

Orem's Self-care Deficit Theory and Nursing Care in Relation to Pneumonia: A Case Report

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ABSTRACT This study was designed to determine the self-care needs of pediatric patients with pneumonia according to Orem's Self-care Theory and to present them for nursing care. Establishing a scientific ground is one of the primary purposes of a professional discipline as well as a sine qua non of professionalization. Nursing is an applied medical discipline based on a professional philosophy, theory, practice and research. Orem, a leading theoretician of nursing practice, points out an interaction between human beings and their environment. Orem also argues that human beings are unique and unitary beings and that they cannot be separated from their environment and accordingly, delineates the components of his nursing theory into humans, health, environment, and nursing practice. This paper, therefore, discusses Orem's theory of self-care deficiency in relation to pneumonia.

INTRODUCTION

A scientific body of knowledge is one of the primary motives of a professional discipline and a criterion of professional development (Boyacioglu and Kutlu 2014; Kaya et al. 2010; Vicdan Kacaroglu 2010). Theoretical foundations and traditional models of professional practice provide guidance while conceptualizing research problems and testing hypotheses (Inan Sengun et al. 2013; Boyacioglu and Kutlu 2014; Naji et al. 2009). Nursing is an applied medical science based on a nursing philosophy, theory, practice and research (Vicdan Kacaroglu 2010; Samancioglu et al. 2010). Nursing theoreticians have developed a number of theories in order to measure the consequences of nursing practices and to investigate the correlation between professional nursing care and practice (Pektekin 2013; Boyacioglu and Kutlu 2014). Professional theories support ethical values and help develop pro-

fessional knowledge. They also ensure professional autonomy, since they improve clinical decision-making and analytical thinking skills. Additionally, professional theories also focus on developing and testing professional knowledge, and thus, promote professional development of nursing. Furthermore, professional theories fundamentally facilitate the production of a set of professional terms of reference peculiar to nursing practice (Velioglu 2012; Vicdan Kacaroglu 2010). Nursing theories generally aim to identify professional phenomena and explain their relations with each other in order to conceptualize nursing practice, besides clarifying the definitions of nursing care (Meleis 2007). Nursing theories also assist in evaluating, observing, and focusing on individual performances and problems, and they enable nurses to develop critical thinking skills in order to provide a framework for nursing practice (Chinn 2001; Fawcett et al. 2001; Ozan Durgun and Okumus 2013). Self-care, on the other hand, is defined as the sum of activities initiated by individuals to maintain a high quality of life, health, and well-being, and it is considered as one's constant involvement in their own health promotion. Self-care theory, accordingly, elicits the necessity of self-care skills to sustain a high quality of life (Ozturk and Karatas 2008; Velioglu 2012). The

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self-care theory was first established by Dorothea Elizabeth Orem in 1956 and revised between 1971 and 2001 as Self-care Deficit Nursing Theory (Orem 2001; Avdal Unsal and Kizilci 2010; Gerceker et al. 2012; Altay and Cavusoglu 2013; Blok 2016). Orem's theory is simply based on three nursing theories employing self-care, therapeutic, self-care demand, self-care deficit, nursing power, and nursing system concepts (Pektekin 2013). Orem's self-care deficit theory stands out as a modern and popular nursing theory (Naji et al. 2009). Orem suggested a mutual relation between human beings, life, health, environment, and wellbeing (Dashiff et al. 2006). Orem emphasized that human beings are unique and unitary and that they cannot be considered separately from their environment. She further defined a nursing paradigm in accordance with her definitions of human being, health, environment and nursing (Avdal Unsal and Kizilci 2010; Gerceker et al. 2012; Blok 2016). Orem argued that self-care is an innate ability and that nursing practice should deal with the external factors that interfere with the development of those abilities (Simmons 2009). Orem believed that nursing is an art and that it has also certain intellectual dimensions such as making decisions in critical situations, designing, organizing and planning care as well as practical dimensions like coping with care challenges (Aish and Isenberg 1996; Ozkan and Ozturk 2006; Samancioglu et al. 2010).

Orem defined self-care as the practice of everyday life activities that individuals efficiently and intentionally perform on their own on a continuous basis. Self-care refers to a learned attitude developed with personal interest, education and medical experiences (Tomey and Alligood 1998; Ozturk and Karatas 2008; Velioglu 2012). Orem's theory is an umbrella theory that is comprised of three nursing theories, which are subsequently discussed (Orem 1990; Baker and Denyes 2008; Altay and Cavusoglu 2008; Pektekin 2013).

