Nursing students' perceived stress and experiences in the care of patients with Hepatitis B and C: A qualitative and qualitative study


Ege University Faculty of Nursing, Internal Medicine Nursing, Izmir, Turkey

ABSTRACT

Purpose: The aim of the study was to determine the perceived stress and experiences in the care of patients with Hepatitis B and C.

Materials and Methods: A mixed-method study, one group pre-post-test descriptive and qualitative, was conducted with 32 nursing students. Data were collected using the "Student Introduction Form", "Clinical Stress Questionnaire (CSQ)" and "Semi-structured interview form".

Results: At the beginning of the practicum, the mean score of CSQ was 30.34±10.29. At the end of the practicum, the mean score of CSQ was 37.62±7.24. We found a significant increase at the end of the practicum (t=-3.404; p=0.002). Three main (emotions experienced during the practicum, coping with stress, and effects at the end of the practicum) and 12 sub-themes were identified by phenomenological data analysis.

Conclusions: It was concluded that the stress levels of the student nurses who care for patients with hepatitis B and C increased at the end of the practicum; the students experienced anxiety and emotional breakdowns in the patient care, they acted more carefully to cope with this situation, they sought social support, and the experience reduced their stress.

Keywords: Nursing student, hepatitis B and C, stress, experience

DOI:
INTRODUCTION

The aim of nursing education is to provide students with knowledge, skills, and attitudes in cognitive, affective, and psychomotor areas. This education consists of two phases, theoretical and clinical. The theoretical knowledge is transferred to practice in the clinical environment, thus providing psychomotor development and professional socialisation of students [1,2].

During the clinical experience, being in an unknown environment, fear of making mistakes and harming the patient, the thought that professional knowledge and skills are insufficient for practice, problems in using medical instruments, and fear of being evaluated by instructors cause stress and anxiety in nursing students. Studies have shown that the clinical stress level of nursing students is high at the beginning of practicum [1,3-5]. It is important for students to develop effective coping behaviours to deal with the stress they face, to continue their education in the most efficient way, and to create a positive professional identity [4]. It is important for students to develop effective coping behaviours so that they can cope with the stress they encounter, continue their education in the most efficient way, and create a positive professional identity. Another stressful situation during practicum is the risk of injury, and exposure to infectious diseases. Students practicing in the health field may be exposed to blood-borne pathogens [6]. Studies have reported that nursing students experience more injuries in the field of health than other health students [6,7].

Nursing students who practice in clinics where the treatment and care of patients with infectious diseases such as hepatitis B and C are maintained experience additional stress and different incidents and use methods to cope with this stress during the practicum. In the study conducted by Koç (2017), it was determined that more than half of the nursing students experienced stress while caring for patients with hepatitis B and C, and their stress levels were moderate [8]. It is thought that the evaluation of the stress, experience, and coping methods of the students by the instructors, making plans for the problems, and developing the necessary behavioural changes in the education process will contribute to the students being more careful, self-confident, and less stressful while transitioning into professional life. This study aimed to determine the perceived stress and experiences of nursing students in caring for patients with Hepatitis B and C.

MATERIALS AND METHODS

Design

The research is a mixed method study with a single group pre-post-test descriptive and qualitative.

Study Population/Sample

The study population consisted of a total of 44 fourth (final) year nursing students who practiced in the gastroenterology clinic practicum of a nursing faculty in the spring semester 2021-2022 and autumn semester 2022-2023. Nursing students (12 students) who did not want to participate in the study, did not provide care to patients with hepatitis B and C, and did not complete the data collection forms completely were excluded from the study. The study was completed with 32 nursing students who were practising in the gastroenterology clinic on the specified dates, caring for patients with hepatitis B and C, and who agreed to participate in the study.

There is no specific sample size in qualitative studies. All students who met the inclusion criteria on the specified dates were included in the study without using the sample selection method. The data saturation concept is considered guiding the principle for determining the sample size. Data collection was terminated when data began to repeat. These sample selections have also been used in similar studies, and the sample numbers vary between 10-30 [9-11].

Data collection

The study consists of two phases: quantitative and qualitative. For the quantitative data, the researchers used “Student Description Form”, “Clinical Stress Questionnaire (CSQ)” at the beginning (first week) of the practicum. They used “Clinical Stress Questionnaire (CSQ)” at the end (fourth week) of the practicum. For the qualitative data, interviews were semi-structured, using a semi-structured question form at the end (fourth week) of the practicum. The researchers conducted interviews on the video conferencing application Microsoft Teams for about 30 to 40 minutes. The interviews were recorded.

