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Nursing Care in the Ovarian Cancer According to Levine's Conservation Model: A Case Report

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Abstract

Gynecological cancers and the treatment process can affect women biopsychosocially. Nursing care of the patient who was diagnosed with advanced ovarian cancer and who underwent radical surgery was carried out in accordance with the North American Nursing Diagnosis Association Taxonomy according to Levine's conservation model. The patient is married and 58 years old. She was admitted to the hospital with complaints of swelling in the abdomen, respiratory distress, and gas pains. Free fluid in the abdomen, peritoneal implant, pleural effusion, and bilateral ovarian tumors were detected in the tests and exams. As a result of the tests, radical surgical treatment was administered to the patient, and the patient was diagnosed with fourth-stage ovarian cancer after the surgery. According to the principles in Levine's conservation model, conservation of energy (acute pain, nutrition less than body requirements, etc.), conservation of structural integrity (activity intolerance, ineffective health maintenance, etc.), conversation of personal integrity (risk for body image disturbance, risk for sexual dysfunction, etc.), and conservation of social integrity (family mobilization) were evaluated in the context of the nursing process. In the evaluation of the case, Levine's conservation model guided the planning of priority and possible problems in the early post-operative period and the maintenance of nursing care.

Keywords: Ovarian cancer, nursing care, Levine's conservation model

Introduction

Gynecological cancers are among the most common cancers for women in Turkey and worldwide. According to GLOBOCAN 2020 data, cervical cancer (6.5%) is the most common gynecological cancer in terms of prevalence in the world, followed by endometrial cancer (4.5%) and ovarian cancer (3.4%).[1] Based on Turkey's Cancer Statistics, the most commonly diagnosed gynecological cancer is endometrial cancer (5.6%), followed by ovarian cancer (3.3%) and cervical cancer (2.3%).[2] High mortality rate in ovarian cancer is associated with the fact that it is usually diagnosed in the advanced stage. When ovarian cancer is diagnosed in advanced stage, surgeries to be made, loss of reproductive organs, and other treatments are accompanied by more extensive nursing care.[3] Women diagnosed with gynecological cancer experience physical and psychosocial problems in the treatment and care process which affect women's quality of life negatively.[4] Nursing theories and models are needed in this process to support the adaptation of individuals and ensure the integrity of care provided. Building nursing care on the nursing model ensures that care is addressed in a holistic way and its quality improves.[5-7] Levine's conservation model (LCM) is one of the models that can be used for this purpose.

Levine's conservation model was developed by Myra Estrin Levine, and the model explains the relationship between "human, health/disease, nursing and environment" that guides theoretical knowledge and professional practices. Levine's conservation model is based on adaptation, wholeness, and conservation concepts. The conservation model is the central concept and when a person is in a state of conservation, adaptation and wholeness are also achieved. Levine's conservation model aims to promote adaptation and maintain wholeness. According to Levine, the goal of conservation is to maintain health and the strength to confront disability. Levine proposed 4 principles of conservation as shown in Figure 1.[5-7] According to 4 principles of conservation in LCM, holistic care can be supported.[5,6] Four basic principles of the model are explained with the case reported in this study. This study aims to assess the nursing care process according to LCM in the

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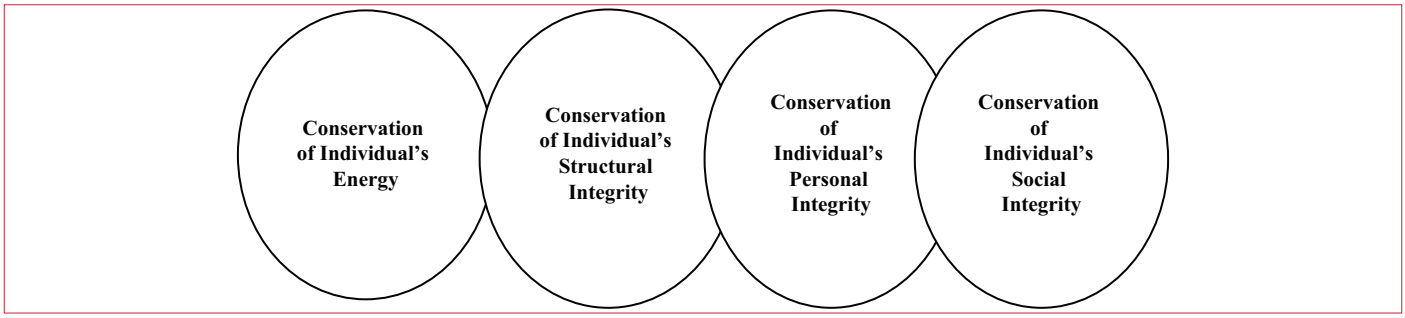

