Research Article

Nursing Students’ Views and Suggestions About Case-Based Learning Integrated Into the Nursing Process: A Qualitative Study

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Abstract

AIM: This study aimed to evaluate students’ views and suggestions about case-based learning.

METHOD: The research was planned by using qualitative method of phenomenological type. Case-based learning was integrated into the nursing process and implemented in four sessions, and then, students’ views and suggestions were collected. In the interview, a semi-structured interview form was used, in-depth interviews were made, and the data were evaluated by qualitative data analysis. Phenomenological approach of Colazzi was used in the analyzes and Huberman method was applied. The COREQ was used to analyze and report the qualitative data. The sample consisted of second-year students in the nursing department of a public university in Anatolia in the academic year 2017-2018. Participants attended the case-based learning program. A focus group interview was conducted with 10 of the participants.

RESULTS: Participants are 10 students with a mean age of 19.86 ± 0.78 years. A total of 65 opinions and suggestions were presented during the focus group meeting. These were grouped under two main and seven sub-themes. Participants had positive views on the program and gave practical suggestions.

CONCLUSION: Case-based learning integrated into the nursing process is a practical nursing method that helps students learn and understand the nursing process better and approach patients from a holistic perspective.

Keywords: Education, focus group, nursing, nursing education, nursing process

Introduction

The goal of nursing education is to encourage students to develop personal and professional skills (Sharif & Masoumi, 2005). Using nursing students’ teaching methods of choice promotes learning, ensures learning retention, and improves academic performance (Vizeshfar & Torabizadeh, 2018). Different methods should be used for high-quality nursing education (Azizi et al., 2018; Holland et al., 2017). One of these methods is case-based learning (CBL) (Aluisio et al., 2016; Hong & Yu, 2017), which allows students to acquire academic knowledge (Yoo & Park, 2015), develop critical thinking (Chan et al., 2016; Hong & Yu, 2017) and problem-solving skills (Yoo & Park, 2015), and improve professional self-efficacy (Kim, 2018). Cases can be taught through brainstorming, group discussions, concept maps (Laver & Croxon, 2015), role play (Kim, 2018; Tucker et al., 2015), simulation and software (Tucker et al., 2015), and demonstration (MacDonnell et al., 2010).

CBL is a method of learning through analysis of a situation that has been or is likely to be experienced (Kirimsoy et al., 2013). It is a student-centered method that involves the teaching of a topic through a scenario, resulting in improved learning outcomes and decision-making skills (Kanbay & Okanli, 2017), and in permanent and in-depth learning (Aluisio et al., 2016). CBL promotes active engagement and self-assessment and decision-making, allowing students to gain insight into how they should react in real life situations (Oermann & Kuzu Kurban, 2015). Nurse education should be based on theoretical and practical training to provide students with the opportunity to put their knowledge to use. However,
not all students get the chance to encounter all cases in clinical settings. To overcome this problem, nursing education should incorporate the CBL (Altınbaş & Derya İster, 2020), which, however, has not been sufficiently studied so far (Majeed, 2014). It is recommended that researchers provide the CBL to nursing students and then find out about their views and recommendations on it (Altınbaş & Derya İster, 2020). Collecting and analyzing qualitative data is a recommended method of evaluating views and recommendations (Chan et al., 2016). Qualitative methods are used to collect data on the environment, processes, and perceptions (Karataş, 2015), and can also be applied to data on teaching methods. Students’ views can provide important information about the effectiveness of a method and help create a framework to overcome its shortcomings (Chan et al., 2016; Kermansaravi et al., 2015; Raymond et al., 2018b; van Hooft et al., 2018). Investigating students’ opinions about a teaching method causes them to feel stressed, but also encourages them to improve themselves (Gholami et al., 2017). This study aimed to determine what nursing students thought about the CBL and what kind of suggestions they would offer to improve it.

**Research Questions**
1. What kind of method do nursing students think the CBL is?
2. What do nursing students suggest about the CBL?

**Method**

**Study Design**
This was a qualitative study that employed phenomenology.

**Sample**
Nursing education varies across countries. Nursing programs in Turkey offer a 4-year undergraduate education. The sample for this study consisted of second-year nursing students from a public university in Turkey. Purposive sampling does not set a limit on the sample size, but it is believed that too large a sample can make interpretation challenging (Baltacı, 2018). Therefore, this study was completed with 10 volunteers after the CBL intervention.

