


REVIEW ARTICLE

The comparison between experimental nursing and routine nursing interventions on the quality of life of stoma patients: A systematic review and meta-analysis

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Abstract

The advance in nursing care for stoma patients is a challenging issue, which will influence the life quality. The quality of life is a major issue in the recovery of stoma patients. The evidence of experimental nursing has not been explored enough. A systematic search and a meta-analysis were performed for the studies of experimental nursing interventions versus routine nursing interventions on patients with a stoma. The comparisons between nursing interventions were performed to find which kind of intervention will be superior in improving life quality. After a restricted selection, 10 studies, 460 subjects with experimental nursing intervention, and 478 controls with the routine nursing intervention were enrolled in a variety of causes of the stoma. The focused outcome was the quality of life. The meta-analysis was performed by Review Manager 5.4. Among the stoma patients, the meta-analysis favours the experimental nursing intervention group with higher scores of life quality when compared to the routine nursing intervention group. The meta-analysis results were with positive mean differences, significant tests for overall effect, and significant heterogeneities in the random-effects model. The experimental nursing intervention showed higher positive effects on the quality of life when compared to routine nursing intervention for stoma patients. Experimental nursing intervention might be an option for stoma nursing practitioners to improve stoma care.

KEYWORDS

experimental nursing intervention, meta-analysis, quality of life, routine nursing intervention, stoma

Key Messages

- among the stoma patients, the meta-analysis favours the experimental nursing intervention group with higher scores of life quality when compared to the routine nursing intervention group

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- the meta-analysis results were with positive mean differences, significant tests for overall effect, and significant heterogeneities in the random-effects model
- the experimental nursing intervention showed higher positive effects on the quality of life when compared to routine nursing intervention on stoma patients

1 | INTRODUCTION

The stoma means the opening formed on the skin surface, which usually represents the consequence of ostomy. The ostomy will usually be applied by extracting the colon, rectum, ileum, or bladder or part of each of them to the abdominal surface, which might cause the inability to control stool and urine flow from the ostomy.^{1,2} There are various reasons for the creation of stoma in clinical practice. The most common cause is the colorectal cancer, which is the second most common cancer type in women and the third most cancer type in men.¹ In addition to colorectal cancer, the bladder cancer, ulcerative colitis and inflammatory bowel disease will be the underlying aetiology for the creation of stoma.^{1,3} From the point of view of patients, the inability to control the urine and stool will significantly influence the quality of life of the patients with stoma. The complications of stoma include the bleeding from the stoma, irritant dermatitis around the stoma, stoma retraction, incontinence, prolapse of the stoma mucosa, faecal dermatitis, infection of the stoma, and fungal infection, parastomal hernia and stenosis, etc.^{2,4-8} Therefore the stoma care will be an important issue for the nursing care, which may bring beneficial effects on the quality of life of stoma patients. The expertise of specific-training registered nurses can also prevent and reduce the complications of stoma, which can guarantee patients on the optimal treatment path, ensure independence before discharge, show empathy and compassion, and reduce hospitalisation length.⁹⁻¹⁴ Therefore the expertise nursing from registered nurses can help patients with stoma reach a better quality of life.

Among the quality of life indicators for the stoma patients, the stoma quality of life-related scale will be the most direct indicator of the stoma condition. The stoma quality of life scale¹⁵ and stoma self-efficacy scale¹⁶ are the most representative scales of stoma quality of life-related field. The lack of involvement of a wound ostomy care nurse might increase the risk of developing stoma complications, which might be associated with poorer quality of life.¹⁷ Therefore nursing care plays a crucial role for the quality of life of the stoma patients. In the past, the routine nursing intervention

played a crucial role. The routine nursing intervention typically include selection of pouching appliances, medication instructions, health education, diet nursing, symptom nursing, posture nursing, postoperative nursing and outpatient follow-up. The routine nursing is usually based on the hospital care. However, in recent years, advance in nursing care has been developed. Therefore the experimental nursing intervention arises and becomes the research focus. The experimental nursing intervention include any atypical nursing care, such as hospital-family holistic care based on “timing is right” dynamic theory,⁷ evidence-based continuing care bundle in a specific population of patients with a high compliance,⁶ home-based nursing intervention based on health belief model to enhance the motivation to facilitate the initiatives,⁴ home nursing intervention,¹⁸ teleconsultation^{3,13} based on social learning theory to improve the self-efficacy, nurse-led multicomponent intervention,⁸ nursing intervention combined with early nutritional support,¹⁹ self-efficacy nursing intervention (direct experience, alternative experience, verbal persuasion, social and psychological support, and adjustment of the intervention measures according to the patients’ feedback),²⁰ home care mobile app nursing,¹⁸ and multimedia learning education nursing intervention.²¹ The experimental nursing intervention is usually not limited to the hospital and mostly is based on the home or community nursing care model. The experimental nursing intervention might be superior to routine nursing intervention in improving the scores of the stoma quality of life-related scales or the skin complications due to the advanced model implantation within the nursing intervention model.^{1,4,7,19,21,22} Therefore the differences in effects between the experimental and routine nursing interventions on the stoma quality of life-related field might be an intriguing issue in recent years. However, the meta-analysis of investigating the differences between the experimental and routine nursing interventions has not been published according to our knowledge. We would aim to analyse if the experimental nursing intervention will be superior to the routine nursing intervention in this study based on the published literature in the related field. The purpose of the current meta-analysis study aimed to provide updated

information on experimental nursing intervention in stoma care, which can help stoma nursing practitioners to review their practice and consider if they can try to apply the experimental nursing intervention to stoma care.