Figure 1. Four basic principles of Levine's conservation model.[5,7]

patient diagnosed with fourth-stage ovarian cancer who underwent radical surgery.

Case Details

The patient's data were collected with the Gynecology Data Collection Form. Nursing care requirements of the patient were planned based on LCM in line with the North American Nursing Diagnosis Association (NANDA) Taxonomy Nursing Intervention Classification (NIC) interventions. An institutional permit was obtained for the study. Detailed information on the study was provided to the patient, and the patient's written consent was obtained. Then, information was collected through the face-to-face interview technique. A data collection form developed for gynecological patients was used to collect data. The form consists of the following sections: socio-demographic characteristics, current and past medical history (surgeries, diseases, nutritional characteristics, habits, hygiene behaviors, etc.), gynecological and obstetric history, health and social history of the family, assessment of systems, laboratory findings, medications used, observation and comments. According to the 4 basic principles of LCM, nursing diagnoses were grouped on the data collection form, then plans and interventions were reported.

Some Personal Details of the Patients

The patient is a secondary school graduate housewife who is 58 years old and has been married for 42 years. She lives with her husband in a district center in a rental house. She has social security and stated that their expenses were higher than their income. Her weight is 85 kg and her height is 160 cm. Her body mass index is 33.3 kg/m^2.

Past Medical History

She had 3 surgical interventions other than her gynecological surgery. She underwent cholecystectomy in 2002, lumbar hernia surgery in 2005, and hip and knee replacement in 2018. She stated that she eats 3 times a day, tries to consume all food groups, and consumes milk/dairy products every other day. She had no history of cancer in her first- and second-degree relatives. She had a history of hypertension and cardiovascular disease. She has been smoking for 30 years (10 cigarettes a day).

Obstetric History

She had 8 pregnancies, 4 childbirths, 3 living children, 3 elective abortions, 1 stillbirth, and 1 miscarriage in her obstetric history. She stated that she had vaginal deliveries with midwife assistance at the hospital. She reported that she had a miscarriage at home, but she did not visit any doctor and that her elective abortions were performed by a doctor at a private polyclinic. The patient used the calendar method along with coitus interruptus as contraceptive methods although her menstrual cycles were irregular. She stated that she was not satisfied with these methods and had an unwanted pregnancy.

Gynecological History

The patient went through menopause 5 years ago, and her age at menarche was 13 years. She stated that her cycles were irregular and her intervals were getting longer before menopause. Although she had visited a doctor for this issue, she discontinued the recommended treatment (oral contraceptive) due to headaches and weight gain. She stated that she did not have sexual intercourse after menopause, her husband wanted to have intercourse but she had no such desire and she did not see sex as a need. She also stated that she had vaginal infections frequently, particularly there was an increase in the frequency of infections with the menopause. The patient emphasized that although the treatments prescribed for infection were effective, the infection recurred. She maintains perineal hygiene using back-to-front motions. The patient stated that she did not have regular gynecological check-ups and she only reported to a healthcare institution when she had a health issue. She reported having only one bone density scan and Pap smear (no malignity was detected) after the menopause. She did not perform regular breast self-examination. She admitted that she did not have sufficient information on breast self-examination, vulvar self-examination, and vaginal infection in particular.

