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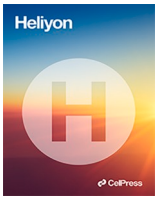

Research article

Exploring the genuine psychological experiences of novice nurses at emergency resuscitation events: A qualitative interview study

Yiqing Wang [a], Yuanyuan Liang [a], Xuemei Zheng [b], Xiaoxia Zhang [b], Liwei Feng [a,*]

[a] Department of Pediatric Surgery, West China Hospital, Sichuan University, China
[b] Division of Head & Neck Tumor Multimodality Treatment, Cancer Center, West China Hospital, Sichuan University, China

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ABSTRACT

Purpose: An emergency rescue situation is an inevitable challenge in medical work, requiring collaborative efforts from healthcare professionals. Due to a lack of practical experience, novice nurses may encounter difficulties in successfully managing emergency resuscitation events. This study aimed to analyse the authentic psychological experiences of novice nurses participating in emergency resuscitation events by exploring applicable coping methods and management strategies.

Methods: This study utilized a hermeneutic phenomenological qualitative research method. We employed purposive sampling to select 27 Novice nurses from West China Hospital of Sichuan University for face-to-face semistructured interviews. Data collection for this study was conducted from November 2023 to January 2024. The interviews were fully audio-recorded and transcribed verbatim. The data were coded, categorized and summarized with the help of Nvivo 20.0 software based on the interpretation of phenomenological research methods. Thematic analysis was performed to deeply analyse and extract corresponding themes. The COREQ criteria were used to guide the reporting of this study.

Results: The authentic psychological experiences of novice nurses participating in emergency rescue events mainly include six aspects: lack of rescue knowledge reserves and related abilities, psychological and emotional changes, psychological stress after the rescue, rational arrangement of manpower, team cooperation, and postevent reflection and learning. Their authentic psychological experiences directly affect whether novice nurses can effectively respond to emergency rescue events.

Conclusions: This study suggested enhancing novice nurses' knowledge, improving their resuscitation skills, and improving their psychological well-being during resuscitation events. It advocates for organized staffing, effective teamwork, and robust support systems to empower novice nurses and improve their overall capabilities in emergencies. These findings offer valuable insights for future research in this area.

1. Introduction

An emergency is an event that causes serious harm to human life or the environment in which it occurs, and within the medical

* Corresponding author.Chengdu, 610041, China.
E-mail addresses: wangyiqing@wchscu.edu.cn (Y. Wang), xewklyy123456@163.com (Y. Liang), 461903547@qq.com (X. Zheng), zhangxiaoxia@scu.edu.cn (X. Zhang), yutao-flw@163.com (L. Feng).

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field, these events may include but are not limited to cardiac arrest, severe trauma, etc. [1,2]. An emergency rescue situation is an inevitable challenge in medical work, requiring collaborative efforts from healthcare professionals. Seasoned nursing staff with practical experience are expected to make rapid and accurate judgments. Novice nurses [3] are defined as nurses who have graduated from school and obtained nursing qualifications. They typically have one to two years of work experience. Their main clinical responsibilities include not only routine nursing procedures but also critical care procedures, such as assisting senior medical staff in cardiopulmonary resuscitation and handling medical orders. Due to factors such as insufficient theoretical knowledge and limited practical experience, novice nurses often exhibit negative emotions such as nervousness, confusion, and fear during emergency rescue situations [4]. These negative emotions may exacerbate their difficulty in adapting to new environments, creating a negative cycle that, in the long run, could increase the turnover rate among novice nurses [5]. According to the World Health Organization's (WHO) predictions, there will be a shortage of 5.7 million nursing personnel globally by 2030 [6]. To address this clinical challenge, researchers have delved into analysing the factors contributing to the dilemmas faced by novice nurses, aiming to help them build confidence in their professional roles. However, most existing studies have focused primarily on the psychological distress that novice nurses may experience in routine clinical work [7,8], overlooking their authentic psychological experiences and perceptions when involved in emergency rescue events.

