

Effect of Enterostomal Therapist-Led Visual Health Education Combined with Peer Education on the Self-Nursing Ability, Quality of Life and Peristomal Complications in Patients with a Permanent Colostomy

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Objective: This study aimed to analyse the impact of enterostomal therapist-led visual health education combined with peer education on the postoperative self-nursing ability, quality of life and peristomal complications in patients with a permanent colostomy.

Methods: Patients with a permanent colostomy admitted to Second Hospital of Hebei Medical University between March 2021 and March 2023 were selected and divided into the study group (60 patients) and the control group (60 patients). Enterostomal therapist-led visual health education combined with peer education was adopted in the study group, and regular education was adopted in the control group. The clinical effects between the two groups were compared.

Results: Repeated measurement analysis of variance showed that the two educational methods had different effects on the quality of life ($F_{treatment} = 342.734, p < 0.001$), self-nursing ability ($F_{treatment} = 256.321, p < 0.001$), adaptability ($F_{treatment} = 321.734, p < 0.001$) of patients with a permanent colostomy. After the 3-month intervention, the differences in all aspects of the quality of life, self-nursing ability and adaptability between the two groups were statistically significant, and the score of the study group was higher than that of the control group ($p < 0.05$). Compared with the control group, the study group had a lower incidence of the five complications ($p < 0.05$) and higher nursing satisfaction ($Z = -2.968, p < 0.05$).

Conclusion: Enterostomal therapist-led visual health education combined with peer education can improve the quality of life of patients with a permanent colostomy, improve their positive mood, reduce their negative mood, improve their adaptability to the stoma, reduce complications and improve their daily living conditions. In the future, the clinical application of visual health education and peer education in patients with permanent colostomy should be increased.

Keywords: peer education, visual education, self-nursing ability, quality of life, peristomal complications, permanent colostomy patients

Introduction

With changes in social structure, the human disease spectrum has also changed greatly, and the incidence of malignant tumours is increasing year by year.¹ According to relevant data,² the number of incidence cases of colorectal cancer and deaths from this disease in 2005 reached 172,000 and 99,000, respectively. Rectal cancer is the most common colorectal cancer, accounting for 50%–60% of all patients, while approximately 75% of these patients have low rectal cancer.³ Miles surgery is a commonly used treatment for low rectal cancer. Nearly 100,000 patients undergo this treatment every year in China, and a permanent colostomy is required after surgery.⁴ After a stoma, patients need to wear an ostomy bag to collect excrement. The possibility of faeces and urine leakage and odour lead to patients fearing stomas and experiencing negative emotions, such as anxiety and

inferiority,⁵ and they may be unwilling to participate in social activities. These changes can bring physiological, social adaptation and psychological problems to patients with stomas and seriously affect their quality of life.^{6–8} Patients with stomas often have a lower quality of life than the general population.^{9–11} Therefore, it is important to help patients with stomas return to social life and improve their quality of life.

Health education is an important pathway to spread health knowledge and skills, promote the development of individual and public health and solve current public health problems.¹² Traditional health education sometimes has a poor effect as it is influenced by patients' education level, understanding ability and memory ability, and it does not always achieve the expected clinical prognostic effect.^{13,14} Therefore, medical staff must intervene in the compliance behaviour of patients in a more effective way.^{15–17} Improving the method of health education enables health information to be conveyed more effectively. For example, multimedia technology can be used to transform the content of health education into images to make the content more intuitive;¹⁸ this is called visual education. In addition, the enterostomal therapist (ET) is the operator of the enterostomy and has a deep understanding of the precautions for the daily life of patients with enterostomy. Therefore, ET-led content production of visual health education videos can greatly improve their quality, thereby improving the education effectiveness.

Peer education is a form of sharing ideas and knowledge among certain groups of people to achieve educational goals.¹⁹ Research^{20,21} has shown that continued sharing of disease information and emotional support are important influences on continued behavioural changes and health sustenance in people with the same disease (eg AIDS, diabetes, cardiovascular disease and cancer). In recent years, peer education has been widely applied in the medical field, and it has achieved good results in preventing AIDS and improving the quality of life of patients with AIDS,^{22,23} as well as in the self-management of patients with chronic diseases.^{24,25} To date, this model has been increasingly applied to the psychosocial adjustment and quality of life promotion of patients with cancer in China, but there are few related studies, particularly for patients with stomas.

