

Original paper

Students' Learning of the Home Nursing Process Using Case Studies

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Abstract

In order to appropriately use case studies for learning, it is necessary for teaching staff to create contents that enable students to obtain standardized, consistent, and similar experiences. On the other hand, students are expected to learn about information classification and the thought process from understanding the aims of and grounds for support, as well as its relationships, to resolving problems. The present study examined students' learning of the home nursing process and the contents of 4 cases presented to them, as shown in Tables 1 and 2. On analyzing the contents to determine more effective methods of learning and practice using a limited number of cases, the necessity of developing/devising cases in accordance With the purposes and supporting students' active learning was indicated.

Key words : case study-based learning, learning process, learning items, home nursing

I. Introduction

Learning is the process of understanding the semantic significance of obtained knowledge and applying it. At the same time, it is a type of self-activity that is accomplished only by learners. Case study-based learning is classified as a method of contextual learning, which is more effective to present practical problem-solving contexts than lecture-based, directive, and item-by-item learning. The structure of such learning is characterized by interactions with students' active participation, simulations, and actual cases (Yamada, 2014).

As case study-based learning requires high-level ordering, it is also likely to improve decision-making and critical thinking skills as a form of education. Furthermore, feedback and debriefing opportunities provided by teaching staff

are effective methods of learning, as these facilitate immediate discussions to correct errors, consequently enabling students to concentrate on their learning experiences, and subsequently learn more appropriate and necessary approaches (Oda et al. 2004). Promoted active learning and an enhanced understanding of subjects are also useful to reduce students' anxiety over training.

For teaching staff, it is necessary to create contents that enable students to obtain standardized, consistent, and similar experiences, in order to appropriately use case studies (Fnasima, 2013). Case study-based learning stimulates memory, and requires a connection between theory and practice. A large number of students learn about information classification and the thought process from understanding the aims of and grounds for support, as well as its

relationships, to resolving problems through it. However, as a demerit of such learning, it takes time to develop cases and prepare teaching materials. In addition, teaching staff are charged with the task of helping students shift their minds from passive to active learning. With the aim of achieving our case study-based learning goals and ensuring appropriate learning contents, the present study analyzed the contents of cases, which were developed by the authors in 2012, and have been used for learning since that time, as well as the details of students' learning process, to examine more effective methods of learning and teaching using a limited number of cases.

II. Objective

To examine more effective methods of learning and teaching using a limited number of cases by clarifying the details of students' case study-based learning and analyzing the contents of 4 cases presented to them.

III. Methods

1. Significance of practice and learning goals

At the authors' university, cases studies are used for practice as part of the [Theory of Home Nursing Activity] course. Students learn home nursing on a step-by-step basis and systematically through the [Introduction to Home Nursing], [Theory of Home Nursing Support], and [Theory of Home Nursing Activity] courses, in this order. They are expected to sufficiently learn using simulations prior to training, and case study-based learning also serves as a pre-training process. At present, home nursing training is mainly focused on home-visit nursing services to support community residents' daily life activities; therefore, cases presented to students are mostly developed in home settings. There are 2 goals of case study-based learning: (1) classifying information regarding patients and their families, assessing their health and living conditions, and developing support plans based on the ICF in consideration of the purposes and characteristics of home nursing; and (2) clarifying personal goals and challenges to address during home nursing training. Students proceed with such learning through the following 3 steps: (1) developing basic knowledge; (2) understanding the significance and reasons; and (3) applying knowledge for analysis, determination, and planning.

2. Methods of practice

1) Cases presented to students

The following 4 cases were presented to students: (1) cerebral infarction led to a long-term bedridden condition; (2) home care for a patient with Alzheimer-type dementia became feasible with cooperation from other family members; (3) support from other community residents enabled a patient with schizophrenia to continuously receive home care; and (4) a patient with intractable disease continued to receive home care with support from other family members and multiple professionals. During case study-based learning, information is initially classified into mental and physical functions, activities (ADL/IADL), participation, and environmental/personal factors, based on basic patient data, such as the age and sex, in addition to the ICF. Subsequently, it is organized based on the forms used in the Long-term Care Insurance System covering home-visit nursing services, such as <Home Care Service Plans>, <Home-visit Nursing Plans>, and home-visit nursing records. Students select 1 out of the 4 cases, each of which is presented using 6 or 7 pages of A4 paper, practice the nursing process, and develop nursing plans.

2) Procedure of practice and points of guidance

In the [Theory of Home Nursing Activity] course, students develop the home nursing process as part of practice, using 10 out of the 15 sessions, each of which lasts 90 minutes. To promote their active learning, each class consists of 2 consecutive sessions in a room for self-directed activities.

