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# Determination of Accuracy of Nursing Diagnoses Used by Nursing Students in their Nursing Care Plans

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**Abstract**

**Aim:** The aim of this study was to determine and evaluate appropriateness of nursing diagnoses with NANDA taxonomy used by second year nursing students in their nursing care plans.
**Methods:** Retrospective design.
**Findings:** While care plans included 42 nursing diagnoses appropriate to NANDA II taxonomy, some phrases (n=30)were used as nursing diagnoses. Risks for infection, pain, activity intolerance, anxiety were the most frequently used diagnoses while nursing diagnoses in domains of cognitive-perceptive, self perception and role relations are very few.
**Conclusio:** Performing case studies in clinical settings by using NANDA diagnoses, specifying difficulties experienced by nursing students' and determining levels of discomfort while assessing the patients and determining the perceptions of nursing students by doing qualitative studies are recommended.

**Key Words:** NANDA, nursing students, nursing care plans

## Introduction

Preparing nursing care plans is a scientific problem solving method which helps successfully approaching to both healthy and sick individuals and their families in a logical and systematical way. Nursing process includes stages such as assessment of patient and gathering data, selecting nursing diagnosis, determining outcomes, planning, implementation and evaluation (Kaya et al., 2004). According to NANDA's definition, nursing diagnosis is a decision making process related to current or potential health problems of individual, family or society (Erdemir, 2003) which is a result of critical thinking ability. Identifying patients' problems is a vital step in nursing process (Juntilla et al., 2005) and generally attitudes toward nursing diagnoses are positive. Since nursing care is an important indicator of successful health care, developing and using care plans in clinical settings and having standardization in nursing care and propound nurses' responsibilities is crucial. Thus, it is essential to teach nursing students the importance of using nursing diagnosis and decision making process while creating nursing care plans during their clinical assignments. According to the literature nursing students are aware of importance in using nursing diagnoses in clinical area and considered them as a priority topic in the nursing profession (Erdemir et al., 2004; Hakverdioğlu et al. 2009). Despite of theoretical information given in nursing curriculum related to nursing diagnoses in Turkey, it was determined that students still have difficulties in perceiving and using nursing diagnosis in clinical

practice and their achievement at this point is not satisfactory (Güner & Terakye 2000; Kaya et al., 2004; Hakverdioğlu et al. 2009). Some of the nursing students mostly focus on medicals diagnoses instead of nursing diagnoses, could not distinguish problems that are mainly involved to nursing (Güner & Terakye, 2000) or either experience difficulties referring patients' needs as nursing diagnoses (Hakverdioğlu et al., 2009). Another study related to accuracy of nursing diagnoses used in emergency service showed that 76% of the diagnoses considered being of low accuracy (Marini &Chaves, 2011).

The aim of this retrospective study was to;

1. Determine the nursing diagnoses and
2. Evaluate appropriateness of nursing diagnoses with NANDA taxonomy used in nursing care plans prepared by second year nursing students.

## Methodology

### Sample and Setting

The study sample was consisted of 124 second year nursing students' nursing care plans who were studying in nursing. Data were collected in year of 2007. Nursing care plans developed by nursing students who completed during their summer clinical practice (80 hours for each course) in Internal Medicine and Surgery Clinics were evaluated for their appropriateness related to nursing diagnoses according NANDA taxonomy list which is updated in 2003-2004.

### Procedure

The nursing care plans prepared by nursing students were evaluated by researchers using an evaluation form developed especially for this study. One hundred twenty four (124) nursing care plans which were prepared by nursing students have been evaluated. Data were analyzed by using SPSS 10.00 program and results are shown in numbers and percentages.

## Findings

### Demographic variables of the nursing students

Most of the nursing students were female (65.8%) and others were male (34.72%). Close to half of the nursing students (42.7%) completed their summer clinical practice in internal medicine clinics while 57.3% of them had done their clinical practice in surgery clinics. Students mostly preferred (66.6%) state hospitals; very low percentage of them preferred research hospitals (12.1%) and university medical hospitals (21.8%) for their summer clinical practice.

### Nursing diagnoses used by nursing students in their nursing care plans

In total 41 nursing diagnoses were used nursing care plans prepared by nursing students which included in NANDA taxonomy list. It has been noticed that 30 phrases that are not included in NANDA taxonomy list were determined in nursing care plans. It has been also determined that more than half of the nursing students used possible nursing diagnoses (62.9%) and collaborative problems (15.9%) were also used as nursing diagnoses by students. Risk for infection (14.46 %), acute pain (12.7%), and activity intolerance (8.4%), anxiety (8.2%), nutrition: imbalanced, less than body requirements (7.42%) and constipation (7.03%) are the commonly used nursing diagnoses by students. The list of nursing diagnoses selected from NANDA taxonomy list given in Table 1. Phrases that were used by nursing students as nursing diagnoses (however not included in NANDA taxonomy list) presented in Table 2.