2. BACKROUND

Psychological experiences refer to various sensations, emotions, thoughts, and states of consciousness that individuals experience at the psychological level. It encompasses a broad range of subjective experiences, including but not limited to emotions, sensations, memories, consciousness, and thoughts [9]. It also covers the psychological reactions and perceptions individuals generate during objective interactions, information processing, and the experience of events in the external environment. Healthcare professionals, as special occupational groups, may experience heightened psychological burdens due to the complexities of their work environment, leading to adverse stress coping outcomes [10]. Emergency resuscitation events present a significant research challenge for novice nurses. Due to their short tenure and limited experience, novice nurses have yet to establish mature stress coping mechanisms [11,12]. Consequently, they are more susceptible to negative stress influences, potentially disrupting their physiological and psychological equilibrium and promoting the onset and development of related disorders such as insomnia and depression [13,14]. Understanding the psychological experiences that novice nurses face during emergency rescue situations can assist in establishing positive stress coping mechanisms, adapting to complex clinical environments, and fostering a positive mindset to support their entire professional career.

Qualitative research is a methodological approach aimed at in-depth observation, description, and interpretation of phenomena [15]. Distinguished from quantitative research, qualitative research primarily involves the collection of data through observation, interviews, and textual analysis, with data typically analysed using inductive, categorical, and thematic clustering methods to distill and interpret themes and relationships. The focus of this approach is on the intrinsic characteristics, feelings, and meanings of the research subjects, aiming to gain a deeper understanding of their behaviors, attitudes, and perspectives. Interpretative phenomenology, also known as 'practical phenomenology,' proposed by Van Manen [16], is one of the commonly used methods in qualitative research. The interpretative phenomenology approach emphasizes a profound understanding of individual experiences and the revelation of inner meanings. The purpose of this research method is to identify and define phenomena through an investigation of individual life experiences. Therefore, in this study, the interpretative phenomenology research method was utilized, where researchers, through face-to-face semistructured interviews, aimed to distill and summarize the genuine psychological activities of novice nurses during emergent resuscitation events. This endeavor seeks to provide more targeted support and guidance measures for the psychological well-being of novice nurses, thereby enhancing their clinical practice capabilities and professional identity.

3. Study

3.1. Design

This study employed a purposive sampling method, and the researchers utilized an interpretative phenomenological research approach. The researchers in this study accurately coded, organized, and analysed the interview data, thereby deducing corresponding themes. This study aimed to explore the authentic psychological experiences of novice nurses involved in emergency rescue events. A total of 27 valid semistructured interviews were conducted throughout the study, with the entire interviews being recorded and transcribed verbatim. The study strictly adhered to the guidelines for qualitative research (COREQ) [17].

3.2. Study setting

This study was conducted at West China Hospital of Sichuan University, a comprehensive teaching hospital. To ensure the smooth progress of the research, interviews were conducted in quiet and spacious ward classrooms to minimize external distractions while ensuring the privacy and tranquility of the interview process, allowing participants to comfortably engage in authentic and in-depth communication. At West China Hospital of Sichuan University, novice nurses can receive theoretical training courses provided by the hospital's nursing department. These courses cover a range of topics, including but not limited to, general disease care, specialised disease care, and critical patient care. Additionally, novice nurses receive guidance from experienced senior teachers during clinical practice.

3.3. Study subjects

The study subjects of this research were novice nurses from various departments of West China Hospital, Sichuan University. Recruitment notices were disseminated by the research team in advance. Subsequently, a member of the research team selected interviewees based on predefined inclusion criteria, informing them about the purpose and significance of the interviews and obtaining their informed consent. The inclusion and exclusion criteria for this study are delineated in Table 1.

3.4. Data collection

Data collection for this study was conducted from November 2023 to January 2024. The research team comprised five professional nursing personnel, with one member of the research group responsible for screening the study subjects according to the inclusion criteria. Contact with the study subjects was established in advance via electronic mail or WeChat. The first author and another researcher undertook the interviewing responsibilities. Specifically, the first author collected data through face-to-face semistructured interviews, while the other researcher recorded the nonverbal behaviors of the interviewees. Both researchers were female registered nurses who had completed qualitative research coursework and obtained a Master's degree in Nursing, demonstrating requisite research qualifications. Another member of the research group independently verified the interview data. The entire research process was conducted under the guidance of a nursing Ph.D. holder. The project leader oversaw quality assurance throughout the study. A total of 27 study subjects participated in this research. Prior to the interviews, the participants were informed that the entire interview process would be recorded. Each interview session lasted between 30 and 60 min. The interviews continued until saturation was reached, indicating that no new information nodes emerged, at which point the researchers ceased further interviews.