Therefore, this study explores the impact of ET-led visual health education combined with peer education on the postoperative self-nursing ability, quality of life and complications of patients with a permanent colostomy, to provide a reference for the development and implementation of peer education programmes.

Methods

Sampling Power Analysis

The R 4.2.1 software package was used for sample estimation and power analysis, with parameters set as follows: target power = 0.90; alpha = 0.15; group allocation equal ($N_1 = N_2$); experience difference $\delta = 1.5$; standard deviation $\sigma = 2.5$; $N_1 = N_2 = 42$, dropout rate = 30%, $N_1' = N_2' = 60$, $N' = 120$.

Study Participants

Using the convenience sampling method, a total of 120 patients undergoing permanent colostomy admitted to Second Hospital of Hebei Medical University between March 2021 and March 2023 were selected as the study participants; these were divided into 60 cases in the study group and 60 cases in the control group using a random number table. The inclusion criteria were as follows: (1) aged 18–75 years; (2) primary school education or above and able to communicate fluently in Chinese; (3) received first permanent stoma; (4) able to express their feelings verbally; (5) the postoperative condition was stable without serious complications. The exclusion criteria were as follows: (1) history of mental illness; (2) the tumour has metastasised to other organs; (3) accompanied by other serious physical diseases, such as heart failure or stroke; (4) serious postoperative complications or other serious life-threatening diseases; (5) unable to communicate and express effectively; (6) cognitive dysfunction; (7) failure to take care of themselves; (8) temporary ostomy. This study was approved by the hospital ethics committee, and all study participants gave informed consent and signed a written consent form.

Study methods

In this study, the control group and the study group were compared by randomised controlled experiments. Routine procedures were performed in the control group. Before discharge, the responsible nurse informed the patient and their dependents of the follow-up time and the relevant precautions after discharge. Patients were followed up according to the

routine postoperative follow-up procedures of the hospital. During the follow-up visit, timely health education of the patients was conducted and their questions were answered.

The study group adopted ET-led visual health education combined with peer education to educate patients and their peers. The specific process was as follows:

(1) Team building. The visual health education team was composed of an ET, a nurse with more than 5 years of experience and a grade of intermediate or above in the department, a psychologist, a nutritionist, a peer educator and two researchers. The team was responsible for discussing and developing the intervention programme, identifying the content of visual education and feeding back and addressing the problems in the implementation process. The intervention programme and the visual education content were determined by a joint discussion within the research team. Rehabilitation specialist nurses, rehabilitation therapists and researchers were jointly responsible for the shooting and production of videos, posters, brochures and other visual content. During the implementation, the rehabilitation physician was responsible for assessing the patient's condition to determine whether they could participate in the study, working with the rehabilitation therapists to develop personalised visual education content for patients and training their peers and family. The content of the visual health education was intuitive, vivid, professional and easy to understand. The visual health education contents included the following: (i) an environment introduction (including department environment, personnel, hospital environment and related paths for tests in the department); (ii) a disease introduction (including disease aetiology, pathology, anatomical relationship and introduction of successful cases); (iii) a video display (including a video demonstration, animation demonstration, background music and decomposition demonstration of a function exercise video), animation, song, rhymes and other forms of content.

(2) Screening of peer educators. The screening criteria were as follows: (i) patients with >2 years since the stoma surgery; (ii) a junior high school education or above; (iii) outgoing and enthusiastic demeanour, with good understanding ability, language organisation and expression abilities and interpersonal communication skills; (iv) unrestricted mobility and full behavioural capacity; (v) aged <65 years; (vi) high quality of life with the stoma (quality of life score for stoma 60 points), high level of self-efficacy for patients with stomas (self-efficacy score >103 points), high level of adaptability for stomas (adaptability >60 points); (vii) ability to follow a peer education programme and conduct a peer education intervention for patients with stoma; (viii) time, energy and willingness to undertake peer education work.

