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“I would like to use it more effectively...” nursing student’s experiences with NANDA-I nursing terminology: a qualitative descriptive study

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Abstract

Background Standardized nursing terminologies play a crucial role in describing and documenting nursing care. For students, learning the components of the NANDA-I terminology—such as defining characteristics and related factors—accurately is essential for determining nursing diagnoses. However, there is a notable lack of qualitative studies investigating Turkish nursing students’ experiences with these terminologies. This study aimed to explore nursing students’ experiences regarding NANDA-I nursing terminology.

Methods This descriptive qualitative study was conducted with 29 second-, third-, and fourth-year nursing students. Data were collected through face-to-face, in-depth, and semi-structured interviews between June 2023 and December 2023. Content analysis was used to analyze the data.

Results Content analysis revealed four main themes: (a) knowledge and awareness, (b) the facilitating effect of NANDA-I on patient care, (c) improvement of NANDA-I terminology training, and (d) challenges in utilizing NANDA-I.

Conclusions The findings of this study offer recommendations for nursing educators to make adjustments to the educational curriculum concerning NANDA-I terminology. Developing nursing education curricula is crucial to help students gain a better understanding of NANDA-I terminology and to utilize it effectively in clinical practice.

Clinical trial number Not applicable.

Keywords NANDA-I, Standardized nursing terminology, Nursing students, Nursing education

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Introduction

Standardized nursing terminologies (SNT) play a crucial role in defining and describing nursing care. These terminologies provide concepts and clear definitions of nursing phenomena, enabling nurses and other care providers to use the same terminology to identify patient issues, nursing interventions, and patient outcomes across various national and international settings, thereby enhancing nursing care [1]. Additionally, SNTs have significant potential to optimize patient care and provide information to generate valuable insights [2].

The literature identifies NANDA International, Inc. (NANDA-I) as the most widely used standardized nursing terminology in clinical practice publications [2]. NANDA-I provides a structured framework for nursing diagnoses, encompassing 267 diagnoses organized into 13 domains and 47 classes. These domains represent “spheres of knowledge” that capture the unique knowledge base of the nursing discipline, while the classes are groups sharing common characteristics [3]. Additionally, NANDA-I defines a nursing diagnosis as “a clinical judgment concerning a human response to health conditions/life processes, or vulnerability for that response, by an individual, family, group, or community” [4].

For students to accurately determine nursing diagnoses, it is essential that they thoroughly understand the components of the NANDA taxonomy, including defining characteristics and related factors [5]. Yönt et al. [6] determined that 75.4% of nursing students believe that the NANDA-I terminology contributes to patient-centered and holistic care. However, evidence in the literature indicates that nursing students encounter certain challenges with diagnoses. Specifically, students face difficulties in identifying appropriate nursing diagnoses for patients, adequately receiving training, and gaining sufficient experience [7]. Although students generally show a positive attitude towards NANDA-I nursing diagnoses, they often struggle to distinguish between medical and nursing diagnoses [8]. Similarly, it has been noted that students tend to base nursing diagnoses on insufficient objective and subjective data, often interpreting medical diagnoses, symptoms, and findings as nursing diagnoses [9]. In this context, several studies have emphasized the need for further research to gain an in-depth understanding of the difficulties and challenges students face in this field [10, 11].

A systematic review identified the need to integrate SNT into electronic health records, emphasizing that this could be achieved by incorporating SNT into nursing education curricula [12]. However, another systematic review by Tastan et al. [13] reported that, out of 107 studies focusing on five different SNTs, only six targeted students, suggesting that the role of SNT in nursing education has not been adequately explored. In particular,

there is limited information in the literature regarding nursing students’ experiences with the NANDA-I terminology. In several studies, researchers have examined nursing diagnoses used by students within the NANDA-I terminology [14–18]. Additionally, Enebeli et al. [19] explored nurses’ experiences with NANDA-I through a quantitative approach; however, to our knowledge, there is no study that qualitatively examines nursing students’ experiences with this terminology.

Understanding the experiences of nursing students, who represent the future of the nursing profession, with the NANDA-I terminology may guide the development and updating of nursing curricula to cultivate well-equipped nurses capable of providing holistic care. Our study aims to analyze nursing students’ experiences with NANDA-I terminology to help enhance the effectiveness of teaching methods and strategies used in their education.