Current Medical History

She was admitted to a healthcare institution with complaints of swelling in the abdomen, respiratory distress, and gas pains in March 2019. She also experienced constipation, anuresis, back pain, and swelling in her legs during this process. Free fluid in the abdomen, peritoneal implant, pleural effusion, and bilateral solid ovarian tumors were detected in the tests. She was hospitalized after the tests, and it was decided to perform surgical treatment in April 2019.

Surgical Interventions

The patient was administered radical surgery treatment (total abdominal hysterectomy, salpingo-oophorectomy, omentectomy, appendectomy, bilateral pelvic paraaortic lymphadenectomy), and she was diagnosed with fourth-stage ovarian cancer during the surgery. Macroscopic metastatic sites were identified in the liver, spleen, diaphragm, stomach, rectum, bowel mesentery, and serosa of uterus

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Table 1. Patient's Laboratory Results

Test	Pre-op	Post-op	Reference Range
Complete blood count			
Red blood cells (RBCs)	4×10^{12}/L	3.25×10^{12}/L*-3.24×10^{12}/L**	$4.2\text{-}5.4 \times 10^{12}$/L
Hemoglobin (HGB)	9.8 g/dL	7.8 g/dL*-8.9 g/dL**	12.0-16.0 g/dL
Hematocrit (HTC)	33.5%	27.1%*-24.3%**	37.0-47.0%
Thrombocyte	583×10^9/L	517×10^9/L*-411×10^9/L**	$130\text{-}400 \times 10^9$/L
White blood cells (WBC)	7.7×10^9/L	7.57×10^9/L*-4.56×10^9/L**	$4.8\text{-}10.8 \times 10^9$/L
Biochemistry			
Fasting blood glucose	86 mg/dL	143 mg/dL	75-106 mg/dL
Aspartate aminotransferase (AST)	25 U/L	24*-16** U/L	0-31 U/L
Aspartate aminotransferase (AST)	11 U/L	7*-4** U/L	0-34 U/L
Albumin	3.7 g/dL	2.2*-2.8** g/dL	3.5-5.2 g/dL
Lactate dehydrogenase (LDH)	518 U/L	480*-362** U/L	0-247 U/L
Urea	38 mg/dL	66 mg/dL	7.9-21 mg/dL
Creatine	0.8 mg/dL	1.3 mg/dL	12-30 mg/dL
Na	144 mmol/L	134 mmol/L	136-146 mmol/L
K^+	4.7 mmol/L	3.8 mmol/L	3.5-5.1 mmol/L
Ca^{++}	9 mg/dL	6.9 mg/dL	8.8-10.6 mg/dL
Tumor marker values			
Cancer antigen 125 (CA 125)	388 U/mL	-	0-35 U/mL
Cancer antigen 15-3 (CA 15-3)	703 U/mL	-	0-31 U/mL
Cancer antigen 19-9 (CA 19-9)	8.3 U/mL	-	0-35 U/mL
Carcinoembryonic antigen (CEA)	<0.5 ng/mL	-	0-3 ng/mL

*Result of the first test; **Result of the second test.

during the surgery. Treatment options other than the surgery performed will be planned after the completion of surgical recovery.

Drugs Used

Pethidine Hcl 100 mg 2 × 1 [intramuscular (IM)], misoprostol 200 µg 3 × 2 [per oral (PO)], dimenhydrinate 50 mg 3 × 1 [intravenous (IV)], metoclopramide 10 mg 3 × 1 (IV), ceftriaxone disodium 1 g 2 × 1 (IV), enoxaparin sodium 4000 ANTI-XA IU 1 × 1 [subcutaneous (SC)], ranitidine 50 mg 3 × 1 (IV), nitroimidazole 1 g 3 × 1 (IV), furosemide 20 mg 2 × 1 (IV), amlodipine 10mg 1 × 1 (PO), metoprolol succinate 50 mg 1 × 1 (PO), acetylsalicylic acid 100 mg 1 × 1 (PO). Table 1 shows laboratory results of the patient before and after the surgery.