**Data Collection**
Prior to the CBL intervention, a detailed lesson plan was developed (Appendix 1) and integrated into the nursing process. Each CBL session lasted 100 minutes. An expert was consulted for the cases in the CBL program (Appendix 2). The integration of the cases into the CBL program was based on the Nursing Interventions Classification, Nursing Outcomes Classification, and NANDA-International (NANDA-I) (Bulechek et al., 2017; Carpenito-Moyet, 2012). The sample was divided into two for the CBL program, which was applied in classrooms between February and May 2018. One week after the CBL program, a focus-group interview (120 minutes) was conducted with 10 of the 37 participants. The focus-group interview was held using a semi-structured interview form (Appendix 3), for which an expert was consulted (Appendix 2). The interview was audio-recorded. Notes were taken during the interview. One of the researchers acted as a director, while the other acted as a reporter during the interview. Data were collected by the focus-group interview method. It is impossible to prevent respondents from interacting in the focus-group interviews. To minimize this, the researchers asked the interview questions and received answers in order. There were two focus groups of five respondents each. Data collection was terminated when no more data adding new information or insight was forthcoming (data saturation) (Yağar & Dökme, 2018). The interviews were held at the participants’ convenience, so that they would feel comfortable answering the questions. A semi-structured interview form was used during the interviews for consistency. An interview flow template was used for flow and order. Whenever the researchers were in doubt, they consulted with an academic specialized in qualitative research.

In this research, a semi-structured interview form was used to collect the data. There are four questions in this form;

1. Can I learn your positive and negative feelings and thoughts about the “case-based teaching method?”
2. Have you been taught such a lesson before?
3. Compare the “case-based teaching method” with your current courses. What are the differences between the two courses?
4. What are your suggestions for this method?

For confirmation, results should be corroborated by those of other studies (Creswell, 2017). Therefore,
the researchers discussed the results in line with the related literature.

Reliability
Interrater reliability was calculated for both the semi-structured interview form and the themes using the formula \[ \text{Reliability} = \frac{\text{number of agreements}}{\text{number of agreements} + \text{number of disagreements}} \times 100 \] (Arastaman et al., 2018; Guba, 1981; Ocak & Kutlu Kalender, 2017). The interrater reliability was higher than 80, indicating acceptable reliability. Both researchers analyzed the data independently and then combined it based on the order specified by encoders (Table 1). The researchers consulted with an academic specialized in qualitative research to reach a consensus on the parts on which they had disagreed during coding. Bias was reduced using Colaizzi’s phenomenological methodology, which consists of seven steps: (1) recording data, (2) determining significant statements, (3) making sense of the statements, (4) classifying themes into groups, (5) improving the groups, (6) stating the phenomenon clearly, and (7) constructing a fundamental structure (Onat Kocabıyık, 2016).

Statistical Analysis
Themes were developed and categorized. Data were analyzed using conventional qualitative data analysis (Sönmez & Alacapınar, 2014). In the qualitative data analysis, Colaizzi’s phenomenological methodology was used to disclose the meaning attributed by respondents to the intervention in question (Demir et al., 2017). Colaizzi’s phenomenological methodology is used to reveal the meaning attributed by people to an event/phenomenon (Onat Kocabıyık, 2016). The Consolidated Criteria for Reporting Qualitative Research, which is a 32-item checklist, was used to analyze and report the qualitative data (Tong et al., 2007).

Ethical Consideration
The study was approved by the Non-Clinical Research Ethics Committee of the Faculty of Health Sciences of Selçuk University (2017/58). Written permission was obtained from the department of nursing. Written informed consent was obtained from participants. The researchers kept the names of the respondents anonymous during data report and kept the audio-recordings and transcripts in encrypted files on their computers.

Results
The focus-group interview was conducted with 10 participants (2 men and 8 women) with a mean age of 19.86 ± 0.78 years. In the focus-group interview, the respondents presented 65 views and recommendations, categorized into two main themes; “Opinions” and “Suggestions.” The theme “opinions” consisted of four subthemes; “The CBL program helped me acquire more academic knowledge and learn the nursing process better”; “The CBL program increased my motivation and appealed to me”; “It was good that the CBL classes were not crowded”; and “The question–answer (Q&A) during the CBL class was helpful.” The theme “suggestions” consisted of three subthemes; “The CBL should be integrated into the current curriculum”; “Nurses and instructors should be role models for students”; and “The CBL nursing education should be offered to other students as well.” The respondents stated that they had never had a case-based course before. Respondents 5 and 7 did not answer question 3, while respondent 8 did not answer question 4. Table 1 shows the distribution of the responses and themes.