## Discussion

In our study, we determined that 41 nursing diagnoses were used by students in nursing care plans. The ten most frequently used diagnoses used in care plans were as follows; risk for infection, pain, activity intolerance, anxiety, nutrition: imbalanced, less than body requirements, constipation, oral mucous membrane impaired, knowledge deficit, impaired skin integrity. According to the assessment of the domains of NANDA nursing diagnoses used in nursing care plans, the first five nursing diagnoses made were in domains of safety, activity/exercises, comfort, compete with stress, food/fluid nutrition while nursing diagnoses related to cognitive-perceptive, self-perception and role relations are very few. Research findings show that sexuality did not take any part among nursing diagnoses selected by nursing students (Hakverdioğlu et al., 2009) although it is seen appropriate for nurses to talk with patients about sexual problems (Akıncı et al., 2011).

**Table 1. Common nursing diagnoses used by nursing students according NANDA II taxonomy list (2003-2004)**

| Related domain (Nursing diagnoses ) | n | % |
|---|---|---|
| **ACTIVITY/EXERCISE (14.5 %)** | | |
| 1. Activity intolerance | 43 | 8,4 |
| 2. Impaired physical mobility | 10 | 1,9 |
| 3. Fatigue | 4 | 0,8 |
| 4. Walking impaired | 3 | 0,6 |
| Deficient divisional activity | 1 | 0,2 |
| 5. Ineffective tissue perfusion | 4 | 0,8 |
| 6. Decreased cardiac out-put | 3 | 0,6 |
| 7. Self care deficit | 6 | 1,2 |
| **COMPETE WITH STRESS (9.6%)** | | |
| 8. Anxiety | 42 | 8,2 |
| 9. Anxiety, death | 2 | 0,4 |
| 10. Ineffective coping | 1 | 0,2 |
| 11. Sorrow, chronic | 1 | 0,2 |
| 12. Breathing pattern, ineffective | 3 | 0,6 |
| **SELF PERCEPTION (3 %)** | | |
| 13. Body image disturbed | 8 | 1,5 |
| 14. Powerlessness | 7 | 1,3 |
| 15. Personal identity, impaired | 1 | 0,2 |
| **ELIMINATION (8.43%)** | | |
| 16. Constipation | 36 | 7,03 |
| 17. Diarrhoea | 4 | 0,8 |
| 18. Constipation risk for | 1 | 0,2 |
| 19. Gas exchange impaired | 2 | 0,4 |
| **HEALTH PROMOTION/ EDUCATION (5.8%)** | | |
| 20. Knowledge deficient | 26 | 5 |
| 21. Health maintenance, ineffective | 2 | 0,4 |
| 22. Therapeutic regime management: family ineffective | 2 | 0,4 |
| **COGNITIVE- PERCEPTIVE (1.7%)** | | |
| 23. Communication impaired ;verbal | 9 | 1,7 |
| **SAFETY (29.76%)** | | |
| 24. Risk for infection | 74 | 14,46 |
| 25. Skin integrity, impaired | 22 | 4,3 |
| 26. Tissue integrity, impaired | 15 | 3 |
| 27. Hyperthermia | 4 | 0,8 |
| 28. Trauma risk for | 3 | 0,6 |
| 29. Oral mucous membrane, impaired | 29 | 5,6 |
| 30. Poisoning, risk for | 1 | 0,2 |
| 31. Violence, self-directed risk for | 1 | 0,2 |
| 32. Hypothermia | 1 | 0,2 |
| 33. Risk for aspiration | 2 | 0,4 |
| **COMFORT (16.6%)** | | |
| 34. Social isolation | 2 | 0,4 |
| 35. Acute Pain | 65 | 12,7 |
| 36. Nausea | 18 | 3,5 |
| **ROLE RELATIONS (0.2%)** | | |
| 37. Family processes, interrupted | 1 | 0,2 |
| **FOOD/ FLUID NUTRITION(9.92%)** | | |
| 38. Nutrition: imbalanced, less than body requirements | 38 | 7,42 |
| 39. Fluid volume, deficient | 7 | 1,3 |
| 40. Fluid volume, excess | 6 | 1,2 |
| **TOTAL** | **512** | **100** |

**Table 2. Phrases used by nursing students as nursing diagnoses that are not included in NANDA taxonomy II**

| Phrases used by nursing students as nursing diagoses | Number (n) | Percentage (%) |
|---|---|---|
| 1. Not having effective airway clearance | 22 | 16,8 |
| 2. Alteration in sleep pattern | 24 | 18,3 |
| 3. Infection | 7 | 5,3 |
| 4. Ineffective personal care | 19 | 14,5 |
| 5. Sleeplessness | 7 | 5,4 |
| 6. Moving around and meaningless talking | 1 | 0,7 |
| 7. Breathing difficulty coming with effort | 2 | 1,5 |
| 8. Discharge education | 2 | 1,5 |
| 9. Detoriation in skin turgor | 1 | 0,7 |
| 10. Deficiency in personal hygiene | 4 | 3 |
| 11. Insufficient breathing | 3 | 2,3 |
| 12. Tendency for infection | 2 | 1,5 |
| 13. Dehydration | 1 | 0,7 |
| 14. Insufficient nutrition | 1 | 0,7 |
| 15. Nocturnal dyspnea | 1 | 0,7 |
| 16. Loss of role | 1 | 0,7 |
| 17. Change in bowel elimination | 1 | 0,7 |
| 18. Risk for bleeding | 5 | 3,8 |
| 19. Ineffective perception | 1 | 0,7 |
| 20. Fluid-electrolyte imbalance | 3 | 2,3 |
| 21. Deficiency in care after toileting | 4 | 3 |
| 22. Weakness on muscles | 1 | 0,7 |
| 23. Decrease in activity | 1 | 0,7 |
| 24. Changes in urination pattern | 4 | 3,8 |
| 25. Spiritual boredom | 3 | 2,3 |
| 26. Changes in eating pattern | 5 | 3,8 |
| 27. Deficiency in feeding himself | 2 | 1,5 |
| 28. Change in skin color | 1 | 0,7 |
| 29. Hypertension | 1 | 0,7 |
| 30. Hypovolemia | 1 | 0,7 |
| TOTAL | 131 | 100 |