Classification of Main Conservation Principles in Levine's Conservation Model for the Care Process of the Case

Data for the current health history are classified as follows according to 4 main conservation principles of LCM. Problem areas were defined, and a nursing care plan was prepared through NANDA and NIC classification system for the patient who was assessed in 4 main areas according to the LCM model.

Principle 1 Conservation of Energy

Conservation of energy refers to maintaining the required balance to perform vital activities. Nursing interventions are planned to conserve the energy of individuals. Physical activity, nutrition, and body temperature are associated with this principle of LCM.[5-8] The patient fell within class I obesity based on her body mass index. However, she stated that she lost weight when she was hospitalized. The patient was interviewed on postoperative seventh day (11th day after hospitalization). The orally fed patient had nausea. Her input was 2900 cc and output was 2250 cc. Foley catheter was removed on the fifth day after the surgery. There was no problem in micturition after the removal of the catheter. The defecation frequency was once a day after the surgery. The patient stated that she could sleep at the hospital. Although her sleep was interrupted due to coughing, she reported that she was well-rested in general. Vital signs were as follows: pulse: 74 beats per minute, blood pressure: 125/61 mmHg, body temperature: 36.4°C, respiration: 22 breaths per minute. The patient stated that she had pain in her abdomen, and her score on the visual pain scale was 5. She could walk after the surgery with the help of her daughter. Her daughter stated that the patient could actually walk

Table 2. Nursing Process Based on the Principle of Conservation of Energy.[9,10]

Nursing Diagnosis	Aim	Objective(s)	Interventions	Assessment
"Nutrition less than body requirements" due to reduction in oral intake and nausea	Ensure sufficient and balanced diet	The patient will comply with defined nutritional recommendations	- The individual's dietary pattern and requirements will be assessed - Daily caloric intake will be determined and bodyweight will be monitored - Fluid input and output volume will be followed up - Oral care will be performed before and after meals - Smaller and frequent portions will be provided to decrease nausea - Dehydration symptoms such as skin turgor and dry tongue will be monitored - Antiemetic treatment will be administered when needed	- There is no vomiting, nausea still continues intermittently - It was observed that she was careful about her diet
"Risk for deficient fluid volume" due to surgical operation, nausea, reduction in oral intake	Maintain fluid–electrolyte balance	Sufficient liquid will be taken, and dehydration symptoms will be eliminated	- Dehydration symptoms such as skin turgor and dry tongue will be monitored - Vital signs will be monitored - Fluid input and output volume will be followed up - The patient will be supported regarding oral feeding - Liquid support will be provided if oral intake is limited - Surgical incision site will be evaluated - Bodyweight will be monitored on a daily basis - Tests (Htc, BUN, sodium, potassium, protein) will be performed to monitor fluid and electrolyte changes	- There is no vomiting, nausea still continues intermittently - It was observed that she was careful about her diet and fluid intake - There were no signs of dehydration
Self-reported "acute pain" due to radical surgery	Stop the pain and provide relief to the patient	The patient will express that her pain is relieved verbally or non-verbally	- The location and severity of the pain will be assessed - Practices/procedures that increase the pain will be minimized - Changes in the pain will be monitored - Non-pharmacological methods (massage, music, rest) to relieve the pain will be performed and taught - Practices to avoid abdominal distension will be performed and proper position will be maintained - Analgesic treatments will be administered upon doctor's instruction when needed and their efficacy will be assessed	- Movement restriction due to pain reduced - VAS score fell from 5 to 3
"Hygiene self-care deficit" associated with stating hygienic requirements and movement restriction due to pain and incision	Support the patient to meet her hygienic requirements	The patient's hygienic requirements will be met The patient will state that she is relieved	- Mobility of the patient will be ensured as soon as possible - The patient will be supported for the activities she can perform - Her pain will be alleviated to facilitate her mobility - A suitable environment will be provided for a bed bath when needed	- She stated that she could meet her hygienic requirements with support (from her spouse/daughter) - She keeps getting support from her daughter regarding mobility

Table 3. Nursing Process Based on the Principle of Conservation of Structural Integrity.[9,10]

