

Original Article

Effects of psychological intervention on quality of life, negative emotions, and psychological rehabilitation in post-hysterectomy women

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Received March 2, 2018; Accepted April 7, 2018; Epub July 15, 2018; Published July 30, 2018

Abstract: Objective: Our aim was investigate the effects of psychological interventions on quality of life, negative emotions, and psychological rehabilitation in women that underwent hysterectomy. Methods: In this study, 124 consecutive women undergoing hysterectomies were randomly subdivided into the control group (n=58) or observation group (n=66). In the control group, 58 women were treated with usual care whereas 66 women in the observation group received psychological intervention in addition to the usual care given to control group. Psychological intervention included psychological guidance, health education, cognitive intervention, behavioral relaxation, listening to music, and emotional support. During the questionnaire survey, women in the two groups were instructed to fill out the World Health Organization Quality of Life Scale (WHOQOL), Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), and Symptom Checklist 90 (SCL-90) 1 day before hysterectomy. They filled out the SAS, SDS, and SCL-90 scales at discharge and WHOQOL scales and sexual questionnaires 6 months after surgery. WHOQOL, SAS, SDS, and SCL-90 scores before and after surgery and postoperative quality of sexual life were compared between the two groups. Their satisfaction with nursing care was also compared. Results: Scores of SAS, SDS, and SCL-90 before surgery were basically similar for women in both groups (all $P > 0.05$). Scores of SAS, SDS, and SCL-90 at discharge in the observation group were remarkably lower than those before surgery in the same group and those at discharge in control group (all $P < 0.05$). WHOQOL scores and scores for its physical, psychological, and social relationships domains before surgery differed insignificantly between the two groups (all $P > 0.05$). Scores in the observation group 6 months after surgery were significantly higher than those before surgery in the same group and those at 6 months in control group (all $P < 0.05$). Likewise, at 6 months, orgasm, self-confidence in feminine charms, sexual desire, sexual arousal time, and coital pain and discomfort of women in the observation group were superior to those in the control group. Postoperative quality of sexual life at 6 months was remarkably different between the two groups (all $P < 0.05$). Additionally, women in the observation group showed more satisfaction with nursing care ($P < 0.05$). Conclusion: Attaching importance to the poor psychological state of women undergoing hysterectomy and implementing active psychological interventions contributed to greater improvement in their negative emotions (anxiety and depression), quality of sexual life, global quality of life, and psychological rehabilitation as well as higher satisfaction with nursing care.

Keywords: Hysterectomy, psychological intervention, quality of life, negative emotion, psychological rehabilitation

Introduction

In recent years, uterine diseases including uterine fibroids, adenomyoma, and endometrial carcinoma have been increasingly prevalent, with patients showing a trend of a younger age. Hysterectomy is one of the most common surgeries for treating the abovementioned uterine diseases. Inevitably, hysterectomy may, to some extent, affect the physiological integrity of patients. The vast majority of women bear a

huge psychological burden as they are anxious about the detrimental effects of hysterectomy on their female characteristics and postoperative quality of life [1, 2]. A study on post-hysterectomy women revealed that in addition to surgical trauma, decline in postoperative quality of life, and sexual function of the women, hysterectomy was also closely associated with psychological, physiological, and social factors [3, 4]. Clinicians generally believe that most women undergoing hysterectomy have poor mental sta-

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tus and negative emotions (such as anxiety and depression), adversely affecting their postoperative psychological rehabilitation and immune functions [5, 6]. Post-hysterectomy women may develop evident negative emotions. On one hand, negative emotions may affect their condition, curative effects, and prognosis. On the other hand, they are also unbeneficial to postoperative quality of life and psychological rehabilitation. As a result, determining how to promote the postoperative psychological state and relieve negative emotions is paramount. Perioperative psychological problems primarily arise from the fact that women undergoing hysterectomy lack a correct understanding of hysterectomy and have long-term negative emotions. Therefore, the purpose of this study was to clarify the effects of psychological intervention on women undergoing hysterectomy with an aim of alleviating negative emotions and improving postoperative quality of life and psychological rehabilitation.