However, to our knowledge, no research in the literature has investigated NANDA-I experiences of nursing students using the qualitative approach. Determining NANDA-I terminology-related experiences of nursing students who are to be the nurses of the future can contribute to the training of well-qualified nurses able to provide holistic care by developing or updating the nursing curriculum accordingly. In the present study, the aim was to help make the teaching methods and strategies used in education more effective by analyzing nursing students’ NANDA-I terminology-related experiences.

Methods

Design

This descriptive qualitative study was conducted to investigate students’ nursing experiences in depth [20]. Qualitative descriptive studies seek to explore and understand a phenomenon, a process, or the perspectives and worldviews of people involved in the research [21]. The Consolidated Criteria for Reporting Qualitative Research (COREQ) was used to report this research (Supplementary material) [22].

Participants and setting

In the selection of the sample of the study, the purposive sampling method was used [23]. First-year nursing students at the nursing faculty where the research was conducted were not included in the research because they did not participate in clinical practice. Second, third, and fourth-year nursing students were included in the study. The inclusion criteria were as follows: (a) being an undergraduate student and continuing the education, (b) having used NANDA-I terminology in clinical practice, (c) giving informed consent and volunteering to take part in the study, (d) being over 18 years of age, and (e) speaking Turkish at a level suitable for being interviewed. Of

the nursing students, 32 who met the inclusion criteria for the study were reached. Three of them were excluded from the study because they wanted to withdraw from the study. Thus, the sample of the study consisted of 29 students. Each participant was interviewed once.

Data collection

Data were collected from June to December 2023 through face-to-face, in-depth interviews using a semi-structured interview form. All interviews were audio-recorded with participants' consent. The semi-structured interview form included open-ended questions designed to clarify students' experiences with NANDA-I terminology. To ensure question appropriateness, the form was reviewed by two faculty members specializing in "Standardized Nursing Terminologies" and the "Nursing Process." After receiving the feedback, the form was finalized. A pilot interview was then conducted with three students, who were not part of the sample, to determine whether the questions were sufficiently clear and understandable (Table 1). The data obtained from these three pilot interviews were excluded from the analysis. The interviewer had no previous relationship with the participants.

After informing the students about the purpose of the study and that the interviews would be audio-recorded, the time and place for the interviews were arranged with each participant. The interviews were conducted by the second author of the study, who had training in qualitative research design. The interviews were held in the second author's well-lit, private office at the nursing faculty to minimize interruptions. The interviewer took field notes during the interviews. The interviewer described the appearance and body language of the participants in the field notes. Each interview took 32 to 43 minutes. Interviews continued until the saturation point was reached, in other words, until data began to repeat and no new information emerged. Each participant was interviewed once.

Data analysis

The content analysis method was used to analyze the data obtained from the interviews. The first and third authors, both experienced in qualitative research, conducted the data analysis independently. The steps described

by Erlingsson and Brysiewicz [24] guided the content analysis process. Prior to data analysis, all interviews were transcribed verbatim. In the first step, researchers divided the text into small, meaningful units. In the next step, a code list was created from the meaningful units, and both researchers compared the code lists they created. The subsequent steps of the analysis were conducted based on the code list on which the researchers reached a consensus. In the category creation step of the analysis, categories were created by bringing together and grouping similar and different codes. Categories were named according to their contained meaning. In the next step, two or more categories were brought together to create themes that explained the experience. Finally, the researchers came together, discussed the themes, and reached a consensus on four themes that explained the phenomenon.

Trustworthiness

The following four basic methods were used in the study to ensure the trustworthiness of the data: credibility, transferability, dependability, and confirmability [25, 26]. All the researchers received training in qualitative research and conducted qualitative research before. Two of the researchers were female, and two were male. Three held PhD degrees, while the second author held an MSc degree. Additionally, the researchers have experience working with nursing students and the education system. Students with diverse experiences were included in the study sample, and interviews continued until no new information was obtained. The interviews were conducted by the same researcher using the semi-structured interview form. Data analysis was independently carried out by the first and second researchers based on a code list they agreed upon. Under each theme, examples of student statements were presented as direct quotes [25, 26]. Kappa analysis was used through Statistical Package for the Social Sciences - IBM (SPSS) to compare the reliability levels of the themes between the coders created after data collection. In the present study, the agreement value between the coders was 0.91, which indicated that the agreement was at an acceptable level [27].

