.5 l), wine (0.2 l) and spirits (0.02 l): 39.3% of the respondents stated that on average they drink one to two glasses of beer per week, 14.3% do not drink any beer at all, 38.0% of the respondents drink one to two glasses of wine and 10.2% of the respondents drink six or more glasses. The majority of the respondents (52.6%) do not consume spirits at all, and the choice of six and more glasses was chosen by 8.8% of the respondents (Chart 1).

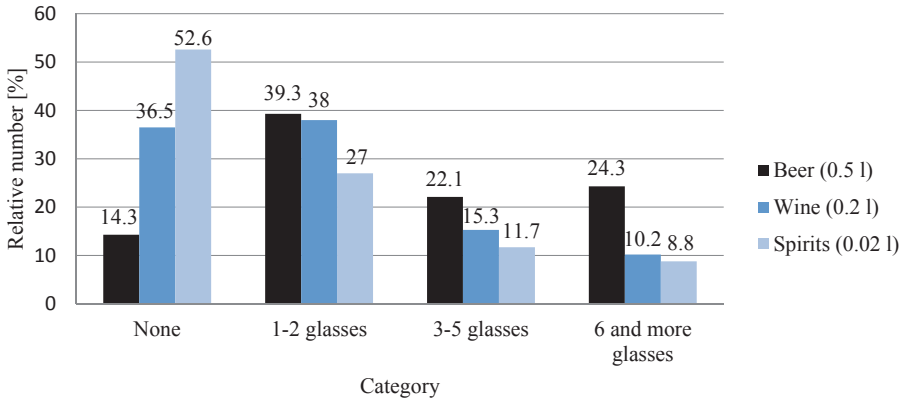

Chart 1 – Alcohol consumption per week in terms of beer, wine and spirits

Another examined category was diet problems. The respondents most often stated no diet problems (not at all), namely 32.9%. Extreme diet problems were stated by only 2.3% of the respondents. 33.3% of the respondents chose the option of "slightly" concerning limited diet measures, while 2.7% of the respondents chose the extreme diet measure (Chart 2).

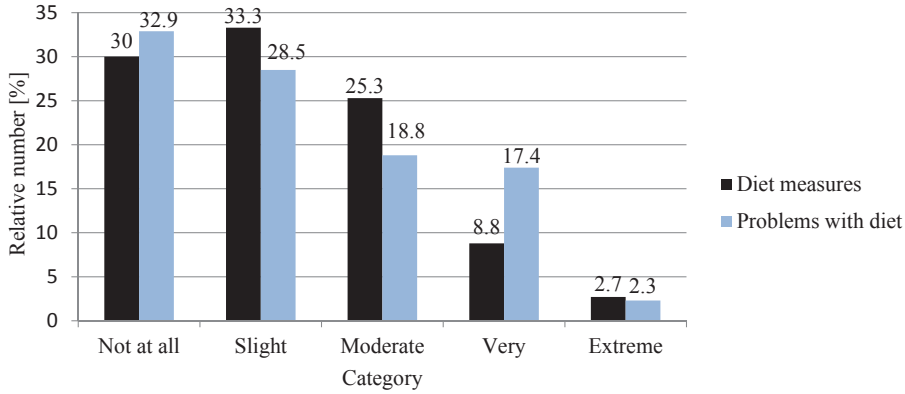

Chart 2 – Measures and problems concerning diet

The second testing by means of the chi-squared test analysed the diet problems of the respondents and their present diet restrictions. Because of the insufficient amount of observations, Yate's correction had to be done in this case. The outcome (280227 at 16 degrees of freedom) with the significance level 0.001 established that the patients who do not suffer diet problems significantly more frequently mention that they are not restricted by present diet measures. The more the diet problems, the higher the rate of restriction by present diet measures. We also analysed alcohol consumption in the patients with stoma. There was no statistically significant connection between alcohol consumption and stoma (chi-squared test 3.537 at 1 degree of freedom with the significance level 0.063 /n.s./). So it has not been proved that the patients with stoma consume less alcohol than the patients without a stoma.

DISCUSSION

As follows from the obtained outcomes, most respondents (68.8%) drink 1.5 to 2 l of fluid, which is, according to Machová and Kubátová (2015), a sufficient amount in terms of a normal drinking regime in normal activity and weather. Sugar-free beverages are especially recommended. According to Zachová (2010), the stoma patients should drink 2 to 2.5 l of fluid a day. The stoma patients should also avoid the intake of sparkling beverages because of possible excessive flatulence.

Another significant finding was the fact that 52.5% of the respondents do not consume alcohol. Our results are consistent with the research results by Kisvetrová and Gabrhelíková (2012), who executed a research survey in the healthy population considering colorectal cancer. It was established that 36.7% of Czech and 43.3% of Scottish people consume alcohol once a week. Reduced alcohol consumption may be an endeavour to better one's lifestyle after the diagnosis of colorectal cancer, which includes healthy diet and enough movement. Yang et al. (2017) mention that alcohol consumption is connected to a higher risk of colorectal cancer. Zachová (2010) states that a small amount of alcohol is allowed in the stoma patients; however, she does not specify this amount. She further advises avoiding beer, which causes flatulence and has a laxative effect. However, beer can also support digestion.

The other category dealt with diet problems, in which only 32.9% of the respondents did not have any diet problems. Higher occurrence of diet problems is connected with problems relating to colorectal cancer. According to Vyzula (2001), cancer patients should consume more proteins than healthy individuals in order not to lose weight. This is also confirmed by Skřička et al. (2009), who point out that it is necessary to supply proteins and electrolytes because there is a lack of them caused by intestinal permeability. Glinska et al. (2009), mention that the most frequent diet mistake in the stoma patients is an excessive consumption of fat, spicy foods and sparkling beverages.

The patients who suffered colorectal cancer and who have a stoma system should often change their diet habits and observe new diet measures. Concerning changes, they are mostly in a worse situation than patients with ileostomy, who should consume more fluid and avoid foods that are harder to digest, while patients with colostomy mostly tolerate foods that they consumed before the surgery (Pailová 2010). This fact has been proved twice in our research survey when 70.1% of the respondents negatively perceive the restriction in diet measures. It has been confirmed by the tests that if the patients mention diet problems, they are also more limited by diet measures. Concerning the problems of alcohol consumption in the patients with stoma, no effect has been proved of stoma on the amount of consumed alcohol.

CONCLUSION

The problem of nutrition in patients with colorectal cancer occurs in the principle of conservation of structural integrity and energy conservation. These principles are disturbed in the respondents, especially with regard to diet problems when they have to change their eating habits. This is the reason that these results can be used for the appropriate education of the patients and to offer alternative foods in the nutrition of patients with colorectal cancer. It has also been established that more than half of the respondents follow a sufficient drinking regime and do not consume any alcohol.

CONFLICT OF INTERESTS

The authors have no conflict of interest to disclose.

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