Self-care Theory

Self-care is defined as the activities initiated and performed by individuals to maintain a high quality of life, health, and wellbeing, and it is considered as a learned attitude acquired through personal interest, education and medical experiences (Orem 2001; Avdal Unsal and

Kizilci 2010; Hartweg and Pickens 2016). The theory explains what self-care is and why it is necessary to sustain life (Ozturk and Karatas 2008; Pektekin 2013). According to self-care theory, human beings are capable of defining and covering their own needs (Avdal Unsal and Kizilci 2010). Nurses, then, are expected to develop skills to identify self-care skills of care receivers and to strive to understand those skills. When self-care power is not properly identified, nurses are unable to do the following:

- ♦ Make decisions about already present or potential self-care deficits and their causes.
- ♦ Produce a sound method to deliver valid and reliable assistance as well as pick up and practice useful nursing systems (Yesilbalcan Usta et al. 2005).

Self-care Deficit Theory

The theory illustrates when and how nurses should assist individuals (Ozturk and Karatas 2008; Pektekin 2013; Hartweg and Pickens 2016). Orem underlines the significance of personal control in self-care and characterizes self-care as one's awareness and self-efficacy towards their needs on a continuous basis (Yildiz 1997; Hartweg and Pickens 2016). This theory necessitates the care receiver's active involvement in his or her own care. However, nurses can evaluate and compensate for the deficiencies of those who are unable to perceive and react due to impairments in psychomotor functions (Samancioglu et al. 2010).

Nursing Systems Theory

Orem asserted that nursing care and self-care procedures include both intellectual and practical dimensions. Self-care theory demonstrates that nursing care is meant to determine why the care receiver needs nursing, to organize and plan a nursing care, and to maintain the sustainability of nursing care (Ozturk and Karatas 2008; Velioglu 2012; Pektekin 2013).

METHODOLOGY

This case report was designed to determine the self-care needs of pediatric patients with pneumonia according to Orem's Self-care Theory and to present them for nursing care. A verbal consent was obtained from the case, and the

case was treated by the university and her family.

The adolescent care receiver was diagnosed with pneumonia and experienced difficulties in self-care owing to etiological agents and symptoms. The nurse assisted the care receiver in carrying out her self-care when needed.

RESULTS

Case Report

Anamnesis

Name: GG

Age: 10 years old

Gender: Female

Diagnosis: Pneumonia

Complaints: Asthenia, fever, cough and inappetence

Patient's History: She complained of cough and secretion for 15 days. She had a fever (maximum temperature was over 39°C) for two days. She was admitted to the emergency room on 22nd December 2014 and immediately hospitalized in the clinic.

Family's Reaction: Her family was deeply concerned about her condition.

Medical History: The patient was previously hospitalized for a viral upper respiratory infection and discharged with recovery. No prior history of operation was noted.

Family History: Her mother and father were 39 and 43 years old respectively, and there was no kin marriage in the family, the family had two children, they belong to the low socioeconomic level, the family was self-employed, and there was no pneumonia history in the family.

Physical Condition

Vital Findings: Pulse: 96/m, Respiratory Rate: 28/m, Blood Pressure: 100/60, Fever: 37.2°C

General Status: Asthenic and weak

Respiration: Dyspnea (+), Cough (+), Secretion (+) and Wheezing (+)

Complexion: Normal

Weight: 22 kg (3-10%)p

Height: 125 cm (3-10%)p

Diet: She ate only her favorite food for all meals, she had a poor appetite (+), and liquid intake was supported.

Elimination: Urine and feces control were normal for her age. Urine frequency: 5-6 times a day. Defecation frequency: once per day.

Sleep and Rest: Her sleep was often interrupted by dyspnea, coughing and wheezing.

Pain: She had a 6 grade (VAS) a headache.

Vaccination: She had been vaccinated properly.

Communication: She could easily communicate with people and had good communication with health personnel as well. She could express how she felt or if she felt any pain.

DISCUSSION

Self-care Needs

Self-care needs are open manifestations and expressions of insights concerning a patient's needs about which valid hypotheses are put forward and essential instructions are provided (Velioglu 2012).

Self-care needs are categorized into three groups:

1. Universal Self-care Needs
2. Health Deviation Self-care Needs
3. Developmental Self-care Needs (Yesilbalcan Usta et al. 2005; Dashiff et al. 2006; Gerceker et al. 2012; Pektekin 2013).

In light of this theoretical background, the nursing care based on Orem's Self-care Deficit Theory was planned for a 10-year-old female patient who had been diagnosed with pneumonia, and hospitalized in a children's hospital. Each phase in the theory will be presented along with the patient's data.

Universal Self-care Needs

Self-care is defined as activities initiated and performed by individuals to sustain life, health, and wellbeing as well as one's involvement with their health promotion (Ozturk and Karatas 2008). Orem claims that the purpose of nursing practice is to assist care receivers until they can take care of themselves on their own and ensure self-efficacy at their earliest convenience (Samancioglu et al. 2010).