Table 1. Colaizzi’s Method of Data Analysis

| Serial Number | Steps |
|---------------|-------|
| 1             | Transcribe the interviews verbatim. |
| 2             | Turn to the transcripts for the parts lacking consensus. |
| 3             | Develop themes and subthemes separately. |
| 4             | Cross-check the transcripts. |
| 5             | Go over the themes that are not clear, according to the Huberman model (Baltacı, 2019). |
| 6             | Conduct a Miles & Huberman analysis for the main theme and subthemes. |
| 7             | Present the themes and subthemes in tables. |
Theme 1 Opinions

Subtheme: The CBL program helped me acquire more academic knowledge and learn the nursing process better: All respondents stated that the CBL program made them more aware and knowledgeable about academic content, nursing process, and care planning. The following are direct quotations from three respondents:

Respondent 1: “I’ve learned to approach patients from a holistic perspective and to tackle not only complications but also psychological and social problems, and now I can combine parts and see things as a whole…”

Respondent 2: “…I didn’t know how to use the nursing process when planning care, but the CBL is helping me manage care now, it’s also increased my knowledge on medication and helped me understand what nursing diagnosis is…”

Respondent 10: “…I can plan care more easily and distinguish between descriptive and related factors. I got to see what I’d been (doing wrong during care planning. I used to get bored planning care, but the CBL program helped me better understand the nursing process. The nursing diagnosis book is too general and confusing. It is too broad, but now I understand that I can go beyond that knowledge and that it is practically possible…”

Subtheme: The CBL program increased my motivation and appealed to me: The respondents noted that they felt more confident when they saw that they could easily reach the teacher and ask him/her questions to plan care without fear of being graded. The following are direct quotations from three respondents:

Respondent 3: “…I was more efficient because I had no fear of being graded, I was more comfortable during the internship than usual… The CBL classes were more active than others, I was more motivated and engaged because I had no fear of being graded…”

Respondent 4: “…It was a privilege for me to participate in this training. No one had the chance to do as thorough an examination as the students attending this training, which was an advantage…”

Respondent 6: “…I liked it when I saw that I could plan care, it motivates me now…”

Subtheme: It was good that the CBL classes were not crowded: The respondents saw it as a great advantage that they had all their questions answered because the CBL classes were not crowded. The following are direct quotations from three respondents:

Respondent 2: “…In other classes, we would ask our questions in haste and get some answers because the classes were too crowded, but in the CBL class we could ask our questions in detail…”

Respondent 6: “…the CBL class was less crowded than others, and so it was more like a Q&A type of class, so they were more efficient. Besides, the group of 37 was divided into two, which was very good for the CBL class…”

Respondent 10: “…we all asked and answered questions, everybody got to talk, which is not possible in other classes because they are too crowded…”

Subtheme: The Q&A during the CBL class was helpful: The respondents remarked that Q&A in the CBL class was better for them because all their questions were answered, which promoted their learning. The following are direct quotations from three respondents:

Respondent 6: “…theoretical classes were very intense, and the instructors would think that we knew about theory, and so, they sometimes wouldn’t answer our questions, and those classes offered nothing much when it comes to practice, but in the CBL class we examined what was taught in theory, and I thought that I could put it into practice…”

Respondent 7: “…we always had time constraints in other classes, but in the CBL class we got to ask all our questions one by one and got answers, I mean we kind of had to ask questions, but in the end, we learned…”

Respondent 10: “…we had Q&A throughout the CBL class, which was very productive, I got to ask all the questions I had in mind and got answers to all of them…”

Theme 2 Suggestions

Subtheme: the CBL should be integrated into the existing curriculum: All but respondents 1 and 8 recommended that the CBL should be integrated into clinical practice or offered by the current curriculum
as an elective course. The following are direct quotations from three respondents.

Respondent 2: “…the CBL should be integrated into the curriculum, there is no need to make extra time for it, I mean, I had to come to school for the CBL class apart from the courses I already have, so it was kind of a hurdle for me…”

Respondent 5: “…the CBL should be offered as an elective course, and students could be split into groups of 30 and work on cases…”

Respondent 7: “…In the first week of clinical practice, the instructor should bring a case and present it to her students, just like what we have in the CBL, and tell them that she expects the same from them…”

**Subtheme: Nurses and instructors should be role models for students:** Respondents 1, 6, 7, and 10 stated that clinical nurses and instructors should adopt a common language and serve as role models for the nursing process and care planning. The following are direct quotations from three respondents:

Respondent 1: “…nurses should be role models for this…”

Respondent 6: “…instructors should use a common language and be role models when it comes to planning care.”

