



The process and indicators of resilience among nursing students in clinical practicum in Taiwan: A qualitative study

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Background: Resilience is essential for managing stress and maintaining equilibrium. During the clinical practicum, nursing students may experience tremendous physical and mental stress, and these negative experiences are considered a source of resilience for students. However, no universal definition of resilience among nursing students exists in the literature, occasioning the need to define the processes and indicators of resilience.

Purpose: This study aims to explore the resilience process and indicators among nursing students in clinical practicum in Taiwan. **Participants:** Fifteen fifth-year junior college nursing students in Northeastern Taiwan who had completed the clinical practicum were interviewed, including 12 females and three males. All participants were aged 20.3 ± 0.61 years and all participants had clinical practicum experiences over four months.

Methods: A qualitative descriptive study, using purposive and snowball sampling methods, was conducted to collect the experience of the nursing students in their internship. Data were collected using a semi-structured guide and deep interviews, and analyzed through the content analysis method by Waltz, Strickland, & Lenz (2010).

Results: Based on the participants' practical experiences during their clinical practicum, three main themes and nine indicators were identified. The resilience of nursing students is considered a process. The main themes are (1) uncontrolled clinical practical stress, (2) Maintain learning-life balance, (3) Positive attitude toward nursing.

Conclusions: Resilience is a critical factor to stabilize nursing students and enable them to recover from adversity. Both positive and negative experiences significantly impacted the students' attitudes and confidence levels during the clinical practicum. The findings will provide faculty to adapt their teaching method to various situations of nursing students.

1. Introduction

Resilience is essential for managing stress and maintaining equilibrium [1], which is also vital to the academic and career success of nursing students [2]. Resilience could be defined as the ability or capacity that enables a person to overcome, adapt, bounce back, and/or grow after experiencing stressors or adversity [3,4]. Resilience was of crucial importance in coping with stress and staying in balance [1,5]. Additionally, it also played a mediating role in maladaptive perfectionism and academic procrastination [6,7], making students grow stronger and overcome adversity from their experience [8]. The negative experiences were considered a source of

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resilience for nursing students, which contributes to nursing students' readiness to take care of patients [9]. However, the literature on nursing student resilience is sparse [3], and the resilience of nursing students is not well defined in the research literature [4].

Nursing education encompasses both theoretical courses and practical training, providing students with a comprehensive learning process that integrates knowledge and practical experience, ultimately preparing them for their roles as healthcare professionals [10]. Clinical experiences help students learn technical skills and develop their problem-solving and clinical reasoning abilities [11,12]. On the other hand, students experienced the deaths of patients, exposed themselves to chances of infection, and also had physical contact with patients of the opposite sex when providing nursing care in clinical settings [13,14]. These learning experiences also pose challenges for nursing students, as they often entail a lack of practical experience, demanding care tasks, struggles in completing assigned homework, discrepancies between theoretical knowledge and practical clinical applications, a fast-paced environment, and interactions with instructors, which could contribute to stress and low self-esteem among individuals [15–17]. In Taiwan, nursing students also felt stress or anxiety during their clinical training period [17]. Clinical learning-related stressors could cause students to experience negative emotions and lower their confidence [18], even swaying their decision of being a nurse [17,19,20].

Mayer et al. (2022) [2] indicated there were three sources of resilience during nursing school: negative experiences, supportive structures and relationships, and individual coping processes and abilities. Eaves et al. (2019) [21] and Wu et al. (2020) [5] suggested that psychological resilience, mood control, self-plasticity, and coping flexibility, were factors for positive coping styles. Some strategies that could increase resilience, decrease burnout, and increase coping behavior, are physical activity and good sleep [22]. Listening to music would also properly adjust the mood and reduce the impact of tension for nursing students [7]. Adopting problem-solving and accommodation coping strategies was found to be beneficial in managing stress and promoting psychological well-being among nursing students [18]. Female nursing students were more likely than male and non-medical students to adopt positive coping styles [5]. However, Eaves and Payne (2019) [21] suggested that resilience could not protect students from high levels of tension that lead to burnout or intentions to quit.

The undergraduate level represents a critical stage in shaping the professional mindset, values, and capabilities of nursing students [23]. Coping, for nursing students, involves the process of assimilating into the ward culture [15]. However, limited studies have explored the resilience of nursing students within academia, incorporating relevant socio-ecological frameworks and theories [2]. The context and indices of resilience for various populations or domains require further clarification [3]. This study aimed to explore the resilience process and indicators among nursing students in clinical practicum in Taiwan.

