



## Research article

# Internship and postgraduate entrance examination: A qualitative study on the psychological experience of undergraduate nursing students under dual pressure in China

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## ABSTRACT

**Background:** With the development of nursing positions and nursing disciplines in China's tertiary hospitals, the number of people applying for the master's degree in nursing is also increasing year by year. Postgraduate examinations are held during internship, so nursing students face the dual pressure of testing and internship, which brings varying degrees of negative experiences and emotional fluctuations.

**Objective:** To explore the psychological experiences and influencing factors of undergraduate nursing students under the dual pressures of clinical nursing internships and postgraduate examination preparations.

**Design:** Descriptive qualitative study.

**Method:** Purposeful sampling was used to recruit 18 participants from eight tertiary hospitals in China between October and December 2023. Semi-structured in-depth interviews were conducted, with interview recordings transcribed verbatim. Thematic analysis was then applied to the data.

**Results:** Four themes were identified: negative experiences under dual pressures, coping mechanisms for negative experiences, motivational effects under dual pressures, and evaluations of significant individuals. Nursing students improved their overall abilities through internships and exam preparations, gaining a clear understanding of themselves and certain hospital roles. However, at this stage, students also experienced adverse psychological experiences for various reasons. Thus, they employed several methods to alleviate their psychological stress, aiming for a better state to face internships and exam preparations.

**Conclusion:** Schools and hospitals should pay more attention to the needs of nursing students under dual pressures, monitoring their emotional states, and providing psychological support to enhance their stress-coping abilities. It is important to ensure the overall well-being of students while strengthening the motivational effects of internships and learning experiences.

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## 1. Introduction

As we all know, nursing is an indispensable part of the healthcare system. In recent years, with the deepening of population aging, there has been a shortage of nurses in China and globally [1]. Currently, China is placing greater emphasis on the training of nursing professionals. With the continuous development of nursing education in China, the number of nursing graduates has significantly increased and the proportion of nursing graduates with bachelor's degrees is on the rise [2]. There were 272 undergraduate nursing colleges in China by 2021. After completing undergraduate nursing education, students enter clinical work after passing hospital internships, completing theses, and earning their bachelor's degrees. The clinical internship phase plays a crucial role in the training of undergraduate nursing students, being the key period for integrating nursing theoretical knowledge with practice. Internships offer students opportunities to gain clinical experience, meet patient care needs, develop communication skills and empathy, and build confidence through patient care tasks [3,4]. Compared to students in other disciplines, nursing students report higher levels of stress [5]. The primary sources of stress for nursing students stem from academic activities and clinical internships [6]. Nursing students face various pressures during internships, such as patient-nurse conflicts [7], occupational exposure [8], and even workplace bullying [9].

With the growing demand for higher-level nursing talents and competitive job market in Chinese tertiary hospitals, the pressure on undergraduate nursing students has increased, leading to a rising number of applicants for nursing postgraduate studies [10]. Nursing postgraduates are indispensable in nursing discipline development, enhancing theoretical knowledge, practical skills, and critical thinking [11], and improving research capabilities [12]. Undoubtedly, the graduation of a large number of nursing postgraduates will improve clinical nursing quality and promote the development of nursing education. In China, undergraduate nursing students must intern for over eight months in their senior year and take postgraduate exams during their internship. Thus, students preparing for postgraduate studies must manage their internship tasks while facing the added pressure of exam preparation, leading to varying degrees of negative experiences and emotional fluctuations, potentially affecting their work and study enthusiasm, professional identity [13], and even leading to psychological disorders [14]. Previous studies on nursing student stress have indicated that nursing interns face heavy workloads [15] and significant stress when preparing for postgraduate exams [16].

Understanding the psychological experiences of nursing students under dual pressures is crucial. This provides important recommendations for maintaining the mental health of nursing interns, improving nursing internship education, and enhancing professional identity. However, there is a lack of research on the psychological state of nursing students under dual pressures, and no targeted intervention plans have been developed. This study aims to deeply explore the psychological experiences and influencing