The above-mentioned cases are presented in the section [Development of the Home Nursing Process Using the ICF Model] of an auxiliary textbook, with which students participate in an approximately 60-minute orientation session. During this session, they are provided with explanations of learning goals and methods, as well as group work procedures. Subsequently, they are divided into 16 groups, each of which consists of 5 to 6 students under the guidance of 4 teaching staff members, including a part-time training assistant. They develop learning plans in accordance with the schedule of practice, hold group discussions with support from the teaching staff member in charge, and create training records 3-(1) to (3).

3. Methods of the present study

1) Scope of analysis: the 4 cases were cited from

the section [Development of the Home Nursing Process Using the ICF Model] of a textbook published by the authors in 2012, and have been used for learning since that time. The contents of these cases and students' learning process were analyzed.

2) Method of analysis: the case study-based learning process was classified and analyzed, focusing on the contents of learning and points to be noted in accordance with teaching goals. The 4 cases were systematically classified based on the following items specified in a previously created sheet for analysis: the case number, type, age, sex, disease name/pathological condition, medical care, learning items, summary, and other related items). Subsequently, the described contents were interpreted and explained.

3) Definitions of terms

(1) Case study-based learning: a method of learning using descriptions of information regarding actual patients and their families to effectively use experiences, understand individual subjects, achieve reasoning techniques for the thought process, and nurture critical thoughts, in order to comprehend complex causal relationships underlying each case and achieve problem-solving skills.

(2) Learning method: a method to deepen understanding of nursing and achieve problem-solving skills by developing the nursing process using fictitious patients.

IV. Results

Table 1 shows the results of analysis of the case study-based learning process. Learning experience consisted of the following 3 steps in accordance with the advancement of learning:

In step 1, students learned about the purpose and procedure of practice, and examined individual cases in detail during the first half of the practice. They read descriptions of the cases together, and used their knowledge, integrating that obtained through the [Theory of Family], [Theory of Disease], [Geropsychiatric Nursing], [Related Laws and Regulations], the and [Social Welfare] courses as a basis for integrative learning to accurately understand subjects. Furthermore, they appeared to adopt daily life-focused perspectives to appropriately recognize the subjects, and understand the role of families, as well as care.

In step 2, students were engaged in practice the most actively; they classified information, conducted assessment, and developed nursing plans. It was the process of clarifying the viewpoint of individuals leading a daily life, and determining the health status in consideration of the course of disease and severity of impairment. Students needed to understand the principles of treatment and nursing based on the health stage, and observe the influences of impairment on daily life in this step.

In step 3 as the final stage of practice, students evaluated their learning achievements. They held discussion meetings independently, and explained the grounds on which they had developed