2. Methods

2.1. Design

In this qualitative study, the authors conducted in-depth interviews on resilience with fifth-year nursing students who had finished clinical practicum in a junior college school in Taiwan.

2.2. Participants and setting

Purposive and snowball sampling methods were used in this study. Students willing to participate in the study were invited through the Line app on which it was promoted widely. Fifteen participants had enrolled in the last year of a 5-year associate degree in nursing (ADN) program at a nursing junior college in northeastern Taiwan, including 12 females (80 %) and 3 males (20 %), aged 20.3 ± 0.61 (see Table 1). The inclusion criteria were: 1) aged 20 or above; 2) had finished clinical practicums; 3) providing consent to record the interview content; and 4) taught by the researchers. The exclusion criteria were: 1) under the age of 20; 2) indigenous or foreign students; 3) not finished all clinical practicums yet. The interviews were conducted at locations the participants perceived to be convenient, quiet, and free of interruption. All participants in this study were Taiwanese, and there were no indigenous or foreign students included. Approximately 73.3 % of the participants resided in rural areas.

Table 1
Background information of the participants. (n = 15).

Variable		N (%)
Age		20.3 ± .61*
Gender	Female	12 (80.0)
	Male	3 (20.0)
The highest stress departments	Medical	12 (80.0)
	Surgical	10 (66.6)
	Obstetrics/Pediatric	8 (53.3)
Source of stress	Last miles	9 (60.0)
	Insufficient knowledge	15 (100)
	Unskilled	15 (100)
	Relationship	12 (80.0)
	Homework/report	13 (86.6)
	Others	5 (33.3)

Note: * Mean (SD).

2.3. Data collection

The interviews were guided by a semi-structured interview guide (see Table 2). Audio recordings and field notes were taken and obtained. The author of this study conducted all the interviews to ensure consistency in data collection. The length of the interviews ranged from 40 to 60 min.

2.4. Data analysis

The data were analyzed using the content analysis by Waltz et al. (2016) [24] of eight steps: 1) Defining the content of the concept to be analyzed. 2) Confirm the characteristics or concepts to be analyzed. 3) Selecting the analysis unit to be applied.

4) Developing a sampling plan. 5) Developing category, coding, or scoring guidelines. 6) Pretesting the categories or coding guidelines. 7) Establishing internal consistency among coders. 8) Analyzing qualitative research data. To ensure the accuracy and validity of the findings, the authors evaluated the rigor of this qualitative study by using the method of Lincoln and Guba (1985) [25]: After completion of each interview, the content was transcribed verbatim, verified repeatedly, and reviewed by peers and seasoned nursing experts to ensure the accuracy of the content. The researcher categorized similar content into themes, analyzed the content systematically, and provided detailed and thorough descriptions of the participants' perspectives. The robustness of the present study was evaluated using the following: 1. Credibility involved the present researcher's random selection of interview content for analysis and discussion with another practicum instructor to determine the consistency of interview content, as suggested by Lincoln and Guba (1985) [25]. 2. Dependability was identified by the present researcher's nursing practicum instructor status, experience of more than 10 years, and qualitative research training. 3. Confirmability was achieved through discussion with another practicum instructor to determine data objectivity. 4. Transferability involved ensuring that the data were representative of the themes. The procedures for content analysis were as follows:

The researchers formed meaningful sentences from the analyzed data, extracted semantic meanings from these sentences, and then established themes from characteristics shared by the extracted meaning. Another expert was invited to conduct a concurrent analysis, and subsequently discussed with the present researcher the adequacy of semantic meanings and themes to ensure content consistency. Finally, the results of the content analysis were integrated to form indices for the context of resilience in nursing students. Throughout the process, the present researcher constantly reflected on the content used for analysis to ensure the objectivity of the study.

2.5. Ethical considerations

Institutional Review Board approval of the Saint Mary's Hospital Behavior and Social Science Study Ethics Review Committee (SMH IRB106004) was obtained prior to data collection. The participants' informed consent was obtained before the study, and the interview process and relevant procedure were conducted in accordance with ethical principles. None of the participants rejected or withdrew from the study.

3. Results

This qualitative analysis revealed three themes and indicators of resilience in nursing students, including uncontrolled clinical practical stress, maintain learning-life balance, and positive attitude toward nursing (see Table 3). The statements were as follows.