**Table 1**  
Consolidated Criteria for Reporting Qualitative Research guidelines.

No Item	Guide questions/description
<b>Domain 1: Research team and reflexivity</b>	
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?
2. Credentials	What were the researcher's credentials? <i>E.g. PhD, MD</i>
3. Occupation	What was their occupation at the time of the study?
4. Gender	Was the researcher male or female?
5. Experience and training	What experience or training did the researcher have?
6. Relationship established	Was a relationship established prior to study commencement?
7. Participant knowledge of the interviewer	What did the participants know about the researcher?
8. Interviewer characteristics	What characteristics were reported about the interviewer/facilitator?
<b>Domain 2: study design</b>	
9. Methodological orientation	What methodological orientation was stated to underpin the study? <i>E.g. content analysis</i>
10. Sampling	How were participants selected?
11. Method of approach	How were participants approached?
12. Sample size	How many participants were in the study?
13. Non-participation	How many people refused to participate or dropped out? Reasons?
14. Setting of data collection	Where was the data collected?
15. Presence of non-participants	Was anyone else present besides the participants and researchers?
16. Description of sample	What are the important characteristics of the sample?
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?
20. Field notes	Were field notes made during and/or after the interview or focus group?
21. Duration	What was the duration of the interviews or focus group?
22. Data saturation	Was data saturation discussed?
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?
<b>Domain 3: analysis and findings</b>	
24. Number of data coders	How many data coders coded the data?
25. Description of the coding tree	Did authors provide a description of the coding tree?
26. Derivation of themes	Were themes identified in advance or derived from the data?
27. Software	What software, if applicable, was used to manage the data?
28. Participant checking	Did participants provide feedback on the findings?
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified?
30. Data and findings consistent	Was there consistency between the data presented and the findings?
31. Clarity of major themes	Were major themes clearly presented in the findings?
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?

factors of nursing students under dual pressures, providing references and data support for constructing clinical nursing education and psychological intervention plans for nursing students.

## 2. Methods

### 2.1. Design

This qualitative descriptive study used online interviews for qualitative data collection and thematic analysis. The study adhered to the Consolidated Criteria for Reporting Qualitative Research guidelines [17] (Table 1).

### 2.2. Participants

Participants were recruited from eight tertiary hospitals in Henan, Guangdong, and Hubei provinces from October to December 2023. Considering the objectives of the study, eligible participants included nursing students currently experiencing the “dual-pressure” situation, those with a leave duration of less than one week, and individuals willing to sign the informed consent form. A total of 18 respondents were selected by using purposive sampling in this study, and none dropped out. Participant information is presented in Table 2. After obtaining written informed consent, online video conference interviews were arranged.

In China, undergraduate nursing students typically begin their clinical internships after completing their third year (including the summer break after the third year, the first semester of the fourth year, and the winter break after the first semester of the fourth year). On the other hand, graduate exam preparation generally starts from the second semester of the third year of undergraduate studies (including the second semester of the third year, the summer break, and the first semester of the fourth year). Therefore, the term “dual-pressure period” refers to the intersection of the internship and exam preparation, specifically the summer break after the third

**Table 2**  
Characteristics of the study participants (n = 18).

Number	Age	Gender	Education background	University	Trainee hospital (grade)	Internship duration (month)
N1	21	Male	Full-time undergraduate	Xinxiang Medical University	The First People’s Hospital of Xinxiang City (Grade III Level A)	4
N2	22	Female	Full-time undergraduate	Henan Polytechnic University	The First Affiliated Hospital of Zhengzhou University (Grade III Level A)	3.5
N3	21	Female	Full-time undergraduate	Xinxiang Medical University	Zhongshan Hospital of Traditional Chinese Medicine (Grade III Level A)	3.5
N4	22	Male	Full-time undergraduate	Xinxiang Medical University	The Third Affiliated Hospital of Xinxiang Medical University (Grade III Level B)	4
N5	22	Male	Full-time undergraduate	Xinxiang Medical University	Wuhan Union Medical College Hospital (Grade III Level A)	3.5
N6	21	Female	Full-time undergraduate	Sanquan College, Xinxiang Medical University	Henan Hongli Hospital (Grade III Level C)	4
N7	22	Female	Full-time undergraduate	Xinxiang Medical University	The Third Affiliated Hospital of Xinxiang Medical University (Grade III Level B)	3.5
N8	22	Male	Full-time undergraduate	Xinxiang Medical University	Henan Provincial People’s Hospital (Grade III Level A)	4
N9	21	Female	Full-time undergraduate	Xinxiang Medical University	Zhongshan Hospital of Traditional Chinese Medicine (Grade III Level A)	3.5
N10	21	Female	Full-time undergraduate	Henan Polytechnic University	The First Affiliated Hospital of Zhengzhou University (Grade III Level A)	4
N11	21	Female	Full-time undergraduate	Xinxiang Medical University	The First Affiliated Hospital of Zhengzhou University (Grade III Level A)	4
N12	20	Female	Full-time undergraduate	Xinxiang Medical University	Wuhan Union Medical College Hospital (Grade III Level A)	3.5
N13	22	Female	Full-time undergraduate	Xinxiang Medical University	The Third Affiliated Hospital of Xinxiang Medical University (Grade III Level B)	4
N14	22	Female	Full-time undergraduate	Xinxiang Medical University	Henan Provincial People’s Hospital (Grade III Level A)	5
N15	21	Female	Full-time undergraduate	Xinxiang Medical University	Zhongshan People’s Hospital (Grade III Level A)	4.5
N16	22	Female	Full-time undergraduate	Xinxiang Medical University	The First Affiliated Hospital of Xinxiang Medical University (Grade III Level A)	5
N17	22	Female	Full-time undergraduate	Xinxiang Medical University	The First Affiliated Hospital of Xinxiang Medical University (Grade III Level A)	5
N18	21	Female	Full-time undergraduate	Xinxiang Medical University	Peking University Shenzhen Hospital (Grade III Level A)	4