In the current meta-analytic study, we hypothesized that the stoma patients might have a better profile and outcome of stoma quality of life-related scales after the experimental nursing intervention when compared to the group receiving the routine nursing intervention. We planned to enrol all kinds of studies in different methodologies, including randomised clinical trials, retrospective studies and other kinds of studies. The outcome of stoma quality of life-related scales after nursing interventions would be the major analysing factor in the current meta-analysis.

2 | METHODS

2.1 | Literature search and selection criteria

We used the following keywords “experimental” or “nursing” or “care” or “intervention” or “stoma” or “ostomy” or “quality of life” or “routine” or “care units” or “life quality” or “trials” or “patients” or “clinical” or “surgery” or “comparison” or “versus” or “conventional” and “unconventional” to search and collect the related articles in the PubMed, ScienceDirect, EmBase, Web of Science, Scopus databases Cumulative Index for Nursing and Allied Health Literature (CINAHL) and the Cochrane Central Register of Controlled Trials (CENTRAL). The articles were limited to those published or e-published online before January 2022.

The inclusion criteria of this study were (a) Stoma patients (b) The studies with stoma quality of life outcomes and related clinical profiles. (c) The studies with detailed data of stoma quality of life after nursing interventions. (d) These studies were also published as English language style in the journals of science citation index database. (e) Nurse-led studies. The exclusion criteria were (a) Detailed data was partially eligible and with some parts unavailable in the content of the articles (the corresponding authors would be inquired about the data we needed in this meta-analysis.) (b) The authors did not respond or already could not have access to the dataset, the articles would be excluded as the category without detailed data. (c) The studies not belonging to stoma patients under the comparisons between experimental nursing intervention and routine nursing intervention. (d) Review articles.

2.2 | Quality assessment and data extraction

The quality of the included randomised clinical trials was independently assessed as “low”, “uncertain” or “high” risk of bias by two reviewers (Yanyan Guo and Yuanyuan Zhang), using the Cochrane Collaboration Revised Risk of Bias tool for randomised clinical trials (RoB 2.0, version August 22, 2019, facilitated by Cochrane RoB 2: Learning Live series). Due to the nature of surgical nursing interventions, blinding of participants was impossible. Therefore, the blinding step was not considered in the overall summary risk of bias judgement. The study was conducted according to the Cochrane Handbook method and reported the results according to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines.²³ The risk of bias for each study was assessed by the bias arising from the randomization process, bias due to deviations from intended interventions, bias due to missing outcome data, bias in the measurement of the outcome, and bias in the selection of the reported result. We extracted the following data from the eligible articles. First, the stoma quality of life scale scores of subjects before experimental and routine nursing interventions respectively. Second, the stoma quality of life scale scores subjects after experimental and routine nursing interventions respectively. Third, the standard deviations for stoma quality of life scale scores in each kind of nursing intervention.

2.3 | Meta-analysis and statistical analysis

We used the Cochrane Collaboration Review Manager Software Package (Rev Man Version 5.4) to perform the meta-analyses. The experimental nursing intervention and routine nursing intervention were compared to each other to find which kind of nursing intervention will be associated with better stoma quality of life. The overall effect size of stoma quality of life scale scores was calculated as the weighted average of the inverse variance for the study-specific estimates. For continuous variables, the weighted mean difference (WMD) was used to estimate numerical variables. The χ^2 distribution test and Higgins I^2 index were used to estimate the heterogeneity. The heterogeneity was also tested by Cochran's Q and τ^2 test. The synthesised results were conducted by pooling the data and using a random effects model meta-analysis. If essential, subgroup analysis was performed to explain the heterogeneity and stratify the data according to different kinds of unconventional warming intervention or surgery. In addition,

