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## Research Article

### NURSING CARE IN INFECTIOUS DISEASES

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#### Abstract

Infectious diseases are one of the serious disease groups that have been continuing from the past to the present, negatively affecting the life of the society and the individual, and at the same time posing a life risk with complications that may develop. Factors such as bacteria, viruses, fungi, and parasites that cause infectious diseases can be transmitted from a sick individual to a healthy individual in a short time, have a mild or severe course, result in death, recovery, or develop life-long immunity. Health personnel, especially nurses, are faced with traumas, physical, chemical, and biological factors during their work, and in many countries, unsuitable working conditions cause work-related infections (HIV, hepatitis B virus, etc.) and occupational injuries. Unlike other workers, healthcare workers are at high risk for infectious disease agents such as needle sticking, blood-borne transmission, respiratory, droplet, and contact-borne agents, and their risk of catching diseases increases. As a result, nurse care applied during the follow-up and treatment of infectious diseases, although it is intertwined with infection control methods, has a very important place in the treatment of complications due to infections.

**Keywords:** Infectious diseases, nursing, care, infection control, measures, prevention

Infectious diseases are one of the serious disease groups that have been continuing from the past to the present, negatively affecting the life of the society and the individual, and at the same time posing a life risk with complications that may develop. Factors such as bacteria, viruses, fungi, and parasites that cause infectious diseases can be transmitted from a sick individual to a healthy individual in a short time, have a mild or severe course, result in death, recovery, or

develop life-long immunity [1]. These factors can be transmitted as a result of droplet route, contact route, body fluids, and sharps injuries [2]. Health personnel, especially nurses, are faced with traumas, physical, chemical, and biological factors during their work, and in many countries, unsuitable working conditions cause work-related infections (HIV, hepatitis B virus, etc.) and occupational injuries. Unlike other workers, healthcare workers are at high risk for

infectious disease agents such as needle sticking, blood-borne transmission, respiratory, droplet, and contact-borne agents, and their risk of catching diseases increases [3,4,5,6,7,8]

### **Infections Transmitted by Contact**

These are infections such as anthrax, rabies, ticks, pediculosis, scabies, herpes simplex, syphilis, and superficial fungi. The role of the nurse is very important in preventing infections transmitted by contact, and it can prevent the infection as well as be the reason for its spread as a carrier. Therefore, contact isolation precautions should be taken, the patient and his environment should not be touched without gloves, and hand hygiene should be given importance before entering the patient's room and after contact with the patient. The patient should not touch another patient with the glove they are in contact with. Particular attention should be paid to the use of hand hygiene techniques [9]. Nursing care plays an important role as well as attention in terms of isolation. The patient's skin should be evaluated for lesions, wounds, and dryness.

If there is dry skin, antihistamine creams should be recommended. The patient should pay attention to body cleanliness, if there is itching, the patient should be informed that care should be taken not to scratch the area, and the nails should be cut short and straight in case of scratching. It should be informed that a warm shower should be taken at appropriate intervals and that it should be dried with a soft towel after the shower [10]. The medical equipment used for the patient should prevent contact with other patients, and care should be taken to use it only for that patient. After the patient is discharged, the tools and equipment we use in the room and bedside should be disinfected or sterilized.

### **Infections Transmitted by Blood and Body Fluids**

Infectious diseases such as Hepatitis B, Hepatitis C, Hepatitis D, and HIV that can cause significant mortality and morbidity are caused by penetrating injuries, contamination

of damaged skin, or splashing to the mucosa. Written procedures and guidelines have been established in hospitals to prevent the risk of transmission of infection, and the use of masks, gowns, glasses, and gloves, which are considered protective equipment, has become widespread. However, in the guideline created today, it is reported that there is an inadequacy in the compliance of health workers with protective measures and it is not possible to prevent blood-borne and sharps injuries. Therefore, training should be given to nurses and other health personnel at regular intervals, and observations should be made in terms of compliance [11,12,13].

Nurses should pay attention to injury and isolation precautions in terms of protecting themselves, as well as care for the patient in terms of the findings developing in the patient. Patients with infections transmitted by blood and body fluids, see themselves as socially excluded, especially psychologically, and this may cause the patient to refuse treatment.

Particular attention should be paid to avoid prejudiced or criminal care in the approach to HIV patients and to ensure that the patient is psychologically comfortable. Since HIV disease can cause different symptoms in other organs in the body, the nurse should be a good observer.

The patient should be examined in terms of night sweats, fever, difficulty in breathing, nausea, vomiting, loss of appetite, difficulty in swallowing while eating, lesions on the skin, enlarged lymph nodes, and confusion [14]. The appropriate nursing care should be given to them. In the clinical symptoms of patients with acute hepatitis, complaints including itching, nausea, vomiting, loss of appetite, jaundice, dark urine, and light-colored stools could be presented.