This table includes participant identifiers, age, gender, educational level, undergraduate institution, internship hospital (level), and internship duration. For instance, Participant N1 is a 21-year-old male, full-time undergraduate at Xinxiang Medical College, interning at Xinxiang City First People’s Hospital (Grade III), with 4 months of internship.

year and the first semester of the fourth year of undergraduate studies.

### 2.3. Data collection

After reviewing relevant literature and considering the study's objectives, the interview outline was initially designed and refined through a pilot interview with a nursing student under dual pressures.

Final interview questions included.

- (1) How does the clinical nursing internship and preparation for nursing postgraduate exams create pressure for you?
- (2) What impact does the pressure you face have on you?
- (3) How do you alleviate the negative effects brought by nursing internship and exam preparation?
- (4) How do you coordinate the relationship between clinical nursing internship and exam preparation?
- (5) Facing the dual challenge of clinical nursing internship and postgraduate exam preparation, what are your insights?

The co-first authors were the interviewers of this study, both were postgraduate nursing students trained in systematic qualitative research methods, who were able to complete the interviews independently and smoothly. In each interview, one interviewer was assigned to conduct a semi-structured in-depth interview with the respondent [18]. Prior to the formal interviews, the researchers contacted the participants via messaging software to negotiate interview times, ensuring that both interviewers and participants would not be disrupted by external factors during the interviews. Subsequently, the researchers logged into Tencent Meeting (a feature-rich video conferencing software with clear video and audio quality) and scheduled a meeting for a specific time slot. Within half an hour before the interview started, the researchers sent the scheduled meeting link to the participants via messaging software and obtained verbal informed consent. During the interviews, the interviewers used concise language, avoided ambiguous statements, maintained a smiling attitude, demonstrated respect for the participants, and provided appropriate responses (such as nodding or other encouraging gestures).

Most events recalled by the subjects were close to the time of the interview, making recollection easier [19]. The study strictly adhered to the principle of informed consent, protecting the privacy of the interviewees, and recordings were made with their permission. Interviewers focused on the content, maintained an objective and neutral stance, listened attentively, and observed the interviewees' facial expressions and body language, which were also noted. The interviewer made a brief record of the interview status after the interview. Interviews lasted 30–50 min, and recordings were transcribed into text within 24 h of the interview. Each participant was interviewed only once, avoiding repeated interviews. Data collection reached saturation after 15 interviews, as no new codes or themes emerged [20]. To further confirm no new themes, three additional interviews were conducted [21]. Data collection ceased after the 18th interview, ensuring no new themes emerged.

### 2.4. Data analysis

Data analysis was based on thematic data analysis as proposed by Braun and Clarke [22]. Utilizing Nvivo 12.0 for organizing and synthesizing data. The thematic analysis method proposed by Braun and Clarke consists of six steps: familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the manuscript (the steps are not linear but rather a recursive process).

Researchers repeatedly watched videos, carefully observed and considered the tone of the interviewees, facial expressions, and body language to ensure the accuracy and reliability of the data. If different participants expressed the same fact but had different tones and body language, it indicated that they had different attitudes towards that fact. This phenomenon was worth analyzing in depth. When they held a positive view of an experience, they often displayed their excitement and shared it enthusiastically with the interviewer. Conversely, when they had a negative view of an experience, they tended to slow down their speech and accompanied it with a range of body language, such as bitter smiles, head tilts or shrugging. Therefore, the interviewer briefly recorded the respondents' tone rhythms and changes in body movement during the interview process in order to better identify them when reviewing the video. By interpreting tone and body language, we could understand the respondents' meanings.