Table 1 Semi-structured interview questions

1. How would you describe the use of the NANDA-I Nursing Classification System in the clinical education process?
2. How much do you know about the NANDA-I Nursing Classification System?
3. To what extent do you think you benefited from using NANDA-I during clinical training?
4. What do you think about the role of the NANDA-I Nursing Classification System in your clinical education?
5. What difficulties have you had while using NANDA-I in clinical training?
6. How do you think the NANDA-I Nursing Classification System has affected your clinical decision-making process?
7. How effective do you think the use of NANDA-I is in standardizing your nursing practice?
8. Do you think you have received sufficient support from your instructors regarding the use of NANDA-I during the clinical training process?
9. What changes would you recommend to make the classification system more effective in your education and practice?

Table 2 Sociodemographic characteristics of the participants

The participant's (P) number	Age	Sex	Year at school	The participants' Perceived Level of Knowledge About NANDA-I (**)
P1	22	Woman	4	Good
P2	21	Woman	3	Good
P3	23	Man	4	Moderate
P4	22	Woman	3	Poor
P5	23	Man	4	Poor
P6	20	Woman	2	Moderate
P7	22	Woman	4	Poor
P8	20	Woman	2	Moderate
P9	21	Man	3	Poor
P10	23	Man	4	Good
P11	22	Woman	3	Moderate
P12	22	Woman	4	Poor
P13	23	Man	4	Good
P14	20	Woman	2	Moderate
P15	22	Woman	3	Poor
P16	21	Man	3	Good
P17	21	Woman	2	Poor
P18	24	Man	4	Good
P19	21	Woman	2	Moderate
P20	23	Woman	4	Poor
P21	20	Woman	2	Moderate
P22	21	Man	3	Good
P23	26	Man	4	Good
P24	23	Man	4	Moderate
P25	20	Woman	2	Moderate
P26	21	Man	3	Poor
P27	23	Woman	4	Good
P28	24	Woman	4	Good
P29	22	Man	3	Moderate
Mean	21,93			
SD*	1,43			

Note. *: Standard Deviation; **: Students' knowledge about NANDA-I terminology reflects their own perceptions, and no measurement tool was used

Ethical issues

The study was carried out in accordance with the ethical standards established in the Declaration of Helsinki. Prior to the study was conducted, ethical approval was obtained from Izmir Bakırçay University Non-Invasive Clinical Research Ethics Committee (decision number: 1078, research number: 1058, decision date: June 15, 2023), and permission was obtained from the institution where the research was to be conducted (decision number: E-27344949-100-1323189, decision date: June 19, 2023). The students participating in the study were informed about the study, and their written consent was obtained prior to the interviews.

Results

The sociodemographic characteristics of the participants are presented in Table 2.

At the conclusion of the data analysis, the following four themes regarding nursing students' experiences of using NANDA-I terminology emerged: (a) knowledge and awareness, (b) the facilitating effects of NANDA-I on patient care, (c) improvement of NANDA-I terminology training, and (d) challenges in utilizing NANDA-I.

Theme 1: knowledge and awareness

The participating students expressed that they had heard of the NANDA-I terminology; however, they perceived their knowledge level as inadequate. They noted that adequate knowledge is necessary to use a diagnostic system correctly and effectively. Additionally, they mentioned experiencing difficulties in accessing publications related to the NANDA-I terminology and suggested that this terminology should be emphasized more in their education.