3.5. Interview process

3.5.1. Preinterview

To ensure the rigor of the data collection and analysis, the researchers randomly selected three novice nurses who met the inclusion criteria for preinterviews [18,19]. However, the data from the preinterviews were not utilized in the analysis of the research results. Based on the results of the preinterviews, the interview outline was revised and improved. The preinterview outline is as follows.

(1) What was your first experience with rescue like?
(2) How did your psychological emotions change during the entire rescue process?
(3) How did you cope with such emotions?
(4) What experiences did you learn from it?

3.5.2. Formal interviews

Based on a review of relevant domestic and international literature and consultations with relevant experts following the preinterviews, a formal interview outline was developed as follows.

(1) Can you describe a recent rescue situation you encountered?
(2) How did your psychological state change throughout the rescue process (before, during, and after)?
(3) How did you manage your psychological changes at that time?
(4) What were your feelings during the entire rescue process?
(5) What do you think was the most significant lesson you learned during the rescue process?
(6) What kind of assistance do you hope to receive regarding rescue?
(7) Do you have anything else to share about rescue?

Table 1
Inclusion, exclusion, and dropout criteria.

Inclusion Criteria	Exclusion Criteria	Dropout Criteria
1–2 years of work experience	A novice nurse who has not yet participated in rescue incidents.	The interview was unexpectedly interrupted and terminated due to an interruption.
Has obtained the nursing license certificate	Unwilling to express personal inner feelings and experiences related to participating in rescue incidents.	The interviewee declined to further disclose and terminated the interview.
Participated in rescue incidents		
Willing to share genuine psychological experiences from participating in rescue incidents.		
Voluntarily participating and signing the informed consent form.		

3.6. Data organization and analysis

The researcher completed a textual translation of the interview voice within 24 h, confirmed any queries with the interviewee, and used interpretive phenomenological research methods. Two members of the research team imported textual data into Nvivo 20.0 software and utilized the software's coding node function to conduct open and axial coding of the data, selecting three-level coding. The research team members reviewed the coding of the interview data to ensure consistency. Group discussions were conducted for nodes with disagreements between two rounds of coding, ultimately selecting the node closest to the theme of the study. In addition to coding and nodes, the researchers created memos to record thoughts, doubts, and insights that arose while reviewing the data. The researchers coded the obtained interview data into new or existing nodes. This study arranged the interviews and locations in advance with the interviewees, soliciting their informed consent. Therefore, there were no dropouts in this study. Due to disputes arising during the transcription of interview texts, repeat interviews were conducted with two interviewees. Consequently, a total of 29 interviews were conducted for this study, 27 of which were deemed valid. When the 27th interview was conducted, no new coding content emerged. To verify whether the data reached saturation, three interviewees were randomly selected based on purposive sampling principles. The results showed that further interviews did not reveal new themes, indicating data saturation.

3.7. Ethical review

This study was approved by the Biomedical Ethics Review Committee of West China Hospital of Sichuan University, with approval number 2448. Informed consent was obtained from the interviewees before the interviews, and the confidentiality of personal information of the interviewees was ensured throughout the interviews. The interviewees could withdraw from the study at any stage without any impact on their rights or interests.

3.8. Quality control

This study strictly adhered to the COREQ standards [17]. The data collected were independently verified by another member of the study team who also completed qualitative coursework and obtained a master's degree in nursing. This was done to increase the credibility of the study and reduce personal bias.