In this study, the data were tree-coded according to the interview content, and a total of 101 codes were generated during the initial coding process, including 470 reference points (familiarizing with the data and generating initial codes). Subsequently, the initial codes were integrated into potential categories, forming 22 new codes. The 22 codes were further integrated to find the themes and sub-themes (searching for themes). Reviewing the interview videos and improving the analysis content to ensure proper alignment between the themes and codes, as well as between different themes (reviewing themes). The generated codes were discussed with the research team and nursing experts under their guidance until consensus was reached. After the themes have been refined, the researchers will provide appropriate descriptions and naming for each theme based on their focus and coding types to ensure they are concise and comprehensive (defining and naming themes). Ultimately, this study has formed 4 themes, each with 3 sub-themes, and the results were provided to the respondents. The researchers wrote a manuscript based on the research data after no comments from the respondents (writing the manuscript).

### 2.5. Rigor

Credibility, confirmability, dependability, and transferability were used as criteria to assess the rigor of this study [23]. Researchers

established a good trust relationship with participants before interviews and expressed empathy during the interviews to ensure the appropriateness and correctness of the data, thereby ensuring the study’s credibility. The research findings represented the data collected without subjective bias, and researchers were trained in systematic qualitative research methodology to ensure confirmability and dependability. The study’s transferability was ensured through rich descriptions of data and maintaining reflective diaries. The participants had clear postgraduate study plans and were all interning in tertiary hospitals, ensuring the representativeness of the data collected.

During the interviews, researchers listened attentively, did not interrupt the participants, and maintained a neutral stance. Participants were encouraged to express their inner feelings, and confidentiality of their personal information was assured. Researchers conducted further inquiries into the participants’ responses for more detailed information. Non-verbal communication was used to express empathy and understanding of the participants’ experiences. Videos and audio of interviews were retained; participants’ body language and tone variations were noted. Transcriptions were done by the researchers within 24 h of each interview and were then verified by the participants to ensure accuracy.

2.6. Ethical considerations

This study was approved by Xinxiang Medical Universit Medical Ethics Committee (XYLL-20230330). All participants signed an informed consent form before the interviews. The principle of confidentiality was followed, and participants were assured of their right to withdraw from the study at any time without any reason.

3. Results

Eighteen participants (Table 2), including four males and fourteen females aged 20–22, took part in the study. Ultimately, four main themes and twelve sub-themes were identified (Table 3). And the four main themes is: negative experiences under “dual pressure”, coping mechanisms for negative experiences, motivational effects under “dual pressure”, and participants’ evaluations of significant figures.

3.1. Negative experiences under “dual pressure”

The study participants described negative experiences arising from their internships and study processes, which impacted their work efficiency, learning efficiency, and even their lives. Over time, these adverse experiences have become a significant reason for their declining sense of professional identity in nursing.

3.1.1. Bullying in the workplace

Respondents generally stated that they had experienced bullying during work, primarily from non-mentoring nurses, patients, and patients’ families.

(1) Bullying by non-mentor nurses

After several months of clinical internships, the interns perceived themselves at the bottom of the hospital hierarchy. They not only had to perform well in their internships but also diligently prepare for their postgraduate entrance exams. In this process, they often faced bullying, primarily by non-mentor nurses in their internship departments.

*“My mentor was quite supportive, but some non-mentor nurses would demand. I do their work after finishing mine. (...) I planned to study after my tasks, but these non-mentor nurses would assign me their tasks, making me unhappy.” (N3)*

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

Main themes	Sub-themes
Negative experiences under “dual pressure”	Bullying in the workplace Overwhelming external pressures Lack of opportunities for technical operational practice
Coping mechanisms of negative experiences	Communication Avoid Coordination
Motivating effects under “dual pressure”	Reduced recall bias Enhanced adaptability Enhanced practical skills
Evaluation	Self-evaluation Evaluation of mentor teachers Evaluation of the patients

*"I wish some non-mentor nurses on the clinic floor would speak to us more gently. As a new clinical student, I find their tone hard to accept."* (N13)

Due to inadequate clinical experience and personal qualities, some nurses found it challenging to provide humane care to interns. These nurses, often at the lowest hospital ranks and victims of workplace bullying themselves, vented their negative emotions on the more vulnerable interns, who silently endured the abuse without voicing their concerns.

*"I'm afraid to point out issues with some nurses, fearing reprisals."* (N13)

## (2) Bullying by patients and their families

Patients, a primary contact for intern nurses and a central focus of nursing work, along with their families, sometimes expressed dissatisfaction towards interns due to inadequate clinical experience or patient's own illness. This dissatisfaction occasionally escalated to attacking the interns, even though the interns caused no harm.