Table 3 Themes and subthemes determined after the analysis of qualitative data

Themes	Subthemes
Knowledge and Awareness	Perceived level of knowledge about NANDA-I terminology Awareness and perception of NANDA-I terminology
The Facilitating Effect of NANDA-I on Patient Care	Contribution of NANDA-I terminology to students' patient care planning and implementation Students' skills related to the use of NANDA-I terminology for the evaluation and diagnosis of the patient
Improvement of NANDA-I Terminology Training	Integration of terminology into students' clinical decision-making process Improvement of NANDA-I education in nursing theoretical courses and practices More effective use of NANDA-I terminology in training programs Learning strategies regarding NANDA-I terminology and publication requests
Challenges in Utilizing NANDA-I	Difficulty in prioritizing diagnoses Adapting to different perspectives of different faculty members Failure to integrate NANDA-I with NIC and NOC Difficulties in evaluating the interventions taken Access and use of publications related to NANDA-I terminology

Subtheme 1.1: perceived level of knowledge about NANDA-I terminology

The participant students stated that they felt their knowledge of NANDA-I was insufficient and, therefore, they were unable to use it efficiently in their clinical practice. It was noted that this situation created challenges in the standardization of patient care.

"Using NANDA-I in clinical applications makes our job easier and enables us to provide care more systematically. However, at times, I experienced difficulty in using NANDA-I due to my limited knowledge. I found it challenging to make a diagnosis." (Participant 3).

"I feel that we are not provided with enough information about NANDA-I. As a senior student, my knowledge level is insufficient." (Participant 23).

Subtheme 1.2: awareness and perception of NANDA-I terminology

The participating students stated that they were aware that using NANDA-I terminology standardized nursing care and improved the quality of care and that NANDA-I facilitated not only nurses' work but also other team members' and even patients' work. They also acknowledged that, although their awareness of NANDA-I was high, their limited knowledge created an obstacle to providing care.

"Availability of such a terminology system benefits nurses, student nurses, and patients. It was easier for me to evaluate the patient when I used NANDA-I in the clinic." (Participant 8).

"We learned the NANDA-I terminology in our courses. Availability of such terminology is a very good situation in terms of standardizing patient care." (Participant 17).

Theme 2: the facilitating effect of NANDA-I on Patient Care

The participating students stated that NANDA-I facilitated their work during training, standardized patient care, enhanced their skills in patient evaluation and diagnosis, and contributed to their clinical decision-making abilities.

Subtheme 2.1: contribution of NANDA-I terminology to students' patient care planning and implementation

The participating students stated that using NANDA-I made the planning and implementation of patient care more systematic in their clinical practice and facilitated the planning process while improving the quality of patient care by standardizing it.

"Having such a terminology system definitely facilitates our work in providing patient care in clinical practice. Using NANDA-I in patient care also improves the quality of care." (Participant 1).

"As a nursing student, sometimes we don't know what we should do or in what order. NANDA-I ensures that the care we provide is systematic in this regard." (Participant 9).

Subtheme 2.2: students' skills related to the use of NANDA-I terminology for the evaluation and diagnosis of the patient

NANDA-I not only provides standardized care but also promotes holistic and individualized care. The participating students stated that using NANDA-I improved their ability to evaluate and diagnose patients in clinical practice, and that using terminology like NANDA-I also enhanced their critical thinking skills.

"NANDA-I enables us to plan the most appropriate care for the patient. It simplifies making nursing diagnoses and planning the care process." (Participant 5).

"NANDA-I was especially useful for me when evaluating patients in the clinic. Thanks to NANDA-I, I was able to think critically while assessing my patients." (Participant 22)

Subtheme 2.3: integration of terminology into students' clinical decision-making process

Nurses are expected to use their problem-solving and decision-making skills in the clinic. The participating students stated that using NANDA-I enhanced their clinical decision-making processes and problem-solving skills, and that using NANDA-I to select the most appropriate diagnosis for the patient facilitated their decision-making process and improved their case management skills.

"NANDA-I guided me in situations where I had to make decisions about the patient I was caring for during clinical practice, especially in making nursing diagnoses and setting concrete goals for my patient's care." (Participant 6).

"After all, every patient is a case for us. As student nurses, we must be able to manage these cases in the best way possible in the clinic. Thanks to NANDA-I, I was able to manage these cases effectively, and my self-confidence has increased." (Participant 13).

Theme 3: improvement of NANDA-I terminology training

The participating students stated that training on the NANDA-I diagnostic system should be improved, noting that they thought they lacked knowledge about how to use NANDA-I effectively and that this gap in knowledge could be addressed by enhancing the training provided.

