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Professional article
Stručni članak
UDK 616.348-089-052:613
https://doi.org/10.2298/MPNS2306146B

FACTORS AFFECTING THE QUALITY OF LIFE OF PEOPLE WITH COLOSTOMA

FAKTORI KOJI UTIČU NA KVALITET ŽIVOTA OSOBA SA KOLOSTOMOM

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Summary.
Introduction. Colon cancer is a public health problem due to its frequency. According to the number of diagnosed cases, it is the third most common malignant tumor in the world in people of both sexes, and even the second most common in terms of mortality. The incidence is higher in developed regions, although increase is recorded in the developing countries due to changes in the living habits of the population. Operation is the method of choice in the disease treatment, and the performance of colostomy affects the patient's life, although it significantly prolongs it. **Material and Methods.** Literature review available in scientific databases was used as material in order to present significant results of the latest existing research in the selected area. **Results**. A wide range of studies conducted to observe the predictive factors, which in different ways affect the quality of life of patients with colostomy, confirm that the psychological aspects of the newly created situation have the most prominent importance in further life. In addition to possible problems with nutrition, stoma care, dressing, physical activity, professional and sexual life, and travel, it seems that coping with stress and changes in physical appearance are the fields on which the most work should be directed by both the family and the patient, as well as members of the medical team. **Conclusion.** The quality of life of people with colostomy is interference of medical and rehabilitation treatment, and it depends on the patient's willingness to cooperate during the entire treatment, care and rehabilitation process. All reference bodies and institutions should undertake activities to design a comprehensive strategy for improving life quality, primarily through the prism of improving one's own body image, functional status, psychological and social support.
Key words: Colostomy; Quality of Life; Risk Factors; Colonic Neoplasms; Health Knowledge, Attitudes, Practice

Sažetak.
Uvod. Karcinom debelog creva zbog svoje učestalosti predstavlja javno-zdravstveni problem. On je po broju dijagnostikovanih slučajeva treći najčešći maligni tumor na svetu kod pripadnika oba pola, a čak drugi prema smrtnosti. Incidencija je viša u razvijenim regijama iako se sve veći porast beleži u zemljama u razvoju − zbog promene životnih navika stanovništva. Operativni zahvat predstavlja metodu izbora u tretmanu oboljenja, a izvođenje kolostome, iako značajno produžava život pacijenta, utiče na njegov kvalitet. **Materijal i metode.** Kao materijal korišćen je pregled literature dostupan u naučnim bazama, kako bi se predstavili značajni rezultati najnovijih postojećih istraživanja u izabranom području. **Rezultati.** Širok dijapazon studija koje su sprovedene u cilju opservacije prediktivnih faktora, koji na različite načine utiču na kvalitet života pacijenata sa kolostomom potvrđuju da psihološki aspekti novonastale situacije imaju najistaknutiji značaj u daljem životu. Pored mogućih problema sa ishranom, negom stome, oblačenjem, fizičkom aktivnošću, profesionalnim i seksualnim životom, te putovanjima, čini se da suočavanje sa stresom i promene u telesnom izgledu čine polja na koja treba usmeriti najviše rada kako porodice i pacijenta, tako i članova medicinskog tima. **Zaključak.** Kvalitet života osoba sa kolostomom predstavlja interferenciju medicinskog i rehabilitacionog tretmana; zavisi od spremnosti pacijenta na saradnju tokom celokupnog postupka lečenja, nege i rehabilitacije. Sva referentna tela i institucije treba da preduzmu aktivnosti na osmišljavanju sveobuhvatne strategije za poboljšanje kvaliteta života, pre svega kroz prizmu poboljšanja slike vlastitog tela, funkcionalnog statusa, psihološke i socijalne podrške.
Ključne reči: kolostomija; kvalitet života; faktori rizika; tumori kolona; znanje o zdravlju, stavovi, praksa

Introduction.