(3) Training of peer educators. Visual health education combined with routine health education was used to train the peer educators. Before the start of the study, a team composed of an ET, nurses with >5 years of specialised working experience in the department, psychologists and nutritionists trained them three times a week for 4 weeks, with each session lasting 2 h. After the classes, the visual training materials based on the course content were sent to the trainees, and question-answer sessions and group discussions were carried out through WeChat and other methods. The main contents of the training included the following topics: anatomical knowledge of the digestive tract, stoma type, diet of patients with stomas and precautions of daily life; how to judge the psychological status; how to communicate effectively about the same disease experience; how to share one's experience of successful stoma nursing and postoperative life. During the training, stoma care products were provided for each student to improve their motivation. After the training, 12 individuals were finally identified as peer educators.

(4) Determination of intervention methods for peer education: (i) Peer educators and patients in the observation group were divided into six groups, and each group included two peer educators and 10 patients. The group members were freely combined, and the peer educators in the group were responsible for the patients in the group; (ii) the director of this study introduced the patients in the observation group to their respective peer educators, so that they got to know each other and gained trust;²⁶ (iii) relevant consultation and effective communication were conducted once a week by the responsible peer educator. The specific content was flexibly adjusted by the peer educators according to the situation of the patients in the observation group, and they chose different ways according to the specific situation, such as by telephone, WeChat or door-to-door visits; (iv) according to the situation of their team members, group discussions were convened once a month and lasted for 1–2 h until the topic was fully discussed, and specific topics were determined by the group members before the discussion; (v) peer educators regularly reported the education effect, care situation of the stomas, psychological status and other information to the training team leader every month. If they had any problems in the process of intervention, they sought help from the team leader in time. The team leader gave timely feedback,

evaluated the guidance effect and proposed more feasible plans according to the situation of group members and the intervention effect; (vi) this peer education lasted for 3 months from the discharge of the patient. All costs during the intervention, such as phone bills, information fees and room rental fees, were provided by this study.

Data Collection

The basic data of the patients with stomas, the Stoma Quality of Life score, exercise of self-care agency (ESCA) score, ostomy adjustment scale score and complications during the follow-up were collected, and the satisfaction score of the whole nursing process was assessed within 12 hours after the end of the nursing process. The basic information included age, gender, height, body mass index (BMI), marital status, occupation, housing style, education level, family per capita monthly income and payment method for medical expenses. There was no loss to follow-up in either group.

Quality of life was assessed using the specific scale for patients with stomas, known as the Stoma Quality of Life scale.²⁷ The scale contains 20 items and involves four dimensions: social interaction, physical and mental conditions, the relationship with families and friends and the impact of the ostomy bag on patients. Each item has four levels: always, sometimes, rarely, never, worth 1–4 points, respectively. The score ranges from 20 to 80 points, with a higher score indicating a better quality of life.

Self-care ability was assessed using the ESCA score.²⁸ The scale includes 43 items in four dimensions: self-nursing skills, self-responsibility, self-concept and health knowledge level. The Likert 5 grade (0–4 points) scoring method was adopted, and the total possible score was 172 points. The higher the score was, the better the patient's self-care ability.

The adaptability of patients with stomas was evaluated with the Ostomy Adjustment Scale,²⁹ including physical function, psychological state and social interaction, giving a total of 34 items. The total score is 34–204; the higher the score is, the better the adaptability. The scores are assessed as follows: nonadaptation, 34–68 points; low adaptation, 69–119 points; moderate adaptation, 120–170 points; and high adaptation, 170–204 points.

To capture the incidence of stoma complications, the occurrence of stoma bleeding, skin and mucosal separation, stoma oedema, stoma prolapse and dermatitis around the stoma within 3 months after the operation was noted.

The nursing satisfaction evaluation survey was performed with a self-made “nursing service satisfaction evaluation card”, which has a total possible score of 100 points. The scores are assessed as follows: very satisfied, 80–100 points; relatively satisfied, 60–79 points; dissatisfied, <60 points.

Statistical Analysis

Statistical analysis was performed using SPSS 26.00. Normally distributed data are presented as mean \pm standard deviation ($\bar{x} \pm s$) and the *t*-test was used for comparison between groups. Repeated measurement data were analysed by repeated measures analysis of variance. Count data are expressed as frequency or rate using the chi-squared (χ^2) test. A rank-sum test was used for group comparisons of rank variables, and a *p*-value of <0.05 was considered statistically significant. One-way repeated measures analysis of variance was used to determine the effect of the ET-led visual health education combined with peer education on the total scores of quality of life, self-nursing ability and patient adaptability.