Table 2
General information of interview participants.

number	genders	education attainment	length of service	title	department
1	Female	undergraduate degree	2	RN	Gastroenterology Department
2	Male	undergraduate degree	2	RN	Gastroenterology Department
3	Female	undergraduate degree	1	RN	Gastroenterology Department
4	Female	undergraduate degree	1	RN	Cardiology Department
5	Female	undergraduate degree	2	RN	Cardiology Department
6	Male	undergraduate degree	1	RN	Nephrology Department
7	Male	master's degree (MSc)	1	RN	Neurology Department
8	Female	master's degree (MSc)	2	RN	Hepatobiliary Surgery
9	Male	master's degree (MSc)	1	RN	Biliary Surgery
10	Female	undergraduate degree	2	RN	Cardiovascular Surgery
11	Female	undergraduate degree	1	RN	Pediatric Surgery
12	Female	undergraduate degree	1	RN	Pediatric Surgery
13	Female	undergraduate degree	1	RN	Pediatric Surgery
14	Male	undergraduate degree	1	RN	NEUROLOGICAL INTENSIVE CARE UNIT
15	Female	master's degree (MSc)	1	RN	NEUROLOGICAL INTENSIVE CARE UNIT
16	Female	master's degree (MSc)	1	RN	Cardiac Intensive Care Unit
17	Female	undergraduate degree	2	RN	Cardiac Intensive Care Unit
18	Male	master's degree (MSc)	1	RN	INTENSIVE CARE UNIT
19	Female	master's degree (MSc)	1	RN	INTENSIVE CARE UNIT
20	Female	undergraduate degree	2	RN	Anesthesiology Department
21	Female	master's degree (MSc)	1	RN	Anesthesiology Department
22	Male	undergraduate degree	2	RN	Operating Room
23	Female	undergraduate degree	1	RN	Operating Room
24	Female	master's degree (MSc)	2	RN	General Medical Center
25	Male	undergraduate degree	1	RN	Emergency Department
26	Male	master's degree (MSc)	1	RN	Emergency Department
27	Female	master's degree (MSc)	1	RN	Emergency Department

RN: Registered Nurse.

4. Results

4.1. Baseline information

A total of 27 primary nurses, including 18 females (66.7 %) and 9 males (33.3 %), were included in this study. In terms of educational composition, 59.3 % of the respondents had a bachelor's degree. For details, see Table 2.

4.2. Coding results

The transcribed and coded data from 27 valid audio recordings were analysed, leading to the identification of 26 secondary nodes. These secondary nodes were further consolidated into six primary nodes: knowledge deficiency and related capabilities, postevent reflection and learning, changes in psychological emotions, teamwork coordination, psychological stress after resuscitation, and reasonable manpower arrangement. These nodes are shown in Fig. 1 and Table 3.

4.3. Hierarchical analysis of psychological experiences

Through the use of the hierarchical chart option in Nvivo20.0 software, the analysis of coded nodes was conducted. Among the tree-like nodes, "knowledge deficiency and related capabilities" and "postevent reflection and learning" had the highest proportions, followed by "changes in psychological emotions" and "teamwork coordination". The nodes with the lowest proportions were "psychological stress after resuscitation" and "reasonable manpower arrangement". Within the "knowledge deficiency and related capabilities" node, the most prominent aspects were "insufficient thinking ability in emergency situations" and "inability to cope with different situations". Among the "changes in psychological emotions" node, the most common were "feeling nervous and chaotic", "gradual calmness during resuscitation", and "sense of achievement". In the "teamwork coordination" node, the most critical factor was "team communication skills." In the "psychological stress after resuscitation" node, the most important factors included "reflection and evaluation" and "seeking support." In the "reasonable manpower arrangement" node, the most critical issue was "graded responsibility assignment." Through the analysis of these coded nodes, a more comprehensive understanding of the genuine psychological experiences of novice nurses participating in resuscitation events can be obtained.