Data Collection Tools

Student Description Form: This form was designed by the researchers and consisted of 8 questions about students' socio-demographics and other characteristics [7,8].

Clinical Stress Questionnaire (CSQ): The scale was developed by Pagana (1989), and the validity and reliability of the Turkish version were tested by Şendir ve Acaroğlu (2006).

The scale consists of a total of 20 statements in four subscales. Each statement is scored between 0 and 4. The questionnaire is scored as a minimum of "0" and a maximum of "80" with lower scores indicating low-stress levels [12].
Semi-structured Question Form: The semi-structured question form was prepared upon the literature review [8-11]. Five questions were prepared to determine the experiences of the students. At the end of the interview form, there is a closing question, whether there is anything else he/she wants to say to the students before the end of the interview. A professor and an assistant professor were interviewed to evaluate the questions in the semi-structured interview form in terms of aim, meaning, and scope. Three students were interviewed for the validity and reliability of the semi-structured question form and revisions were made to the form after the pilot study.

The semi-structured questions were as follows:
1. How did you feel when you learned that you would practice in this clinic? 2. What was the most stressful situation for you while caring for patients? 3. How did you feel while caring for a patient with hepatitis B or C? 4. How did you cope with the stress you experienced? 5. What changed for you at the beginning and end of the practicum? 6. If you have anything to add, please let me know.

Statistical analysis
A statistical Package program was used in the statistical analysis of the qualitative data. Descriptive statistics were used to analyse students' socio-demographic characteristics and scale scores. The difference between mean scale scores pre and post-practicum was assessed with a t-test. The qualitative data analysis used content analysis, inductive and deductive approaches. Codes and categories were created with the data obtained from the semi-structured interview form [13]. Similar data were classified under specific themes and subthemes. After that, the data were analyzed again, and the coding was checked.

Ethical considerations
Institutional permission and ethical approval were obtained by the Scientific Research and Publication Ethics Committee of the university (01/03-1264; 6 January 2022) informed voluntary consent was obtained before commencing the study.

RESULTS
The mean age of students was 21.53±1.07 years, and 71.9% were women. 43.8% of the participants reported living in a student hostel, 93.8% did not care for patients with hepatitis B and C before, and all were vaccinated against hepatitis B. Other sociodemographic characteristics of the students are shown in Table 1.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean±SD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>21.53±1.07</td>
</tr>
<tr>
<td>Gender</td>
<td>n (%)</td>
</tr>
<tr>
<td>Female</td>
<td>23 (71.9)</td>
</tr>
<tr>
<td>Male</td>
<td>9 (28.1)</td>
</tr>
<tr>
<td>Economic Status</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>7 (21.9)</td>
</tr>
<tr>
<td>Medium</td>
<td>25 (28.1)</td>
</tr>
<tr>
<td>Good</td>
<td>-</td>
</tr>
<tr>
<td>Place of residence</td>
<td></td>
</tr>
<tr>
<td>With their family</td>
<td>4 (12.5)</td>
</tr>
<tr>
<td>With their friends at home</td>
<td>11 (34.4)</td>
</tr>
<tr>
<td>A student hostel</td>
<td>14 (43.8)</td>
</tr>
<tr>
<td>Alone at home</td>
<td>3 (9.4)</td>
</tr>
<tr>
<td>Previous experience of practicum</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32 (100.0)</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Previous experience about care of a patient Hepatitis B/C</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td>No</td>
<td>30 (93.8)</td>
</tr>
<tr>
<td>Vaccination against Hepatitis B</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>32 (100.0)</td>
</tr>
<tr>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Level of knowledge about Hepatitis B/C (according to student statement)</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>16 (50.0)</td>
</tr>
<tr>
<td>Partially good</td>
<td>14 (43.8)</td>
</tr>
<tr>
<td>Nor good</td>
<td>2 (6.3)</td>
</tr>
<tr>
<td>Total</td>
<td>32 (100.0)</td>
</tr>
</tbody>
</table>
At the beginning of the practicum, the mean score of CSQ was 30.34±10.29. At the end of the practicum, the mean score of CSQ was 37.62±7.24. We found a significant increase at the end of the practicum (t=-3.404; p=0.002) (Table 2).

