

# Factors Related to Recovery in Patients after Total Hysterectomy\*

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## Abstract

**Purpose:** To identify factors related to recovery among patients after total hysterectomy.

**Design:** Descriptive correlational design.

**Methods:** The sample composed of 115 adult patients after total hysterectomy at Bach Mai Hospital and the National Hospital of Obstetrics & Gynecology, Hanoi, Viet Nam. Data were collected using the patients' medical record and interviewed with 3 questionnaires: 1) the Numerical Rating Scale, 2) the Multidimensional Scale of Perceived Social Support, and 3) the Quality of Recovery-15. Spearman's Rho was employed to test correlation among studied variables.

**Main findings:** The findings revealed that pain score was negatively related to recovery ( $r_s = - .70$ ,  $p < .05$ ); while co-morbidity and social support were not related to recovery ( $p > .05$ ).

**Conclusions and recommendations:** Pain was the vital factor inhibiting patients' recovery. Therefore, in order to promote the patients' smooth transition to their optimum recovery, pain should be well controlled. Pain management protocol should be developed and tested for their effectiveness through research before implementation.

**Keywords:** total hysterectomy, pain, social support, recovery, co-morbidity

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# ปัจจัยที่มีความสัมพันธ์กับการฟื้นตัวของผู้ป่วยหลังผ่าตัด เอามดลูกออกกั้งหมด\*

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## บทคัดย่อ

**วัตถุประสงค์:** เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับการฟื้นตัวของผู้ป่วยหลังผ่าตัดเอามดลูกออกหัวหมด

**รูปแบบการวิจัย:** การวิจัยเชิงสหสัมพันธ์

**วิธีดำเนินการวิจัย:** กลุ่มตัวอย่างเป็นผู้ป่วยภายนอกหัวหมดจำนวน 115 คน ที่รับการรักษาที่หอผู้ป่วยหลังผ่าตัด โรงพยาบาลบัวบาน และโรงพยาบาลสุตินรีเวช กรุงเทพฯ ประเทศไทยจำนวน 115 คน เก็บข้อมูลด้วยการสัมภาษณ์โดยใช้แบบสอบถาม และเก็บข้อมูลบางส่วนจากแฟ้มประวัติของกลุ่มตัวอย่าง วิเคราะห์ความสัมพันธ์ของตัวแปรโดยใช้สถิติสเปียร์เมนโรว์

**ผลการวิจัย:** ผลการศึกษาพบว่า ความป่วยมีความสัมพันธ์ทางลบกับการฟื้นตัวของผู้ป่วยหลังผ่าตัดเอามดลูกออกหัวหมด ( $r_s = - .70$ ,  $p < .05$ ) อย่างไรก็ตาม การมีโรคร่วมและการสนับสนุนทางสังคมไม่มีความสัมพันธ์กับการฟื้นตัวหลังการผ่าตัดเอามดลูกออกหัวหมด

**สรุปและข้อเสนอแนะ:** เนื่องจากความป่วยหลังผ่าตัดเป็นปัจจัยสำคัญที่ขัดขวางการฟื้นตัว ดังนั้นเพื่อส่งเสริมให้ผู้ป่วยเกิดการเปลี่ยนผ่านอย่างราบรื่นจนเกิดการฟื้นตัวได้อย่างเต็มที่ ผู้ป่วยควรได้รับการควบคุม ความป่วยอย่างมีประสิทธิภาพหลังการผ่าตัด และควรมีการพัฒนาแนวปฏิบัติเพื่อควบคุมความป่วย และนำไปทดสอบประสิทธิผลด้วยงานวิจัยก่อนนำไปใช้