Colon cancer is a public health problem due to its frequency. It accounts for more than 9% of the world incidence of cancer, it is the third most common form of cancer in the world and an even more common cause of death [1, 2]. Globally, colorectal cancer is the third most common cancer diagnosed in men (after lung and prostate cancer), and second in women (after breast cancer) [3]. Although it is possible to detect the disease in the early asymptomatic phase when the chances of cure are much higher, unfortunately it is usually detected only after the appearance of one or more symptoms. Primary and secondary prevention are of great

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importance when it comes to the mentioned pathology, so screening for colorectal cancer has been carried out in our country for many years. More precisely, since 2012 (gradual introduction) there has been an organized mass invitation of the target population (from 50 to 74 years old, once every two years) for testing (i.e. detection of hidden bleeding in the stool) and interpretation of the screening tests, followed by strict control quality and reporting, thereby reducing mortality [4, 5].

The choice of therapeutic procedure depends on the type, localization and the degree of development of the malignant process, although primacy is given to surgical methods of treatment. After surgical intervention (intestinal resection), an opening is made in the patient's front abdominal wall in the same way so as to maintain the function of the digestive tract (colostomy) [5].

Given that facing the patient with the fact that they suffer from a malignant disease, followed by the change in physical appearance, comes along with various psychosocial difficulties, all procedures that affect the patient's quality of life, in addition to stoma care, are extremely important. Along with the family, which has a basic role in all aspects of rehabilitation and improving the life quality after hospital treatment, the doctor and nurse/stoma therapists make an integral part of the team primarily responsible for patient education [6].

Assessment of the quality of life is an important segment of evaluation of all performed diagnostic and therapeutic procedures. There are numerous definitions that try to clarify the meaning of the term "quality of life". It basically y means well-being, which is influenced by both objective indicators and the subjective perception of the individual, as well as the evaluation of physical, social, emotional, functional and material well-being [7, 8].

As colostomy can be temporary (in order to temporarily exclude the intestine from the passage) and permanent (permanent opening for the removal of gas and stool), the patient's perception/awareness changes depending on its type. The word "stoma" is of Greek origin and means an opening, which does not have to be surgically performed the anterior abdominal wall because of the malignant process only (which has been expanding in recent years), but also as a result of the so-called benign etiology [9].

The position or the place where the stoma is performed in the case of a malignant process depends on the location, although it can also be performed as a therapeutic measure in certain congenital anomalies, various processes or injuries, etc. It is round or oval in shape, pink or red in color, 2-5 cm in diameter. It does not have nerve endings, so it is not sensitive to touch [9, 10].

Facing the patient with a new way of life, nutrition, care and proper replacement of the stoma brings a series of problems that are primarily psychological in nature, and which can intensify after leaving the inpatient facility. Uncertainty, feeling of helplessness and fear of the final outcome of the disease, along with the specifics of care, are often a predictive factor that leads to loss of self-confidence, isolation from social life, alienation, and the emergence of depressive reactions. Before the surgical intervention, after it (in hospital conditions) and upon discharge, members of the medical team have a key role in educating and encouraging the patient to take control of the continuation of regular activities (equivalent to those before surgery) [6].

Research shows that people with implanted colostomy face a series of questions, problems and doubts, which have repercussions on their quality of life to a greater or lesser extent [11, 12].

Material and Methods

To draw conclusions related to the topic, a review of the scientific databases: Medline, Pubmed, Web of Science, Google Scholar, and Embase was used as a work method, whereby the words "quality of life" and "colostomy" were used for the review of literary material. After reading the summaries and individual parts of the papers/texts, papers that met the set criteria were selected, i.e. that examined and analyzed exclusively the quality of life of people with a colostomy, the results of which were presented in the discussion.

Results

Most of the studies that were conducted earlier, as well as in recent years, aimed to investigate which factors and to what extent affect the quality of life of people with a colostomy [11, 12].

The researchers predict that continuous patient monitoring for a period of three to six months after their discharge from the hospital has favorable effect on the acceptance of their new health condition, and later on everything that entails a changed lifestyle, so that it is as close as possible to the previous one. Therefore, the focus lies on monitoring by the stoma therapist and the so-called home stoma nurse. This multicenter study was conducted in France and included 12 centers that care for patients with a stoma in order to assess the impact on their quality of life with the help of a stoma therapist [11].