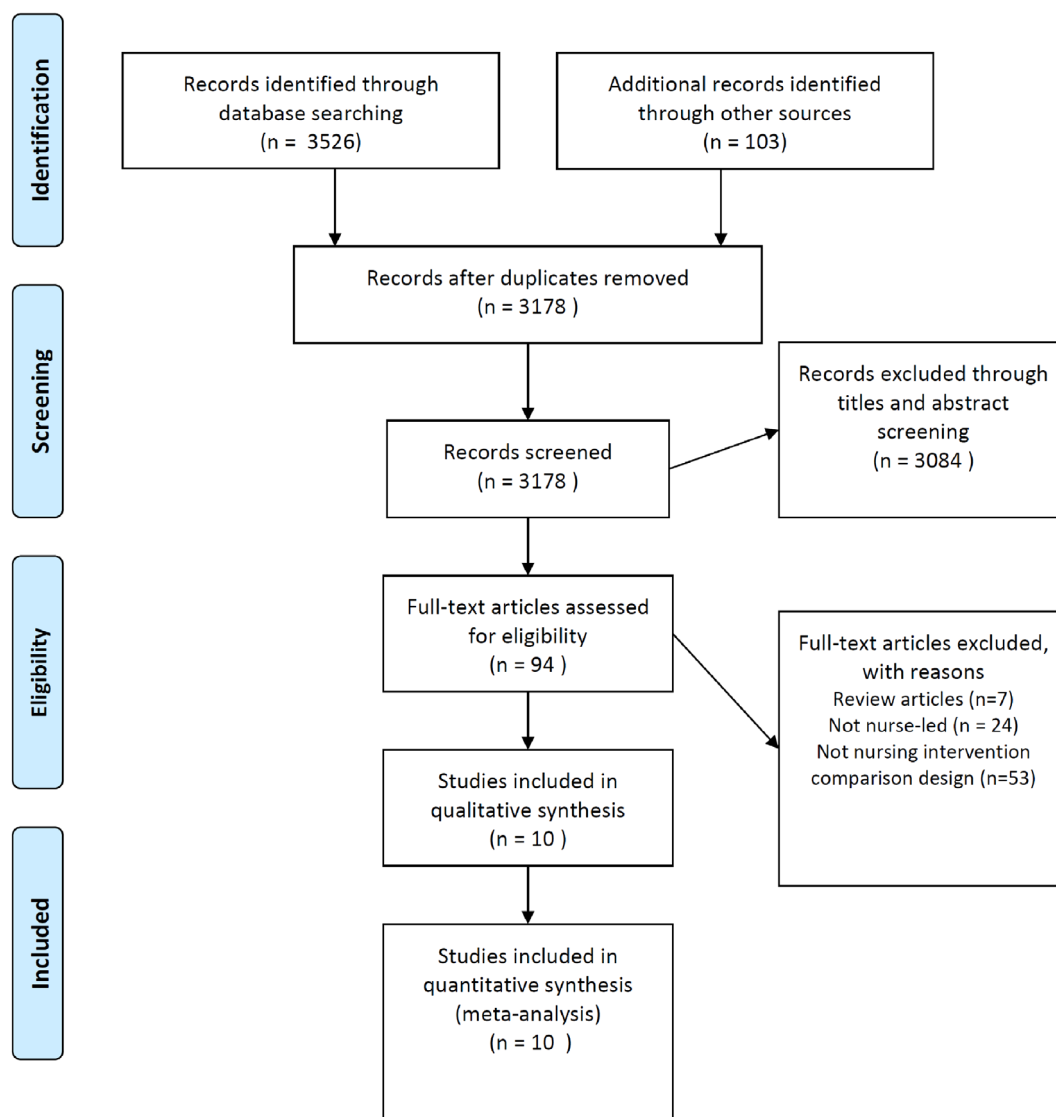


FIGURE 1 The PRISMA flow diagram of the current meta-analysis. The current meta-analysis followed the PRISMA guideline to identify the potentially relevant literature and screen the identified literature using abstract and title selection. The full text of screened literature was assessed to find the eligible studies and include the suitable ones for the final meta-analysis

the forest plot was used to estimate if the meta-analysis would favour which kind of warming intervention. Finally, the test for overall effect was calculated to produce the Z value and determine the significance of P value.

3 | RESULTS

3.1 | Description of studies

The initial literature search through dataset found 3526 articles and additional records from other sources were 103 articles. Then duplicates were removed and the residual 3178 articles were screened according to the

relevance of abstracts and titles. The 3084 articles were discarded after this step. Full-text contents were assessed for the eligibility for the 94 articles. Then 84 articles were excluded due to review articles, not nurse-led studies, not randomised trials, and not perioperative settings. The qualitative synthesis of these 10 articles was performed and no articles were excluded. At last, the 10 studies were still eligible after the quantitative synthesis and entered the final meta-analysis step (Figure 1).^{3,4,6-8,13,18-21} Among the 10 studies, 8 were randomised clinical trials,^{3,6-8,13,18,20,21} one was retrospective¹⁹ and one belonged to quasi-experimental study.⁴ The detailed demographic data of the 10 studies were also summarised in Table 1. The assessment of each study for the bias risk was listed in Figure 2.

TABLE 1 Summary of enrolled studies

	Subjects	Nursing methods	Stoma cause and type	Study type and scale
Augustad et al. ³	52 versus 58 Age: 65.5(12.9) versus 59.3(16.3) Gender: 24M/28F versus 31M/37F	Teleconsultation versus Hospital routine nursing care (Regular stoma follow-up at the hospital's surgical outpatient clinic. A wound and stoma nurse performed the hospital follow-up.)	Colorectal cancer Diverticulitis Inflammatory bowel disease Stoma type: ileostomy and colostomy	Randomised Controlled trial Stoma quality of life scale
Cengiz et al. ⁴	26 versus 24 Age: 58.84(11.87) versus 54.50(14.42) Gender: 17M/9F versus 14M/10M	Home-based nursing intervention versus routine nursing care (Usual stoma care and interview)	Colorectal cancer Stoma type: ileostomy colostomy	A quasi-experimental study with a control group Stoma quality of life scale
Lo et al. ²¹	27 versus 27 Age: 57.93(17.53) versus 62.96(17.64) Gender: 17M/10F versus 14M/13F	Multimedia learning education program versus conventional education service program	Not mentioned in study	Randomised experimental design Stoma quality of life scale
Su et al. ⁶	50 versus 57 Age: 56.98(14.66) versus 59.11(12.93) Gender: 35M/15F versus 32M/25F	Evidence-based continuing care bundle versus routine nursing intervention (Outpatient follow-up visits)	Colorectal cancer Stoma type: ileostomy and colostomy	Randomised clinical trial Quality of life scale
Wang et al. ¹⁸	100 versus 103 Age: 56.95(14.88) versus 59.18(14.13) Gender: 62M/38F versus 67M/36F	Home care mobile app versus routine nursing intervention (Selection of pouching appliances, drug instructions, health education and follow-up with nurse at 1, 3 and 6 months after discharge in the outpatient clinics)	Colorectal cancer Bladder cancer Stoma type: ileostomy and colostomy	Randomised clinical trial Stoma self-efficacy scale
Xu et al. ²⁰	20 versus 28 Age: 60.9(11.47) versus 61.14(13.58) Gender: 14M/6F versus 19M/9F	Self-efficacy intervention versus routine nursing intervention	Colorectal cancer Stoma type: colostomy	Randomised clinical trial Stoma quality of life scale
Ye et al. ¹⁹	48 versus 44 Age: 60.24(9.46) versus 59.12(10.73) Gender: 32M/16F versus 26M/18F	Nursing intervention combined with early nutritional support versus routine nursing intervention (routine nursing, psychological nursing, diet nursing, symptom nursing, posture nursing, pipeline nursing and other post-operative nursing care and health education)	Low rectal cancer Stoma type: colostomy	Retrospective study design Stoma quality of life scale
Zhang et al. ¹³	52 versus 51 Age: 52.9(13.3) versus 55.3(13.7) Gender: 31M/21F versus 36M/15F	Enterostomal nurse telephone follow-up versus routine nursing intervention (Instructions for medications, basic health advice related to their condition, arrangements for outpatient follow-up)	Colorectal cancer Stoma type: colostomy	Randomised clinical trial Stoma self efficacy scale
Zhang et al. ⁷	62 versus 63 Age: 58.52(11.67) versus 59.39(12.83) Gender: 40M/22F versus 38M/25F	Timing it right nursing intervention versus routine nursing intervention (routine care and gastrointestinal surgery follow-up)	Colorectal cancer Stoma type: colostomy	Randomised clinical trial Stoma quality of life scale
Zhou et al. ⁸	23 versus 23 Age: 65.04(11.61) versus 66.13(11.01) Gender: 22M/1F versus 21M/2F	Nurse-led multicomponent intervention versus routine nursing intervention (routine care over a 6-month period following ostomy surgery)	Bladder cancer Stoma type: ileal conduit	Randomised clinical trial Stoma self efficacy scale