Materials and methods

Women

In this study, from January 2016 to June 2017, 124 consecutive women that underwent hysterectomies in our hospital were recruited as participants. Married women aged between 23 and 45 years were eligible for enrollment if they had a normal marriage, preoperatively-confirmed uterine leiomyoma, adenomyosis or endometrial carcinoma, indications for hysterectomy, and complete clinical data. Eligible women were also required to comply with the questionnaire survey and had no occurrence of major preoperative and postoperative adverse events. Women were excluded if they had undergone previous surgeries for gynecological disease, had concomitant underlying disease (hypertension, diabetes mellitus, and major organ dysfunction), a history of mental disease, unstable household income, or hearing and visual disorders. Illiterates were also excluded. All enrolled women submitted written informed consent and this study was approved by our Hospital Ethics Committee.

Enrolled women were randomly assigned to receive usual care (control group, n=58) or psychological intervention apart from usual care (observation group, n=66).

Nursing care programs

Usual care: Women in the control group were given usual care including preoperative visits, global health education, informing of anesthetic programs, surgical procedures, precautions and preventions against postoperative complications, and answering questions of the patients. However, they did not receive the following psychological interventions.

Psychologic interventions: In addition to usual care, women in the observation group were also given psychological intervention including psychological guidance, health education, cognitive intervention, behavioral relaxation, listening to music, and emotional support. Details are shown as follows.

Psychological guidance: Care providers should have good communication with the women in a sincere, caring, and sympathetic manner with amiable words to establish a good doctor-patient relationship. Prior to surgery, patients should be informed of perioperative precautions by means of encouragement, guidance and hints, anesthesia induction, and the whole process of the operation including possible intraoperative and postoperative abnormalities and corresponding measures, stressing the influence of subjective factors on surgery. Moreover, they were advised to increase the amount of exercise according to their postoperative recovery. After discharge, they were encouraged to take active part in social activities, cultivate hobbies and interests, improve self-image, establish good interpersonal relationships, actively accept social support, and enhance the ability of self-mental adjustment.

Health education: Education on basic knowledge should be enhanced for the women. Care providers should illustrate anatomic relationships among the reproductive organs and physiological knowledge in plain words with the help of diagrams and tables. Emphasis should be attached to interpreting differences between hysterectomy and ovariectomy and showing that hysterectomy would not adversely affect endocrine functions or female characteristics. Programs regarding sexual health education were carried out for spreading basic knowledge about sexual psychology. Moreover, patients were encouraged to minimize their psychological disorders and get fully relaxed in sexual

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intercourse. They were also guided to explore more effective sexual skills focused on sexual enjoyment, feeling exchanges, and caressing stimulation.

Cognitive intervention: Care providers should have relaxing conversations with patients to get to know their psychological problems and negative emotions, confirm if they had relevant wrong cognition and were willing to accept help, and make a detailed explanation on principles of cognitive intervention and relationships among cognition, emotion, and behavior. Patients were reminded that negative emotions primarily arise from their own wrong cognition. They were encouraged to actively accept cognitive intervention and learn to approach problems from multiple perspectives, identifying and correcting wrong cognition. Additionally, they were informed that negative emotions are detrimental to curative effects and prognosis and that psychological problems could not be solved even with the help of the most experienced physicians if they did not have a sensible way of thinking.

Behavior relaxation: The women were instructed to do progressive muscle relaxation. While keeping a comfortable position and stable heart rates and breaths, they tried to relax, avoiding any distractions. They just concentrated themselves on gradually relaxing the head, body, and legs. They were also encouraged to make emotional catharsis by disclosing their inner doubts or ideas, fully giving vent of bad moods. Care providers helped the women find the roots of negative emotions via good communication. After carefully listening to patients, care providers got a better understanding of the psychological problems and inner thoughts of patients. Subsequently, they planned and adopted corresponding intervention strategies. Patients were encouraged to cope with negative emotions by means of cognitive intervention, progressive muscle relaxation, and emotional catharsis.