Those patients should be followed closely and their intake and output should be followed up. In case of loss of appetite in patients due to nausea and vomiting, weight should be monitored, and the patient should be fed frequently and sparingly. In terms of nutrition, a low-fat, low-cholesterol diet and foods containing sufficient vitamin D should

be preferred, while foods containing high iron and iron supplements and coffee consumption should be avoided. Fluid and electrolyte balance should be provided [15,16]

Transmission may occur as a result of blood and blood product transfusion. During or after the transfusion, any reaction may develop due to the infectious agent, and other reasons, these may be minor symptoms or may result in death. Nurses, in case of reactions during transfusion, firstly, the transfusion is stopped immediately, vital signs are determined, blood cultures are taken from both arms of the patient, and crossmatch and blood group are controlled. Urine is examined for free hemoglobin and then isotonic infusion is started. The patient is examined in terms of bleeding, itching, and respiratory distress. If there are lung findings, oxygen is given and, if there are pulmonary findings, a chest X-ray is taken. If an infection is suspected, a broad-spectrum antibiotic is started, and then the blood product bag is sent to the microbiology laboratory. The reaction is registered and informed about the development [17,18,19].

### **Respiratory and Droplet Transmitted Infections**

Diseases, such as colds (cold), influenza, tuberculosis, tonsillopharyngitis, chickenpox, measles, rubella, mumps, whooping cough, diphtheria, meningitis, pneumonia, viral hemorrhagic fevers (Ebola, Lassa, Marburg) are respiratory and droplet infections.

Tuberculosis and bacterial meningitis take first place as infections that can still threaten people despite the many preventions, antibiotic treatments, and developments in intensive care units [20,21]. It has been reported that the incidence of tuberculosis among healthcare workers at hospitals is higher in nurses than in the general population [22]. In the nursing care of a patient with tuberculosis, first of all, the patient's health history is taken. Findings, such as fatigue, headache, chest pain, fever, night sweats, weight loss, cough, bloody sputum, and painful lymph nodes are

examined [23,24]. The vital signs of patients with tuberculosis are monitored and their oxygen saturation is checked, and oxygen support is provided, if necessary. Patients with tuberculosis should be taken to the isolation room and single rooms should be preferred. If a single room cannot be provided, patients with tuberculosis should be taken to the same room. Room doors should be kept covered; rooms should have a negative pressure ventilation system. If not, windows should be kept open [25,26]. In the approach of healthcare professionals to patients with tuberculosis, they should take isolation relevant precautions. When they enter the room for treatment, they should wear an N95 respirator mask and restrict visitors, because they will be in close contact with the patient during treatment [27,28,29].

For meningitis, appropriate nursing interventions are required for the risk of restlessness, agitation, headache, abdominal and back pain, high fever, increased intracranial pressure, and changes in consciousness level, which are among its clinical findings. Body temperature and other vital signs should be monitored frequently.

Fever should be dropped to a degree that meets the metabolic needs of the brain and regulates blood flow. Changes in consciousness levels should be monitored and recorded [30,31]. There may be a risk of injury and falling due to seizures in patients with meningitis, these conditions should be considered. Since oral intake will cause aspiration in patients with impaired swallowing reflex, IV fluid supplementation should be continued [32]. Patients with meningitis are at risk in terms of an increased intracranial pressure syndrome and should be followed up in terms of symptoms, such as gushing vomiting, visual disturbances, headache, and dilation of the pupils. Fluid restriction should be performed in patients with increased intracranial pressure. Broad-spectrum antibiotics, antiepileptics for seizures, antipyretics for fever, and antiemetics for nausea should be administered by the physician's order [31,32].

## Infections Transmitted by the Digestive System

Diseases, such as hepatitis A and E, typhoid fever, paratyphoid, cholera, dysentery, and salmonella are especially transmitted by the consumption of contaminated water and food and raw and uncooked meat. It is necessary to give importance to both personal hygiene and the hygiene of the food taken. Diarrhea, nausea, vomiting, and fever can be seen in infections transmitted through the digestive tract. In the first care of the nurse, spicy, fatty foods, caffeine, and carbonated drinks should be avoided. Especially the consumption of easy-to-digest foods should be paid attention to, and the patient should be fed less but frequently.

Adequate fluid intake should be ensured during the day, and the patient's intake and output should be monitored. If the patient's fluid intake is limited, parenteral support is provided by the physician's order to maintain fluid and electrolyte balance [33].

## Infectious Diseases and Nursing Care

In infectious diseases caused by factors such as bacteria, viruses, fungi, and parasites, the common clinical symptoms are fever, night sweats, diarrhea, nausea, vomiting, anorexia, cough, difficulty in breathing, weakness, headache, muscle aches, sore throat, runny nose, night sweats, skin rash and itching, jaundice, enlarged lymph nodes.