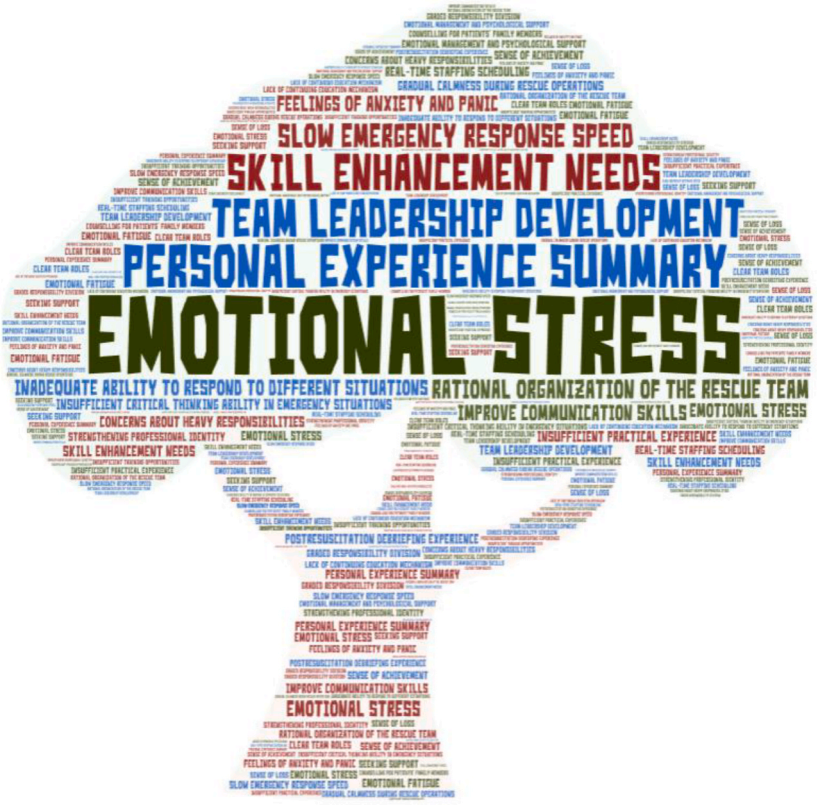

Fig. 1. Node source diagram

Table 3
Psychological experience analysis Table.

Primary Node	Secondary Node	Number of Reference Nodes	References	Examples of Reference Nodes (N1–N27)
Lack of Knowledge Reserve and Relevant Skills	Insufficient Critical Thinking Ability in Emergency Situations	10	N1,N3,N7–N9,N14, N16,N17,N25,N27	When facing a rescue situation, I always do not know what to do.
	Lack of Continuing Education Mechanism	6	N1,N5, N13,N16,N23, N24	Although I have learned relevant knowledge in school, the subsequent training mechanisms are relatively lacking.
	Inadequate Ability to Respond to Different Situations	11	N1,N4,N6,N8–N11, N14–N16,N25	In clinical practice, patients' conditions can change at any time, and I often feel helpless in responding to these changes.
	Insufficient Practical Experience	10	N3,N5,N7,N13,N16, N19,N22–N25	Due to my relatively short time in the profession, I still lack significant practical experience.
	Insufficient Training Opportunities	5	N1,N8,N15,N16,N27	After starting work, I have had fewer opportunities to participate in training sessions.
	Slow Emergency Response Speed	12	N1–N3,N7,N10,N18, N20–N23,N26,N27	When facing deteriorating patient conditions, I often struggle to react promptly.
Emotional and Psychological Changes	Feelings of Anxiety and Panic	11	N2,N4,N6–N8,N16, N21–N23,N25,N26	Due to a lack of knowledge and experience, I feel nervous as my initial reaction during resuscitation.
	Sense of Achievement	8	N3,N6–N7,N9, N13–N15, N25	After successfully resuscitating a patient, I feel a sense of accomplishment and happiness deep inside.
	Concerns about Heavy Responsibilities	10	N1,N2,N6,N11,N14, N15,N24–N27	I understand the importance of resuscitation for patients and their families. Therefore, during resuscitation, I feel a strong sense of responsibility.
	Gradual Calmness During Rescue Operations	9	N1–N3,N8,N17,N21, N25–N27	When I first start participating in resuscitation work, I may feel nervous, but as I become more involved, I gradually calm down internally.
	sense of loss	6	N6,N13,N17,N21–N23	If the resuscitation of a patient fails, I may feel powerless and a sense of loss, believing that my efforts in the resuscitation were inadequate.
psychological stress after the rescue	emotional stress	14	N1–N4,N9,N11–N13, N17–N18,N22, N25–N27	After the resuscitation is over, I find myself still immersed in the tense atmosphere of the rescue.
	seeking support	7	N3,N8,N11,N18,N19, N23,N27	Usually, after the resuscitation is over, I tend to confide my feelings and experiences during the resuscitation to colleagues or friends.
	emotional fatigue	8	N1,N7–N9,N13,N21, N24–N25	Due to my work in the critical care unit, I encounter numerous resuscitation events, and at times, I feel fatigued from coping with them.
	counselling for patients' family members	6	N7–N9,N14,N22,N26	During resuscitation, it is crucial to pay attention to the feelings of the patient's family members and strengthen communication with them.
reasonable staffing allocation	real-time staffing scheduling	9	N8–N9,N12–N14, N16–N18,N27	Resuscitation requires a large amount of manpower coordination, but in actual clinical practice, there is often a shortage of personnel.
	graded responsibility division	7	N5,N9–N10,N13,N14, N22,N25	Individuals who effectively implement hierarchical responsibility division during resuscitation work can significantly improve the efficiency of the rescue operation.
	rational organization of the rescue team	12	N2,N6–N8,N13, N15–N17,N19,N22, N24,N27	In resuscitation work, experienced senior staff members need to effectively allocate responsibilities and roles to each member of the resuscitation team.
team cooperation	clear team roles	7	N5,N9,N11,N18, N23–N25	Having clear roles for each individual during patient resuscitation will effectively enhance the efficiency of the resuscitation work.
	improve communication skills	11	N1,N3–N4,N6,N12, N14–N15,N18,N20, N24,N27	In the context of resuscitation work, there is often a tendency to focus solely on the various operational aspects of the resuscitation process, sometimes leading to neglect of communication with the patient's family members.
	team leadership development	13	N2,N4,N6–N7, N11–N12,N15,N17, N19–N20,N23–N24, N27	In a resuscitation team, having a leader with strong leadership skills always helps me feel reassured.
postevent reflection and learning	skill enhancement needs	13	N1,N5–N7,N11–N13, N16,N18,N20–N22, N27	I still need to improve my clinical skills to ensure that I am more proficient in resuscitation work in the future.