Nursing Diagnosis	Aim	Objective(s)	Interventions	Assessment
"Activity intolerance" due to pain, fear (due to previous hip and knee replacement), and surgery	Prevent possible complications due to activity intolerance Ensure physical mobility	She will perform daily life activities more easily It will be ensured that she will express her fears	- The location and severity of the pain will be assessed - Practices/procedures that increase the pain will be minimized - Her incision site will be supported when she coughs - She will be instructed to do active and passive exercises in the bed and her position will be changed frequently - Daily physical activities (e.g., ambulation, personal care) will be accompanied as needed - Relevant measures will be taken against the risk for falls - Increased activity will be encouraged	- The patient keeps getting support from her daughter due to her fears - It was observed that she was willing to do exercises in the bed
"Risk for falls" due to anemia, surgery, chronic disease, and medications	Avoid the risk for falls	There will be no falls or injuries	- "ITAKI Fall Risk Scale" will be used for the risk for falls - Bed rails will be raised, and it will be checked if the brakes of the bed are locked - It will be ensured that the room will be illuminated sufficiently - The patient will be encouraged to wear non-slip slippers - She will be assisted during walking	- No falls or injuries occurred
"Risk for delayed surgical recovery" associated with the radical surgery underwent	Prevent delayed surgical recovery	There will be no delay in surgical recovery	- Vital signs will be monitored - Sufficient liquid will be taken - Fluid input and output volume will be followed up - Pain will be assessed - Surgical incision site will be monitored - Dressing on the incision site will be changed aseptically, the condition of the incision site and the presence of any allergic reaction to tapes will be assessed - Deep breathing and coughing exercises will be done - It will be ensured that the patient will consume protein- and carbohydrate-rich foods - Emotional support will be provided to the patient as well as her spouse and daughter	- No delay was observed in surgical recovery
"Risk for infection" due to frequent vaginal infection, lack of perineal hygiene, hospitalization, presence of IV catheter, and surgery	Prevent infections in the patient and protect the patient from complications caused by infection	Body temperature will be stabilized There will be no redness or discharge at the incision site Vaginal discharge will be odorless Laboratory findings will be normal	- Surroundings will be organized properly after each care - Number of visitors will be minimized - Hand hygiene will be done before and after each contact with the patient - Hand wash and its importance will be told - Catheter site and incision line will be monitored for signs of infection, followed up and cared for by using aseptic techniques - Vital signs will be monitored - Blood/urine sample will be collected for diagnosis when needed - Treatment will be administered according to instructions of the physician if there is an infection - The patient will be trained on perineal hygiene and genital infections - Sufficient liquid will be taken - Signs and symptoms of infection will be explained to the patient's spouse and daughter	- There was no infection

(*Continued*)

Table 3. Nursing Process Based on the Principle of Conservation of Structural Integrity. (*Continued*)

Nursing Diagnosis	Aim	Objective(s)	Interventions	Assessment
"Risk for bleeding" due to surgical intervention, post-operative period, and the use of anticoagulants	Assess the risk for bleeding	Vital signs will be stable, urine output will be 30 mL/h and above There will be no signs of shock and bleeding	- Vital signs will be monitored - Vaginal bleeding and/or sanitary napkin change will be monitored - Laboratory findings will be monitored - Signs and symptoms of shock will be monitored - Surgical site will be assessed in terms of bleeding, dehiscence, and evisceration - Fluid input and output volume will be followed up - Preparations will be made for urgent interventions against the risk for bleeding	- There was no hemorrhagic shock
"Ineffective health maintenance" due to insufficient information/ behaviors on treatment, care, and health (e.g., smoking, insufficient consumption of milk/ dairy products, genital hygiene, breast self-examination, vulvar self-examination)	Exhibit behaviors to promote health Take part in health-related decisions	The patient will define high-risk behaviors for health condition Desired health behaviors will be observed	- Insufficient knowledge affecting the maintenance of health will be identified - Primary protective health information (e.g., healthy diet, regular exercise) will be assessed and training on such information will be planned - Secondary protective information (e.g., providing treatment, identifying risk factors such as smoking, breast self-examination, vulvar self-examination) will be assessed and training on such information will be planned	- The patient defined high-risk behaviors for health condition - She was willing to perform healthy lifestyle behaviors - She stated that she did not smoke during her stay at the hospital, and she was willing to quit smoking - She stated that she would perform regular breast self-examination and vulvar self-examination