*"Some patients or their families, possibly due to medical stress, fear, or anxiety about the illness, may direct their frustrations at us, the interns."* (N1)

*"Although we sometimes face bullying while doing our best to care for patients, we generally understand the behavior of patients and their families. Due to the varied personality backgrounds of patients and their potential anxiety, it's challenging to expect perfect behavior from them."* (N16)

In conclusion, participants inevitably experienced bullying from various clinical roles during their internships, leaving an indelible negative impact on them. However, interns often demonstrate an understanding of patients and their families, reflecting the respondents' underlying qualities as caregivers.

### 3.1.2. Overwhelming external pressures

Internships and exam preparations are two significant, phase-specific tasks for intern nurses and a primary source of their external pressure. Participants not only took on various professional roles like caregivers, communicators, and rehabilitators but also the role of students aiming to pass their postgraduate exams.

#### (1) Overwhelming internship pressure

Clinical internships, essential for nursing students, provide an opportunity to apply theoretical knowledge in practice and gain experience and skills from different departments. Moreover, internships cultivate students' communication skills with patients. However, when the demands exceed what students can bear, it leads to immense pressure.

*"Nursing internships can be tough, with a heavy daily workload, constantly running around the ward, carrying out various nursing tasks to care for patients. (...) I rotated through many departments, and the specialized nursing care and treatments varied in each department."* (N16)

In this study, participants generally believed that the excessive physical burden of internships impacted them in multiple ways and even threatened their mental and physical health. They hoped that hospitals would reduce their workload while ensuring effective internship experiences.

*"My suggestion to the hospital is not to overburden the interns with work."* (N17)

#### (2) Excessive study pressure

The postgraduate examination, a selective test with extensive content and a large number of candidates, requires immense effort to pass due to low admission rates. Additionally, as nursing is an applied discipline requiring substantial theoretical knowledge, and interns spend much time in clinical settings, these factors lead to an overwhelming study pressure.

*"I feel extremely exhausted. I can't do what I want to do each day. Even when friends invite me out, I dare not go because I have to study after work. I feel like I can't be myself."* (N9)

Among many factors, the lack of effective, disposable study time is a crucial cause of their significant study pressure.

*"I feel the study pressure is quite significant. (...) After work, I'm exhausted and want to rest, but I have to study, which is quite conflicting."* (N14)

In summary, the pressure experienced during internships impacts their studies, and difficulties in studying further interfere with their internships, causing a causal relationship between the two. Although they are capable of managing one of these challenges, their phase-specific tasks require them to excel at both simultaneously. Facing undergraduate internships and postgraduate exam

preparation at the same time is a highly challenging task for nursing students.

### 3.1.3. Lack of opportunities for technical operational practice

The respondents, in the mid-stage of their internships, have indeed learned numerous clinical nursing procedures. However, they still feel that their internships are predominantly occupied with repetitive and simple nursing tasks daily.

*"Most of our work involves monotonous and repetitive tasks like continuously taking blood pressure readings or making beds, sometimes even until the end of the shift." (N10)*

This is not the internship experience they anticipated. They wish to apply the nursing techniques they have learned in clinical settings and review and strengthen their learned content. They hope to gain more opportunities for technical professional nursing operations and reduce the workload of repetitive nursing tasks.

*"I hope our instructors do not always assign us repetitive tasks like changing fluids and measuring blood pressure. We should be given more diverse technical operations." (N6)*

In conclusion, despite facing various pressures during their clinical internships, the students' ultimate goal remains to enhance themselves through internships and postgraduate exam preparations. Having completed three years of their undergraduate studies, they aspire to improve through extensive technical nursing operations during this period. Adequate training in diverse nursing operations lays the foundation for becoming a qualified Advanced Practice Nurse, balancing rich nursing theory knowledge with enhanced practical nursing skills. Some nurses, to avoid trouble, treat interns as mere laborers for menial tasks, which is not an appropriate practice in a scientific medical field.

## 3.2. Coping mechanisms for negative experiences

To adapt and address the problems they face and to mitigate the negative impact of their experiences, the participants had adopted a series of coping mechanisms, including communication, avoidance, and coordination.

### 3.2.1. Communication

Communication serves as a bridge to establish or maintain connections with others. The participants mentioned that they share their problems with their parents, classmates, friends, and mentor teachers. This method provides them an outlet for emotional release and is also an important way for others to understand and support them.

*"My parents are quite concerned about me. We maintain three calls a day, in the morning, afternoon, and evening. They offer guidance to me." (N13)*

*"I discuss with classmates or friends, who are also preparing for exams. Talking and comforting each other is very effective in relieving my stress." (N2)*

### 3.2.2. Avoidance

When participants accumulate a certain level of negative emotions, they chose temporary avoidance to alleviate their physical and psychological burden by engaging in pleasurable activities or doing things they want to do, temporarily forgetting their predicaments.

