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A retrospective pilot study of high-quality nursing care for cervical cancer

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Abstract

This retrospective pilot study investigated the feasible effect of high-quality nursing care (HQNC) for patients with cervical cancer (CC). A total of 58 patients with CC were included in this study. All patients were treated with routine care, and were divided into a treatment group and a control group, according to the different interventions they received. In addition, patients in the treatment group also received HQNC. The primary outcome of anxiety was measured by Beck Anxiety Inventory (BAI). The secondary outcomes were rumination, as measured by ruminative responses scale (RRS); and emotion, as measured by the Emotion Regulation Questionnaire (ERQ). All outcomes were measured before and after 4-week treatment. After treatment, patients in the treatment group showed better outcomes in anxiety, as evaluated by BAI scale (minimal, $P = .04$), rumination, as measured by RRS ($P < .01$), and emotion, as assessed by ERQ ($P < .01$), compared with patients in the control group. The results of this study demonstrated that HQNC might have positive effect in patients with CC after 4-week treatment.

Abbreviations: BAI = beck anxiety inventory, CC = cervical cancer, ERQ = Emotion Regulation Questionnaire, HPV = human papilloma virus, HQNC = high-quality nursing care, RRS = ruminative responses scale.

Keywords: cervical cancer, effect, high-quality nursing care

1. Introduction

Cervical cancer (CC) is one of the most common diagnosed malignancy cancers in worldwide.[1–3] It is also one of the most leading causes of cancer among female population.[4] It often happens at the locations of the cervical canal and vagina, or transitional zone.[5] It has been estimated that about more than 530,000 new cases increase annually and more than 275,000 deaths occur each year.[6–8]

Many factors are reported to result in CC, such as oncogenic human papillomavirus (HPV), precocious intercourse, multiple sexual partners, multiple pregnancies, and smoking.[9,10] Of those, persistent infection with oncogenic HPV is the most common cause of CC.[9] Moreover, early gene coding proteins of HPV can also cause CC.[9]

The treatment options of CC mainly consist of surgery, chemotherapy, radiotherapy, concurrent radiochemotherapy, and targeted therapy.[11,12] Of these therapies, radiotherapy is often widely used, because of its wide range and high cure rate.[13] Unfortunately, this kind of intervention also leads to physical conditions, psychology, and social functions, as well as menopause symptoms, lower quality of sex life, hematuria, frequent micturition, bloody stool, and pain.[13] All these side-effects also cause psychologic conditions,[14] which also impact the prognosis and treatment of CC.

Presently, few studies explored the effect of high-quality nursing care (HQNC) for patients with CC. Thus, in this pilot study, we tried to investigate the feasible effect of HQNC for patients with CC.

2. Patients and methods

2.1. Ethics

This study was approved by the Ethics Committee of Second Affiliated Hospital of Shaanxi University of Chinese Medicine. All CC participants provided written informed consent.

2.2. Patients

This study was conducted between January 2016 and December 2017 at Second Affiliated Hospital of Shaanxi University of Chinese Medicine. A total of 42 patients with the confirmed diagnosis of CC at stage I, II, or III via cervical scraping smear and biopsy were enrolled in this study.[15] All patients admitted in the department of gynecology of the Second Affiliated Hospital of Shaanxi University of Chinese Medicine. The inclusion criteria consisted of patients with complete data information, normal hearing and communication skills, as well as the ability to take part in the outcome assessment independently. Exclusion criteria included local recurrence or other malignant tumors, mental conditions, and intellectual disability, receiving chemotherapy or radiotherapy. In addition, patients were also excluded if they received HQNC or psychosocial treatment three months before the study, as well as the psychologic problems, or other complications that affected the outcome assessments.

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The authors report no conflicts of interest

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2.3. Intervention schedules

Patients in both groups received routine care by 3 experienced nurses. Routine care included daily life care, oral care and patients' condition observation closely. In addition, the patients in the treatment group also received psychologic treatment, 30 minutes each session, 1 session daily, 5 sessions weekly for a total of 4 weeks. The psychologic treatment consisted of a gratitude diary and a mindfulness-based intervention. The nurses instructed each patient to the details of psychologic treatment, and provided him or her manual containing instruction and guidance of such treatment. Then each subject was asked to practice this intervention to make sure that it was correctly.

2.4. Outcome measurements

The primary outcome was anxiety. It was measured by Beck Anxiety Inventory (BAI).[16] It is a widely used 21-item self-report scale. It is used to evaluate the anxiety symptoms. The score from 0 to 7 demonstrates low anxiety, from 8 to 15 mild anxiety, from 16 to 25 moderate anxiety, while the sum score of more than 26 indicates a severe anxiety.

Table 1

Patient characteristic at baseline.

Characteristic value	Treatment group (n = 29)	Control group (n = 29)	*P*-value
Age, y	43.1 (9.5)	41.9 (10.2)	.64
Race (Asian Chinese)	29 (100.0)	29 (100.0)	–
Education			
Elementary school or below	2 (6.9)	4 (13.8)	.40
Secondary school	5 (17.2)	3 (10.3)	.45
High school	9 (31.0)	6 (20.7)	.37
College or university	13 (44.8)	16 (55.2)	.43
Marital status			
Single	4 (13.8)	2 (6.9)	.40
Married	22 (75.9)	25 (86.2)	.32
Divorced/widowed	3 (10.3)	2 (6.9)	.64
Employment			
Employed	25 (86.2)	27 (93.1)	.40
Unemployed	3 (10.3)	2 (6.9)	.64
Retired	1 (3.4)	0 (0)	.49
Stage of cervical cancer			
I	8 (27.5)	7 (24.1)	.76
II	15 (51.7)	13 (44.8)	.60
III	6 (20.7)	9 (41.5)	.37
No. of delivery			
0	3 (10.3)	4 (13.8)	.69
1	19 (65.5)	21 (72.4)	.57
2	6 (20.7)	4 (13.8)	.49
3	1 (3.4)	0 (0)	.49
No. of abortions			
0	20 (69.0)	18 (62.1)	.58
1	7 (24.1)	6 (20.7)	.75
2	2 (6.9)	4 (13.8)	.40
3 or above	0 (0)	1 (3.4)	.49
No. of children			
0	3 (10.3)	4 (13.8)	.69
1	21 (72.4)	22 (75.9)	.76
2	5 (17.2)	3 (10.3)	.45
No. of sexual partner			
1	21 (72.4)	19 (65.5)	.57
2	6 (20.7)	5 (17.2)	.74
3 or above	2 (6.9)	5 (17.2)	.24

Data are present as mean ± standard deviation or number (%).