Universal self-care needs are instrumental in maintaining the physical and functional unity of human beings in all phases of life. Orem specifies universal self-care needs as air, water, nutrition, elimination, the balance between activity

and rest, isolation and social interaction, avoiding dangers, and development of individuals and their functions (Dashiff et al. 2006; Ozturk and Karatas 2008; Pektekin 2013).

Orem (2001) points out that individuals who manage their self-care are self-care agents, in other words, the person making the action (Fawcett 2005). Those who assist individuals who cannot manage their own self-care are called dependent care agents (Avdal Unsal and Kizilci 2010).

Caregiving pediatric nurses know that pneumonia is common in childhood and particularly more frequent in early childhood and infancy. They assess the patient in detail keeping in mind that pneumonia may occur as the primary disease or as a complication of another dysfunction. The nurse's analyses for universal self-care need to be based on the patient's data acquired by observation, anamnesis, physical examination and personal communication.

Developmental Self-care Needs

Developmental self-care needs are related to situational factors or maturity, and they manifest during adolescence (Pektekin 2013). These prerequisites can be internal or external and include age, gender, adolescence, health status, sociocultural level, factors that affect health care (example, treatment and diagnostic needs), family structure, daily practices, environmental factors and availability and efficiency of resources (Dashiff et al. 2006). Developmental self-care needs also include sustaining life and human development, preventive care practices to eliminate adverse circumstances, and needs in different developmental phases (Ozturk and Karatas 2008).

A 10-year-old female patient is going through her early adolescence, which is a period of transition from childhood to adulthood, and she is exposed to the influence of physiological, psychological, and sociological factors. Apart from physical changes, one can experience swift changes in their behaviors and ideas as well as their relations with their parents and peers. Care to give pediatric nurses while working with adolescent children should be aware of their anxieties and sensitivities about their bodily changes. Although the physical symptoms caused by their illnesses hinder self-care activities, they are utterly motivated to develop self-care skills

and manage their self-care activities on their own. Long durations of hospitalization eventually create anxieties about school and their future. As home care is of utmost importance for these children, they should be informed about self-care and be provided with sufficient environment and time. Self-care practices and drills should be repeated such as recommending and demonstrating frequent but little amounts of liquid intake, position change every two hours to allow pulmonary drainage, and percussion and postural drainage in order to enable children to manage self-care activities. If the child is also receiving inhalation therapy, therapy apparatuses should be used. If the child has bacterial pneumonia, antibiotics should be used at home, and rest must be included in the education program.

Health Deviation Self-care Needs

These needs emerge when an individual's physical unity is disrupted (edema or tumors), when an individual's physical functions are impaired (menopause or movement restriction) and when their behaviors have changed due to long-term immobility or overexposure to tobacco smoke (Pektekin 2013). When individuals are deprived of universal care needs in cases of such health deviations caused by their disease or deficiency, they need to manage their self-care on their own (Ozturk and Karatas 2008). These needs are associated with physical conditions caused by a disease and changes in human physiology (Dashiff et al. 2006). The symptoms of the disease are observed and the disease and its influences on the individual are assessed to determine self-care needs (Ozturk and Karatas 2008).

Pneumonia is an acute inflammation that develops in the lung parenchyma (alveolus and interstitium) in response to infectious or non-infectious agents, often including bacteria. Pneumonia can be characterized as a clinical case diagnosed with fever, respiratory symptoms, and parenchymal involvement with the help of physical examination and/or chest radiography findings (Kocabas 2010). Nurses are required to identify and assess the physiopathology of the disease as well as its effects and prognosis so as to assist patients to manage their self-care. This disease is most common in situations of immune system deficiencies (insufficient cough reflex, insufficient mucociliary effect, insufficient im-

mune and inflammation response to inhaled pathogens, insufficient alveolar macrophages).

Pneumonia is the most frequently reported disease, with high mortality rates among childhood infections in developing and developed countries (Kurcer et al. 2007; Arisoy 2009; Celebi et al. 2010; Kocabas 2010). Kurcer et al. (2007) reported that pneumonia is the second most common cause of death and the most commonly reported infection among children in Turkey according to the results of disease burden studies in Turkey. Respiratory infections were the second most common cause of death (13.4% in 0-4 years old children and 6.5% in 5-14 years old children) and it made up fourteen percent of all deaths among 0-14-year-old children (Kurcer et al. 2007; Kocabas 2010).