*"I enjoy having dinner or walking with some friends in the evening. Being with them relaxes me a lot. Such a relaxed atmosphere helps me forget the pressures of both internship and studies, significantly easing my stress." (N4)*

### 3.2.3. Coordination

When neither communication nor avoidance alleviates their stress, it becomes a crucial moment for the participants. They coordinate their pressures based on their reality, striving to resolve conflicts arising between their internships and studies while simultaneously enhancing their internship and study efficiency.

*"I have organized my daily study and work tasks. (...) I have balanced my internship and study content each day to make effective use of my time." (N15)*

## 3.3. Motivating effects under "dual pressure"

During this period, the combination of internships and exam preparation has undeniably exerted psychological and physical stress on the participants. However, it is undeniable that these pressures provide them with a synergistic drive. Participants believe that through the intense training under this dual pressure, their practical skills, adaptability, and professional knowledge have been enhanced and expanded.

### 3.3.1. Reduced recall bias

Through clinical internships and exam preparation, participants report a significant reduction in their recall bias towards

previously learned theoretical knowledge, resulting in the consolidation and enhancement of their professional knowledge.

*"In fact, our clinical work is linked to our textbook knowledge. It's a process of identifying and filling gaps. Additionally, I also learn many things in the clinic that are not covered in textbooks, thereby broadening my knowledge base." (N2)*

### 3.3.2. Enhanced adaptability

Before entering clinical internships, participants mostly encountered an academic environment. Upon entering clinical internships, not only did their learning environment change, but they also faced the unknowns and challenges of the clinical environment. Therefore, they had to make adjustments according to their goals and the real-world environment. They indicate that their adaptability has improved over this period, and they gradually became competent in their nursing roles.

*"When I first entered the clinical environment from the school, I was somewhat afraid. (...) Initially, I was not used to it and felt nervous. But as I gradually adapted to this environment, I began to feel increasingly capable of fulfilling the role of a nurse." (N14)*

### 3.3.3. Enhanced practical skills

Through postgraduate exam preparation, participants noted a decrease in recall bias of theoretical knowledge, allowing them to successfully apply this knowledge in various clinical departments. They encountered diverse medical scenarios, each with unique diseases and nursing measures. By continuously learning and applying relevant theoretical knowledge, their clinical nursing practice skills improved.

*"My mentor teachers instruct me in various nursing procedures, such as ECG monitoring, intravenous infusion, enteral and parenteral nutrition support, and more. (...) No matter what bad experiences I have gone through, my clinical practice skills have definitely improved." (N6)*

## 3.4. Evaluation

Over several months of internship and exam preparation, participants gradually developed a clearer understanding of themselves and the key figures they encountered in their surroundings. This awareness, shaped through feedback, influenced them to varying extents.

### 3.4.1. Self-evaluation

After months of internship and exam preparation, participants had a clear perception of their overall abilities and characteristics, possessing the potential to be competent nurses. However, various negative experiences during this period also left indelible impressions on them.

#### (1) Caregiver

In clinical settings, the essence of nursing is care. Participants described themselves as having empathetic characters, capable of harmonizing with others and showing empathy towards patients. Moreover, they applied communication skills in managing patients' difficulties and fulfilling their needs, thus enhancing the patients' medical experience.

*"I actively inquire and care for elderly patients without family members present in the clinic, asking if they need any assistance." (N3)*

*"I consider myself a person with delicate thoughts. When patients have needs that I can fulfill, I do my best to assist them." (N18)*

#### (2) Ability shortage

Despite their professional level enhancement during the clinical internship and postgraduate preparation, participants acknowledged the need for further improvement in specialized nursing operations across different departments and theoretical knowledge of various diseases.

*"I realize I still have much to learn in the finer details. I see many areas for improvement in both my internship and studies, so I need to continue working hard." (N1)*

#### (3) Low professional identification

Given the current clinical nursing environment in China, participants felt the workload was overwhelming with insufficient compensation, sometimes even facing discrimination from patients. These factors, combined with the exhaustion of preparing for postgraduate studies, led to a decreased sense of identification with the nursing profession.



*"The nursing profession, in a clinical setting, is not only exhausting but also less rewarding in terms of salary. Sometimes, we even face cold attitudes from patients. Overall, clinical nursing is quite strenuous, and I hope to move away from clinical work in the future."* (N10)

*"The pressure from my internship and exam preparation is overwhelming, and I might consider leaving the clinical field in the future."* (N14)

#### 3.4.2. Evaluation of mentor teachers

Mentor teachers are significant figures during the students' internship, subtly influencing interns through their actions, thoughts, and professional abilities. Participants reported that most mentor teachers provided excellent humanistic care and helped cultivate the right attitude towards internship and learning.