(*continued on next page*)

Table 3 (*continued*)

Primary Node	Secondary Node	Number of Reference Nodes	References	Examples of Reference Nodes (N1–N27)
	strengthening professional identity	8	N2,N6–N8,N14,N19, N24,N26	After participating in resuscitation events, I feel that my work is very meaningful.
	postresuscitation debriefing experience	9	N3–N5,N7,N12–N14, N19,N26	After the resuscitation ends, I will reflect on and summarize my experience on my own or with senior colleagues.
	personal experience summary	14	N1,N4,N7–N10, N16–N19,N20, N24–N26	I will summarize the experiences I gained from participating in resuscitation events.
	Emotional Management and Psychological Support	7	N5,N9–N10,N17–N18, N22,N27	After participating in resuscitation events, I seek support from my colleagues to restore my psychological well-being.

4.4. Visualization of the psychological experience model

Based on the organized analysis of the synthesized primary and secondary nodes, the researcher established a visualization of the psychological experience model, depicting the relationships between the primary and secondary nodes. The completed model provides a visual representation of the genuine psychological experiences of novice nurses participating in resuscitation events. Refer to Fig. 2.

5. Discussion

5.1. Node framework of the psychological experience of novice nurses in emergency resuscitation events

Through the transcription and organization of 27 audio data points and utilizing Nvivo20.0 software for coding and analysis, the