Some research synthesizes data sources presented in the most important scientific bases during a ten-year period, with the aim of discovering factors that contribute to the quality of life of patients who have had a stoma performed as a result of colorectal cancer. The results of one such study conducted in Thailand identified a group of five significant themes/aspects that correlate with quality of life, namely: sociodemographic and clinical, physiological, psychological, social and spiritual aspects. The obtained indicators can contribute to the creation of appropriate interventions in the promotion of quality of life, their introduction into the curricula and programs of medical students [12].

Another study conducted in Thailand aimed to determine the degree of adaptation of patients to their lifestyle after the installation of a stoma. It was conducted as a cross-sectional study among 152 people with a stoma, where three instruments were used: socio-demographic and clinical categorization, a scale for the level of adaptation of patients with a stoma, and

a questionnaire on quality of life. The obtained indicators indicated that the coefficients of the psychological and social dimensions have the biggest changes in the average results of adaptation [13].

Another study was conducted in Thailand, with the aim of determining the factors that influence the health-related quality of life of Thai people with colorectal cancer and a permanent colostomy. Data were collected from 232 respondents from six tertiary care institutions using seven instruments: demographic and health data form, social support questionnaire, bowel function test, epidemiological data, depression scale, body image scale and quality of life index. The results showed consistency with other studies. Namely, carcinoembryonic antigen, gender and age had an indirect effect on health-related quality of life, while religion, social support, bowel symptoms, depressive symptoms, disturbed body image and functional status had both indirect and direct effects on quality of life where the strongest effect was achieved by body schema/image disorder [14].

Some studies compare the quality of life in relation to whether the stoma was formed urgently or electively. The search strategy included scientific databases from the mentioned field, and incorporated 1868 patients who underwent stoma as an emergency measure, without previous planning and detailed discussion with members of the healthcare team. This systematic review of literature confirmed that patients who underwent emergency surgery had a slightly worse quality of life, compared to the ones who underwent the same procedure as a planned intervention, and that the female gender coincided with a worse quality of life [15].

Literature related to the discussed topic constantly points out the lesser or greater importance of the patient training for stoma care by the health care team members. A meta-analysis that included 17 randomized controlled trials, i.e. 1437 patients, of which 728 were in the continuous care group and 709 in the control group, indicated that continuous care of colostomy reduces wound infection and improves quality of life [16].

Also, a systematic search and meta-analysis was conducted for studies of experimental nursing interventions in relation to routine nursing interventions in patients with a stoma, in order to decisively determine which type of intervention has an advantage in improving the quality of life. Ten studies were selected, namely 460 subjects with experimental nursing intervention and 478 who were exposed to routine care. Experimental nursing intervention showed greater positive effects on quality of life compared to routine nursing interventions, which is significant information for stoma care practitioners to encourage and improve nursing conditions [17].

Similar research was conducted as a retrospective study, which included 100 patients who underwent colostomy in the period from January 2020 to June 2022 due to colorectal cancer. From the above sample, 51 patients received micro video stimulating nursing intervention, and theymade the experimental group, and 49 received routine nursing intervention (control group). The subjects of observation were psychological status, nutritional status, quality of life and rehabilitation. Micro-video content made by team members, doctors, nurses and researchers was played for 10 min to the patients. The main sequences of this educational program combined self-care, nutrition and family support. The Hamilton Anxiety and Depression Scale and the Quality of Life Scale developed by the European Group for Research and Treatment of Cancer were used as instruments, while the nutritional status was assessed using the subjective global assessment of nutrition. A higher result in the observed category of psychological manifestations was analogous to higher quality of life, i.e. higher in the assessment of nutritional status, poorer nutrition of the person. The results showed that micro video stimulating nursing intervention for patients with colostomy has an extremely positive role in improving the quality of life of patients, correcting their negative emotions and encouraging them to live positively as the results are related to clinical data, assessment of the patient's psychological state, nutritional status and quality of life and are such that there is significant difference in favor of the experimental group [18].

Micro video motivational nursing intervention constitutes a new concept of nursing practice, which encourages the patient through motivation to turn to the achievement of his set goals [19, 20].

First of all, it helps establish a friendly relationship with the patient, provides constant psychological and physiological support, increases the patient's vitality, reduces negative emotions and anxiety, promotes the patient's active participation in treatment, promotes rehabilitation procedures and thus significantly improves the quality of life [21–23].