Subtheme 3.1: improvement of NANDA-I education in nursing theoretical courses and practices

The participating students stated that they needed additional information on how to utilize the NANDA-I terminology in their theoretical courses, laboratory practices, and internships. They also suggested that more time should be allocated to learning the NANDA-I diagnostic system, that practical case studies should be conducted in laboratories, and that opportunities for one-on-one work with instructors should be provided in practice environments.

"It would be more beneficial for us to learn NANDA-I before starting our professional careers. Therefore, the time allocated to teaching NANDA-I should be increased, and our use of NANDA-I should be reinforced through standard patients or simulations." (Participant 11).

"We should learn NANDA-I in more detail and practice it frequently to make our learning permanent. While we use NANDA-I in our clinical practices, faculty members responsible for the clinic should be present to support us in addressing our shortcomings." (Participant 24).

Subtheme 3.2: more effective use of NANDA-I terminology in training programs

The participating students stated that using NANDA-I more effectively in nearly all of their courses would be more instructive and reinforcing. They mentioned that while they used NANDA-I in case discussions during classes, they tended to forget it if they did not use and reinforce it consistently.

"We use NANDA-I in almost all of our clinical practices. Therefore, NANDA-I should be referenced in all our courses. For example, it is not used effectively enough in our gynecology, pediatrics, and public health courses." (Participant 2).

"If we don't repeat what we have learned, we can forget certain aspects. We learned NANDA-I, but since we have not reviewed it regularly, I realized that I forgot some information while using it in my clinical practice. That's why we must consistently reinforce NANDA-I in our lessons and case studies." (Participant 18).

Subtheme 3.3: learning strategies regarding NANDA-I terminology and publication requests

The participating students stated that instructors should teach them practical learning strategies to help them better understand NANDA-I terminology and address their knowledge gaps. Additionally, some students expressed

a need for access to publications in Turkish to learn the NANDA-I diagnostic system more effectively.

"It is not always easy to access books. We don't know how to find accurate information when we need it about NANDA-I during clinical practice. A mobile application related to NANDA-I, allowing us to access NANDA lists, would be very practical." (Participant 10).

"I think NANDA-I is indispensable for providing holistic care to our patients. However, when I wanted to learn more about NANDA-I in detail, I could not find any publications in Turkish. Most of the available publications are in English, which limited my ability to fully benefit from them." (Participant 23).

Theme 4: challenges in utilizing NANDA-I

The participating students stated that they encountered certain challenges while using NANDA-I, including difficulties in prioritizing diagnoses, adapting to the differing perspectives of various faculty members, integrating NANDA-I with the Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC), and evaluating interventions.

Subtheme 4.1: difficulty in prioritizing diagnoses

Prioritizing diagnoses is as important as making nursing diagnoses when it comes to planning care. The participating students stated that they had difficulty prioritizing the nursing diagnoses they made for their patients due to their limited experience.

"In clinical practice, I want to give the best care to my patient... However, when prioritizing the nursing diagnoses for my patient, I sometimes struggle to decide which one should take precedence." (Participant 2).

"Which of my patient's nursing diagnoses is more important? How should I decide this? I feel very indecisive when prioritizing nursing diagnoses in the clinic." (Participant 13).

Subtheme 4.2: adapting to different perspectives of different faculty members

The participating students stated that faculty members from different departments had varying perspectives on the NANDA-I diagnostic system in the courses they taught and that faculty members evaluated diagnoses based on their own departmental focus. This inconsistency led to confusion and created difficulties in reinforcing and implementing NANDA-I.

"Sometimes, the differing evaluations by our teachers confuse me. The diagnoses prioritized by our

professors in the pediatrics course differ from those prioritized by our mental health nursing instructors. This situation is quite confusing.” (Participant 16).
“NANDA-I is indispensable for nursing care in terms of standardizing care. However, there should also be standardization in NANDA-I training! There should not be differing perspectives across different branches of science.” (Participant 22).

Subtheme 4.3: failure to integrate NANDA-I with NIC and NOC

The participating students stated that they were knowledgeable about NANDA-I but had difficulty writing NIC and NOC for NANDA-I diagnoses. They explained that this was due to their lack of sufficient information about NIC and NOC.

“I think I am good at writing nursing diagnoses according to NANDA-I, but I have trouble writing down the interventions for these diagnoses. I need more guidance on how to determine the most appropriate interventions among various options.” (Participant 11).
“Theoretically, I understand the NIC and NOC terminologies, but I need more hands-on training in applying these terminologies in practice. I should gain more experience in effectively using these terminologies in real patient scenarios.” (Participant 29).

