Original paper

Students' Trends in the Selection/Prioritization of Nursing Diagnoses and Challenges of Case Presentation

—— An Analysis of Lists of Problems Created in Case Studies ——

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Abstract

As a method to practice nursing process development, we provide guidance for students to perform a series of steps from assessment, diagnosis, planning, and implementation to evaluation using case studies. This study analyzed nursing diagnoses selected and prioritized by students, focusing on their lists of problems. Nursing diagnoses are defined and disseminated by the North American Nursing Diagnosis Association (NANDA-I).

Such diagnoses are presented in the 10th original version of the NANDA-I Nursing Diagnoses : Definitions and Classification 2015–2017, developed by the association to unify interpretations based on identical nursing diagnoses. They are reviewed once every three years. In this system, nursing diagnoses are selected from 13 domains, and a list of problems is created, giving priority to life-threatening conditions, those requiring emergency management, and those in which problems are clearly (actually) present, in this order, in general. Students without clinical experience tend to face difficulty in appropriately selecting and prioritizing nursing diagnoses in case studies. This study compared nursing diagnoses and priorities entered by students and teaching staff in lists of problems used for case studies. The former showed a tendency to select nursing diagnoses with a focus on the advanced age of patients. On prioritizing nursing diagnoses, they faced difficulty in accurately recognizing the influences of symptoms on the body, possibly due to their insufficient understanding of pathologic physiology.

Key words : case studies, nursing diagnoses, prioritization

1. Introduction

Helping students learn the nursing process has significance in nurturing their scientific thoughts and abilities to practice systematic nursing. The nursing process consists of 5 steps : assessment, diagnosis, planning, implementation, and evaluation. (Shigeno K et at., 2015) Regarding nursing diagnosis, R. Alfaro-Le Fevre emphasized the importance of appropriately selecting nursing diagnoses, stating that "Problems identified at the stage of diagnosis provide a basis for the development of care plans. Similarly, confirmed strengths markedly facilitate the determination of nursing intervention". (Alfaro-LeFevre R, 2002) The nursing process is the basic idea of nursing practice. However, in case studies, students without clinical experience tend to face difficulty in visualizing patients, resulting in confusion when prioritizing nursing diagnoses they have selected.

In fact, it is difficult to appropriately select and prioritize nursing diagnosis based only on presented data, rather than through direct contact with actual patients. Considering such a situation, the present study analyzed students' trends in the selection of nursing diagnoses, in

addition to their reasons for prioritizing 5 of them, during a program to practice nursing process development using case studies, with the aim of providing a basis for appropriate guidance on nursing diagnosis as part of the nursing process.

2. Outline of guidance on nursing process development (Figure 1)

In the [Nursing Process] course, students learn the theory of the nursing process, and practice what they have learned through Nursing Training II in the first and second terms of the 2nd year, respectively. They collect information, and conduct assessment using NANDA-I Classification II. (Herdman TH, 2012) For example, information collection is performed based on the 13 domains defined in this system. On the first assessment, the appropriateness of information collected is examined ; we call this step "primary assessment". On the second assessment, associated information is organized, regardless of the domain ; we call this step "secondary assessment". The association chart schematizes such associations. Through these steps, nursing diagnoses are selected. The appropriateness of each nursing diagnosis for the relevant patient is determined based on the defining characteristics, related factors, and risk factors of such a diagnosis. Subsequently, a list of problems is created, while numbering selected diagnoses in the order of descending priorities. The prioritization of nursing diagnoses aims to determine the directionality of nursing by clarifying interventions needed by patients the most.

3. Guidance for the selection and prioritization of nursing diagnoses

Nursing diagnoses are selected from the 13 domains of the NANDA-I Classification. Referring to their definitions, defining characteristics, and related factors, the most appropriate diagnoses are determined.