The secondary outcomes comprised rumination and emotion. The rumination was assessed by the ruminative responses scale (RRS),[17] with 22 items by Likert-type scale. Each item ranges from 0, can perform almost never, to 4, perform almost always. The higher score indicates the severe rumination. It was validated by the previous study.[18] The emotion was evaluated by the Emotion Regulation Questionnaire (ERQ).[19] It includes 6 items. Subjects were asked to reply each item by using 7-point Likert scale, varies from 1, strongly disagree, to 7, strongly agree. The higher score revealed more reappraisal use. All primary and secondary outcomes were measured before and after 4-week treatment.

2.5. Statistical analysis

Sample size was calculated by the Software PASS 11. Because of the short duration, the desired sample size for this pilot study was 58 subjects, with 29 patients each group, which is the minimum sample size to assess the effect of HQNC for CC. No randomization and blinding procedure was applied in this study.

All characteristic values and outcome data were analyzed by using SPSS software (SPSS V.15.0; IBM Corp, Armonk, NY). Dichotomous variables were performed by Fisher exact test, while continuous data were operated by Mann–Whitney *U* test. A value of $P < .05$ was defined as a statistical significance.

3. Results

The characteristic values of all included patients in both treatment group and control group are summarized in Table 1. No significant differences in all values were detected between 2 groups at baseline.

After 4-week treatment, subjects in the treatment group demonstrated better outcomes in anxiety, measured by BAI score (minimal, $P = .04$; mild, $P = .19$; moderate, $P = .19$; Table 2); and rumination, measured by RRS ($P < .01$, Table 3); as well as the emotion, measured by ERQ ($P < .01$, Table 4), compared with patients in the control group.

4. Discussion

Currently, no study specifically investigated the effect of HQNC for patients with CC. To our best knowledge, this pilot study is the first study to explore the feasible effect of HQNC for CC. Although this study just assessed the feasible effect of HQNC, it will still provide helpful evidence for either the clinical

Table 2

Comparison of anxiety before and after 4 weeks treatment.

BAI scale	Treatment group (n = 29)	Control group (n = 29)	*P*-value
Before treatment			
Minimal (0–7)	8 (27.6)	6 (20.7)	.54
Mild (8–15)	17 (58.6)	19 (65.5)	.59
Moderate (16–25)	3 (10.3)	4 (13.8)	.69
Severe (26–63)	1 (3.4)	0 (0)	.49
After treatment			
Minimal (0–7)	16 (55.2)	8 (27.6)	.04
Mild (8–15)	12 (41.4)	17 (58.6)	.19
Moderate (16–25)	1 (3.4)	4 (13.8)	.19
Severe (26–63)	0 (0)	0 (0)	–

Data are present as mean ± standard deviation.
BAI = Beck Anxiety Inventory.

Table 3

Comparison of rumination before and after 4-week treatment.

RRS score	Treatment group (n = 29)	Control group (n = 29)	*P*-value
Before treatment	37.9 (8.7)	39.1 (8.3)	.59
After treatment	31.5 (4.2)	37.6 (5.0)	
Difference from baseline	6.4 (3.3–8.6)	1.5 (0.4–2.7)	
Difference between groups		5.0 (2.9–6.9)	<.01

Data are present as mean ± standard deviation.
RRS = ruminative responses scale.

Table 4

Comparison of emotion before and after 4-week treatment.

ERQ score	Treatment group (n = 29)	Control group (n = 29)	*P*-value
Before treatment	22.6 (4.4)	21.9 (4.7)	.56
After treatment	27.3 (5.1)	23.0 (5.3)	
Difference from baseline	4.7 (3.0–6.5)	1.1 (0.3–1.8)	
Difference between groups		3.6 (2.3–4.7)	<.01

Data are present as mean ± standard deviation.
ERQ = Emotion Regulation Questionnaire.

practice or for the similar future studies regarding the HQNC for treating CC.

The results of this study showed that patients in the treatment group showed better outcomes in anxiety, measured by the BAI; rumination, evaluated by RRS; and emotion, assessed by ERQ scale, compared with subjects in the control group. The results indicated that the feasibility effect of HQNC may be efficacious for patients with CC among Chinese female population.

This study has several limitations. Firstly, the sample size was pretty small, which may affect the results of HQNC for CC. Secondly, the outcome tools were not comprehensive, because it only assessed the anxiety, rumination, and emotion, but not the quality of life. Thirdly, this study did not comprise follow-up evaluation after the 4-week assessment, therefore, this study only explored the short-term effect of HQNC for CC. Fourthly, this pilot study just assessed the feasibility effect of HQNC for patients with CC. Thus, more high-quality studies are still needed to further warrant the results of this study. Finally, this study did not apply procedure of randomization and blinding, which may increase the risk of case selection.

5. Conclusion

The results of this study showed that HQNC might be effective for patients with CC after 4-week treatment. Future studies are still needed to warrant this result.

Author contributions

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