Note: Age: mean(SD); Gender: M: male; F: female.

3.2 | The meta-analysis results of stoma life of quality scores for the comparison between the experimental nursing intervention and routine nursing intervention

The experimental nursing intervention group was presented as “experimental” group in this meta-analysis. The routine nursing intervention group was presented as “routine” group in this meta-analysis (Figure 3). Total subject number of experimental nursing intervention

group was 460 and total subject number of routine nursing intervention group was 478. In the random effects model, the mean difference between experimental nursing intervention group and routine nursing intervention group was 7.79 (95% CI: 4.85–10.74), which suggested that the stoma quality of life scores was higher in the experimental nursing intervention group. The results reached the significance level (test for overall effect $Z = 5.19, P < .00001$). However, significant heterogeneity was noted ($\tau^2 = 15.78, \chi^2 = 61.99, df = 9 (P < .00001), I^2 = 85\%$). In addition, the results of the standard mean

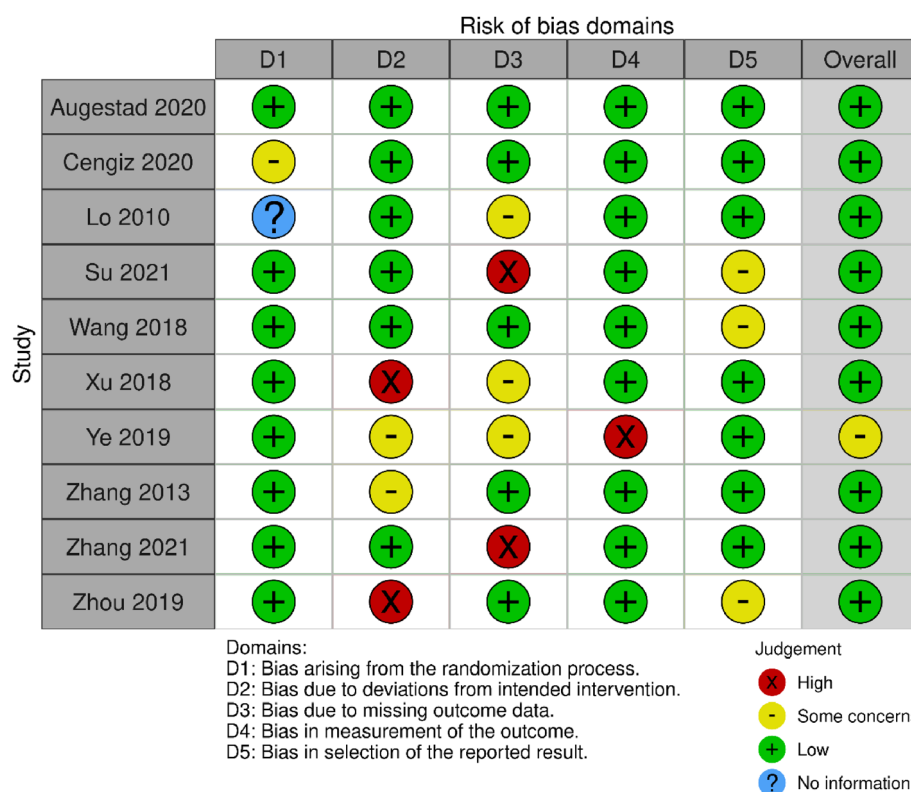


FIGURE 2 The assessment of risk of bias for the enrolled studies in the current meta-analysis. The risk of bias tool visualise the bias assessment for each enrolled study