Subtheme 4.4: difficulties in evaluating the interventions taken

Evaluating nursing interventions accurately is very important. To achieve this, the evaluation component of NANDA-I must be performed meticulously. In this regard, the participating students stated that they had difficulty evaluating the interventions they implemented in NANDA-I.

“It is really difficult to evaluate the diagnoses I make for patients... I mean, I carry out many interventions for my patients who are at risk of suicide, but the evaluation aspect is very limited.” (Participant 8).
“Probably, the evaluation is the most important part... However, I struggle to determine how and where to begin the evaluation. Because of this, I feel that the quality of care I provide to my patients decreases.” (Participant 19).

Subtheme 4.5: access and use of publications related to NANDA-I terminology

The participating students stated that their limited knowledge about NANDA-I terminology was due not only to the lack of sufficient detailed information in their courses but also to the low number of publications

available in Turkish. They also mentioned that they could use the NANDA-I terminology more effectively if there were more publications in Turkish and if more detailed information were provided in their courses.

“We use NANDA-I in our clinical practice. However, we should know more about this diagnostic system. The information we receive about NANDA-I in our courses is not enough. We cannot find a publication in Turkish to get detailed information.” (Participant 12).

“I wish there were a mobile application related to NANDA-I... It would be helpful if we could use this application when selecting appropriate nursing diagnoses and interventions.” (Participant 29).

Discussion

This study was conducted to explore nursing students' experiences with NANDA-I nursing terminology in depth. Four main themes emerged from the study: knowledge and awareness, the facilitating effects of NANDA-I on patient care, improvement of the NANDA-I terminology training, and challenges in utilizing NANDA-I.

In our study, similar to the literature, the participating students reported positive perceptions of the NANDA-I nursing terminology [6, 28–31]. This result suggests a willingness among students to use NANDA-I terminology in clinical practice. However, according to their statements, their knowledge of NANDA-I terminology was inadequate, and they encountered challenges in accessing publications. Contrary to our findings, Ogunfowokan et al. [29] reported that students' knowledge of NANDA-I use was satisfactory. In our study, students' limited knowledge about NANDA-I and their difficulties accessing publications on the topic may have hindered their effective use of NANDA-I in the clinic. Therefore, it may be recommended to increase the number of NANDA-I-related courses in the nursing curriculum and to ensure the ongoing translation of the latest NANDA-I version into Turkish.

The participating students stated the facilitating effects of NANDA-I on patient care. They reported that NANDA-I contributed to the planning and implementation of patient care, enhanced their skills in patient evaluation and diagnosis, and increased the quality of education by involving them in the clinical decision-making process. In a study conducted by Abed El-Rahman and Al Kalaldeh, nursing students reported that using NANDA-I improved patient care, made care safer, systematized their knowledge, and increased professionalism [8]. Similarly, Yönt et al. [6] found that 75.4% of the students believed NANDA-I ensured patient-centered care. Thus, nursing students' ability to use NANDA-I effectively in clinical environments can improve the

quality of patient care. Within this context, encouraging the use of NANDA-I in the clinical training of nursing education is recommended.

The participating students also stated that NANDA-I education could be provided more effectively, that they needed additional training on NANDA-I terminology, that different learning strategies should be explored, that Turkish publications on NANDA-I were needed, and that they had suggestions for its use. Studies in the literature have reported that NANDA-I terminology should be included in the nursing education curriculum [30], that course hours should be increased [11], and that guidance on this subject should be provided to faculty members and nurses in clinical environments [29]. It is recommended that nursing educators employ diverse teaching strategies when teaching nursing diagnosis [32, 33]. To help students understand and apply NANDA-I terminology more effectively, innovative teaching methods such as case studies, virtual reality, and virtual simulation should be integrated into their education, and more publications should be made available in Turkish.