## Fever and Nursing Care

Although fever is mostly caused by a viral infection, there may also be a sign of a serious bacterial infection, such as pneumonia, meningitis, sepsis, and urinary infection [34]. Therefore, nurses should be careful about the febrile patient from multiple perspectives. The patient should be followed up in terms of a rash or redness in the body along with fever. To detect the microorganism causing the infection and to treat it accordingly, a blood culture is taken from the patient in cases whose temperature is 38

degrees or higher, and then antipyretic medication is administered by the physician's order in fevers of 38° C and above.

In sub febrile fever, hourly fever is checked. If a blood culture will not be taken from the patient, a cold cloth is applied to the joint areas, care is taken to ventilate the patient's room, and thin, non-squeezing clothes are put on. It is necessary to examine other vital signs together with fever [35].

## Anorexia, Nausea, vomiting, diarrhea, and nursing care

They are the most common symptoms after fever. In nursing care, nausea and vomiting should be minimized, the patient should be provided with normal fluid and food intake as soon as possible, and the liquid electrolyte balance should be regulated. Especially in the individual with vomiting, it should be questioned whether the vomiting is in the form of gushing. If the consciousness is closed, it should be laid on its side. To prevent tracheal aspiration, the head should be turned to the side in the semifowler position (The patient is usually on their back.

The bed angle is between 30 degrees and 45 degrees. and the legs of the patient may be straight or bent). The intake and output should be followed up and checked in terms of vital signs and dehydration. It is encouraged to eat small and frequent meals and to eat slowly with liquid and soft foods. Avoid low-fat, caffeinated, and carbonated drinks. The patient should be kept in the semi-fowler position after the meal [36,37,38]. Abdominal pain, cramps, and the shape and color of stool should be examined, and the amount and frequency of defecation should be questioned. In patients with diarrhea, the aim is to replace the fluid losses. The most effective and least invasive way of treatment should be preferred. Oral rehydration fluids recommended by the World Health Organization (WHO) are life-saving in infants [39,40]. Oral rehydration therapy (ORT) is the oral administration of appropriate solutions to prevent dehydration caused by diarrhea [41]. These solutions are readily available or can be made using sugar, salt, and water. In patients with diarrhea in the ward, this treatment

includes sugar, sodium, potassium, and chlorine in oral intake. Support is provided by giving saltine crackers, rice, or potato foods. It is recommended to consume foods rich in protein. The patient should be provided with sufficient fluid intake, eat small but frequent meals, and consume foods that are easy to digest. The patient is trained to give importance to personal hygiene.

### **Respiratory distress and nursing care**

Changes in respiratory rate and lung sounds should be noted and then informed to the physician. The patient's saturation is monitored by pulse oximetry. If oxygen is low, oxygen support is provided to the patient. An appropriate position (eg, fowler position) is placed on the patient to correct dyspnea. Minimal activities are performed on the patient. Bed rest is recommended. The patient's vital signs and general condition are monitored. The patient is coughed effectively and deep breathing exercises are performed. Fluid intake is ensured and postural drainage is applied. Systemic or metered-dose inhalers are administered to reduce inflammation by the physician's order. Nursing care is important to prevent possible complications, increase the effectiveness of treatment, and ensure a healthy discharge [42,43,44].

### **Nursing Approach in the Treatment of Infectious Diseases and Its Side Effects**

Antibiotic treatment is a way to eliminate bacteria that cause infectious diseases. In addition to the benefits of antibiotics, as with all other drugs, they have undesirable side effects. While these side effects can be so simple as skin rash and itching that they do not require the discontinuation of the antibiotic or are so serious as life-threatening, such as anaphylaxis [45]. If the patient develops anaphylaxis due to the effect of the drug, the drug causing the problem should be discontinued first, vital signs should be monitored, and spare vascular access should be established for the patient. Airway patency

and consciousness should be examined immediately and epinephrine should be administered intramuscularly. It should be determined whether the patient is dyspneic or hypotensive. If there is an airway obstruction, intubation or tracheostomy is required, or a cardiopulmonary arrest is present, resuscitation should be performed. If there is a shock or it is expected to develop, the legs should be lifted and intravenous fluids should be given [46,47]. If the patient does not respond to the procedures or remains to be hypotensive or has respiratory distress, the patient should be followed up in the intensive care unit. If fluid therapy is not sufficient, vasopressor drugs may be given [48,49].

### **Infectious Diseases and Prevention**

Delays in the diagnosis of infectious diseases can lead to the continuation of active transmission, secondary drug resistance, and an increase in mortality. The most important way to eradicate this infection is vaccination [50,51]. Since healthcare workers encounter infections more frequently, tetanus, pneumococcal, hepatitis A, hepatitis B, and meningococcal vaccines should be completed. Blood parameters, chest X-rays, and respiratory infectious disease screenings should be performed for healthcare personnel at higher risk of infection at regular intervals [52].

As a result, nurse care applied during the follow-up and treatment of infectious diseases, although it is intertwined with infection control methods, has a very important place in the treatment of complications due to infections.

There is no conflict of interest.

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