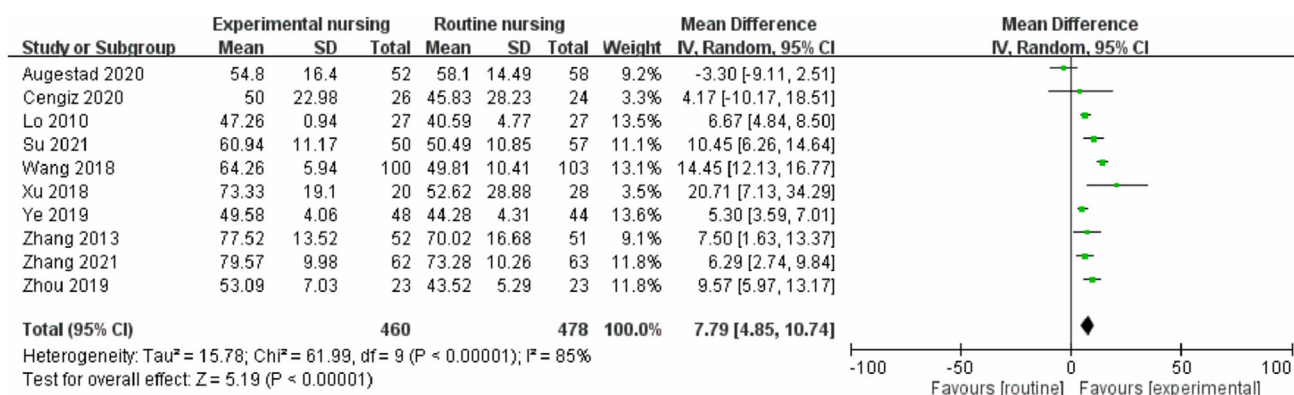


FIGURE 3 The experimental nursing intervention versus routine nursing intervention meta-analysis forest plot for the stoma quality of life in the stoma patients (mean difference). The results favoured the experimental nursing intervention in the stoma quality of life of stoma patients. The heterogeneity was significant and the result was statistically significant

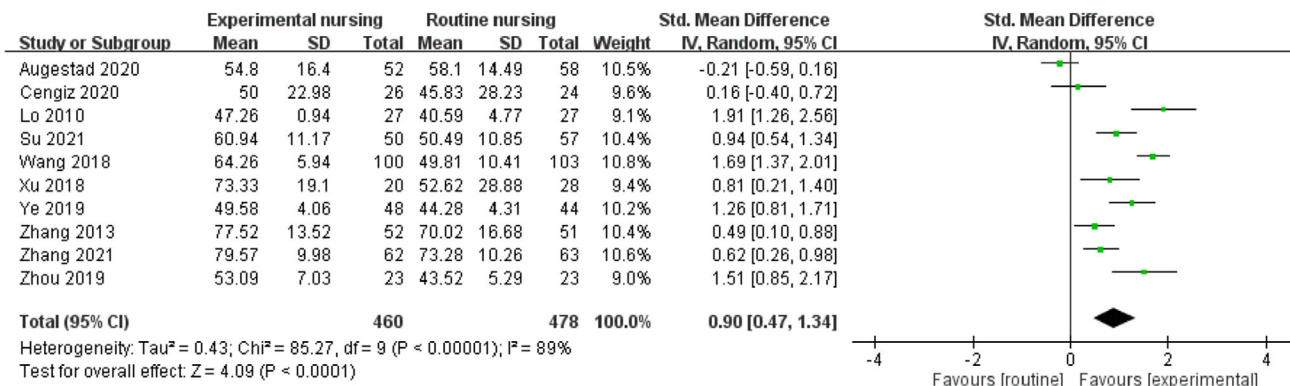


FIGURE 4 The experimental nursing intervention versus routine nursing intervention meta-analysis forest plot for the quality of life of the stoma patients (standard mean difference). The results also showed superior effects on the stoma quality of life for the experimental nursing intervention

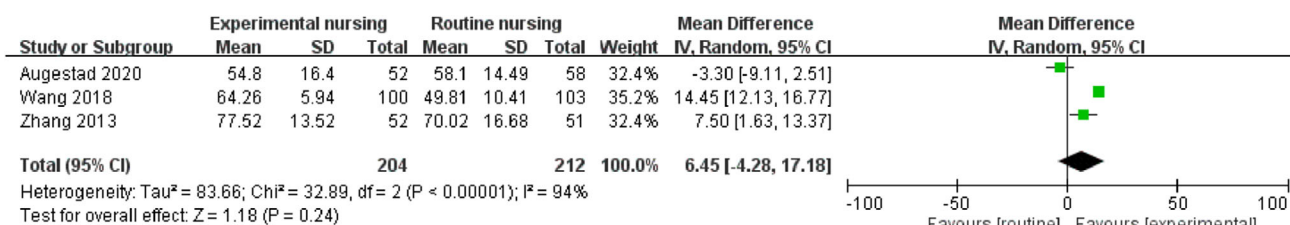


FIGURE 5 The subgroup analysis for the telecom-based experimental nursing intervention. No significant difference was found in the subgroup analysis of the comparison between telecom-based experimental nursing intervention and routine nursing intervention

difference showed a significantly higher stoma quality of life score in the experimental nursing intervention group (Figure 4). The funnel plot results showed relatively equal and symmetric spreading of the scatter plots of enrolled studies, which suggested no significant publication bias. For the subgroup analysis of telecom-based experimental nursing intervention, no significant superiority was found when compared to routine nursing intervention (Figure 5).

4 | DISCUSSION

In this meta-analysis of total of 938 subjects, we found that the experimental nursing intervention might be superior to the routine nursing intervention in the stoma quality of life. Even though the regions of the enrolled studies mostly belong to China, the trend of the positive effects on the stoma quality of life is still revealed by the current meta-analysis. Due to the issue of high heterogeneity, the random effects model has been applied in the current study. The significant results were still derived by the computations of random effects model. In addition, no significant publication bias was mentioned. Therefore the results can support that experimental

nursing intervention might bring a better quality of life for the stoma condition of patients. The stoma nursing practitioners can consider the experimental nursing intervention as an option to improve the quality of life for stoma when they faced limited improvement in stoma care under routine nursing intervention.