*"So far, all the teachers I've met have been good. They even allocate specific times for my studies, and I think they provide a favorable humanistic environment. They also protect us in case of conflicts with patients."* (N2)

Moreover, participants affirmed the professional capabilities of their mentor teachers, which met the standards of qualified mentors, significantly aiding in the interns' practical skills and theoretical knowledge.

*"I find the mentor teachers I've met to be very serious and responsible, offering theoretical guidance and nurturing my practical skills."* (N4)

Despite the significant improvement in interns' overall levels under the guidance of mentor teachers, sometimes, due to various reasons, mentors are hesitant to allow interns to perform more technically challenging nursing operations, leading them to perform many simple, repetitive tasks. This situation, to some extent, limits the interns' practical ability and professional knowledge advancement.

*"I wish mentor teachers would not just make us do simple, repetitive tasks like measuring blood pressure or changing fluids but also teach us more specialized, operational nursing procedures."* (N15)

#### 3.4.3. Evaluation of patients

Patients, as the recipients of medical services, are the primary service targets for nursing interns. Participants noted that although some patients displayed bullying behavior towards interns, most patients were friendly towards them.

*"Although there are some difficult ones, most patient-nurse relationships are quite good, with many patients being cooperative."* (N1)

Moreover, participants believed that a patient with a good attitude and trust in the intern could enhance their work enthusiasm and lead to a pleasant experience. Conversely, a patient's poor attitude or distrust could diminish the intern's enthusiasm.

*"If a patient is polite and trusting, nursing them feels very fulfilling. But if a patient distrusts or is impolite to me, I naturally don't enjoy interacting with them."* (N16)

## 4. Discussion

In this study, "dual pressure" is an important driving force for nursing students to improve their comprehensive level, but it is also the most important source of stress for nursing students at this stage. Describing the experiences and feelings of nursing students under "dual pressure" and their coping mechanisms in the face of adverse experiences is of great significance for better maintaining their physical and mental health and improving clinical nursing education.

Clinical internships are an indispensable experience for undergraduate nursing students, while pursuing a Master's degree represents their higher aspiration for academic and professional development. Clinical practice is crucial in nursing education, enabling students to cultivate practical abilities, critical thinking, and enhance their communication and time management skill [24,25]. The participants in this study are simultaneously preparing for their master's graduate entrance exams while interning. The daily memorization of theoretical knowledge significantly reduces their biased recollection of past knowledge, thereby ensuring they have correct and comprehensive theoretical support when performing clinical work. Thus, they continually strengthened their practical abilities and mastery of professional knowledge. Moreover, rotating through various clinical departments aided in enhancing the students' adaptability.

Clinical internships is a critical component of nursing education, but due to the dynamic and challenging nature of these internships, nursing students often experience significant stress during their internship period [26]. This study's participants, engaged in postgraduate exam preparation, improved their comprehensive abilities through daily theoretical study and ongoing clinical practice. Notably, as they progressed, their stress levels correspondingly increased [27]. Excessive stress may decrease nursing students' confidence, job satisfaction, and professional interest [28]. In our study, the dual challenges of internship and exam preparation were the root causes of negative emotions among nursing students, with clinically induced stress being more perceptible such as bullying at the workplace [29]. The bullying experienced by students mainly came from non-mentor nurses rather than mentor nurses, which might be linked to several reasons. Firstly, under the current Chinese undergraduate nursing education context, internships must be conducted in tertiary hospitals, and mentor teachers should have over three years of clinical experience and possess good professional qualities and personal cultivation. Secondly, the younger non-mentor nurses might also be experiencing lateral bullying leading them

to vent their frustrations on more vulnerable interns, a potential coping mechanism against bullying from other nurses [30]. Regardless of the victims, workplace bullying affects the physical and mental well-being of those bullied [31]. In clinical settings, patients may vent their frustrations on nursing interns due to their illnesses and personal qualities, but beyond this, it is important to pay more attention to the patient's healthcare experience. If patients have a certain level of autonomy and receive adequate respect during nursing care, the likelihood of attacks on nursing students may significantly reduce, but nurses tend to prefer compliant and passive patients [32]. Establishing a stable doctor-patient relationship is essential for reducing patients' distrust in the healthcare system and encouraging them to actively participate in their own care, leading to improved health outcomes [33]. This study highlighted the lack of opportunities for technical nursing operations for nursing students, which might also relate to students opting to study theoretical knowledge during their free time at hospitals, thereby missing valuable practical experiences in technical nursing operations. The pressure on nursing students is clearly evident during times of "dual pressure". Previous research has shown that measures such as muscle relaxation and support, and mind-body medical skills courses can help alleviate nursing students' stress, anxiety, and depression [34,35]. However, the above measures often take up too much time for the research subjects. The participants in this study are in a particularly stressful period (preparing for exams and internships). Therefore, nursing students who are under dual pressure need more convenient and effective intervention measures, such as Chinese Five Elements Music Therapy [36]. We hope that in future research, more effective interventions can be carried out with minimal disruption to the nursing students' exam preparation and internships.