unaided, but she was afraid as her mother had hip and knee replacement, therefore, she wanted to help her mother and could not leave her alone. The patient had limited activity. She stated that she usually takes a shower every other day; however, she was uncomfortable as she could not take a shower for 11 days. She also stated that she wanted to go home and take a shower right away. Four nursing diagnoses were determined as "nutrition less than body requirements," "risk for deficient fluid volume," "acute pain," and "hygiene self-care deficit,"[9-10] and the nursing process is shown in Table 2.

Principle 2 Conservation of Structural Integrity

This principle focuses on nursing interventions for the healing process. Prevention of wounds, wound healing, and prevention of complications are associated with the conservation of structural integrity.[5-8] Midline laparotomy was performed during the surgery. The surgical incision was covered with dry gauze. Six nursing diagnoses were determined as "activity intolerance," "risk for falls," "risk for delayed surgical recovery," "risk for infection," "risk for bleeding," and "ineffective health maintenance,"[9-10] and the nursing process is shown in Table 3.

Principle 3 Conservation of Personal Integrity

This principle emphasizes the uniqueness and individuality of people. Conservation of personal integrity is associated with an individual's self-awareness, decision-making process, values, and privacy.[5-8]The patient was open to communication and showed adherence to treatment and procedures. However, the diagnosis of ovarian cancer was not shared with the patient yet. She was told that she underwent surgery due to a mass in her reproductive organs. Her daughter and family knew the diagnosis. The patient joined the decisions within the family and personally in an active manner. She stated that her husband and children respected her decisions. She stayed in a single patient room. The patient stated that as she was in menopause and refrained from sexual activity, she was not affected by the surgery. She added that she was relieved as her complaints such as shortness of breath and swelling in the abdomen before the surgery have resolved. She wanted to recover and go back home right away. Three nursing diagnoses were determined as "risk for body image disturbance," "risk for sexual dysfunction," and "risk for suffering" due to loss of reproductive organ based on the principle for conservation of personal integrity,[9-10] and the nursing process is shown in Table 4.

Principle 4 Conservation of Social Integrity

This principle involves love, respect, and sharing. The individual resides within an ethnic group, a religious group, a community, and a political system. Nurses should have sufficient information on the individual's social circle and respect the requirements for conservation of social integrity.[5-8] The patient's daughter stayed with her as a companion. Her daughter assumed the patient's care during the hospitalization process. She stated that the patient's husband and other children would also support the patient after she was discharged. According to the principle of conservation of social integrity, the

Table 4. Nursing Process Based on the Principle of Conservation of Personal Integrity.[9,10]