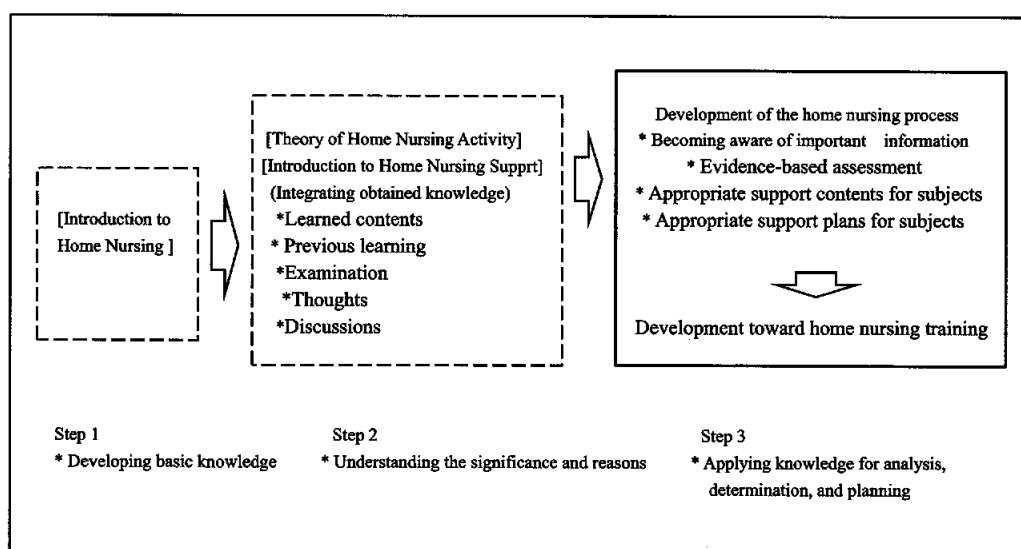


Figure 1 Structure and Procedure of Nursing Process Learning

Table 1 Case Study-based Learning Process

Session	Item of learning	Point of guidance	Process of planning
1	I. Understanding the purpose and procedure of practice 1) Group work procedures 2) Presentation of cases and recording methods 3) Grouping and others	<ul style="list-style-type: none"> Confirming the schedule of practice and students' roles Clarifying the overall practice goal achievement level 	Step 1 Confirming the characteristics of the home nursing process
2	II. Studying cases 1) Reading descriptions 2) Examining 3) Using obtained knowledge	<ul style="list-style-type: none"> Integrating knowledge obtained through the [Theory of Family], [Theory of Disease], [Geropsychiatric Nursing], [Related Laws and Regulations], and [Social Welfare] courses as a basis for integrative learning Giving importance to the viewpoint of individuals leading a daily life Adopting daily life-focused perspectives, and understanding that nursing support targets patients and their families Understanding the role of families and influences of family relationships on care 	
3 4 5 6 7 8	4) Classifying information 5) Assessing 6) Planning	<ul style="list-style-type: none"> Determining the health status in consideration of the course of disease and severity of impairment. Understanding the principles of treatment and nursing in accordance with the health stage Observing the influences of impairment on daily life 	Step 2 Classifying general characteristics Classifying individual characteristics Classifying nursing challenges Classifying grounds for support contents and challenging goals Determining the priority Organizing the plan to be implemented
9 10	III. Case study meetings 1) Creating materials 2) Presentations and discussions 3) Evaluation (students/teaching staff)	<ul style="list-style-type: none"> Holding discussions independently Classifying and explaining the contents of examination using understandable expressions Evaluating presentations to share learning achievements 	Step 3 Evaluating the outcomes of learning experience

their plans. At the same time, their critical thoughts were used the most effectively in this step.

Table 2 outlines the 4 cases. The focuses of home nursing included: 1) nursing based on a comprehensive understanding of patients and their families; 2) nursing from ethical perspectives; 3) nursing to support the QOL and lifestyle; 4) nursing to bring potential healing and recuperative powers out; 5) ensuring the safety of care involving physical invasiveness; and 6) the characteristics of home nursing. The 4 cases were described with storylines based on the ICF.

To help students examine the backgrounds of subjects, their characteristics as community residents were briefly described. Their developmental stages, diseases, and severity of impairment were similar to those they learned in the [Theory of Home Nursing] course. As a point of nursing process development, appropriate perspectives to examine individual cases were also briefly explained to students, in addition to viewpoints to: address differences between the characteristics of actual patients and those they learned in general nursing theories; classify the

focuses of nursing, contents of support, and challenges; and determine necessary nursing techniques. The nursing process includes planning and implementation¹⁾; in the present study, importance was given to planning during practice. In short, the focuses of learning, such as the characteristics of home nursing and points to be learned from individual cases, were clearly explained to students.

V. Discussion

1. Necessity of developing and improving cases

For more effective learning using a limited number of cases, contents that meet the requirements of home nursing are essential. In other words, it is necessary for students to accurately recognize points of learning using case studies in consideration of the purposes of learning home nursing. For such learning, realistic cases are desirable. While the theory of home nursing specifies that home nursing targets "patients receiving home care and their families", their backgrounds markedly vary. Therefore, in order to develop extensive imaginations, it is