Coping mechanisms are vital when nursing students face stress [37]. Studies have shown that "avoidance" is the least used coping method among nursing students [38]. However, in our research, "avoidance" was a common coping mechanism under the "dual pressure", possibly related to the duration of the avoidance behavior. The study participants relaxed themselves to temporarily forget the issues faced in internships and studies, thereby alleviating some negative emotions and better facing current challenges. Communication and coordination were positive responses to negative experiences; nursing students used communication to make others understand and support them, while coordination was a crucial measure in handling the contradictions between internship and exam preparation. Previous studies have indicated that understanding nursing students' stress coping strategies helps guide teachers and clinical mentors in creating a caring and supportive learning environment, further aiding nursing students in achieving nursing success [16].

The interviewees generally believe that they have the ability to care for patients, and that humanistic care can improve patient satisfaction and maintain their psychological well-being [39]. It is worth noting that perhaps the emphasis placed by schools and hospitals on the humanistic care ability of nursing students is intended to facilitate the transition from nursing students to qualified nurses [40], but it overlooks the fact that nursing students also need humanistic care, especially those under "dual pressure". Over time, their professional identity decreases, subsequently affecting their quality of nursing and increasing their stress [41,42]. Another factor that affects the quality of nursing and the enthusiasm of nursing students in this study is the attitude of patients, which, as mentioned earlier, to a certain extent depends on the patient's experience in the nursing process.

## 5. Strengths and limitations

### Strengths.

- (1) Online interviews overcome the physical distance between researchers and interviewees. Secondly, interviewees can choose their own interview location, making them more comfortable and less anxious in a familiar environment, thereby enhancing the reliability and authenticity of the research data.
- (2) The nursing students interviewed came from 8 hospitals in three different provinces in China. The research scope is wide, so the research results are more representative.

### Limitations.

Due to certain visual limitations during the video conference, researchers were unable to observe the complete body movements of the research subjects.

## 6. Conclusion

This study extracted four main themes. During the process of internships and exam preparation, nursing students' professional levels, comprehensive abilities, and adaptability were enhanced. However, the negative experiences encountered by nursing students are aspects that hospitals and schools should pay more attention to. It is recommended that schools arrange lectures on postgraduate exam preparation, providing more psychological counseling and guidance; hospitals should offer more humanistic care to nursing students, regularly conducting one-on-one psychological consultations. Additionally, hospitals should grant appropriate 'exam preparation leave' to ensure students can balance both internship and exam preparation. In addition to assisting students who are simultaneously interning and preparing for exams in cultivating good physical and mental health and a positive mindset through the aforementioned methods, hospitals also need to strengthen training for on-duty nurses. This will help improve the quality of nursing, enhance the patient's experience in the nursing process to indirectly reduce the negative experiences of nursing students, increase their professional identity, and strengthen their enthusiasm for nursing. Ultimately, this will enable them to face the challenges of internships and studies with confidence.

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## Data availability statement

The authors do not have permission to share data.

## CRedit authorship contribution statement

**Minghao Zhang:** Writing-original draft preparation, Conceptualization, Methods, Interviews, Validation of results. **Qing Wang:** Writing-original draft preparation, Interview, Data planning, Software Nvivo12.0, Confirmation of results. **Yingying Chen:** Literature review and summary, Analysis interview results, Investigation, Confirmation of results. **Mengjiao He:** Analysis interview results, Investigation, Confirmation of results. **Weiqing Zhou:** Analysis interview results, Investigation, Confirmation of results. **Zihui Yao:** Analysis interview results, Investigation, Confirmation of results. **Lina Wang:** Supervision, Confirmation of results. **Yan Lin:** Writing – review & editing, Validation, Supervision, Project administration.

## Declaration of competing interest

There is no conflict of interest in this study. We declare that we have no financial and personal relationships with other people or organizations that can inappropriately influence our work, there is no professional or other personal interest of any nature or kind in any product, service and company that could be construed as influencing the position presented in the review of the manuscript entitled.

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