Some studies examine the impact of electronic health platforms on patients with a stoma. E-health includes everything related to information and communication technologies, including telemedicine, mobile health and health informatics. They conclude that digital applications can bring scientific knowledge, improve information and education of individuals and families, but also recognize early symptoms and signs of possible complications. One of them aimed to determine the most relevant content for promoting stoma self-care integrated in the E-health platform, as a digital application for smartphones or a website/site, which patients use independently for the so-called stoma management, self-care, self-monitoring and interaction with the stoma therapist [24].

Stoma surgery, as previously mentioned, can lead to a series of negative psychological outcomes, which require post-operative adaptation. Clarck et al. show that there are good post-operative support ways to deal with the resulting mental outcomes, but also a lack of pre-operative psychological preparation in standard nursing models. This study examined the existing and the new models of psychological preparation in stoma surgery during the preoperative period. A systematic search of scientific databases detected 15 publications

that met the criteria for inclusion in the research, and included 1565 participants. The following interventions were conducted: psycho-educational and counseling examination, demonstration and verification of practical skills, examination of post-operative outcomes of adjustment, anxiety, depression, quality of life and self-efficacy. It was concluded that despite all the encouraging progress in this area, there is not enough evidence to evaluate the overall effectiveness of the existing and some new models of preoperative psychological preparation on the postoperative psychological outcome of each individual undergoing ostomy surgery [25].

A qualitative study based on Heidegger's phenomenological approach, using Van Manen's method, sought to discover how colostomy patients dependent on a wheelchair (due to a previous spinal cord injury) influenced their experiences. The respondents, who were 9, were directly interviewed, and the results showed that their experiences are difficult, that they constantly face challenges, and that they have different awareness about colostomy [26].

Certain research has the task of identifying the quality of life of people with a stoma, including their sexual health and sexuality after surgery. By reviewing the literature, i.e. peer-reviewed scientific journals in the last 5 years, a detailed search found that a stoma affects many aspects of a patient's life, primarily by changing the image of one's own body, the relationship with one's partner, but also the quality of one's sexual life. The evaluation concluded that perioperative educational programs for patients with ostomy qualifications would provide wholehearted and necessary support in dealing with physical and mental difficulties, which would improve all aspects of quality of life [27].

Skin complications that negatively affect the quality of life of patients are distinguished among the possible complications that patients with a colostomy are exposed to. Peristomal skin complications, in addition to having significant impact on the quality of life, increase health care costs, product consumption, etc. A randomized controlled trial was conducted over 6 months in 2022 in 5 different countries aiming to evaluate the performance of a stoma base plate with skin protection technology. The sample included people with peristomal skin complications (79 of them) who were examined for the tested product and compared with the product in use, while the health-related quality of life was quantified using the so-called questionnaire – dermatological quality of life index. Significantly more participants gave preference to the researched product compared to the used one, because the research product, i.e. the base plate with skin protection technology reduced the percentage of peristomal skin complications, thereby improving the quality of life of these patients [28]. At the same time, a pilot study was carried out on a digital stoma leakage notification system, i.e. the impact on care and quality of life. More precisely, the evaluation of the performance of the new digital stoma leakage notification system was carried out among 25 patients for 21 days. The results confirmed that the episodes of leakage outside the base plate decreased from 2.8 to 0.5 episodes after three weeks of using the tested product, which reduced anxiety, improved the emotional health and quality of life of the subjects [29].

Bowel dysfunction after colorectal cancer surgery is the subject of research by many experts. Maalouf et al. used interviews to collect data from 54 patients from a university colorectal center. Analysis of the obtained results revealed five areas related to the quality of life that are affected by bowel dysfunction: psychological/emotional stress, role and relationships in the society, limitations of recreational activities, physical limitations, as well as adaptation to changes and self-empowerment. It was established that patients with minor or major bowel dysfunction have more frequent disorders in social activities, sexual life and sleep quality [30].

Some research aims to examine new follow-up strategies for patients with colorectal cancer that affect health-related quality of life and functional outcomes. Thus, patients from four Danish centers were monitored by comparing the records, followed by the patients after the education and the control by standard follow-up with five routine visits to the doctor. Patients from both groups underwent computed tomography in Year 1 and 3. The primary outcome was assessed by the functional assessment after the therapy, while the secondary one included explicit functional involvement and overall patient satisfaction after three years. Of the initial 336 patients, the follow-up after three years ended in 248. The obtained results suggest that no differences were found between the observed groups, neither for the primary endpoint, nor for the functional outcomes [31].