Three main and 12 sub-themes were identified by phenomenological data analysis (Table 3).

### Table 2. Pre and Post Practicum Students’ Clinical Stress Questionnaire (CSQ) Mean Score

<table>
<thead>
<tr>
<th>Clinical Stress Questionnaire (CSQ) Mean Score</th>
<th>Pre-practicum</th>
<th>Post-practicum</th>
<th>p/t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30.34±10.29</td>
<td>37.62±7.24</td>
<td>p=0.002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>t=-3.404</td>
<td></td>
</tr>
</tbody>
</table>

### Table 3. Main themes and Sub-themes

<table>
<thead>
<tr>
<th>Main themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotions experienced during the practicum process</td>
<td>Anxiety</td>
</tr>
<tr>
<td></td>
<td>Fear</td>
</tr>
<tr>
<td></td>
<td>Excitement/Concern</td>
</tr>
<tr>
<td></td>
<td>Stress</td>
</tr>
<tr>
<td>Coping with stress</td>
<td>Being careful</td>
</tr>
<tr>
<td></td>
<td>Ignoring</td>
</tr>
<tr>
<td></td>
<td>Getting help (nurse, lecturer, friend)</td>
</tr>
<tr>
<td></td>
<td>Practicing/caring more</td>
</tr>
<tr>
<td></td>
<td>Crying</td>
</tr>
<tr>
<td>Effects at the end of the practicum</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Self-confidence</td>
</tr>
<tr>
<td></td>
<td>Emotional wear and tear</td>
</tr>
</tbody>
</table>

**Main theme 1: Emotions experienced during the practicum process**

The sub-themes specific to this main theme were "anxiety, fear, excitement/concern, stress". Example statements;

**P2:** "I was a little nervous at the beginning, but I did not have any problems because I applied the principles of asepsis and antisepsis and remained calm."

**P5:** "During the practicum process, I learned more about the disease, I researched more. This increased my anxiety.

**P12:** "Although I was a little nervous at first, with the necessary protective equipment and attention, I was able to care for myself without any problems."

**P25:** "The very high prevalence of infectious diseases frightened me a lot. I thought about what to do."

**P7:** "The possibility of infection during invasive procedures caused me a lot of stress."

**P10:** "... I was very excited to practice, but I was always worried about the possibility of coming into contact with the patient's stickers." 

**P28:** "I felt happy that I would observe such diseases closely. I was excited thinking that it would be a reinforcing clinic as I would take part in each unit and see the functioning..." 

**Main theme 2: Coping with stress**

"The sub-themes specific to the main theme of "coping with stress" were determined as "being careful, ignoring, getting help (nurse, lecturer, friend), practicing/caring more, crying". Example expressions; 

**P27:** "I was very stressed. By asking for help from the nurses, I learned about the applications I did not know. This helped me to reduce my stress."

**P29:** "...When caring for a patient with hepatitis B, I tried not to focus on it, I tried to do the practices without thinking that the patients had hepatitis."

**P3:** "I was so stressed. I coped by crying."

**P16:** "Rather, I tried to control my stress by practicing at every opportunity...I gained experience...experience would reduce my stress"

**P9:** "I felt safe and calm because I performed the procedure by paying attention to the principles of asepsis and antisepsis to protect myself and the patient during the procedures" 

**Main theme 3: Effects at the end of the practicum**

"The sub-themes of "experience, self-confidence, emotional wear, and tear" were identified within this main theme. Example expressions; 

**P6:** "Caring for patients with such diseases, doing practices has increased my self-confidence a lot, now I can do many things more confidently..."

**P18:** "...I've had emotional attrition, I haven't had any extra experience..."

**P4:** "As I was able to closely observe the symptoms and complications of such diseases, I felt more familiar with the issues. Being involved in..."
procedures involving nurses from the outpatient clinic to the intensive care unit helped me improve my experience.”

**DISCUSSION**

The results obtained were discussed within the scope of the students’ stress levels before and after the practicum, the emotions experienced during the practicum, coping with stress, and the effects at the end of the practicum.