All in all, life principles and sexuality are not included among these domains in our study. The reason for this finding could be that nursing students are not comfortable to discuss life principles (such as religiosity, spirituality, moral distress etc.), they may also feel reluctant to ask questions about sexuality of the patient.

While planning a care for patient, it is important for nurses to involve both family and the patient in the care plan since family members and other care givers are mostly influenced by the outcomes of the patient's illness. In general, although family and care givers play an important role in managing patient's care, nursing diagnoses related to social interaction are very few in this study which is congruent with the Allesandra et al.'s study (2011). It is important to teach students to involve family members in nursing process in order to give a holistic nursing care and stress its importance.

"Risk for infection" is considered as a potential nursing diagnosis according to NANDA, it was determined that 14.6% (n=72) of our nursing students used this nursing diagnosis in their nursing care plans which is congruent with some other studies done with nursing students (Hakverdioğlu et al., 2009; Kaya et al.2003; Carvalho Lira & Olivera Lopes, 2011).This is also the most frequently used nursing diagnoses in studies done among working nurses (Lucena &

Barros, 2006). The reason for these diagnoses to be chosen by nursing students may be because they observe those diagnoses being used frequently than any other diagnoses in clinical settings and also asepsis and antisepsis are important concepts that overstressed in nursing procedures during nursing education. Studies show that pain is the most frequently stated nursing diagnosis both by nurses and nursing students (Ay 2003, Yom, Chi & Yoo 2002; Olaogun et al.,2011). The results of our study are consistent with those previous studies. It was found affirmative that nursing students were concerned about patients' pain and making assessment while they were taking care of the patient. When nursing diagnoses used by nursing students compared with the NANDA taxonomy list, it was determined that more than half of the (58.9%) nursing diagnoses are identical. These findings are congruent with different studies where they found nursing diagnoses are suitable to NANDA taxonomy at some level (Ay 2003, Carpenito 2004, Thoroddsen & Thorsteinsson, 2002). Since this study had a retrospective design and data were gathered from care plans, we were not able to question the theoretical knowledge of the students. However, sufficiency of theoretical knowledge, clinical experience and cognitive development may have had an influence on students' performance related to nursing care plans. Studies reported that nursing students' feelings of incompetency and having few professional nursing skills (Sharif & Masoumi 2005) and insufficient theoretical knowledge also affect the anxiety they feel before clinical practice (Can & Erol, 2012) and some of them feel overwhelmed (James & Chapman 2005) during clinical practice. As nursing students' ability about patient assessment increases, their ability in determining nursing diagnoses and planning nursing interventions also improves (Can & Erol, 2012). Hakverdioğlu et al. (2009) reported that second-year students' experience more difficulties in determining nursing diagnoses since their clinical experience is less than third-year and fourth-year students. Therefore, feeling unconfident in nursing activities may also affect the patient assessment activity which is a vital first step in developing nursing care plans. Being able to think critically and assessing the patient, analyzing the data hereby and tailoring theoretical knowledge to clinical practice are important elements in planning and implementing nursing care. Therefore, besides teaching the importance of nursing diagnoses, special attention need to be paid in choosing the right diagnoses and effective use of them in nursing care plans. In our study, we determined 30 phrases that are not included in NANDA taxonomy were used as nursing diagnoses; even signs/symptoms related to diseases, collaborative problems were chosen as nursing diagnoses in the care plans developed by nursing students. According to these findings, it can be said that although students are able to select nursing diagnoses at some degree, they still have tendency to use some phrases as nursing diagnoses, they also have some difficulty in expressing the right terminology and analyzing the data and they are not able to classify etiologies link to nursing diagnoses. It is important giving feedback to nursing students related to their nursing care plans in clinical environment, helping them to focus on doing right patient assessment are rewarding in nursing education. Misuse of nursing diagnoses will induce dilemmas in planning and implementing the patient care which is an unwanted result.

## Conclusions

Although nursing students were able to select appropriate nursing diagnosis from NANDA II taxonomy list, their abilities of naming the diagnoses correctly according to the terminology are not at the satisfactory level. For this reason, performing case studies in clinical settings by using NANDA diagnoses, specifying difficulties experienced by nursing students' in using nursing diagnosis and determining levels of discomfort while assessing the patients are recommended.

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