In the current meta-analysis, the colorectal cancer was the major reason for the patients to receive stoma-related surgery. The bladder cancer, ulcerative colitis and inflammatory bowel disease also constituted parts of the aetiology for the stoma patients. The clinical profile of the current meta-analysis was also similar to the clinical causes of stoma in the clinical practice. At last, the enrolled studies mostly were randomised clinical trials, which might suggest that our findings of superior relief effects of experimental nursing intervention should be significant on the stoma quality of life for patients.

The patients with stoma usually have physical and psychological adjustment difficulties, which used to lead to poor quality of life.²⁴ The routine nursing intervention for stoma care includes teaching the patient how to improve stoma care, enhancing independence before discharge and showing empathy and compassion.⁹ Since the stoma care is the major factor influencing the consequence and complications of patients after ostomy surgery,

the nursing interventions may play a major role in the post-operative care of ostomates (patients with stoma). From this perspective, the enterostomal nurse can give long-term follow-up care, such as persistent counselling, education, and surveillance for complications of stoma.¹⁰ The nursing competence will be a major factor in reducing the complications of stoma,¹¹ which can be beneficial for enhancing the stoma quality of life. Therefore the advance in nursing competence, such as the experimental nursing intervention, may bring enhanced nursing care and better stoma quality of life.²² The preoperative nursing-based education program also showed the similar effects for improving the stoma quality of life.^{25,26} In recent years, the multimodal and multidimensional nursing intervention also showed the significant improvements in stoma quality of life via qualitative evaluation.²⁷ Due to the important relationship between the demographic data, clinical factors and the stoma quality of life, the more delicate and advanced nursing intervention modality should be the future trend.¹⁷ Therefore the experimental nursing intervention in the stoma care has been the research focus in recent years. A study showed that advanced nursing program will have protective effects on the stoma-related complications and the prognosis of low rectal cancer patients with stoma after abdominoperineal resection with sigmoidostomy.² The experimental nursing intervention also evolves to the telecom-based phase. A study showed that a 4G wireless remote system can help patients exchange the information about the stoma-related complications with medical staff.²⁸ Another study of nurse-led telephone follow-up intervention can solve stoma care problems efficiently, shorten the process of resuming normal life, and provide psychological support.²⁹ It suggested that the telecom-based nursing intervention can be a meaningful work to enhance the stoma quality of life of patients. According to the above literature, the nurse staff should not limit their care to solely the model of routine nursing intervention. The experimental nursing intervention should be a future trend for the nurse staff to provide nursing care to patients with stoma and help patients improve their quality of life.

The benefits of experimental nursing intervention on the stoma patients have been published in recent years, such as reducing readmission, increasing cost-effectiveness,³⁰ decreasing the probability of delayed discharge,³¹ improving the quality of life,³² enhancing stoma proficiency, decreasing hospital stay length,^{12,33} increasing patient's satisfaction, reducing the amount of clinical investigation,³⁴ offering more physical, psychological, and spiritual needs,³⁵ delivering better care for the patients in the rural area (the telecom-based nursing)³⁶ and less anxiety or depression.^{19,27,37} Our meta-analysis results showed significant improvements

in stoma quality of life for the experimental nursing intervention, which might be linked with the benefits mentioned above. Therefore the experimental nursing intervention should be enhanced in the future based on the fruitful findings of previous studies and our meta-analysis results. However, more efforts will be needed to clarify the relationship between the stoma quality of life and the factors listed above, such as the reduction in readmission rate, decrease in anxiety or depression, enhanced stoma proficiency and offer more physical, psychological, and spiritual needs, etc. In summary, the positive effect of experimental nursing intervention on the stoma quality of life was observed in the current meta-analysis, which should be significant and reliable.

In the current meta-analysis, we must acknowledge that there were several limitations. First, enrollment of different methods of experimental nursing interventions might limit the interpretations of our meta-analysis results. In this meta-analysis, we just aimed to summarise the effects of experimental nursing intervention at first. In the future, more specific analysis for each kind of experimental nursing intervention on the stoma quality of life should be warranted. Second, the diversity of underlying diseases might limit the interpretation of our meta-analysis results. If there are more randomised studies for each kind of underlying disease (such as colorectal cancer) in the future, we can perform a more specific analysis for a specific experimental nursing intervention on a specific kind of underlying disease. It can reduce the bias of different kinds of underlying diseases in this meta-analysis. Third, the significant heterogeneity might influence the interpretations of our meta-analysis results. It might be related to the heterogeneity of experimental nursing intervention, patient type, and types of underlying diseases. However, random effects model analysis still revealed significant results, which suggested the persistent significance of our findings. The future meta-analysis with more homogeneous subjects from specific kinds of experimental nursing interventions may help us find the significant results with less biases. Fourth, three studies were telecom-based nursing intervention modalities,^{3,13,18} which did not belong to the traditional clinical care style. The possible bias from the telecom-based nursing intervention should also be considered in the current meta-analysis. However, in the current global threat of COVID-19 pandemic, telecom-based nursing intervention should be considered due to the safe prevention of disease spreading. Therefore we still enrolled the telecom-based nursing intervention in our meta-analysis. Probably it can give the future direction of experimental nursing intervention in the atmosphere of COVID-19 pandemic. Fifth, most enrolled studies come from China. The geographic bias might limit the interpretation of our meta-analysis results. Sixth, the gender

unequal percentages within the enrolled studies should be considered as a limitation when we tried to interpret the current meta-analysis results.