**Students’ stress levels before and after the practicum**

Health science students may experience stress in clinical practice for many reasons. One of them is the working environment, and the characteristics of the patients cared for. In particular, caring for patients with infectious diseases can cause stress for students whose clinical experience is still developing regarding injury and transmission. Student nurses care for patients with hepatitis B and C, which are viral infections with a high risk of transmission during clinical practice. Inadequate knowledge and practical experience may increase students’ stress levels. Our study observed that the stress level of students caring for patients with hepatitis B and C was close to medium level, increased significantly after the practicum, but remained at medium level. The number of studies on student nurses caring for patients with hepatitis B and C is limited in the literature. Koç’s study (2017) found that 69.9% of nursing students reported that they experienced stress while caring for patients with hepatitis B, and their stress levels were found to be moderate [8]. In studies on the stress levels of nursing students in general clinics, stress levels were found to be at a moderate level [3,14].

The study of Baysan et al. (2015) determined that the stress level decreased after clinical practice [14]. In line with this result, it can be considered that the stress level decreases with increasing experience. On the contrary, in our study, it was observed that the stress level of the students increased after the practice and experience. The reason for this can be said to be the increase in the knowledge and awareness of the students and the effect of other stressors in the clinical environment on this situation.

**Emotions experienced during the practicum**

In the study, the students stated that they experienced anxiety, fear, and stress while caring for patients with hepatitis B and C during the practicum due to the risk of transmission, sharp and piercing instrument injury, and inadequate knowledge about hepatitis B and C. In the studies in which health students were analysed, it was observed that nursing students experienced sharps injuries at a higher rate, and the most important reason for these injuries was trying to put the caps on the needles [6,7,15,16]. Mert’s study (2018) stated that the most important reasons for the stress experienced by nursing students in the clinic were inexperience and carelessness [17]. The study conducted by Datar et al. (2022) reported that students had knowledge about blood-borne diseases but were insufficient in the transition from knowledge to practice [7].

**Coping with stress**

For specific reasons, students who experience stress in clinical practice can develop appropriate stress-coping methods. These methods help students to manage their emotions and become professional members of the profession. In our study, students stated that they could cope with the stress they experienced by acting more carefully, getting support from nurses, lecturers or friends, or ignoring the fact that the patients had an infectious disease. In Koç’s study (2017), it was determined that nursing students coped with the stress they experienced while caring for patients with hepatitis B and C with a "self-confidence" and "seeking social support" approach [8]. Social support-seeking behaviour is similar to our study. A study conducted in Hong Kong on the clinical experiences of nursing students determined that they used four methods to cope with stress; transference, remaining optimistic, problem-solving, and avoidance [3]. The "avoidance" method was similar to our study’s “ignoring” method. In another study conducted by Mlek (2011), it was observed that nursing students used "emotion-focused" and "problem-focused" coping approaches more frequently as coping methods in clinical rotations [5].

**Effects at the end of the practicum**

Health science students are a group that is particularly at risk for sharps injuries and infectious diseases due to a lack of experience and skills [18]. Since the nursing profession is also a profession in the risky group, it can be considered that the limited clinical experience of nursing students may increase the risk and cause more anxiety [16].

The students in our study stated that their experience during the application relaxed them, increased their self-confidence, and made them think that they could perform safer applications. Karimi-Sari et al. (2017) determined that the level of knowledge and awareness of hepatitis B and C was high in students who had experienced or had a sharps injury [18]. In another study in which clinical stress levels of nursing students were analysed, it was concluded that anxiety and stress levels decreased as experience increased [14].

In addition to the positive effects of the experience, some of the students in our study stated that they were emotionally worn out during this process. It can be thought that this is one of the reasons for the high post-practicum stress scores.
can be said that the emotional wear and tension experienced increase the students’ stress levels.

LIMITATIONS

The limitation of the study is that the research was conducted with the students of a nursing faculty.

CONCLUSIONS

The results showed that the stress levels of student nurses caring for patients with hepatitis B and C increased at the end of the practice. In the interviews with the students, it was observed that they experienced anxiety and emotional wear and tear in patient care, behaved more carefully to cope with this situation, sought social support, and the experience reduced their stress.

In line with the results:

• Working with nursing students as well as students practicing in other health fields,
• Increasing the level of knowledge of students about infectious diseases and prevention methods in nursing education,
• It is recommended that students be given training on coping with stress.

ORCID

Hülya Kankaya
https://orcid.org/0000-0003-3154-9103
Yasemin Yıldırım
https://orcid.org/0000-0002-8970-3743

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Conflicts of Interest

There is no conflict of interest.

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