Listening to music: Patients were in advance informed of the purposes and significance of listening to music and any relevant precautions. After providing written informed consent, they were recommended various types of music (preferably lyrical, light, and soft music). Besides, their favorable music could also be played. Patients enjoyed music twice per day, in the morning and evening. While listening to

music, they were required to wear headsets. The standard volume was that which made the patients comfortable and relaxed.

Emotional support: Relatives and friends of patients were asked to avoid influencing patients with their own negative emotions. They were also informed of the importance of emotional support on rehabilitation of patients. Apart from material support, they should also give spiritual encouragement and support to patients, showing full respect and sympathy for them so that they could feel their love and affection and become more confident in fighting against disease. Besides, care providers should also integrate humanistic care into daily medical work, promote mutual support and collective communication among patients, and encourage them to open their hearts and make an emotional catharsis.

Evaluation tools

Women in the two groups were instructed to fill out the World Health Organization Quality of Life Scale (WHOQOL), Self-Rating Anxiety Scale (SAS), Self-Rating Depression Scale (SDS), and Symptom 90 Checklist (SCL-90) 1 day before surgery [7-10]. They were required to fill out the SAS, SDS, and SCL-90 scales at discharge and WHOQOL scales and sexual questionnaires 6 months after surgery. Women in the two groups were compared in scores of WHOQOL, SAS, SDS, and SCL-90 as well as quality of sexual life before and after surgery. The WHOQOL scale consists of 6 domains. In the current study, we evaluated the quality of life of the women based on merely scoring physical, psychological, and social-relationships domains, all having positive scores. SAS and SDS both included 20 items, rating into 1 to 4 grades, with 50 points as the threshold value for discriminating anxiety from depression. The SCL-90 scale covers 90 items, rating into 1 to 5 grades, with higher scores indicating worse psychological rehabilitation. Satisfaction with nursing care was compared between the two groups.

Statistical analysis

All statistical data in this study were analyzed with use of SPSS software, version 18.0. Measurement data are presented as mean \pm SD. Paired t-tests were employed for intragroup comparisons before and after treatment, whereas independent samples t-tests were uti-

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Table 1. Demographics of the women

Variable	Control group (n=58)	Observation group (n=66)	t/ χ^2	P
Age (year)	41.27±3.26	40.85±3.52	0.325	0.624
Gravidity and parity	2.52±1.34	2.43±1.45	0.421	0.571
Disease course (mon)	38.25±26.42	40.12±28.42	0.264	0.739
Disease type (n, %)	Uterine leiomyoma	41 (62.12)	1.256	0.425
	Adenomyosis	9 (15.52)	1.362	0.521
	Endometrial carcinoma	6 (10.34)	1.625	0.362
	Other	5 (8.62)	0.925	0.482
Education (n, %)	Junior middle school or lower	17 (25.76)	0.862	0.712
	High school	34 (51.72)	1.104	0.176
	College or higher	15 (22.73)	1.825	0.124

Note: Measurement data were compared by the t-tests, and count data were compared with the Chi-square tests.

Table 2. SAS, SDS, and SCL-90 scores before surgery and at discharge (score)

		Control group (n=58)	Observation group (n=66)	t	P
SAS score	Before surgery	42.36±9.15	43.16±8.95	0.524	0.482
	At discharge	38.63±12.47	30.26±5.62	8.025	0.023
	t	0.299	6.710		
	P	0.793	0.021		
SDS score	Before surgery	41.47±13.47	40.92±10.04	0.425	0.562
	At discharge	38.69±12.04	34.25±7.20	9.431	0.016
	t	0.287	2.321		
	P	0.801	0.026		
SCL-90 score	Before surgery	162.47±5.28	159.42±6.74	0.325	0.634
	At discharge	153.42±9.58	102.37±5.27	15.425	<0.001
	t	3.636	67.220		
	P	0.068	<0.001		

ervation group and control group (all $P>0.05$). Scores at discharge in the observation group were remarkably lower than those before surgery in the same group and those at discharge in the control group. Scores at discharge differed significantly between the two groups (all $P<0.05$), as listed in **Table 2**.