5 | CONCLUSION

The experimental nursing intervention might be superior to routine nursing intervention for improving stoma quality of life or self-efficacy of patients with a stoma. The experimental nursing intervention showed a higher tendency to improve stoma care and related quality of life than the routine nursing. Experimental nursing intervention might be an option for nursing practitioners to improve the quality of life in stoma care. However, the heterogeneity of underlying diseases and modalities of experimental nursing intervention should be considered in the current meta-analysis. A future meta-analysis of homogeneous interventions and patients will be warranted to confirm our findings for the stoma quality of life.

DATA AVAILABILITY STATEMENT

Data available on request from the authors

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REFERENCES

- Alenezi A, McGrath I, Kimpton A, Livesay K. Quality of life among ostomy patients: a narrative literature review. *J Clin Nurs*. 2021;30(21–22):3111–3123. doi:10.1111/jocn.15840
- Shao W, Wang H, Chen Q, Zhao W, Gu Y, Feng G. Enhanced recovery after surgery nursing program, a protective factor for stoma-related complications in patients with low rectal cancer. *BMC Surg*. 2020;20(1):316. doi:10.1186/s12893-020-00978-3
- Augustad KM, Sneve AM, Lindsetmo RO. Telemedicine in postoperative follow-up of STOMa Patients: a randomized clinical trial (the STOMPA trial). *Br J Surg*. 2020;107(5):509–518. doi:10.1002/bjs.11491
- Cengiz B, Bahar Z, Canda AE. The effects of patient care results of applied nursing intervention to individuals with stoma according to the health belief model. *Cancer Nurs*. 2020; 43(2):E87–E96. doi:10.1097/NCC.0000000000000678
- Roveron G, Barbierato M, Rizzo G, et al. Italian guidelines for the nursing Management of Enteral and Urinary Stomas in adults: an executive summary. *J Wound Ostomy Contin Nurs Off Publ Wound Ostomy Contin Nurses Soc*. 2021;48(2):137–147. doi:10.1097/WON.0000000000000745
- Su X, Zhong MH, Ye XM, et al. Effects of evidence-based continuing care bundle on health outcomes in rectal cancer patients with temporary stomas: a multicenter randomized controlled trial. *Cancer Nurs*. 2021;44(3):223–234. doi:10.1097/NCC.0000000000000762
- Zhang X, Lin JL, Gao R, et al. Application of the hospital-family holistic care model in caregivers of patients with permanent enterostomy: a randomized controlled trial. *J Adv Nurs*. 2021;77(4):2033–2049. doi:10.1111/jan.14691
- Zhou H, Ye Y, Qu H, Zhou H, Gu S, Wang T. Effect of ostomy care team intervention on patients with Ileal conduit. *J Wound Ostomy Contin Nurs Off Publ Wound Ostomy Contin Nurses Soc*. 2019;46(5):413–417. doi:10.1097/WON.0000000000000574
- Burch J. The pre- and postoperative nursing care for patients with a stoma. *Br J Nurs*. 2005;14(6):310–318. doi:10.12968/bjon.2005.14.6.17799
- Doughty D. Role of the enterostomal therapy nurse in ostomy patient rehabilitation. *Cancer*. 1992;70(5 Suppl):1390–1392. doi:10.1002/1097-0142(19920901)70:3+3.0.co;2-8
- Foa C, Bisi E, Calcagni A, et al. Infectious risk in ostomy patient: the role of nursing competence. *Acta Bio-Medica Atenei Parmensis*. 2019;90(11-S):53–64. doi:10.23750/abm.v90i11-S.8909
- Forsmo HM, Pfeffer F, Rasdal A, Sintonen H, Korner H, Erichsen C. Pre- and postoperative stoma education and guidance within an enhanced recovery after surgery (ERAS) programme reduces length of hospital stay in colorectal surgery. *Int J Surg*. 2016;36(Pt A):121–126. doi:10.1016/j.ijso.2016.10.031
- Zhang JE, Wong FK, You LM, et al. Effects of enterostomal nurse telephone follow-up on postoperative adjustment of discharged colostomy patients. *Cancer Nurs*. 2013;36(6):419–428. doi:10.1097/NCC.0b013e31826fc8eb
- Zhen L, Wang Y, Zhang Z, et al. Effectiveness between early and late temporary ileostomy closure in patients with rectal cancer: a prospective study. *Curr Probl Cancer*. 2017;41(3):231–240. doi:10.1016/j.currproblcancer.2017.02.007
- Baxter NN, Novotny PJ, Jacobson T, Maidl LJ, Sloan J, Young-Fadok TM. A stoma quality of life scale. *Dis Colon Rectum*. 2006;49(2):205–212. doi:10.1007/s10350-005-0275-6
- Karacay P, Togluk Yigitoglu E, Karadag A. The validity and reliability of the stoma self-efficacy scale: a methodological study. *Int J Nurs Pract*. 2020;26(6):e12840. doi:10.1111/ijn.12840
- Pittman J, Rawl SM, Schmidt CM, et al. Demographic and clinical factors related to ostomy complications and quality of life in veterans with an ostomy. *J Wound Ostomy Contin Nurs Off Publ Wound Ostomy Contin Nurses Soc*. 2008;35(5):493–503. doi:10.1097/01.WON.0000335961.68113.cb
- Wang QQ, Zhao J, Huo XR, et al. Effects of a home care mobile app on the outcomes of discharged patients with a stoma: a randomised controlled trial. *J Clin Nurs*. 2018;27(19–20):3592–3602. doi:10.1111/jocn.14515
- Ye X, He D, Zhao J, Lei Y, Yao Q, Wang H. Application value of nursing intervention combined with early nutritional support in preventive stoma reversion of low rectal cancer. *Oncol Lett*. 2019;17(4):3777–3782. doi:10.3892/ol.2019.10055
- Xu S, Zhang Z, Wang A, Zhu J, Tang H, Zhu X. Effect of self-efficacy intervention on quality of life of patients with intestinal stoma. *Gastroenterol Nurs Off J Soc Gastroenterol Nurs Assoc*. 2018;41(4):341–346. doi:10.1097/SGA.0000000000000290
- Lo SF, Wang YT, Wu LY, Hsu MY, Chang SC, Hayter M. A cost-effectiveness analysis of a multimedia learning education program for stoma patients. *J Clin Nurs*. 2010;19(13–14):1844–1854. doi:10.1111/j.1365-2702.2009.02931.x