Conclusion

Progress in medicine, including the care of colostomy patients, is a challenging issue, primarily due to the quality of life of stoma patients. In addition to its benefits, colostomy has a negative physical, psychological and social impact on the patient's quality of life as it primarily changes the body image the patient had had about themselves, thus lowering self-confidence and social functioning. Activities of the health care team members should focus on developing competencies for the stoma self-care as it is supposed to contribute to adaptation to a new health condition and preservation of quality of life. Technological evolution makes a useful tool for the promotion of self-help competencies. Scientific literature induces that medical team members should use the findings of current studies in designing a comprehensive strategy for improving the quality of life, with an emphasis on improving one's own body image, functional status, and social and emotional support. In recent years, the so-called clinical nurses changed from the traditional biological-medical model to the modern biological-psychological-medical model, which implies that attention is directed towards the functional component and quality of life. More and more support is given to the implementation of a micro video stimulating health/nursing intervention, the results of which show good clinical effect.

References

1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021;71(3):209-49.

2. Martinis I, Pugelnik J, Šporčić M. Važnost procjene nutritivnog statusa bolesnika s kolorektalnim karcinomom. Hrana u zdravlju i bolesti. 2023;12(1):33-41.

3. Kukić B. Kolonoskopija u dijagnostici kolorektalnog karcinoma - najčešća pitanja i dileme. Med Pregl. 2017;70(11-12):359-63.

4. Naumov I, Fenjveši A. Pilot program - detekcija tumora debelog creva kod ispitanika severnobanatskog okruga. Med Pregl. 2012;65(7-8):285-8.

5. Lavdaniti M, Tsitsis N. Definitions and conceptual models of quality of life in cancer patients. Health Science Journal. 2015;9(2):6.

6. Bachelet V, Collet G, Ribal A. The role of the stoma therapy nurse in the preoperative period. Rev Infirm. 2012;181:25-6.

7. Kraljević N. Rehabilitacija bolesnika s rakom debelog crijeva. Libri Oncologici. 2013;41(1-3):87-92.

8. Slavuj L. Objektivni i subjektivni pokazatelji u istraživanju koncepta kvalitete života. Geoadria. 2012;17(1):73-92.

9. Glavaš K. Kvaliteta života osoba sa stomom u istarskoj županiji [master's thesis]. Rijeka: Sveučilište u Rijeci, Fakultet zdravstvenih studija u Rijeci; 2019.

10. Vuković A. Preoperativna i postoperativna edukacija pacijenata sa kolostomom [undergraduate thesis]. Koprivnica: Sveučilište Sjever, Sveučilišni centar Varaždin, Odjel za sestrinstvo; 2015.

11. De Ponthaud C, Roupret M, Vernerey D, Audenet F, Brouquet A, Cotte E, et al. StomaCare: quality of life impact after enhanced follow-up of ostomy patients by a home healthcare nursing service-a multicentre, randomized, controlled trial. Colorectal Dis. 2023;25(1):128-43.

12. Sritan S. Factors contributing to the quality of life among Thai patients diagnosed with colorectal cancer with a stoma: an integrative review. J Adv Nurs. 2023;79(1):1-14.

13. Diniz IV, Pereira da Silva I, Silva RA, Garcia Lira Neto JC, do Nascimento JA, Costa IKF, et al. Effects of the quality of life on the adaptation of people with an intestinal stoma. Clin Nurs Res. 2023;32(3):527-38.

14. Bunkong S, Arpanantikul M, Sirapo-Ngam Y, Monkong S, Viwatwongkasem C, Olson K, et al. A model of factors influencing health-related quality of life among Thais with colorectal cancer and a permanent colostomy. Pac Rim Int J Nurs Res Thail. 2023;27(1):185-99.

15. MacDonald S, Wong LS, John-Charles R, McKee T, Quasim T, Moug S. The impact of intestinal stoma formation on patient quality of life after emergency surgery - a systematic review. Colorectal Dis. 2023;25(7):1349-60.