Scores of WHOQOL scale and its domains before surgery and 6 months after surgery

lized for intergroup comparisons at the same time points. Count data were described as percentages and Chi-square tests were used for intergroup groups. $P<0.05$ was deemed significantly different.

Results

Patient demographics

The two groups of women were largely balanced in age, gravidity and parity history, cause of disease, disease types, and education ($P>0.05$, **Table 1**).

SAS, SDS, and SCL-90 scores before surgery and at discharge

SAS, SDS, and SCL-90 scores before surgery were insignificantly different between the ob-

WHOQOL scores and scores for its physical, psychological, and social-relationships domains before surgery were different slightly between the two groups (all $P>0.05$). Corresponding scores 6 months after surgery in the observation group were significantly higher than those before surgery in the same group and those at 6 months in control group. Scores differed greatly at 6 months between the two groups (all $P<0.05$, **Table 3**).

Quality of sexual life 6 months after surgery of the two groups

Six months after surgery, greater improvements in orgasm, self-confidence in feminine charms, sexual desire, sexual arousal time, and coital pain and discomfort were noted in the observation group versus control group (all $P<0.05$).

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Table 3. Scores of WHOQOL scale and its domains before surgery and 6 months after surgery (score)

		Control group (n=58)	Observation group (n=66)	t	P
WHOQOL score	Before surgery	74.52±12.62	73.92±13.45	0.326	0.692
	6 mon after surgery	71.62±10.85	84.52±12.47	12.525	<0.001
	t	2.838	2.402		
	P	0.105	0.025		
Physical	Before surgery	51.58±14.71	52.39±13.88	0.524	0.482
	6 mon after surgery	54.19±13.52	81.52±17.44	26.425	<0.001
	t	3.753	3.777		
	P	0.064	0.003		
Psychological	Before surgery	52.61±18.43	53.52±17.84	0.624	0.436
	6 mon after surgery	48.49±17.61	82.28±16.92	25.023	<0.001
	t	0.197	55.426		
	P	0.862	0.000		
Social relationships	Before surgery	48.89±17.32	47.91±16.51	0.425	0.584
	6 mon after surgery	49.19±16.42	80.68±15.86	23.484	<0.001
	t	0.015	81.159		
	P	0.989	<0.001		

Table 4. Quality of sexual life 6 months after surgery of the two groups (n, %)

Outcome		Control group (n=58)	Observation group (n=66)	χ ²	P
Orgasm	Ordinary	17 (29.31)	6 (9.09)	35.216	<0.001
	Dissatisfied	23 (39.66)	5 (7.58)		
	Satisfied	18 (31.03)	55 (83.33)		
Self-confidence in feminine charms	Ordinary	27 (46.55)	8 (12.12)	32.053	<0.001
	Dissatisfied	12 (20.69)	4 (6.06)		
	Satisfied	19 (32.76)	54 (81.82)		
Sexual desire	Ordinary	19 (32.76)	16 (24.24)	6.868	0.032
	Dissatisfied	14 (24.14)	7 (6.06)		
	Satisfied	25 (43.10)	43 (65.15)		
Sexual arousal time	Ordinary	46 (79.31)	19 (28.79)	33.110	<0.001
	Dissatisfied	2 (3.45)	2 (3.03)		
	Satisfied	10 (17.24)	45 (68.18)		
Coital pain and discomfort	Ordinary	32 (55.17)	17 (25.76)	35.951	<0.001
	Dissatisfied	16 (27.59)	4 (6.06)		
	Satisfied	10 (17.24)	45 (68.18)		

The two groups were considerably different in quality of sexual life at 6 months ($P<0.05$, **Table 4**).