**คำสำคัญ:** การผ่าตัดเอามดลูกออกหัวหมด ความป่วย การสนับสนุนทางสังคม การฟื้นตัว ภาวะโรคร่วม

## Background and Significance

Hysterectomy was the most frequent surgical procedure in gynecological surgery<sup>1</sup>. It aimed to cure disease of uterus such as fibroids, prolapse, endometriosis or adenomyosis, and chronic pelvic pain. In the United States, hysterectomy was the most common major surgery in women with the ages ranged from 40 to 44 years, there were more than 500,000 cases of hysterectomy were performed annually<sup>2</sup>. In low income countries, total hysterectomy was the treatment of choice because the patients usually get access to care in the late stage of disease<sup>3</sup>. After surgery the women should be assisted to restore function and psychological stability throughout the recovery process. In addition, to reduce complications from surgery, early recovery from gynecological surgery was expected outcomes<sup>4,5</sup>. The earlier the patients recovered, the lesser they had postoperative complications such as atelectasis and deep vein thrombosis. Moreover, their gastrointestinal function will recover leading to decreased abdominal discomfort and increased appetite<sup>6</sup>.

One main factor that delayed postoperative recovery was pain. Patients with moderate to severe postoperative pain usually stayed in the hospital longer than ones without postoperative pain and hence adding to hospital cost. Patients with multimodal analgesia had lower pain scores and earlier returned of bowel peristalsis as well as showed shorter stay in the hospital<sup>7</sup>. Pain will be an obstacle to perform early ambulation to make patients recover from the illness soon otherwise they might develop several complications such as pneumonia, decreased bowel movement, abdominal discomfort, or paralytic ileum. To improve postoperative recovery and earlier hospital discharge, it was necessary for management of pain<sup>8</sup>.

The co-morbid diseases also affected recovery and can predict survival from endometrial cancer<sup>9</sup>. In Vietnam, heart failure, renal failure, hypertension, and diabetes were commonly found among people in their middle to the aged group; these diseases also disturbed

patients' early ambulation after surgeries.

Surgery was the stressful event on physical, psychological, and social lives of individuals. Support from others could tremendously affect patients' recovery by cushioning the effect of that event. Patients with greater connection to others reported lower postoperative pain, milder unpleasantness, and lower anxiety in the first five days after surgery ( $p < .001$ )<sup>10</sup>; they were more likely to show good postoperative recovery accordingly. Patients undergoing total hysterectomy could be viewed as having transit in their health and illness continuum. This process could be explained very well by using Meleis' transition theory<sup>11</sup>. Pain and co-morbid diseases served as personal factors while social support served as an environmental factor of patients after hysterectomy. Those aforementioned variables were conditioning factors affecting outcomes of transition in which in this study referred to recovery after hysterectomy.

In Northern Vietnam, there were about 200 women in Bach Mai hospital and more than 1,000 in the National Hospital of Obstetric and Gynecology receiving total hysterectomy per year. Therefore, the researcher who serves as a head nurse of obstetric and gynecology unit was interested in studying recovery and factors associated with recovery in these patients. It was expected that the results from this study would contribute to recovery process so that patients after hysterectomy could smoothly transit to their previous condition before surgery.

## Objective

To identify factors related to recovery of patients after total hysterectomy.

## Hypothesis

1. Postoperative pain and co-morbid diseases were negatively related to recovery in patients after total hysterectomy.
2. Social support was positively related to recovery in patients after total hysterectomy.

## Methodology

### Population and Sample

Population of the study included female patients who had total hysterectomy at Obstetrics & Gynecology Department, Bach Mai Hospital and National hospital of Obstetrics and Gynecology, Hanoi, Vietnam.

Sample was selected from the population according to the inclusion criteria: 1) 18 years old and older, 2) able to communicate in Vietnamese language. Patients who were diagnosed with cancer were excluded from the study.

The sample size was calculated by using G\*power program to determine the minimum number of participants needed for correlational design<sup>12</sup>. The level of significance  $\alpha = .05$ , the power of the statistical test (Power  $1-\beta = .9$ ), and the medium effect size. Because there was limited study about these variables, the researcher used medium effect size for this study ( $ES = .3$ )<sup>13</sup>. Based on G\*power, sample size should be at least 109 patients, so the researcher added 5% to cover incomplete data; made the sample size of 115 patients with total hysterectomy.