Nursing Diagnosis	Aim	Objective(s)	Interventions	Assessment
"Risk for body image disturbance" due to increased dependence on some daily life activities, privacy for reproductive organs, being in post-operative period, disruption of tissue integrity associated with surgical intervention, and loss of reproductive organs	Facilitate adaptation to changing body image Create a positive sense of self	The patient's adaptation to body image will be facilitated after the surgery She will be allowed to express herself	- The patient will be allowed to express her thoughts regarding what reproductive organs mean to her and the loss of such organs - She will be encouraged to share her emotions with her significant others - She will be provided with spouse/family support - Her self-confidence will be boosted by emphasizing her individual characteristics as a woman - Her stage in adaptation to body image (incident, re-treatment, acceptance, and remodeling) will be determined - Information on surgery site and post-operative requirements will be provided to the patient as well as her spouse/daughter and cooperation with the healthcare team will be made on this matter - Situations that affect the sense of self adversely and coping skills will be determined - Positive coping skills will be improved and negative ones will be changed	- It was observed that the patient focuses on the decrease in her physiological problems after the surgery - Her adaptation process is still ongoing
"Risk for sexual dysfunction" due to the absence of sexual intercourse after menopause, having a surgical operation and pain	Ensure that the patient can have a satisfactory sexual intercourse	She will be able to have satisfactory sex life	- Details of sexual problems will be learned from the patient and characteristics related to sexual function will be assessed - Privacy and confidentiality will be achieved - She will be provided with information on situations that can alter the sex life (e.g., diseases, periods in life, medications, stress) - Duration and possible causes of sexual dysfunction will be determined - It will be ensured that she will express her emotions - Possible issues that can be experienced by women who underwent radical hysterectomy (e.g., decreased lubrication, loss of sex drive, difficulty with reaching orgasm and dyspareunia) will be discussed - The importance of keeping the vaginal canal open will be emphasized, and she will be informed about the use of lubricants - She will be encouraged for sexual activity after the abstinence of 6 weeks post-operatively in cooperation with the physician - Spouse support will be obtained during sexual counseling	- The risk for sexual dysfunction still remains
"Risk for suffering" due to the loss of reproductive organ	Ensure that the patient expresses her emotions	She will be able to express her emotions regarding the grief properly She will be able to notice the issues regarding pathological grief process	- The patient and her family will be allowed to express their fears and concerns, they will be reassured and supported - The patient will have a suitable environment and time for counseling - An empathic approach will be used - Grief reactions of the patient and her family will be supported - Family members will be encouraged for identifying their emotions and supporting each other - It will be ensured that the patient undergoes loss/pain/grief stages - She will be encouraged for expressing anger verbally - Cooperation will be made for professional psychological support when needed	- The grief process of the patient and her family is still ongoing

Table 5. Nursing Process Based on the Principle of Conservation of Social Integrity.[9,10]

Nursing Diagnosis	Aim	Objective(s)	Interventions	Assessment
"Family mobilization" to promote the patient's health and affect it positively	Ensure that the family members go through this process in a manner to minimize the effect on family dynamics	The family will be able to cooperate during the home care process She will be aware of existing support systems	- The sources and strengths of the family, family members, and family support systems will be determined - The patient will be informed about the developments in the patient's condition and her care - The family members will cooperate in planning and administration of the changes in the patient's treatments and lifestyle - The family members will be allowed to join the patient's care process - The family members will be encouraged to realize their emotions	- The patient's spouse and children will support the home care process - The patient's daughter takes part in her care actively

nursing process based on the nursing diagnosis of "family mobilization"[9,10] is given in Table 5.

Discussion

While ovarian cancer ranks third in gynecological cancers in terms of incidence, it ranks second in terms of mortality.[1] Absence of specific symptoms of ovarian cancer in the early stage[3,11] causes delayed diagnosis,[12] which is associated with high mortality. Radical surgeries, chemotherapeutic agents, and other procedures performed in the treatment of gynecological cancers may affect care capability and quality of life adversely.[13-15] Nursing models can be used to assess care requirements of individuals systematically in this process.[6-8] In our study, the adaptation of the patient to the radical surgery process and her holistic care were planned in accordance with LCM. Four conservation principles of LCM are founded on improving quality of life. There are limited studies on nursing care process in LCM.[16,17] There is literature on presentation of Turkish cases in pediatric health nursing designed according to LCM.[18,19] It was determined that 2 of the studies involving LCM were associated with women's health, and they were designed to examine violence in pregnancy[16] and complementary and alternative treatments in gynecological cancers.[17] Our study focuses on care requirements for gynecological cancers. In our study, nursing diagnoses associated with the patient were grouped by 4 main principles of LCM. Diagnoses specified based on conservation of energy and structural integrity are associated with physiological problems in particular. "Nutrition less than body requirements," "risk for deficient fluid volume," "acute pain," and "hygiene self-care deficit" diagnoses were determined for conservation of energy. The patient was trained for the problems identified (non-pharmacological methods for pain, supporting fluid intake, genital hygiene behaviors, etc.), and the patient's dehydration symptoms, pain score, and dietary pattern were assessed. It was observed that nausea was an important factor for the risk of nutrition requirement and deficient fluid volume and that the patient could consume proper foods for her diet and meet her fluid requirement thanks to nursing interventions and treatments administered. Post-operative pain also interfered the patient's daily life activities and self-care requirements. The patient stated that her pain was relieved after pain interventions (Visual Analog Scale [VAS]:3). Furthermore, her daughter kept supporting the patient with her hygiene requirements.