After the selection, students prioritize nursing diagnoses based on Maslow's hierarchy of needs. (Akiba K et al., 2013) The highest-priority diagnoses cover life-threatening conditions, such as those related to breathing, circulation, nutrition, thermoregulation, hydration, and comfort. The second highest-priority diagnoses cover conditions with increased risks (at-risk conditions). The third highest-priority diagnoses cover conditions that do not meet safety needs (anxiety, fear, threats), followed by those that do not meet needs related to feelings of love and belonging (isolation, bereavement), esteem (difficulty in hair-washing or other self-care), and goal achievement (self-actualization), in this order. The focuses of such prioritization include : the necessity of emergency management ; solvability ; need for cooperation from other professionals ; patients' own priorities ; causal relationships ; duration of hospitalization ; and discharge destination. (Shigeno K et at., 2015) Furthermore, it should be noted that priorities change daily, depending on patients' wishes, treatment protocols, and conditions. (Sato, 2010)

4. Objective

This study examined students' lists of problems to analyze nursing diagnoses selected by them and their reasons for prioritizing specific diagnoses, with the aim of providing a basis for appropriate case presentation and guidance by
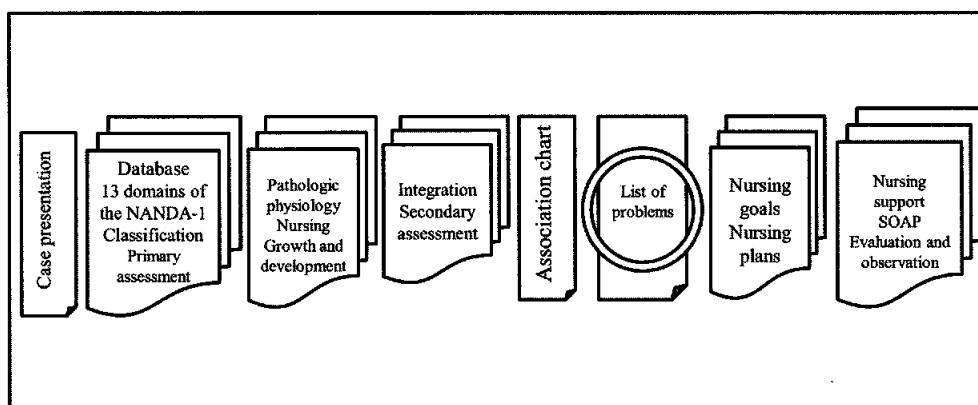

Figure 1   Outline of Nursing Process Development

clarifying students' thought process.

5. Methods

1) Materials

Lists of problems created by 98 second-year students of the Faculty of Nursing, who had completed the [Basic Nursing Activity (Nursing Process) Theory I] course, were used.

2) Study period

The study was conducted within the period between April 1, 2014 and December 30, 2015.

3) Methods

The students' lists of problems, attached to nursing process development sheets used in case studies, were copied to extract nursing diagnoses selected and prioritized (the first to fifth highest) by them.

4) Summary of the presented case

A 78-year-old female used over-the-counter medications to address persistent malaise and slight fever, rather than visiting a hospital. After 2 days, her body temperature reached 38.0X, involving severe coughing with gray-white mucilaginous phlegm during the night-time. When her nocturnal body temperature increased to 38.9℃, she began to suffer from chest pain when coughing. Based on a diagnosis of pneumonia, she was admitted to a hospital as an emergency patient. Due to a loss of appetite, it

was difficult for her to ingest fluids or meals. She was treated with antibiotic drip infusion, oxygen inhalation, and bed rest. Although her family showed cooperative behavior, she was reluctant to trouble them, particularly her daughter-in-law. As physical distress, she complained of breathlessness due to coughing and phlegm on movement, in addition to discomfort due to excess perspiration and high-viscosity saliva.

5) Ethical considerations

The study objective was previously explained to the students to obtain their consent to cooperate. They were also provided with oral explanations of the following : data use was limited to the present study ; participation was unrelated to academic achievements or evaluation ; and privacy was strictly protected.