### Research Instruments

The instruments used for data collection included 5 questionnaires as follows:

1. Demographic data included age, education, marital status, occupation, monthly income, type of health care insurance.

2. Health information questionnaire included diagnosis, length of hospital stay, and co-morbid diseases. Co-morbid diseases record comprised items of common non-communicable diseases including hypertension, diabetes, heart disease, renal disease, and other chronic diseases the patients had before this study; each disease was assigned a score of 1.

3. The Numerical Rating Scale (NRS), was used to measure pain level of patients on the first day after surgery. NRS was developed by McCaffery and Beebe in 1968<sup>14</sup>, the Cronbach's alpha in various studies ranged from .80 to .91<sup>15</sup>. NRS was a rating scale reflected severity of pain

from 0 to 10 in a horizontal line. Patients were asked to verbally rate their pain on this scale with "0" equal to no pain and "10" equal to the worst possible pain. The values on the pain scale correspond to pain levels as follows: 1-3 = mild pain, 4-6 = moderate pain, 7-10 = severe pain.

4. The Multidimensional Scale of Perceived Social Support (MSPSS). This scale composed of 12 items in 3 subscales; family, friends, and significant others. Each item was a rating scale from 1 = very strongly disagree, to 7 = very strongly agree. Total scores of social support ranged from 12 to 84; high score indicated better social support. MSPSS was developed by Zimet, et al. in 1988<sup>16</sup> and has been widely used in health science researches. This scale is in the public domain, there is no requirement to get permission to use the scale. Cronbach's alpha of MSPSS in the present study ( $n = 115$ ) was .91.

5. The Quality of Recovery-15 (QoR-15)<sup>17</sup> was a short-form version of postoperative recovery scale for measuring patient's postoperative recovery. The QoR-15 score ranged from 0 to 150 with a high score referred to a good quality of recovery and a low score referred to a poor quality of recovery. Cronbach's alpha of QoR-15 in this study ( $n = 115$ ) was .95. Recovery was assessed on the day of hospital discharge.

### Protection of Human Subject

This project was approved by the Institutional Review Board of Faculty of Nursing, Mahidol University, Thailand (COA No. IRB-NS 2016/341.0205); and IRB of Vietnam National University, Vietnam. The researcher recruited the samples as standard process specified by the IRB. The issues of independently to make decision to consent, anonymity, and confidentiality were warranted.

### Data Collection

The data collection was conducted in the following sequences:

1. After getting permission to collect data from the directors of the studied hospitals, the researcher met with the head nurse of Gynecology department to explain details of the

research project and ask co-operation to collect data.

2. The researcher met the patients on the first day after total hysterectomy; self-introduced, established relationship with the patients, explained objectives of the study, and asked whether they were interested to participate in the study.

3. The researcher explained details of the research project and data collection process as well as protection of human right to those potential subjects using the participation information sheet. If the patients voluntarily agreed to join the study; they were asked to sign the consent form.

4. The researcher collected demographic data and health information from patients' hospital record; assessed pain level by asking patients to verbally rate his or her own level of pain using NRS; and interviewed patients about social support with the MSPSS.

5. On the day of hospital discharge, the researcher interviewed patients with the QoR-15.

#### **Data Analysis**

Data were analyzed using the computer statistical package with the significant level of .05 as follows:

1. Descriptive statistics: frequency, range, percentage, mean, and standard deviation.

2. All studied variables were tested for normal distribution to meet assumption of Pearson's Product Moment Correlation. However, none of them were normal distributed, therefore Spearman's Rho were used to test correlation among studied variables.

#### **Findings**

The mean age of subjects was 48.7 years with the range from 37 to 86 years; 91.3% were married; the mean monthly income per patient was 169.5 USD and per family was 384.4 USD; 73% had health insurance; the average length of hospital admission was 5 days; the mean of illness duration was 11.6 months with the range from 1 to 28 months; 96.5% diagnosed with fibroid; 73.9% did not have any type of treatment such as uterine curettage, before surgery.