Patient satisfaction with nursing care

In the observation group, 38 women were extremely satisfied with nursing care, 24 were basically satisfied, with a satisfaction rate of 93.94%. 20 women in the control group were extremely satisfied with nursing care and 25

were basically satisfied, with a satisfaction rate of 77.59%. The two groups were remarkably different in satisfaction with nursing care ($\chi^2=5.665$, $P=0.0017$; **Figure 1**).

Discussion

Women undergoing hysterectomy are predisposed to negative emotions because they are anxious about the disease and tend to exaggerate adverse effects of the hysterectomy on

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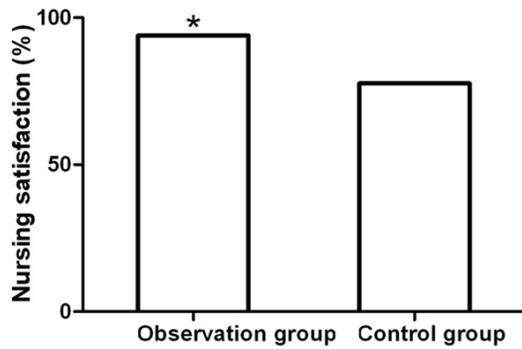


Figure 1. Comparison of women satisfaction with nursing care between the two groups. * $P < 0.05$ Compared with the control group.

female characteristics, postoperative quality of sexual life, and husband-wife relationship. The medical staff should pay more attention to and make accurate assessments of the psychological state of post-hysterectomy women, to minimize the detrimental impact of negative emotions on postoperative rehabilitation. In the current study, 124 women showed overt negative emotions (depression and anxiety) before surgery. After usual care, SAS and SDS scores of women in the control group at discharge were not significantly improved compared to those before surgery. This lack of response greatly affected the postoperative quality of life. This was basically consistent with results reported by Elias et al. [11]. According to a study involving univariate and multivariate stepwise regression analyses on factors influencing psychological state of post-hysterectomy women, the women undergoing hysterectomy who were divorced, younger, and had received higher education were more likely to develop negative emotions including anxiety and depression [12]. Another study revealed that as the uterus is a symbol of femininity, post-hysterectomy women with negative emotions mostly have personal traits of vulnerability and neuroticism [13]. In the current study, women who underwent hysterectomy were treated with psychological interventions. In addition to routine support and encouragement, the women were also encouraged to bravely confront and embrace the reality, try to control their negative emotions, and minimize psychological pressure. As a result, preoperative SAS, SDS, and SCL-90 scores of the 124 women were higher than those before surgery, indicating that it was necessary to treat the adverse psychological states of post-hysterectomy women seriously. A

study in which postoperative quality of life of post-hysterectomy women was evaluated by the WHOQOL scale stated that postoperative depression adversely affects quality of life and psychological rehabilitation of women [14]. Therefore, it is of great practical and theoretical value to implement psychological interventions for post-hysterectomy women, eliminating their negative emotions and relieving psychological burdens.

In this prospective study, women in the observation group and control group were basically balanced in demographics and baseline characteristics. Given this, the women in the control group received usual care whereas those in observation group were given psychological interventions in addition to usual care. Overall, the two groups were similar in SAS, SDS, and SCL-90 scores before surgery (all $P > 0.05$). SAS, SDS, and SCL-90 scores in the observation group at discharge were significantly lower than those before surgery in the same group and those at discharge in control group (all $P < 0.05$). Scores at discharge were remarkably different between the two groups (all $P < 0.05$). This suggests that over the perioperative period, systemic and standard psychologic interventions on the women resulted in significant alleviation of anxiety and depression. We knew from analyzing the conditions and psychological characteristics of the women undergoing hysterectomy that a dominant part of the women had negative cognition, reducing treatment adherence, aggravating negative emotions, and affecting quality of life. Consequently, it was necessary to perform psychologic interventions tailored for post-hysterectomy women, encouraging them to disclose personal thoughts so that care providers could get a better understanding of their thoughts and opinions and tell them the adverse effects of negative emotions on the disease. They should perform psychological interventions including psychological guidance, health education, cognitive intervention, behavior relaxation, listening to music, and emotional support. More effort should be made to contact and communicate with the women, gaining more support from the women themselves and their family members. In this way, they are more confident in dealing with psychological problems. In the current study, listening to music played a crucial role in psychological intervention. It fully highlighted the human nature of psychological