6. Results

1) Nursing diagnoses selected and prioritized by teaching staff (Table 1)

Table 1 shows the nursing diagnoses selected and prioritized by multiple teaching staff members upon deliberations. The highest-priority nursing diagnosis was <ineffective airway clearance>. They regarded comfortable breathing as the highest-level physiological need in this case, and considered airway clearance to contribute to the prevention of suffocation and atelectasis, which are prevalent among the elderly. They selected <hyperthermia> as the

Table 1 Nursing Diagnoses Selected and Prioritized by Teaching Staff

Priority	Diagnosis	Reason
1	Ineffective airway clearance	○ Normal breathing is a sub-domain of basic needs defined by Maslow. ○ Airway clearance facilitates breathing. ○ Suffocation by tracheobronchial secretions may lead to respiratory complications, such as atelectasis.
2	Hyperthermia	○ Fever promotes basic metabolism, consequently reducing the physical strength. ○ Perspiration promoted by fever leads to dehydration. ○ Fever increases the viscosity of phlegm, making expectoration more difficult.
3	Deficient fluid volume	○ Perspiration promoted by hyperthermia and an insufficient fluid intake result in a deficient fluid volume. ○ Advanced dehydration prevents recovery.
4	Unbalanced nutrition : less than body requirements	○ Dehydration due to fever, decreases in the activity level, and environmental changes have resulted in a loss of appetite. ○ An insufficient dietary intake prevents physical recovery.
5	Disturbed sleep patterns	○ Frequent nocturnal coughing, decreases in the daytime activity level, increased concerns, and anxiety over the future tend to cause sleeplessness. ○ Insufficient sleep negatively influences comfort, recovery, and the prevention of symptom deterioration.

second highest-priority nursing diagnosis, as stabilizing thermoregulation is a physiological necessity, and fever promotes basic metabolism, consequently reducing the physical strength. The third highest-priority nursing diagnosis was <deficient fluid volume>, as this is a sub-domain of physiological needs, and it aggravates senile dehydration. The fourth highest-priority nursing diagnosis was <unbalanced nutrition : less than body requirements>, as this is also a sub-domain of physiological needs, and an insufficient dietary intake prevents physical recovery. The fifth highest-priority nursing diagnosis was <disturbed sleep patterns>; although insufficient sleep negatively influences comfort, recovery, and the prevention of symptom deterioration, the level of priority given to this was the lowest among the 5 diagnoses. (Table 1)

2) Nursing diagnoses selected and prioritized by students (Table 2)

The highest-priority nursing diagnosis was <ineffective protection>, selected by 76.0% of the students and followed by <risk of falls> (63.5%), <deficient fluid volume> (55.2%), <disturbed sleep patterns> (54.2%), and <reduced activity tolerance> (41.7%), in this order. (Table 2)

The most frequent reason for prioritizing <ineffective protection> was to address reduced immunity that requires physical recovery. In the NANDA-I Classification, The diagnosis is defined as a "decrease in the ability to guard self from internal or external threats such as illness or injury", and its defining characteristics include :

anorexia, chils, coughing, dyspnea, insomnia, and alteration in perspiration. The reason for prioritizing <risk of falls> as the second highest was to resolve increased risks due to reduced muscle strength related to an old age and long-term bedridden condition. The diagnosis is defined as "vulnerable to increased susceptibility to falling, which may cause physical harm and compromise health". Similarly, <deficient fluid volume> and <disturbed sleep patterns> were prioritized, in this order, considering that the former, due to aging, increases the risks of dehydration and pneumonia deterioration, while the latter results in unmet physiological needs and delayed recovery from pneumonia. Lastly, <reduced activity tolerance> was prioritized, focusing on age-related activity limitations that lead to decreases in the muscle strength and self-care ability, consequently increasing mental stress and the risk of constipation.

7. Discussion

Students and teaching staff showed different trends in the selection and prioritization of nursing diagnoses.