"Activity intolerance," "risk for falls," "risk for delayed surgical recovery," "risk for infection," "risk for bleeding," and "ineffective health maintenance" diagnoses were determined for the principle of conservation of structural integrity. Although pain interventions reduced the patient's pain score, fears arising from previous surgeries may affect her daily life activities. While the patient could do active and passive exercises in the bed, she used the assistance of her daughter in mobilization. During the follow-up of the patient, no signs of bleeding or infection were detected in the vital signs and laboratory results of the patient. There were no signs of infection in invasive interference areas in the incision line. However, maintaining perineal hygiene with back-to-front motions increases the risk of infection. The patient was trained on perineal hygiene, breast self-examination, vulvar self-examination, smoking cessation, consumption of milk/dairy products as well as treatment and maintenance process. She provided positive feedback on training and could identify high-risk behaviors during the assessment stage. She stated that she wanted to quit smoking; however, no change of behavior was observed after her discharge.

She went through an expected loss and grief process after the surgery and diagnosis of cancer. Although the diagnosis of ovarian cancer was not shared with the patient by healthcare professionals, she knew that she underwent a surgery that caused the loss of reproductive organs. She focused on the alleviation in her pre-surgery acute physiological problems and stated that she had relief due to the absence of her problems such as swelling in the abdomen or shortness of breath. The patient stated that she went through menopause 5 years ago and she was not sexually active. She had no desire for sexual intercourse and stated that she was not affected by the surgery. Also, sexual intercourse is not recommended for 6 weeks following gynecologic surgeries. In the principle of conservation of personal integrity, "risk for suffering" due to loss of reproductive organ, "risk for body image disturbance," and "risk for sexual dysfunction" diagnoses were identified. As the patient focused on her acute physiological problems and diagnosis of malignancy was not shared with her, the risk for possible diagnoses regarding the conservation of personal integrity remained. However, it is important to share the fears related to womanhood and reproduction in sexual counseling. Loss of fertility due to menopause and gynecological cancers may be perceived by women as a threat to sexual identity, ability to reproduce, and body image.[3-15] "Family mobilization" diagnosis is noteworthy for facilitation of the patient's ability to cope with and conservation of social integrity. Women having gynecological cancers may face many problems in the perception of the disease and maintenance of self-care. Supporting the care may help the individual to cope with their problems in this process.[13] In the literature, it was stated that there is a positive correlation between self-care and positive disease perception and that the perception of the disease, particularly in non-metastatic cancers, improves the self-care process.[14] Women experience

denial, disbelief, pain, and guilt, stating that family processes/social support was insufficient and they have concerns for the loss of a part of their womanhood.[15] In our patient, caregiver during the hospitalization was her daughter. The patient's spouse, daughter, and her other children would be the social support mechanisms during the home care after her discharge. It was observed that family dynamics were sufficient to maintain home care.

Limitations of the Case

The case was assessed through LCM in the early stage after the surgery, and the nursing process focused on post-operative surgical recovery and adaptation. The patient was not aware of her diagnosis yet, and her possible grieving process was related to the loss of her reproductive organs. These were the limitations of the case.

Conclusion

The nursing process was assessed based on the 4 basic principles of LCM in the patient diagnosed with ovarian cancer. High-priority problems in the post-operative early stage as well as possible challenges for the patient were grouped. It is believed that 4 basic principles of the model were interrelated and efficient in the identification of high-priority problems and their holistic assessment.

Informed Consent: Written informed consent was obtained from the patient.

Peer-review: Externally peer-reviewed.

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