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intervention and was characteristic of simplicity, non-invasion, high acceptance, and effectiveness [15, 16]. Additionally, a previous study also indicated that listening to music is associated with reduced dosage of analgesics after hysterectomy and improved postoperative recovery in women [17]. In the current study, listening to music and other psychologic interventions were associated with reduced postoperative negative emotions (anxiety and depression) in post-hysterectomy women. However, mechanisms of the action of listening to music remain unclear in psychological interventions. Some scholars hold that listening to music can regulate neuroendocrine and reduce catecholamine release, making women calm and relaxed [18].

In the implementation of psychological interventions, importance should be attached to improving postoperative quality of life and sexual life of post-hysterectomy women, in addition to alleviation of negative emotions and enhancement of psychological rehabilitation. A study stated that post-hysterectomy women have evident psychological care needs, in hopes of improving postoperative quality of life and sexual life under the guidance of medical staff [19]. Quality of life of post-hysterectomy women is not only influenced by mental status but also closely related to quality of sexual life. The focus of the current study was to improve postoperative overall quality of life and sexual life of women, as well as their mental status. We conducted psychological guidance and health education to eradicate psychological disorders, find out causes inhibiting sexual responses, correct conservative and wrong sexual cognition, and keep good wife-husband communication. Psychological interventions in the current study started with sexual education, trying to help women solve sexual perplexities, establish healthy sexual concepts, and maximize quality of sexual life. Results of the current study indicated that 6 months after surgery, orgasm, self-confidence in feminine charms, sexual desire, sexual arousal time, and coital pain and discomfort of women were more significantly improved in the observation group than control group. Difference in the quality of sexual life at 6 months was statistically significant between the two groups ($P < 0.05$), implying that psychological intervention contributed to improved quality of sexual life in post-hysterectomy women. Moreover, during cognitive

intervention and behavior relaxation, women improved their cognitive function and capacity of psychologic adjustment, consciously alleviating negative emotions and were in a pleasant and calm mood. Moreover, long-term adherence to behavior relaxation can improve personal traits of the women, eradicate negative emotions, and enable them to keep a good mental state. All of this leads to improved quality of life. In the current study, scores on the WHOQOL scale and its physical, psychological, and social relationships domains of women in the observation group at 6 months were remarkably higher than those before surgery in the same group and those at 6 months in the control group. Scores at 6 months differed considerably between the two groups (all $P < 0.05$), suggesting that positive psychological interventions were conducive to improving postoperative quality of life and psychological rehabilitation of post-hysterectomy women. Even more, results of the current study revealed that women in the observation group showed more satisfaction with nursing care than those in the control group. This difference was statistically significant, consistent with results reported by Li et al. [20].

In summary, placing importance on adverse psychological states, implementing psychological interventions focused on alleviating negative emotions (anxiety and depression), and improving sexual life contributed to improved postoperative quality of life and psychological rehabilitation in post-hysterectomy women. It is worthy of extensive use in clinical work. However, psychological interventions are new to the field of medical management in China. Traditional modality of medical management has resulted in neglect and low awareness of the medical staff with regards to psychological intervention. Neglect of psychological problems adversely affects therapeutic effects and prognosis of the population. Moreover, the psychologic state of patients is hard to assess quantitatively. Psychological interventions are influenced by many factors. In addition to distinctive individual differences, the effectiveness of psychological interventions is also closely related to psychological stress, immune functions, and severity of the disease of the women before nursing care.

Disclosure of conflict of interest

None.

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