3.1. Uncontrolled clinical practicum stress

The nursing students felt discouraged and helpless during their clinical practicum. They experienced stress from teamwork members, and nearly abandoned the clinical training as their knowledge and skills were inadequate.

3.1.1. Frustration and helplessness

Nursing students were confronted with various problems and tension at the beginning of their internships. They felt depressed and frustrated because these problems went beyond what they had learned in school.

Table 2

Interview questions.

1. What made the greatest impression on you during your internship experience?
2. How was your journey of internship at the hospital? How did you make yourself stay on your usual living during the internship?
3. What are the challenges of clinical practicum to you?
4. What difficulties or obstacles have you encountered?
5. What was the greatest stress for you in the clinical internship?
6. How did you adapt to or deal with your stress? What was the most effective approach to releasing stress for you?
7. What makes you feel "supported"? Who gave you the bigger support in the clinical internship?
8. What was the gap between the clinical experience and your expectations? Did you know what was wrong with you, or reasons were?
9. What kinds of changes do you have as finish the clinical internship?
10. After the internship, how did your approach to problem-solving differ from in the past?

Table 3
Three domains and indicators of resilience in nursing students of clinical internship.

Uncontrolled clinical practicum stress	1. Frustration and helplessness
	2. Self-aware of their knowledge and skill deficiencies
	3. Almost giving up
Maintain learning-life balance	1. Overcoming adversity 2. Actively seeking solutions to problems 3. Release stress in various ways
Positive attitude toward nursing	1. Shortening the gap between reality and expectation
	2. Constructing some good relationships with others
	3. Rebuilding self-confidence and achievement

“At the beginning of my internship, I felt overwhelmed as if everything was closing in on me. I was nobody and couldn’t handle the situation. My preceptor treated me like a new nurse, but I always failed to finish everything on time. Sometimes, I was afraid of falling behind on my assignments, so I stayed up late, and even cried myself to sleep.” (P6); “I was timid. I did not contact strangers as usual. So, I pretend I could get along with instructors, or patients. However, talking to patients for collecting information or write reports made me stressed actually. I was not an outgoing person, it was tough for me, and made me very nervous.” (P8)

3.1.2. Self-aware of their knowledge and skill deficiencies

Theoretical knowledge was essential for clinical practice. However, nursing students often realized that they lacked the necessary nursing knowledge and skills only after they entered their clinical internships.

“The senior nurse told me that she hoped I could become a competent nursing staff in the future. If I still knew nothing after clinical training, then I would be an incompetent nurse. I felt very guilty because I lacked professional competence.” (P5); “To be honest, I wasn’t good at applying nursing interventions. One day, my instructor asked me to do an abdominal assessment. I panicked and couldn’t remember anything, so I messed it up. Suddenly, I understand the key point was that my knowledge and skills were inadequate. I felt very guilty.” (P11)

3.1.3. Almost giving up

Throughout the internship, nursing students consistently faced pressure. When confronted with the challenges of learning in the hospital setting, they felt a sense of inadequacy in adapting to the situation independently. Some students even contemplated abandoning the practicum, and this idea lingered in their minds persistently.

“I felt that I might not be able to make it through the practicum because it troubled me at that time. Many negative emotions were overwhelming me, and I even considered quitting and running away. Although I didn’t want to give up on my clinical training and nursing career.” (P4); “I told my family that I was very tired. But if I give up, then I will have nothing. I don’t want others to think that I am incapable of handling pressure. Actually, I would like to give up” (P8)

3.2. Maintaining learning-life balance

Nursing students would actively find resources to keep their clinical learning and life balance. Moreover, they would prepare themselves before the internship, continue to strengthen their abilities, search for solutions to problems, construct some good relationships with others, and release their stress in various ways.

3.2.1. Overcoming adversity

After completing several internship courses, students tend to adapt their approach. They begin to view adversity as a normal part of their journey, as many students have also faced similar experiences during their training, and most of the problems encountered are relatively minor in nature.

“Before starting my nursing training course, I already knew that clinical internship was like a journey of ups and downs on the sea. I had to study and work hard to pass and earn my credits. I encouraged myself that it would be over soon.” (P2); “I was stressed and helpless, but I did not want to give up. I really would like to learn more and more in my internship. I had to overcome these obstacles, and try harder, I had to do better than before. I thought it would be filled with obstacles and exhausting on the way to being a nurse.” (P12)

3.2.2. Actively seeking solutions to problems

As the nursing internship progressed, students gradually mastered the learning process, transitioning from initially following their instructors’ advice to actively seeking solutions. They learned to understand the reasons behind their actions and how to effectively respond to a patient’s needs.