The mean of pain score was 3.2; 69.6% of subjects had mild pain, and 30.4% had moderate pain. Forty percent of subjects had co-morbid diseases included hypertension, heart disease, diabetes, renal disease, and peptic ulcers.

The mean of social support score was 65.88 with the range of 44.8-72.0; the mean of family domain score was 21.64, friends domain was 24.12, and significant others domain was 20.12. The overall scores indicated that patients received high social support.

#### **Recovery among patients after total hysterectomy**

The mean score of recovery among patients after total hysterectomy was 124.57 (SD = 11.78) reflecting the good recovery process. However, there were some items with lower scores. The first three items with low scores included the item "able to enjoy food", "able to return to work or usual home activities", and "have had a good sleep". (Table 1)

**Table 1:** Recovery among patients after total hysterectomy (n = 115)

Item of Recovery	Mean	SD
Able to enjoy food	6.90	1.65
Able to return to work or usual home activities	7.03	1.56
Have had a good sleep	7.18	1.50
Moderate pain	7.71	.85
Feeling sad or depressed	7.96	1.19
Having a feeling of general well-being	7.97	1.07
Able to look after personal toilet and hygiene unaided	8.02	1.92
Feeling rested	8.14	1.59
Feeling worried or anxious	8.37	1.03
Feeling comfortable and in control	8.63	1.41
Able to breathe easily	9.17	1.02
Severe pain	9.17	.80
Nausea or vomiting	9.43	.86
Getting support from hospital doctors and nurses	9.43	.91
Able to communicate with family or friends	9.50	.99
<b>Total score</b>	<b>124.57</b>	<b>11.78</b>

### **Correlation between pain, co-morbidity, social support, and recovery in patients after total hysterectomy**

The results showed that only pain score was negatively related to recovery ( $r_s = -.70$ ,  $p < .05$ ). (Table 2)

**Table 2:** Correlation between pain, co morbidity, social support, and recovery in patients after total hysterectomy (n = 115)

Variables	1	2	3	4
1. Co-morbidity	1.00			
2. Social support	-.10	1.00		
3. Pain	.04	-.20*	1.00	
4. Recovery	.01	.16	-.70*	1.00

\* $p < .05$ , Spearman's Rho correlation

## **Discussion**

### **Recovery among patients after total hysterectomy**

The findings indicated that patients after total hysterectomy were in good recovery process (Mean = 124.57, SD = 11.78). This might be able to explain that majority of patients in this study were in adult age (41-50 years old, Mean = 48.7 years); which were still very active in social activities and works. They were healthy and ready to resume their previous activities. Moreover, almost all of patients (96.5%) were diagnosed as having fibroid which did not affect

their recovery process after surgery. It could be stated that, they were in relatively good health prior to hysterectomy leading to good recovery after surgery. Similarly, Nicholas, et al.<sup>9</sup> indicated that patients' health status before surgery affected postoperative recovery. On the other hand, patients with poor health status were more likely to develop postoperative complications leading to delayed recovery. Good recovery among these patients might be due to the hospital policy to encourage patients on early ambulation at the earliest possible after surgery. Early ambulation not only led patients

to have early recovery but also prevent postoperative complications such as lung atelectasis and abdominal adhesion<sup>18</sup>.

Although in the whole picture, patients seemed to have good progress in recovery, there were some items to be concerned; such as “able to enjoy food”, “able to return to work or usual home activities” and “have had a good sleep”. Patients who experienced low score in “able to enjoy food” might reflect the delayed recovery of their gastrointestinal function which might occur from decreased bowel movement after surgery. Parker, et al.<sup>19</sup> stated that both upper and lower abdominal surgery including hysterectomy commonly caused a temporary inhibition of intestinal motility by the effect of anesthesia and surgical manipulation resulted in decreased bowel movement. Accordingly, it led to decline digestive function and abdominal discomfort and would have problem with poor food appetite.