Results

General Data

In this study, the study group and the control group each contained 60 participants, and the age of the study participants was 37–85 years. Male patients accounted for 60% of the total participants, and 88% of the patients were married; The education level was mostly middle school/junior college, accounting for 54%; retired patients accounted for 54%; the per capita monthly income of most patients' families was 2001–3000 RMB, accounting for 42%; and 86% of patients lived with their spouses. The *t*-test and χ^2 tests indicated that the differences in general data, including gender, height, BMI, educational level, marital status, occupation, residence status and per capita monthly income, were not statistically significant (*p* > 0.05), as shown in Table 1.

Table I Comparison of General Data of Patients Between the Two Groups

Items		The Study Group (N =60)	The CONTROL group (N =60)	t value	P value
Gender	Male/female	37/23	35/25	1.982	0.160
Age (years old)	$\bar{x} \pm s$	51.34 \pm 11.51	50.41 \pm 11.35	1.301	0.197
Height (cm)		157.44 \pm 7.42	156.56 \pm 10.43	0.891	0.377
BMI (kg /m ²)		19.43 \pm 7.63	21.65 \pm 8.75	1.371	0.172
Education	Primary school	14	17	3.342	0.188
	Middle school polytechnic school	30	35		
	Junior college and above	16	8		
Marital status	Unmarried	2	1	1.318	0.725
	Married	51	55		
	Divorced	5	3		
	Bereft of one's spouse	2	1		
Work	On the job	21	23	0.924	0.630
	Retired	32	33		
	Without work	7	4		
Mode of medical insurance payment	Provincial health insurance	14	11	8.385	0.078
	Urban employee basic medical insurance	27	41		
	Medical insurance for urban residents	3	1		
	Rural cooperative medical care	12	4		
	Self-financed	4	3		
Per capita monthly income of households (RMB)	\leq 1000	5	7	5.909	0.116
	1001~2000	14	16		
	2001~3000	22	29		
	>3000	19	8		
Housing style	Living alone	5	3	2.633	0.452
	Living with spouse	52	52		
	Living with children	2	1		
	Others	1	4		

Repeated Measures Analysis of Variance on Total Scores of Quality of Life, Self-Nursing Ability and Patient Adaptability Between Groups

The Shapiro–Wilk test showed that the data of each group follows an approximate normal distribution ($p > 0.05$). The results of Mauchly's test of sphericity showed the equal variance–covariance matrix of each group ($p > 0.05$), and the data are expressed as $\bar{x} \pm s$. The results are summarised and described as follows: there was no interaction effect between the treatment factor and time factor for the total score of the quality of life, self-nursing ability or adaptability of the two groups ($F = 1.387, 2.782, 1.652$, respectively, $p > 0.05$), so the main effects were directly analysed. The two educational methods had different effects on the quality of life ($F_{\text{treatment}} = 342.734, p < 0.001$), self-care ability ($F_{\text{treatment}} = 256.321, p < 0.001$) and patient adaptability ($F_{\text{treatment}} = 321.734, p < 0.001$) of patients with an ostomy, as shown in Table 2.

Comparison of All Dimensions of Quality of Life, Self-Nursing Ability and Patient Adaptability Between the Two Groups After 3 Months of Intervention

The scores of quality of life of participants in the control group and the study group at 3 months after discharge are shown in Table 3. The results show that the differences in all aspects of the quality of life of the patients between the two groups were statistically significant ($t_{\text{social communication}} = 5.467, t_{\text{psychosomatic state}} = 6.332, t_{\text{relationship with family members and friends}} = 7.457, t_{\text{effect of the ostomy bag on patients}} = 4.579, p < 0.001$), and the scores of the study group were higher than those of the control group after 3 months

Table 2 Repeated Measures Analysis of Variance on Total Scores of Quality of Life, Self-Nursing Ability, and Patient Adaptability Between Both Groups