“If I didn’t know the answers or the meaning of systems, I would write down the key points in a memo or check the book during break time. I felt nervous when I met my first patient and struggled to communicate with him. To avoid this, I practiced every day until I knew how to react to a patient.” (P5); “Different hospitals had various challenges for me. I had to strengthen my knowledge and skills, such as by reviewing books or references, especially on diseases and nursing care standards.” (P9)

3.2.3. Releasing stress in various ways

Students acknowledged that they could only confront the challenges in the clinical setting once they had relieved their stress. Each student had their own unique way of accomplishing this: some engaged in exercise, some spent quality time with loved ones during their off time, while others found solace in shedding tears.

“Sometimes, I felt like I couldn’t breathe because I was so stressed. I would call my mother and share with her my training courses. My mom told me that she would come to see me if I needed her, which could make me feel better.” (P11) “I figured out some methods for release, for example, I would do some exercises, and go jogging with headphones on my own on the way home. This was a good idea to calm me down, and also helped me adjust my path again.” (P15)

3.3. Positive attitude toward nursing

The clinical practicum was the best time to gain more experience for students. The nursing students gradually adapted to their internship, becoming more accustomed to the daily routine of practicum. They engaged in self-reflection, worked to close the gap between their expectations and reality, and converted negative thinking into positive attitudes toward nursing.

3.3.1. Shortening the gap between reality and expectation

Students reported a noticeable contrast between clinical settings and the laboratory environment at school, particularly in the application of nursing care to patients. Connecting professional knowledge to real clinical situations during the internship became a significant challenge, leaving students feeling powerless.

“The internship was so different from what I expected. The school and the hospital environments were not the same. I realized that I had to bridge the gap between theory and practice and do my best to take care of patients who were uncomfortable.” (P7) “It was the chance to improve my nursing care abilities. The nursing care experience also taught me to think more about the needs of patients and their families. If I encountered similar problems in the future, the experience would help me make things better.” (P14)

3.3.2. Constructing some good relationships with others

Students identified interpersonal relationships as a major source of stress. Overcoming the awkward atmosphere, especially in their interactions with other nurses, proved to be challenging for them.

“Because I went to the ward early every day, finally, a senior nurse who spent her spare time showing me how to provide correct nursing care. I realized that taking a proactive attitude was the key to building good relationships with preceptors and instructors. This experience helped me to become more involved in the clinical area.” (P6) “Getting along with instructors was very important in the internship. I thought the positive attitude for learning was a good idea to keep the relationship between preceptors and me.” (P11)

3.3.3. Rebuilding self-confidence and achievement

During the clinical practicum, students continuously reflected on and evaluated their own caregiving abilities. They also reconstructed their adaptive skills and self-confidence based on feedback from patients and their families.

“The entire internship process was fruitful, and I gained more confidence on my way to becoming a nurse. I felt like a character from “Transformers”. At the end of the story, I passed the test. I believed becoming a nurse was the right decision for me, and I aspire to become a good nurse like my preceptors.” (P4) “I did like nursing care and enjoyed the clinical practicum. Although the internship process affected my living all the time, I still looked forward to learning more about how to take care of various patients in the hospital. I really cherished this experience and understood how difficult nursing care was.” (P13)

4. Discussion

Throughout the clinical practicum, nursing students encountered significant physical and mental stress, and these challenging experiences contributed to their resilience. The results of this study identified three main themes and nine subthemes. The subthemes are crucial indicators of nursing students’ resilience, which is essential for their successful adaptation to clinical practicum. The discussion was as follows:

4.1. Uncontrolled clinical practicum stress uncontrolled

The learning experience of nursing students in the hospital could lead to low self-esteem among individuals [16,17]. Maladaptive

perfectionism might lead to academic procrastination, and resilience partially mediates the relationship [16,17], which was similar to students' experience of this study. Mayer et al. (2022) [2] mentioned that students' negative learning experience was one of the sources of resilience. In this study, it was found that nursing students attributed their negative internship experiences to the individuals and environments they encountered, which resulted in feelings of frustration and helplessness. During the clinical internship stage, nursing educators should focus on creating a more supportive and conducive learning environment that helps enhance the self-confidence of nursing students in clinical practice [23]. The viewpoint was the same as the result of this study.