Pneumonia is caused by many factors. The leading causes of pneumonia among children older than 5 years are *Mycoplasma pneumoniae*, *Streptococcus pneumoniae* (pneumococcus) and *Chlamydia pneumoniae*. However, *Streptococcus pneumoniae* (pneumococcus) and *Chlamydia pneumoniae* are less frequent causes. Post-neonatal pneumonia is commonly caused by pneumococcus (Arisoy 2009). The only source of pneumonia bacteria is human beings, and patients are contaminated through droplet spread. Pneumonia is most common in winter and spring and crowded indoors increase the risk of contamination (Arisoy 2009).

According to the World Health Organization (WHO) criteria, cough and/or dyspnea in children aged between 2 months and 5 years may be an indicator of pneumonia (Celebi et al. 2010). Sudden fever in older children (almost always $e^{38.5^{\circ}\text{C}}$), shivering, productive cough, chest pain and toxic appearance are typical of pneumonia (Kocabas 2010).

Therefore, it is of utmost importance to assess the changes in the respiratory system and relevant respiratory symptoms while conducting nursing care, which necessarily includes the identification of the symptoms of dyspnea and pneumonia. Any signs of fever, pain or dehydration must be closely monitored. The nurses must carefully handle impaired gas exchange related to abnormal ventilation/perfusion caused by pulmonary infection, obstructive airway deficit due to increased mucus and edema, respiratory deficit due to lower airway inflammation, liquid volume deficit due to fever, tachypnea, insufficient liquid intake, lack of information

about home care and stages of the disease, anxiety about dyspnea and hospitalization of the child, and acute pain related to secondary dyspnea due to cough and disease. The patient must be closely monitored for different stages of pneumonia, serious pneumonia, and critically serious pneumonia.

Nursing Systems Theory

Orem identifies three nursing systems to cover self-care needs of patients:

1. The wholly compensatory nursing system
2. The partly compensatory nursing system
3. Supportive-educative system

The Wholly Compensatory Nursing Systems

This nursing system does not require the patient's active involvement. The patients are wholly dependent on nurses to carry out their daily activities (Ozturk and Karatas 2008; Pektekin 2013; Clari et al. 2016). Sometimes the patients may be unconscious and the nurse would ensure they meet the patients' needs, including oxygenation, nutrition, elimination, hygiene, exercise, and sensory stimuli. The pediatric nurse must closely monitor patients with serious and critically serious pneumonia who may experience symptoms such as traumatic loss of consciousness, groaning, change in complexion, respiration rate, thoracic retractions, nutrition problems, and dehydration. The patient should be monitored to prevent serious problems such as lethargy, cyanosis, response to painful stimulants, tachypnea, apnea, difficulty in the oral intake or no oral intake, and serious dehydration. The nurse should be alert and pay particular attention to the cases of critically serious pneumonia.

The Partly Compensatory Nursing System

The nurse sets up the self-care procedures for the patient and provides the assistance needed (Pektekin 2013). The nurse and the patient have a substantial role in meeting the needs (Ozturk and Karatas 2008). The nurse motivates the patients to manage their own self-care, summon their self-care power, and encourages them to receive care and help (Pektekin 2013). Although self-care attitudes vary at different stages of pneumonia, adolescent patients can manage and participate in many self-care activities such as

nutrition, defecation, mobilization, and treatment in moderate pneumonia. The patient needs guidance and encouragement to carry out and maintain self-care activities on their own. The nursing approach must comply with the stages of child development and the disease, and the nurse should observe and intervene with treatment procedures when necessary. The nurse must also take physiological findings that could lead to serious and critical pneumonia into consideration and must inform the family accordingly.

Supportive-Educative System

The patient can carry out all self-care activities on their own in this system based on education, guidance, an environmental organization and patient support (Pektekin 2013; Ozturk and Karatas 2008).

Pediatric nurses should establish clear and effective information channels with patients and caregiving parents to frame nursing services. Besides, the nurses should inform patients and their parents about the stages of the disease, medication, nursing approach and care for symptoms, and nursing approach in the cases of moderate and serious pneumonia. The parents should be instructed about the organization of a patient's room and environmental organization as well as the significance of bed rest. Moreover, the caregiving nurses are also advised to contact and cooperate with the school management and the parents about school interruption. It is recommended that parents inform the school-teachers and managers about the disease and the patient, if possible.

CONCLUSION

Nursing theories are instrumental in explaining the professional phenomena and their relations with each other to conceptualize nursing practices and to identify nursing care. Self-care is defined as daily life activities initiated and performed by individuals to sustain life, health, and wellbeing, and it is considered as one's constant participation in their own health promotion. Self-care theory legitimizes the urgent need for self-care to maintain daily life activities, which requires the patient to participate in their own care. However, nurses can evaluate and compensate for the deficiencies of those unable

to perceive and perform due to impairments in psychomotor functions.

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