Another low score item in recovery was “able to return to work or usual home activities”; which indicated that patients might concern about their capability to resume previous activities. Patients underwent total hysterectomy generally suffered stress; they might experience emotional distress and guilty after the uterus were removed because they could no longer be able to have children<sup>4</sup>. Moreover, patients might be depressed due to expectation on declined sexual function<sup>20</sup>. Concerning roles and function in society, it was expected to be lower than preoperative phase<sup>21</sup>. A transitional program is therefore important for these patients because it will enhance them to be easily transit to their usual activities.

After surgery, some patients also had sleep disturbance as shown in low score item of recovery on “have had a good sleep”; which could occur due to many factors. For example, the depletion of estrogen hormone after total hysterectomy with ovarian removal led to vasomotor symptom, depression, and sleep disturbance<sup>22,23</sup>. These patients could not perform active activities as usual. If this problem

was not resolved, they might end up with severe depression and other mood disorders. These problems should be taken into consideration and the proper management would be employed to improve patients’ recovery.

#### **Relationship between pain level, co-morbidity, social support, and recovery in patients after total hysterectomy**

Only pain score was negatively related to recovery score ( $r_s = - .70$ ,  $p < .05$ ), while co-morbidity and social support were not correlated with patients’ recovery, which partially supported the proposed hypotheses. Patients who had high pain score would have delayed recovery. The explanation might be that postoperative pain prevented patients from moving or performing their routine daily activities leading to delayed recovery; similar to findings from previous studies<sup>24,25</sup>. If there was inadequate pain control after surgery, pain would arouse the sympathetic nervous system, which could lead to variety of physiologic responses and eventually caused morbidity and mortality<sup>25</sup>. Moreover, another study illustrated that patients after total hysterectomy could not resume their routine activities at the similar level they used to perform prior to the surgery including go back to work, performing previous roles and functions<sup>8</sup>. Therefore, pain control after surgery was vital among patients in the acute phase after hysterectomy<sup>8,19</sup>. Effective postoperative pain management could reduce patients’ suffering, leading to earlier ambulation, decreased length of hospital stay, reduced medical expense, and increased satisfaction of patients and their family members<sup>18</sup>. Good pain control was important to prevent negative outcomes such as hypertension, myocardial ischemia, arrhythmia, respiratory impairment, ileus, and poor wound healing<sup>18,24,25</sup>.

Co-morbidity was not related to recovery after total hysterectomy; it might be explained that 40% of patients in this study had only one co-morbid, mostly was hypertension. Since the surgery was appointed in advance and the co-morbid disease was well-controlled before

surgery, therefore it would not affect recovery process after surgery.

Social support was not related to recovery after total hysterectomy; it might be explained that more than half of patients in this study (67.8%) had their residency in the rural or mountain area so they stayed away from their family during hospitalization. The support they received only came from nurses and other health care personnel. Moreover, 44.3% of them were farmers with low monthly incomes; which made it more difficult to receive instrumental support due to insufficient resources. Although social support was not related to recovery, patients with hysterectomy should receive more support. Nurses should play vital role in providing support while these patients are away from home. Emotional and information support should be encouraged by nurses. Also, nurses should seek for adequate resources for these patients.

### Conclusion and Recommendations

In order to facilitate patients' recovery from the operation, the main transition condition to be concerned was pain which could be viewed as patients' personal factor. Nurses could use this finding to facilitate healthy transition in patients with total hysterectomy. Nurses should assess and improve patients' recovery focusing on patients' gastrointestinal and digestive function after the surgery. Assessing patients' perception of their abilities to return to work and routine home activities was suggested. Sleep quality should be evaluated and sleep hygiene should be promoted. Numerical pain scale should be routinely used to assess pain level and pain control guidelines for patients after hysterectomy should be developed and test for its effectiveness by research. This research should be conducted in multi settings with more samples in Vietnam to cover the broader picture of patients after total hysterectomy.

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