Item		The Study Group (N=60)	The Control Group (N=60)	$F_{interaction} /$ $P_{interaction}$ value	$F_{time} /$ P_{time} value	$F_{treatment} /$ $P_{treatment}$ value
Quality of life	0 day	23.34±4.67	22.45±5.17	1.387/0.219	144.723/ 0.001	342.734/0.001
	1 month	52.23±7.87	35.67±7.34			
	3 months	65.46±12.28	50.93±13.42			
Self-nursing ability	0 day	102.336±13.456	104.223±14.897	2.782/0.102	234.251/ 0.001	256.321/0.001
	1 month	133.364±15.424	115.548±19.436			
	3 months	157.463±20.314	128.345±17.452			
Patient adaptability	0 day	132.573±21.427	133.579±23.573	1.652/0.203	411.723/ 0.001	321.734/0.001
	1 month	164.246±23.578	140.345±21.457			
	3 months	185.582±27.354	153.477±25.468			

of intervention. In terms of self-nursing ability, the differences in all dimensions between the two groups were statistically significant ($t_{self-nursing\ skills} = 5.792$, $t_{self-responsibility} = 7.675$, $t_{self-concept} = 6.247$, $t_{level\ of\ health\ knowledge} = 7.578$, $p < 0.001$), and the study group scored higher than the control group after 3 months of intervention. For adaptability, the differences in all dimensions were statistically significant ($t_{physiological\ function} = 4.285$, $t_{mental\ state} = 5.762$, $t_{social\ interaction} = 6.582$, $p < 0.001$) and the score of the study group was higher than that of the control group after 3 months of intervention, as shown in Table 3.

Comparison of Complications Between the Two Groups

The comparison of complications within 3 months after surgery is shown in Table 4. The results show that the incidence of stoma bleeding, skin and mucosa separation, stoma oedema, stoma prolapse and dermatitis around the stoma was different between the two groups, and the study group had a lower incidence of complications ($p < 0.05$).

Comparison of Patients' Satisfaction with Nursing Between the Two Groups

The comparison of the satisfaction of the whole nursing process from the surgery to 3 months of intervention between the two groups showed that the patients' satisfaction of the study group was 93.33% and that of the control group was 61.67%. The difference in the nursing satisfaction between the two groups was statistically significant, and, overall, the satisfaction of the study group was higher than that of the control group ($Z = -2.968$, $p = 0.003$), as shown in Table 5.

Table 3 Comparison of All Dimensions of Quality of Life, Self-Nursing Ability and Patient Adaptability Between the Two Groups After 3 Months of Intervention

Item		The Study Group (N=60)	The Control Group (N=60)	T value	P value
Quality of life	Social interaction	15.27±4.23	11.49±3.34	5.467	<0.001
	Physical and mental conditions	15.93±4.54	10.76±3.22	6.332	<0.001
	The relationship with families and friends	18.27±4.56	13.56±4.67	7.457	<0.001
	The impact of ostomy bag on patients	14.34±3.67	8.35±4.14	4.579	<0.001
Self-nursing ability	Self-nursing skills	39.23±5.66	27.76±4.66	5.792	<0.001
	Self-responsibility	43.12±6.38	35.57±7.76	7.675	<0.001
	Self-concept	44.67±7.56	36.46±6.19	6.247	<0.001
	Health knowledge level	38.19±7.89	32.55±5.67	7.578	<0.001
Patient adaptability	Physical function	54.78±9.87	47.54±7.74	4.285	<0.001
	Psychological state	66.13±10.23	52.76±5.98	5.762	<0.001
	Social interaction	63.78±10.56	51.36±6.37	6.582	<0.001

Table 4 Comparison of Complications Between the Two Groups

Complications	The Study Group (N=60)	The Control Group (N=60)	χ^2 value	P value
Stoma bleeding	2	15	11.582	<0.001
Skin and mucosal separation	1	17	16.732	<0.001
Stoma edema	3	13	7.212	0.007
Stoma prolapse	4	15	7.566	0.006
Dermatitis around the stoma	1	16	15.420	<0.001

Table 5 Comparison of Patients' Satisfaction with Nursing Between the Two Groups

Groups	The Study Group (N=60)	The Control Group (N=60)
Very satisfied	35	12
Relatively satisfied	21	25
Dissatisfied	4	23
Z value	-2.968	
P value	0.003	

Discussion

As a strategy and educational form of behavioural intervention, peer education focuses on the improvement of patients' ability with experience-sharing among patients as the main body.³⁰ It has the advantages of cultural appropriateness, acceptability and economy³¹ and has become an important method for behavioural intervention in the population.³² Using modern scientific and technological means, such as presentation slides, video, animation, children's songs and other forms, visual education is more intuitive, vivid and easy for patients to understand and accept; patients therefore maintain a high level of attention in the process of education and better master the relevant knowledge. At the same time, patients develop a serious and responsible working attitude and gain a professional knowledge of nurses, which can promote the improvement of patients' compliance and satisfaction with medical staff.³² Therefore, this study successfully established an ET-led team, developed visual educational content and combined peer education methods to improve the quality of life of patients with a permanent colostomy.