Respondent 7: “…we plan care, but each instructor says something different about it and has different styles... We don’t even know which one is right and which one is wrong, but they are supposed to serve as models…”

**Subtheme: the CBL nursing education should be offered to other students as well:** Respondents 4, 7, 9, and 10 highlighted that the CBL program should be offered to all students because they all have difficulty in learning the nursing process and planning care. The following are direct quotations from three respondents:

Respondent 4: “…we now know it and can put it into practice, but we couldn’t do it at all in our first year, so nursing students of all grades should attend the CBL program…”

Respondent 7: “…I believe that other students should also learn these things because no one had taught them to us before, and we didn’t get to learn them in other classes. There should be a case group or something like that could discuss cases with younger students once a week…”

Respondent 9: “…care planning is hard for all students, so older students should help younger students with it, so peer education could be helpful…”

**Discussion**

The discussion is based on the summarized data in Table 2.

CBL makes nursing students more knowledgeable and prone to teamwork, helps them with better

| Main Themes | Subthemes | Respondent No. |
|-------------|-----------|----------------|
| Opinion     | The CBL program helped me acquire more academic knowledge and learn the nursing process better. | * * * * * * * * * * |
|             | The CBL program increased my motivation and appealed to me. | * * * * * * |
|             | It was good that the CBL classes were not crowded. | * * * * * * |
|             | The Q&A during the CBL classes was helpful | * * * * * * |
| Suggestion  | Nurses and instructors should be role models for students | * * * * * * |
|             | The CBL nursing education should be offered to other students as well | * * * * * * |
|             | The CBL should be integrated into the existing curriculum | * * * * * * |
|             | I had never had the CBL education before | * * * * * * |

Note: *Themes and subthemes.
clinical performance, develops more positive attitudes toward clinical practice, helps them understand the holistic approach better and improve themselves professionally (Forsgren et al., 2014), resulting in higher learning retention, quality of care, and patient safety (Ward et al., 2018). The more the students know, the more motivated they are, further facilitating learning (Holland et al., 2017). People who acquire new knowledge are likely to develop more positive attitudes and better skills (Patiraki et al., 2017). Adequate and comfortable learning environments support motivation (Palumbo, 2018; Raymond et al., 2018a), minimize communication problems, and contribute to high-quality care (Sharif & Masoumi, 2005).

Aluisio et al. (2016) divided Indian nursing students into three groups (CBL, standard training, and simulation) to teach them about disasters. They found that the CBL group had the highest knowledge score (55.3 ± 11.3), followed by the simulation (46.9 ± 10.6) and standard training (43.8 ± 11.0) groups. Lee et al. (2020) provided nurses working in nursing homes with the CBL (integrated with online and simulation training) on interventions for heart attacks, and found that the participants felt more competent after the training (post-CBL = 4.11 ± 0.37) than before (pre-CBL = 3.79 ± 0.41) and had higher post-CBL knowledge scores (12.82 ± 2.03) than pre-CBL knowledge scores (10.06 ± 2.28). Therefore, they concluded that the CBL integrated with online and simulation training improved nurses’ knowledge and promoted their learning. Kim and Yang (2020) provided nurses with training based on a case of dementia and found that the training helped nurses learn more about dementia (z = −4.86, p < .001) and interventions for dementia (z = −4.55, p < .001) and develop more positive attitudes toward people with dementia (t = −3.04, p = .003). Nursing students are expected to acquire knowledge and put them into practice in the nursing process. Therefore, we can state that the CBL integrated into the nursing process can contribute to nurses’ education.

Cases appeal to students (Chan et al., 2016; Gholami et al., 2017) and satisfy their expectations (Hong & Yu, 2017). CBL helps nurses make fewer mistakes (Patiraki et al., 2017; Uysal et al., 2016) and makes them more motivated (Cui et al., 2018), and therefore, it should be an integral part of nursing education (McLean, 2016). Focus-group interviews are of significance for detecting the strengths and weaknesses of nursing interventions, correcting errors, eliminating deficiencies, and developing new programs. Opinions and suggestions about methods are sound guides that allow us to see the errors and weaknesses of interventions, helping us generate strategies for reform and revise curricula (Azizi et al., 2018).