In the presented case, pneumonia-related coughing frequently occurred, resulting in airway obstruction due to the excessive accumulation of phlegm. This indicated that life-threatening dyspnea might develop if the condition persists. Based on Maslow's hierarchy of needs and basic human needs defined by Henderson, teaching staff selected and prioritized 5 nursing diagnoses :

Table 2 Nursing Diagnoses Selected and Prioritized by Students

Priority	Diagnosis	Reason
1	Ineffective protection	○ A decrease in the physical strength due to malnutrition, sleeplessness, and pneumonia-related coughing is observed. ○ Reduced immunity due to pneumonia, fever, and a loss of appetite increases vulnerability to infection.
2	Risk for falls	○ Bed rest necessary for treatment leads to reduced muscle strength. ○ At present, the patient's legs are weak and unsteady when going to the toilet.
3	Deficient fluid volume	○ A reduced urinary output, fluid loss due to hyperthermia or other factors, and dehydration are observed. ○ A deficient fluid volume aggravates pneumonia. ○ Priority should be given to physiological needs.
4	Disturbed sleep patterns	○ Sleeplessness due to frequent coughing during the night-time results in unmet physiological needs. ○ Insufficient sleep reduces resistance, and prevents recovery from pneumonia. ○ According to Maslow's hierarchy of needs, sufficient sleep is a physiological need, and it is not met in this case.
5	Reduced activity tolerance	○ Bed rest limits body movements, resulting in further decreases in the muscle strength. ○ Bed rest leads to insufficient motor activity, consequently increasing the risk of constipation.

<ineffective airway clearance>, <hyperthermia>, <deficient fluid volume>, <unbalanced nutrition: less than body requirements>, and <disturbed sleep patterns>, in this order.

In contrast, students did not consider such an increased risk of pneumonia among the elderly. Although they had learned about pneumonia in the fields of pathologic physiology and internal medicine, they may have faced difficulty in predicting the influences of symptoms on patients. The number of those who focused on the patient's decreased nutrient intake and hyperthermia (38.0℃) was also limited. A similar study was conducted and reported as follows : "At the end of the 2nd year, students' knowledge of pathologic physiology, understanding of related concepts, abilities to analyze or interpret information, identify the causes of problems, predict possible events, and appropriately select nursing diagnoses were insufficient, revealing their tendency to face difficulty in developing overviews of patients based only on presented information". (Seki T et al., 2005) In the present study, students rarely regarded pneumonia as directly leading to life-threatening conditions, while focusing on the following keywords : the elderly, pneumonia (infection), reduced muscle strength, immunity, and recuperative abilities. In short, they prioritized nursing diagnoses mainly based on conditions characteristic of the elderly, such as reduced recuperative abilities, and this may explain their tendency to give high priority to nursing diagnoses, such as <ineffective protection>, <risk of falls>, and <reduced activity tolerance>.

It has been reported that "Nursing problems and their lists reflect corresponding patients' current health conditions. The important point is that such problems are specific to individual patients, and they are also accurate and appropriate, while basically indicating the causes. As nursing problems show the directionality of nursing by appropriately presenting patients' conditions requiring support, there must be consistency between the goals of support and such problems". (Kume, 2012) When prioritizing nursing diagnoses, nurses with clinical experience relate them to nursing support to be immediately provided. In contrast, students without such experience face difficulty in determining approaches for patients to be initially performed,

or predicting changes in their conditions. In this respect, developing realistic perspectives on patients as living human beings, imagining diseases, and organizing associated information may be challenges of case studies for students, resulting in difficulty in appropriately selecting and prioritizing nursing diagnoses.

8. Conclusion

When selecting and prioritizing nursing diagnoses using case studies, students tended to focus on general problems frequently faced by elderly females, rather than nursing diagnoses based on knowledge of pathologic physiology.

Therefore, in case studies for students, it may be necessary to present relatively simple diseases, and describe changes in physical functions, pathological conditions and factors influencing them, mental and physical responses, treatment, and impairment-related changes in daily life using not only written expressions, but also illustrations, in order to help them visualize patients more easily. Furthermore, for the prioritization of nursing diagnoses in consideration of their definitions, defining characteristics, related factors, and risk factors, the provision of guidance based on Maslow's hierarchy of needs may be effective.

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