Quality of life: From pre-discharge to 3 months after discharge, the scores in each dimension of the total quality of life scale in both groups increased with a 3-month intervention, indicating that the overall quality of life of patients in both groups was continuously improved. At 3 months after discharge, the peer education group scored better than the control group ($p < 0.05$). This suggests that peer education intervention by trained and qualified peer educators can improve the early quality of life of patients with stomas. The study by Tan Cuilian et al³³ showed that improving the level of social support can effectively improve the quality of life of patients, which is consistent with the results of this study. Peer education is a form of social support that is effective in improving the quality of life of patients with stomas. It can be included in the health education of patients with stomas in future nursing work.

Self-nursing ability: The results of this study showed that the scores of self-nursing skills, self-nursing responsibility, self-concept, health knowledge level and the total score of self-nursing ability in the study group were higher than those in the control group, and the difference is statistically significant ($p < 0.05$), indicating that peer education is better than the routine telephone follow-up of ward nurses in improving the self-nursing ability of patients with stomas. The reason may be that the peer educators themselves are also patients. With their psychological support and positive influencing factors, both sides have established a common determination and confidence in treatment, helping patients overcome the fear of difficulties and strengthening the courage to fight against the disease. Based on their experience, peer educators introduce diseases in plain

language to patients through telephone and face-to-face guidance. Patients can consult educators by telephone or via the internet at any time, which avoids the communication barriers between ward nurses and patients and is beneficial for patients to better accept and master the knowledge and skills of stoma nursing.

Adaptability of patients with stomas: The results show that the level of psychosocial adaptation of patients with stomas is positively correlated with the level of social support; that is, the higher the level of social support felt by patients is, the better the psychosocial adaptation.³⁴ In this study, the scores of physiological functions, psychological state, social adaptation and total score of the patients in the study group were higher than those of the control group, with statistically significant differences ($p < 0.05$), indicating that the adaptation level of the patients in the study group was significantly higher than that of the control group. As providers of experience and adaptation strategies and healthcare educators, peers can provide support in many ways, such as group support, individual support, supporting by telephone or via the internet.³⁵ Compared with the telephone follow-up by specialised nurses, peer education can enhance the empathy of students through the conversion between the sender and the receiver.³⁶ They help patients successfully adapt to life with a stoma by providing practical information and emotional support according to their own experiences.

The study also found that the incidence of stoma complications in the study group was lower than that in the control group ($p < 0.05$). This is in line with the findings of Martins et al,³⁷ which highlights the important impact on the postoperative psychiatric aspects of patients. This is due to the family-fixed caregiver feedback method on health education, which pays attention to teaching stoma nursing knowledge, thereby reducing risk factors that induce stoma complications; this in turn reduces the incidence of complications, improves physiological comfort, alleviates bad moods, improves acceptance of changes in self-image, encourages participation in social activities, promotes a better return to society and improves the quality of life. In addition, the satisfaction with family care in the study group was higher than that in the control group ($p < 0.05$), indicating that the family-fixed caregiver feedback method on health education should be used for patients with rectal cancer with a permanent colostomy, which could improve the satisfaction with family care.

This study also has some limitations. First, this was a single-centre study and it was difficult to guarantee a consistent baseline for the cohort for group comparisons; patients were likely to have other comorbidities that affected prognosis. In addition, this study lasted for 3 months and failed to follow up on the further effect of peer education, and the long-term effect of peer education cannot be known. If other investigators repeat the relevant support of peer education for patients with stomas, the follow-up time can be extended. For example, it can be traced up to 6 months to 1 year after the intervention to further explore the impact of peer education on the long-term quality of life of patients with stomas. Finally, due to the limited time and manpower, the sample size was small, and it may not be ideally representative. Further exploration is needed to achieve large sample and multi-centre research. In future studies, the effects of visual education and peer education can be analysed separately to promote this research more quickly into the popularisation stage of clinical application.