Table 2 Outline of the 4 Cases

Case	1	2	3	4
Category of disease	Geriatric	Geriatric	Psychiatric	Intractable
Age	80	70	40	50
Sex	Female	Male	Male	Male
Name of disease Severity of impairment	Sequelae of cerebral infarction Left hemiplegia Dysphagia Care Grade : 4 Bedridden Condition Level : C ₂	Alzheimer-type dementia Colon cancer Care Grade : 1 Cognitive Level : II	Schizophrenia	Amyotrophic lateral sclerosis (ALS) Bilateral and complete lower-limb dysfunction Percutaneous endoscopic gastrostomy (PEG) Care Grade : 5 Bedridden Condition Level : C ₂
Medical procedure	Percutaneous endoscopic gastrostomy (PEG) management	Stoma management		Artificial respirator management Suctioning Tracheal cannula management PEG management
Characteristics	A patient in whom sequelae of cerebral infarction have led to a long-term bedridden condition	A patient with Alzheimer-type dementia, in whom co-operation from other family members has made home care feasible	A patient with schizophrenia who continuously receives home care with support from other community residents	A patient with ALS who continuously receives home care using social resources and with support from other family members
Points of nursing process development	<ul style="list-style-type: none"> >Clarifying and preventing the negative influences of the long-term bedridden condition >PEG management >Identifying the challenges of guidance >Giving appropriate considerations for the elderly care-giver and determining the appropriateness of using social resources 	<ul style="list-style-type: none"> >Determining the necessity of continuous medical management >Examining the influences of the impairment on daily life to determine necessary support approaches >Identifying the challenges of stoma management and guidance >Giving appropriate considerations and providing approaches for other family members with anxiety and confusion 	<ul style="list-style-type: none"> >Clarifying the necessity and content of support to improve ADL, IADL, and social skills, and lead an independent life >Clarifying the necessity of multi-professional collaboration to support the patient's independence >Clarifying challenges to accommodating the patient's needs 	<ul style="list-style-type: none"> >Observing the risk of life-threatening, critical conditions due to severe ADL impairment and respiratory dysfunction >Identifying the challenges of artificial respirator maintenance/management and guidance >Giving appropriate considerations and determining the necessity of support for patient and other family members with anxiety and confusion due to the progression of the disease >Determining the appropriateness of using social resources in accordance with the pathological condition and situation of other family members
Items of learning	Treatment and nursing of (chronic) cerebral infarction PEG management Systems and social resources to support the elderly	Treatment and nursing of Alzheimer-type dementia and colon cancer Stoma management Medication management Systems and social resources to support the elderly	Treatment and nursing of schizophrenia Medication management ADL training Isolation prevention Systems and social resources to support the home lives of individuals with disabilities	Treatment and nursing of ALS Artificial respirator management Suctioning Tracheal cannula management PEG management Systems and social resources to support the home lives of individuals with disabilities

necessary to effectively use the obtained knowledge, enhance a comprehensive understanding of patients and their families, and nurture observation skills and critical thoughts in accordance with learning goals. As previously mentioned, there are 2 goals of case study-based learning : (1) classifying information regarding patients and their families, assessing their health and living conditions, and developing support plans based on the ICF in consideration of the purposes and characteristics of home nursing ; and (2) clarifying personal goals and challenges to address during home nursing training. The results of the present

study indicate the necessity of showing learning methods more clearly to students when inductively learning using fictitious patients.

On the other hand, learning using fictitious patients, rather than actual patients, is advantageous to students, as it enables them to take sufficient time to understand complex causal relationships underlying each case and achieve problem-solving skills. The point to be noted when using fictitious patients is that there are no actual problems or hazards even if the direction of support determined by students is inappropriate, unlike when treating actual patients ; therefore,

individual cases should be developed so as to facilitate the maintenance of appropriate considerations and perspectives on support. In line with this, in the present study, 4 cases were presented to students, while outlining their characteristics and explaining points of nursing process development, necessary considerations, and challenges of guidance. Based on the results, it may be necessary to examine the appropriateness of textbooks, focusing on symbolism, realism, and integrality⁷, such as the characteristics of cases presented in them and their imaginability that allows the examination of causal relationships, when developing the nursing process. From the viewpoint of life stages, home nursing targets all age groups from infants to the elderly (in the late stages of life). When regarding targets for home nursing as individuals requiring support, they are in need of nursing for their daily life activities, and include those requiring medical care. Furthermore, when focusing on the category of disease, home nursing is provided for patients with diverse diseases from common physical diseases to intractable diseases and mental disorders. Looking back upon the history of Japan's home-visit nursing system, the bedridden elderly were initially targeted when home-visit nursing services (stations) for the elderly were launched in 1992. Subsequently, from 1994, patients with end-stage cancer, intractable neurological diseases, schizophrenia, and others were targeted. Since the Long-term Care Insurance System was established in 2000, those requiring assistance or care have been targeted. The recent revision of care fees is likely to increase the numbers of patients with marked medical care dependency and end-stage conditions in the future. However, it is difficult to develop cases for learning, covering all these patients. In order to enable students to learn more effectively using a limited number of cases, it may be necessary for teaching staff to clarify points of teaching in consideration of the background of the current home-visit nursing system. For the development of appropriate perspectives to understand individual subjects during case studies, discussions of these issues may be necessary.

2. Support for active learning

Group learning is an effective method of learning, reflecting the characteristics of discussions. It is also useful to develop problem-solving skills,

critical thoughts, and communication abilities⁹. In order to help students achieve favorable learning outcomes, taking advantage of group work, it is important to support their active learning by promoting interactions among them mainly through free discussions based on obtained knowledge, and leading them to address their learning challenges. During the 10 practical sessions for case study-based learning, support from teaching staff members was available in steps 2 and 3. Close guidance provided by them may have enabled students to develop active attitudes toward learning with appropriate discipline for group work. On the other hand, the necessity of managing time-dependent changes in groups and providing approaches in consideration of individual students' preparedness and relationships was highlighted. In this respect, arrangements and coordination to continuously allocate multiple teaching staff members may also be essential.

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