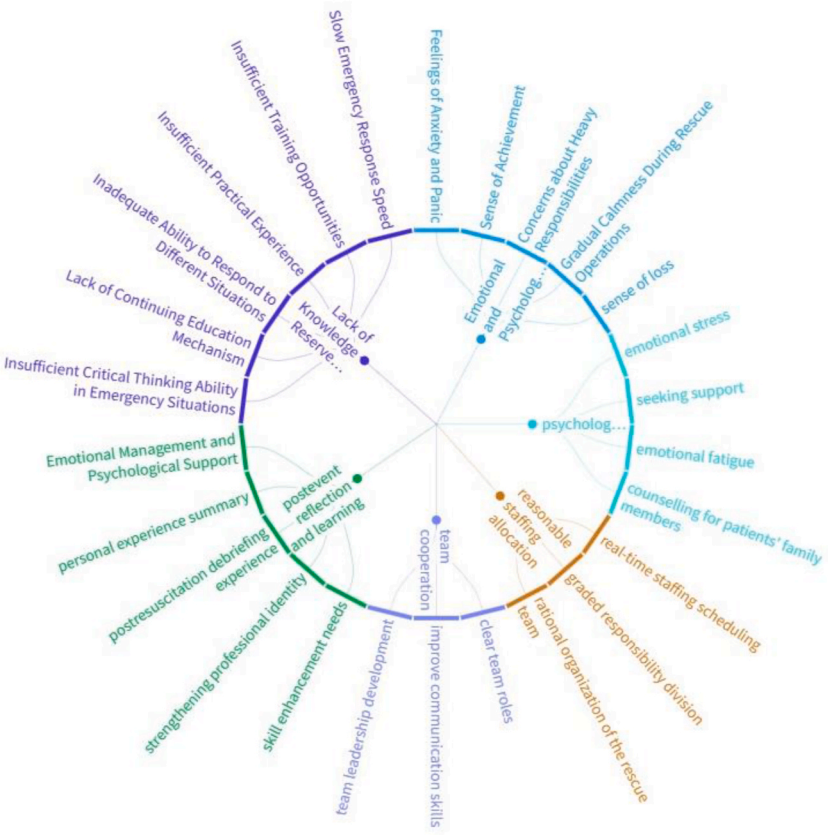

Fig. 2. Node distribution diagram

researcher obtained a node framework representing the genuine psychological experiences of novice nurses participating in emergency resuscitation events. This framework consists of 6 primary nodes and 26 secondary nodes, providing valuable insights for researchers to analyse the real psychological experiences of novice nurses in emergency resuscitation events. The node framework obtained in this study shares similarities with the results of Qingqing Liu et al., who explored the ability of novice nurses to identify deteriorating conditions in emergency patients [20]. However, this paper focuses more on exploring the changes in the psychological trajectory of novice nurses during a resuscitation event and constructing a model of the real psychological experience of novice nurses involved in a resuscitation event.

5.2. Psychological experiences of novice nurses in emergency resuscitation events

5.2.1. Lack of knowledge bases and related abilities

The results of this study showed that novice nurses usually lack expertise and competence in resuscitation in the face of emergency resuscitation events, including novice nurses' lack of critical thinking skills, lack of practical experience and slow emergency response time in emergency situations. This may be attributed to the lack of sufficient practical experience among novice nurses. The current training mechanisms fail to promptly acquire the latest resuscitation knowledge, resulting in the inability to comprehensively cover all potential emergency situations, thereby rendering frontline nurses incapable of coping with various circumstances. Studies by Karahan et al. [21] have indicated that clinical practices among nurses in burn units may entail encountering diverse situations, yet existing training mechanisms do not provide timely access to the latest resuscitation knowledge, leading to incomplete coverage of all potential emergency situations. Consequently, novice nurses lack the ability to respond to different circumstances. Healthcare institutions can establish a more systematic and comprehensive training mechanisms; for example, managers can organize professional knowledge and skills training courses on a regular basis, and novice nurses can be encouraged to participate in academic exchange activities. The above measures can help improve the coping ability of novice nurses in nursing practice.

5.2.2. Emotional changes

Through qualitative analysis, this study thoroughly explored the complex psycho-emotional changes of novice nurses during their participation in resuscitation events, including but not limited to, the sense of nervousness and anxiety, the sense of achievement when the resuscitation is successful or the sense of loss after failure. The reasons for the above emotional changes among novice nurses may be related to the urgency of the rescue event on the one hand, and on the other hand, they mainly originate from the novice nurses' skepticism of their own ability and their worries about the unexpected situation. Therefore, managers can strengthen the stress management training of novice nurses, such as the clinical scenario simulation training method, which was successfully used by Dinh [22] and other scholars in disaster simulation exercises for nursing interns. Scenario simulation exercises can fully simulate different first aid scenarios; novice nurses participate in scenario simulation exercises and experience all aspects of rescue, which can alleviate their sense of nervousness and panic in the face of emergencies, and when the simulation exercise results in failure, they may show a sense of loss, and managers should provide timely psychological guidance to enhance their self-confidence. When the results of the simulation exercise are successful, managers should fully recognize the performance of novice nurses in the rescue event to enhance their professional identity.