16. Wei S, Li N, Li X, Qi M. Effect of continuous nursing on wound infection and quality of life in patients with cancer-related stoma: a meta-analysis. Int Wound J. Forthcoming 2023. doi:10.111/iwj.14285.

17. Guo Y, Zhang Y, Guo X, Zhao W, Wang Q, Liu X, et al. The comparison between experimental nursing and routine nursing interventions on the quality of life of stoma patients: a systematic review and meta-analysis. Int Wound J. 2023;20(3):861-70.

18. Yan Q, Li Y. Micro video incentive nursing intervention improves the psychological state and quality of life in patients with rectal cancer after enterostomy. Am J Transl Res. 2023;15(3):2040-8.

19. He LJ, Zheng MC, Yuet Wong FK, Ying J, Zhang JE. Immediate postoperative experiences before discharge among patients with rectal cancer and a permanent colostomy: a qualitative study. Eur J Oncol Nurs. 2021;51:101911.

20. Al-Haidari G, Skovlund E, Undseth C, Rekstad BL, Larsen SG, Åsli LM, et al. Re-irradiation for recurrent rectal cancer-a single-center experience. Acta Oncol. 2020;59(5):534-40.

21. González-Mercado VJ, Lim J, Marrero S, Pedro E, Saligan LN. Gut microbiota and fatigue in rectal cancer patients: a cross-sectional pilot study. Support Care Cancer. 2021;29(8):4615-21.

22. Saadat LV, Mahvi DA, Jolissaint JS, Urman RD, Gold JS, Whang EE. Discharge destination following rectal cancer resection: an analysis of preoperative and intraoperative factors. Int J Colorectal Dis. 2020;35(2):249-57.

23. Wen-Pei C, Hsiu-Ju J. Changes in fatigue in rectal cancer patients before and after therapy: a systematic review and meta-analysis. Support Care Cancer. 2020;28(6):2513-22.

24. Soares-Pinto I, Braga AMP, Santos IMRMA, Ferreira NMRG, Silva SCDRE, Alves PJ. eHealth promoting stoma self-care for people with an elimination ostomy: focus group study. JMIR Hum Factors. 2023;10:e39826.

25. Clark M, Chur-Hansen A, Mikocka-Walus A. Systematic review with meta-analysis: current and emerging models of preoperative psychological preparation for individuals undergoing stoma surgery. J Psychosom Res. 2023;168:111211.

26. Küçükakça Çelik G, Taylan S. Colostomy may offer hope in improving quality of life: a phenomenological qualitative study with patients dependent on a wheelchair. Qual Life Res. 2023;32(7):1981-9.

27. Paszyńska W, Zborowska K, Czajkowska M, Skrzypulec-Plinta V. Quality of sex life in intestinal stoma patients - a literature review. Int J Environ Res Public Health. 2023;20(3):2660.

28. Sætre R, Gotfredsen JL, Nonboe P, Hansen HD, Mathiesen R, Karlsmark T, et al. An ostomy baseplate with a skin-protection technology reduces peristomal skin complications: a randomized controlled trial (the ATTRACT study). Br J Dermatol. 2023;188(4):474-81.

29. Brady RR, Fellows J, Meisner S, Olsen JK, Vestergaard M, Ajslev TA. A pilot study of a digital ostomy leakage notification system: impact on worry and quality of life. Br J Nurs. 2023;32(6):S4-12.

30. Maalouf MF, Robitaille S, Penta R, Pook M, Liberman AS, Fiore JF Jr, et al. Understanding the impact of bowel dysfunction on quality of life after rectal cancer surgery from the patient's perspective. Dis Colon Rectum. 2023;66(8):1067-75.

31. Hovdenak I, Thaysen HV, Bernstein IT, Christensen P, Hauberg A, Iversen LH, et al. Quality of life and symptom burden after rectal cancer surgery: a randomised controlled trial comparing patient-led versus standard follow-up. J Cancer Surviv. Forthcoming 2023. doi: 10.1007/s11764-023-01410-4.

Rad je primljen 8. VIII 2023.
Recenziran 16. VIII 2023.
Prihvaćen za štampu 18. VIII 2023.
BIBLID.0025-8105:(2023):LXXVI:5-6:146-150.