22. Harputlu D, Ozsoy SA. A prospective, experimental study to assess the effectiveness of home care nursing on the healing of Peristomal skin complications and quality of life. *Ostomy Wound Manage.* 2018;64(10):18-30. <http://www.ncbi.nlm.nih.gov/pubmed/30312155>
23. Knobloch K, Yoon U, Vogt PM. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement and publication bias. *J Cranio-Maxillo-Facial Surg Off Publ Europ Assoc Cranio-Maxillo-Facial Surg.* 2011;39(2):91-92. doi:10.1016/j.jcms.2010.11.001
24. Wade BE. Colostomy patients: psychological adjustment at 10 weeks and 1 year after surgery in districts which employed stoma-care nurses and districts which did not. *J Adv Nurs.* 1990;15(11):1297-1304. doi:10.1111/j.1365-2648.1990.tb01745.x
25. Jensen BT, Kiesbye B, Soendergaard I, Jensen JB, Kristensen SA. Efficacy of preoperative uro-stoma education on self-efficacy after radical cystectomy; secondary outcome of a prospective randomized controlled trial. *Eur J Oncol Nurs Off J Europ Oncol Nurs Soc.* 2017;28:41-46. doi:10.1016/j.ejon.2017.03.001
26. Zimnicki KM. Preoperative teaching and stoma marking in an inpatient population: a quality improvement process using a FOCUS-Plan-Do-Check-Act model. *J Wound Ostomy Contin Nurs Off Publ Wound Ostomy Contin Nurs Soc.* 2015;42(2):165-169. doi:10.1097/WON.0000000000000111
27. Lim SH, Chan SWC, Lai JH, He HG. A qualitative evaluation of the STOMA psychosocial intervention programme for colorectal cancer patients with stoma. *J Adv Nurs.* 2019b;75(1):108-118. doi:10.1111/jan.13821
28. Xu X, Cao Y, Luan X. Application of 4G wireless network-based system for remote diagnosis and nursing of stomal complications. *Int J Clin Exp Med.* 2014;7(11):4554-4561. <http://www.ncbi.nlm.nih.gov/pubmed/25550986>
29. Zheng MC, Zhang JE, Qin HY, Fang YJ, Wu XJ. Telephone follow-up for patients returning home with colostomies: views and experiences of patients and enterostomal nurses. *Eur J Oncol Nurs Off J Eur Oncol Nurs Soc.* 2013;17(2):184-189. doi:10.1016/j.ejon.2012.05.006
30. Iqbal A, Raza A, Huang E, Goldstein L, Hughes SJ, Tan SA. Cost effectiveness of a novel attempt to reduce readmission after ileostomy creation. *J Soc Laparoendoscop Surg.* 2017;21(1):e2016.00082. doi:10.4293/JLSLS.2016.00082
31. Younis J, Salerno G, Fanto D, Hadjipavlou M, Chellar D, Trickett JP. Focused preoperative patient stoma education, prior to ileostomy formation after anterior resection, contributes to a reduction in delayed discharge within the enhanced recovery programme. *Int J Colorectal Dis.* 2012;27(1):43-47. doi:10.1007/s00384-011-1252-2
32. Sier MF, Oostenbroek RJ, Dijkgraaf MGW, et al. Home visits as part of a new care pathway (iAID) to improve quality of care and quality of life in ostomy patients: a cluster-randomized stepped-wedge trial. *Colorec Dis Off J Assoc Coloproctol Great Britain Ireland.* 2017;19(8):739-749. doi:10.1111/codi.13630
33. Chaudhri S, Brown L, Hassan I, Horgan AF. Preoperative intensive, community-based vs. traditional stoma education: a randomized, controlled trial. *Dis Colon Rectum.* 2005;48(3):504-509. doi:10.1007/s10350-004-0897-0
34. Wallace P, Haines A, Harrison R, et al. Joint teleconsultations (virtual outreach) versus standard outpatient appointments for patients referred by their general practitioner for a specialist opinion: a randomised trial. *Lancet.* 2002;359(9322):1961-1968. doi:10.1016/s0140-6736(02)08828-1
35. Sun V, Ercolano E, McCorkle R, et al. Ostomy telehealth for cancer survivors: Design of the Ostomy Self-management Training (OSMT) randomized trial. *Contemp Clin Trials.* 2018; 64:167-172. doi:10.1016/j.cct.2017.10.008
36. Hwa K, Wren SM. Telehealth follow-up in lieu of postoperative clinic visit for ambulatory surgery: results of a pilot program. *JAMA Surg.* 2013;148(9):823-827. doi:10.1001/jamasurg.2013.2672
37. Lim SH, Chan SWC, Chow A, Zhu L, Lai JH, He HG. Pilot trial of a STOMA psychosocial intervention programme for colorectal cancer patients with stomas. *J Adv Nurs.* 2019a;75(6):1338-1346. doi:10.1111/jan.13973

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