Conclusions

Enterostomal therapist-led visual health education combined with peer education can improve the quality of life of patients with stomas, improve their positive mood, reduce their negative mood, improve their adaptability, reduce complications and improve their daily life. In the future, healthcare professionals should recognise the diverse sources of information patients rely on and tailor educational approaches accordingly, ensuring comprehensive support for individuals with permanent colostomy. The clinical application of visual health education and peer education in patients with permanent colostomy should be increased.

Data Sharing Statement

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of the Second Hospital of Hebei Medical University (Ethics Archive Number: 2022-R597), and informed consent was obtained from all participants. All methods were carried out in accordance with relevant guidelines and regulations.

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Disclosure

All of the authors had no any personal, financial, commercial, or academic conflicts of interest separately for this work.

References

- Jiansong R, Qian L, Peng G, et al. Estimation and prediction for incidence, mortality and prevalence of common gastrointestinal tract cancers in China, 2008. *Chin J Epidemiol*. 2012;33(10):1052–1105.
- Ling Y, Liandi L, Yude C, et al. Cancer Incidence and Mortality Estimates and Prediction for year 2000 and 2005 in China. *Chine J Health Statistics*. 2005;22(4):218–221.
- Brown H, Randle J. Living with a stoma: a review of the literature. *J Clin Nurs*. 2005;14(1):74–81. doi:10.1111/j.1365-2702.2004.00945.x
- Desen W. *Theory and Practice of Rehabilitation Treatment for Stoma*. Beijing: China Medical Science Press; 2006:1–2.
- Liping W, Lijun C, Fengling L. Investigation and analysis of the quality of life status and influencing factors of patients with permanent enterostomy. *J Qilu Nursing*. 2018;24(22):68–70.
- Hongtao X, Zhang Y, Yang Y, et al. Health-related quality of life of patients with colostomy and its influencing factors. *Chin Nurs Manage*. 2018;18(6):829–834.
- Maoting T, Xianliang L, Yan S. Implementation status of peer education in patients with colorectal cancer stoma: a review. *Chin J Nurs*. 2016;51(10):1217–1220.
- Grant M, McCorkle R, Hornbrook MC, et al. Development of a chronic care ostomy self-management program. *J Cancer Educ*. 2013;28(1):70–78. doi:10.1007/s13187-012-0433-1
- Taylor C, Morgan L. Quality of life following reversal of temporary stoma after rectal cancer treatment. *Eur J Oncol Nurs*. 2011;15(1):59–66. doi:10.1016/j.ejon.2010.06.002
- Wei Wei S, Ping C, Fa Mei B. Investigation on Life Quality of Patients with Rectal Cancer Undergoing Colostomy and Influencing Factors. *J Clin Nurs*. 2013;12(1):2–5.
- Krouse RS, Grant M, Rawls M, et al. Coping and acceptance: the greatest challenge for veterans with intestinal stomas. *J Psychosom Res*. 2009;66(3):227–233. doi:10.1016/j.jpsychores.2008.09.009
- Jinling S, Jingshu Y. Effect of visual health education on self-nursing ability of patients with coronary heart disease. *Chine J Integrative Med Cardiovascular Dis*. 2014;2(10):186–187.
- Yina C. Video of health education on knee replacement surgery in patients with functional exercise on compliance and satisfaction. *Med Forum*. 2015;19(16):2180–2181.
- Blank MJ. Building sustainable health and education partnerships: stories from local communities. *J Sch Health*. 2015;85(11):810–816. doi:10.1111/josh.12311
- Cuijie C, Xiaoyun J, Bin L, et al. Effect of nursing follow-up on the patients with chronic obstructive pulmonary disease according to outside the hospital medical behavior. *Modern Hospital*. 2014;14(6):93–94.
- Caixia Y, Liqun D, Yuanli C, et al. The effect of collaborative nursing on the compliance behavior and quality of life of patients after percutaneous coronary intervention. *Modern Med J China*. 2016;18(6):89–92.
- Caiyan F, Min M, Hancui Z, et al. Effect of family participatory telephone follow-up on medical compliance behavior and satisfaction of coronary heart disease patients after percutaneous coronary intervention. *J Bengbu Med College*. 2016;41(4):549–551.
- Orem DE. *Nursing: Concept of Practice*. 6th ed. New York: Mc Graw; 2000:40–46.
- Zizhi L, Yuan G. Design of Assessment of AIDS/STD/Safer Sex Peer Education Program. *Chine j Health Educ*. 1999;14(11):5–8.
- Eysenbach G, Powell J, Englesakis M, Rizo C, Stern A. Health related virtual communities and electronic support groups: systematic review of the effects of online peer to peer interactions. *Br Med J*. 2004;328(7449):1166–1171. doi:10.1136/bmj.328.7449.1166
- Hoey LM, Ieropoli SC, White VM, Jefford M. systematic review of peer-support programs for people with cancer. *Patient Educ Couns*. 2008;70(3):315–317. doi:10.1016/j.pec.2007.11.016
- Tam VV, Larsson M, Pharris A, et al. Peer support and improve quality of life among Persons living with HIV on antiretroviral treatment: A randomized controlled trial from Northeastern Vietnam. *Health Qual Life Outcomes*. 2012;10(5):53. doi:10.1186/1477-7525-10-53
- Mash R, Mash RJ. A quasi experimental evaluation of HIV prevention programme by peer education in the Anglican church of the Western Cape South Africa. *BMJ Open*. 2012;2(2):638. doi:10.1136/bmjopen-2011-000638
- Xiaofeng K, Feng L. Review of peer support for individuals with chronic disease. *Chine J Health Educ*. 2012;28(3):219–222.
- Qunai H, Rongli L, Meinong Z, et al. Research of effect on peer education to enhance life quality in patients of breast cancer undergoing chemotherapy. *Chine General Practice Nursing*. 2016;14(3):229–231.
- Kessler D, Egan M, Kubina LA. Peer support for stroke survivors: a case study. *BMC Health Serv Res*. 2014;14:256–257. doi:10.1186/1472-6963-14-256
- Prieto L, Thorsen H, Juul K. Development and validation of a quality of life questionnaire for patients with colostomy or ileostomy. *Health Qual Life Outcomes*. 2005;3(1):62–72. doi:10.1186/1477-7525-3-62
- Yomashita M. The exercise of self-care agency scale. *Western J Nursing Res*. 1998;20(3):370–381. doi:10.1177/019394599802000308
- Simmons KL, Smith JA, Maekawa A. Development and psychometric evaluation of the Ostomy Adjustment Inventory-23. *J Wound Ostomy Continence Nurs*. 2009;36(1):69–76. doi:10.1097/WON.0b013e3181919b7d
- Buller DB, Morrill C, Taren D. Randomized trial testing the effect of peer Education at Increasing fruit and vegetable intake. *Natl Cancer Inst*. 1999;91(17):1491–1500. doi:10.1093/jnci/91.17.1491