In this study, the participating students experienced some difficulties in using NANDA-I. These difficulties included prioritizing diagnoses and adapting to the varying evaluation methods used by different instructors for care plans. In previous studies, students reported challenges such as being unable to distinguish between a nursing diagnosis and a medical diagnosis [8, 14] and struggling to determine the appropriate diagnosis for the patient [6, 7, 28]. The difficulties students encountered highlight the need to revise the educational curriculum and teaching methods to better support prioritizing diagnoses and to ensure that faculty members adopt a consistent approach to care plans. This will enable students to more effectively distinguish between nursing and medical diagnoses and to determine appropriate diagnoses for patients.

The inclusion of NNN (NANDA-I, NIC, and NOC) in the education curriculum is recommended to enhance the outcomes of education and practice [30, 31]. However, the students in our study stated that they struggled to integrate NANDA-I with NIC and NOC and had difficulty evaluating interventions. Similarly, Palese et al. [34] reported that students experienced challenges in evaluating the outcomes of diagnoses. In a study conducted with nurses, participants reported being sufficiently knowledgeable about NANDA-I but were unable to use it effectively in patient care due to a lack of knowledge about NIC and NOC [19]. This underscores the need to focus on both theoretical knowledge and practical skills when integrating NNN into the curriculum. An integrative approach in nursing education will enable students to use NNN more effectively and improve care quality. Based on Theme 3 findings, training adjustments

are recommended to better support students in using NANDA-I, ensuring future nurses can apply NNN effectively in both theory and practice.

Limitations

This study has several limitations. First, since this research was conducted at only one nursing faculty, the findings cannot be generalized to nursing students in other institutions. Future studies should consider being conducted in different countries and across various nursing faculties. Second, each student's experiences with NANDA-I terminology vary depending on their personal backgrounds, clinical practice processes, and perceptions of the terminology. Therefore, conducting comparative studies with a larger participant group that encompasses diverse educational programs and clinical experiences is recommended. Lastly, the qualitative research design of our study limits the ability to quantify results and generalize them to a broader population. Hence, future research should consider adopting mixed-method designs.

Conclusions

This study contributes to the literature by deeply examining nursing students' experiences with using NANDA-I nursing terminology. Based on content analysis, the following themes emerged: knowledge and awareness, the facilitating effects of NANDA-I on patient care, improvement of NANDA-I terminology training, and challenges in utilizing NANDA-I. Our study revealed that although students exhibit positive attitudes toward NANDA-I terminology, they lack sufficient skills to effectively utilize it in clinical practice. It was identified that students face difficulties in prioritizing diagnoses, adapting to different instructors' evaluation methods, and integrating NANDA-I with NIC and NOC.

It is recommended that nursing curricula be restructured to enable students to effectively use NANDA-I terminology in clinical practice. Additionally, nursing educators are advised to continuously update their curricula by following the latest NANDA-I guidelines. Future research should include randomized controlled trials to investigate the effects of integrating NANDA-I into nursing education through different teaching methods.

Implications for nursing practice and education

The results of this study suggest several important implications for nursing practice and education. First, nursing education programs should be updated to enable students to learn and apply NANDA-I nursing terminology more effectively, which can bridge the gap between theoretical knowledge and practical application, preparing students for real-life situations in clinical settings. Second, nursing educators and nurse counselors should

provide students with more guidance and support on effectively using NANDA-I terminology, particularly in areas such as prioritizing diagnoses, adapting to different evaluation methods used by various faculty members, and integrating NNN terminologies. Finally, nursing educators can incorporate innovative methods, such as virtual simulation and storytelling, into the curriculum when teaching NANDA-I terminology. These approaches will help students better understand how to effectively use NANDA-I terminology and related nursing processes by applying them to clinical scenarios.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12912-025-02724-7>.

Supplementary Material 1

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Author contributions

TY, EÜ, and SCY contributed to the conceptualization of the study; EÜ additionally developed the methodology and conducted formal analysis. TY and EÜ contributed to writing the original draft. AD and EÜ conducted data analysis and interpretation. AD and SCY supervised the study, while SCY and AD contributed to reviewing and editing the manuscript. All authors read and approved the final manuscript.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

The ethical principles stated in the Declaration of Helsinki were strictly followed throughout all stages of this research. Before conducting the study, ethical approval was obtained from the Izmir Bakırçay University Non-Invasive Clinical Research Ethics Committee (Decision No: 1078, Research No: 1058, Decision Date: June 15, 2023).

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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