Class size is an important factor affecting education and communication during education because the greater the class size, the less time the teacher has for each student (Raymond et al., 2018a), resulting in reduced learning and motivation. However, because class size remains be an important factor, correct planning (Kocaman & Yurumezoglu, 2015; Palumbo, 2018) and Q&A is recommended to overcome this problem. Q&A-based classes can increase students’ awareness, concentration, confidence, and self-assessment capacity (Kaddoura, 2011). In short, educational conditions (setting, time, class size, etc.) play a key role in learning (Gholami et al., 2017). Therefore, education programs should be based on small class size.

The nursing process and care planning provide a common language for nurses and improve the profession through evidence-based protocols (Patiraki et al., 2017). Nursing students make more mistakes than are acceptable because they cannot clarify the nursing diagnosis while performing the nursing process (Andsoy et al., 2013). A common language makes nursing care more visible, standardized and record-based, and better understood. This helps both healthcare professionals and instructors meet at a common point and serve as role models (van Hooft et al., 2018). Nursing students think of the nursing process as too abstract, hard-to-understand, and challenging. This suggests that we need a more concrete educational paradigm (Zamanzadeh et al., 2015), and we believe we can use the CBL to teach the nursing process.

Nurses and instructors should serve as role models and use a common language to help students put the nursing process into practice. Especially, first- and second-year students find it difficult to comprehend the nursing process and planning care, and therefore, need support (Andsoy et al., 2013; Patiraki et al., 2017; Uysal et al., 2016). Student communities play an important role in making students socially aware and collaborative, and thus support learning (Mohan Bursalı & Aksel, 2016). Case communities and peer education can provide nursing students with the support in question. Integrating the CBL
into the curriculum can be a promising alternative for nursing students.

**Conclusion and Recommendations**

CBL promotes nursing students’ learning and makes them more motivated because they enjoy Q&A sessions and interaction during CBL-based lectures. They believe that the CBL should be integrated into the existing curriculum and that instructors and nurses should be role models as they put the nursing process in practice. CBL turns abstract concepts of the nursing process into tangible and visual representations. Nursing students think that sharing with younger students what they learn from CBL-based lectures can help those students learn the nursing process more easily.

As a result, it would be appropriate for CBL to be integrated into the existing curriculum and used to train both students and nurses in small groups.

**Ethics Committee Approval:** Ethics committee approval was obtained from the Non-Clinical Research Ethics Committee of the Faculty of Health Sciences of Selçuk University (2017/58).

**Informed Consent:** Written consent was obtained from students who participated in this study.

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Appendix 1: CBL Sample Curriculum
Case presentation and analysis (100 Min)

Content:
• Showing the case electronically to the group one day prior to intervention
• Remembering the case (10 Min)
• Presenting the theory of disease (10 Min)
• Presenting medications used (15 Min)
• Sorting out the patient problems (15 Min)
• Diagnosis Nursing of NANDA and determining interventions (35 Min)
• Identifying descriptive and etiological factors (10 Min)
• Evaluation and summary (5 Min)

Objectives of the CBL Program

| GOAL                                                      | Expected time to reach |
|-----------------------------------------------------------|------------------------|
| Informing about diagnosis and medication                  | Week one               |
| Determining patient problems                             | Week one               |
| Explaining patient problems according to NANDA nursing diagnosis | Week one               |
| Identifying descriptive and etiological factors          | Week two               |
| Listing the right nursing interventions (NIC) and discussing group effects | Week three             |
| Discussing possible group results and evaluating the patient | Week four              |

Appendix 2: Expert List

1. Prof. Veysel Sönmez, Hacettepe University, Faculty of Education, retired
2. Prof. Füsun Gülderen Alacapınar, Necmettin Erbakan University, Faculty of Education
3. Assoc. Prof. Selda Arslan, Selçuk University, Faculty of Nursing
4. Assoc. Prof. Şerife Kurşun, Selçuk University, Faculty of Nursing
5. Assoc. Prof. Pınar Zorba Bahçeli, Selçuk University, Faculty of Nursing

Appendix 3: Semi-structured Interview Form Items

1. Could you please tell us about your positive and negative emotions and thoughts about the case-based learning program?
2. Have you ever had such a course before?
3. Please, compare the case-based learning program with your current courses. What is the difference between them?
4. What suggestions can you make concerning the case-based learning program?