31. Caron F, Godin G. Evaluation of a theoretic cally based AIDS/ STD peer education program on postponing sexual intercourse and on condom use among ado lescents attending high school. *Health Educ Res.* 2004;199(2):185–197.
32. Hong Z, Xiaohong W, Yuan D, et al. Effect of peer education on self-nursing behaviors in patients with gestational diabetes mellitus. *J Nurs Sci.* 2013;28(12):79–81.
33. Cuilian T, Lian L, Jiao Hua Y, et al. Impact of whole continuous nursing on quality of life in patients with permanent colostomy. *J Nurs Sci.* 2013;28(12):25–26.
34. Ailing H, Meifeng Z. Study on the adaptation status and related factors in patients with colostomy. *Chin J Nurs.* 2010;45(2):109–111.
35. Wenjuan Z, Qunying Y. Effect of the collaborative nursing model of peer support group on self-nursing and level of adaptation in patients with enterostomy. *J Nurs Sci.* 2015;30(4):5–8.
36. Xiu O, Xiaozhen M, Kena C. The application of partner-education in the nursing for patients with permanent colostomy. *J Qiqihar UnivMed.* 2014;35(11):1699–1700.
37. Martins PSF, Alvim NAT. Perspectiva educativa do cuidado de enfermagem sobre a manutenção da estomia de eliminação. *Rev Bras Enferm.* 2011;64:322–327. doi:10.1590/S0034-71672011000200016

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