Conversely, Taiwanese nursing students strongly believed that they could acquire more knowledge through clinical training courses as opposed to a traditional classroom setting. Additionally, in Taiwan, the term "strawberry generation" was associated with younger individuals who were perceived as having lower resilience, tending to be too weak, giving up easily more than other generations, and losing traditional values [26]. These students refused to be stigmatized as the "strawberry generation" and like to share the responsibility of their families. Thus, the study's results were also influenced by cultural factors.

4.2. Maintaining learning-life balance

The negative experiences were from taking care of patients in clinical settings [9]. Coping was a process of fitting into the ward [16]. The findings of this study revealed that nursing students experienced different levels of stress during their clinical practicum. They faced numerous challenges throughout their clinical training. In line with these findings, Mayer et al. (2022) [22] emphasized the relationship between students' resilience and their capacity to engage in self-regulation and seek support through emotion-focused and problem-focused coping strategies. The supportive structures and relationships as sources of resilience, which could also help mitigate distress and build resilience [2,22].

Resilience was a significant factor in positive coping styles in nursing students [5]. These students adopted various coping strategies which were based on their life experiences. Resilience, mood control, self-plasticity, and coping flexibility, were factors for positive coping styles [5]. Eaves and Payne (2019) [21] suggested that resilience can mitigate life stress, a finding that aligns with the results of the current study. Nursing students demonstrated their ability to withstand the adverse effects of the internship due to their resilience. To increase resiliency, coping behavior, such as physical activity, good sleep, and listening to music, would reduce stress among nursing students [7,18,22].

4.3. Positive attitude toward nursing

Resilience had been viewed as a vital predictor of perceived well-being for nursing students [7,27,28]. In this study, students who initially had low resilience showed low confidence at the start of the internship. However, they demonstrated the ability to adapt, overcome stress and adversity, and maintain a balanced and normal learning and living experience. This positive attitude towards learning effectively enhanced their self-efficacy and professional nursing competency. This finding aligns with the observation made by Hassankhani et al. (2015) [29], who noted a significant correlation between learning motivation and self-efficacy. The students had overcome adversity and grown from experiences [8].

Resilience is a protective factor for nursing students [27]. Greater resilience was found to be a significant predictor of academic achievement, while students who dropped out exhibited markedly lower levels of resilience [30]. The students in the current study exhibited a gradual shift in their mindsets, learning to embrace the challenges of the internship and experiencing a sense of accomplishment. These findings align with the research conducted by Ching et al. (2020) [15], which highlighted that students with high resilience set self-directed goals and effectively utilized self-regulation strategies to cope with challenges. Moreover, the concept of resilience is multifaceted and dependent on context, influenced by the dynamic interaction between an individual and their surrounding environment [31].

5. Limitations

The participants in this study were seasoned nursing students who were from the same school and around 20 years old. Future studies could focus on identifying barriers to resilience, examining sources of support for resilience, and understanding resilience at different levels or schools of nursing programs. Culture could be a contributing factor to resilience, and thus, future studies should investigate the resilience of nursing students from different genders and cultures.

6. Conclusion

Resilience as a key predictor of nursing students' perceived well-being has been recognized. This study defined the process and indicators of resilience among nursing students during their clinical practicum, which were categorized into three domains, each with its own set of indicators. The findings highlighted that positive and negative experiences exerted a significant impact on the attitudes and confidence levels of students throughout the clinical practicum. These experiences ranged from feelings of frustration and helplessness to the ability to maintain a healthy learning-life balance and eventually developing a positive attitude toward nursing. The findings of this study contribute to nursing educators' understanding of students' concerns and needs during clinical practical learning, thereby facilitating the development of their professional abilities. These insights provide valuable guidance for instructors and nurses to support nursing students and novice nurses in navigating the clinical setting and managing stress. For nursing students' resilience, it is recommended that mentors provide continuous support and encouragement throughout the process of clinical adaptation.

Additionally, utilizing methods such as simulation, technology apps, or flipped teaching can aid nursing students in successfully completing their clinical training. These approaches can assist in enhancing their resilience and overall clinical competence.

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Informed consent statement

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Availability of data and material

Data will be made available on request.

Additional information

No additional information is available for this paper.

CRediT authorship contribution statement

Hui-Man Huang: Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Yu-Wen Fang:** Writing – review & editing, Validation, Supervision, Software, Project administration, Methodology. **Su-Jung Liao:** Writing – review & editing, Resources, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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