5.2.3. Psychological stress after resuscitation

Primary nurses often face a psychological stress response after resuscitation, which includes emotional changes, social support, emotional fatigue, and counselling of the patient's family. There are various reasons for the above psychological reactions of primary nurses. First, the unpredictability of emergency resuscitation events requires primary nurses to process a large amount of information and make critical decisions in a short period of time. Second, novice nurses are prone to the emotional stress of self-blame when they face the negative event of failed resuscitation. Therefore, hospitals should establish a sound social support network and create an open and comfortable working environment, that will help novice nurses to share their experiences, promote communication with their peers, and help novice nurses establish a positive psychological coping mechanism. Through the above measures, not only can the psychological pressure and emotional burden of nurses be effectively alleviated, but the sustainable development of nursing can also be promoted.

5.2.4. Rational staffing arrangements

Reasonable manpower allocation is the basis for ensuring the smooth operation of resuscitation. In this study, primary nurses often faced the problems of insufficient staffing and unreasonable staff scheduling when facing emergency resuscitation events. To solve the above problems, management staff can take appropriate measures to assess the quantity and quality of nursing staff on a regular basis, such as improving the intelligent staff scheduling system and establishing a reserve pool or emergency nurses. The team can respond quickly and promptly when a rescue event occurs. A clear division of responsibilities is conducive to improving the professionalism of novice nurses, enabling them to better integrate into the team and maximize team synergy.

5.2.5. Team collaboration

In this study, team role clarification, communication skills improvement and the development of team leadership play important roles in the psychological state of novice nurses when they are involved in resuscitation work. Managers should establish teamwork goals, assign tasks based on the individual abilities of team members, facilitate the effective transfer of information, and assist novice nurses in improving their communication skills. In addition, effective leaders can quickly organize a team, make decisions, and then

distribute tasks during an emergency rescue event. However, novice nurses often lack opportunities for leadership development, increasing their psychological pressure and work difficulty in emergency rescue events. Managers can take measures to set up a rotation system or a one-on-one mentor system to allow novice nurses to accumulate experience in different positions, in addition to enabling experienced senior nurses to mentor novice nurses to enhance their teamwork ability.

5.2.6. Postreflection and learning

The learning and reflection of novice nurses after their involvement in a resuscitation event is a key component of continuous improvement in professionalism and resuscitation skills. In this study, the primary psychological experiences of novice nurses were manifested in reflection and learning after the end of the resuscitation, the need for improvement of resuscitation specialty skills, the summarization of personal experience and the strengthening of professional identity. The main reasons for the above psychological feelings of novice nurses may stem from the urgency of the resuscitation event and the lack of practical experience. To enhance the resuscitation ability of novice nurses, managers should increase the frequency of resuscitation training for novice nurses, for example, by organizing the activities of relevant case studies and group discussions on a regular basis to help novice nurses master and understand the resuscitation process. El Hussein [23] and other scholars' studies on the conversion of nursing students' clinical experience to practical skills showed that managers, by combining theory and practice and constructing a reasonable feedback mechanism, can enhance the comprehensive literacy and coping ability of novice nurses. In addition, with high-intensity resuscitation tasks, novice nurses often feel burnout. Managers help them establish a positive sense of professional identity through the initiative of psychological support groups, which enhances their sense of pride and responsibility for their profession.

5.3. Visual analysis of the main causes of issues

This study explored the real psychological experiences of novice nurses involved in sudden resuscitation events through qualitative analysis to visualize changes in their psychological trajectories. Novice nurses generally feel a lack of professional knowledge and the ability to perform rescue care during emergency rescue events, a problem mainly due to their lack of sufficient clinical experience and systematic rescue training. The long-term impact of this psychological pressure on novice nurses reduces their professional confidence and sense of professional identity. By investigating the competence of 130 novice nurses in acute and critical care. Monica [24] and other scholars showed that simulation training in clinical practice could enhance the self-efficacy of novice nurses. Training programs should focus on the accumulation of practical experience and provide additional training opportunities to enhance novice nurses' knowledge of resuscitation and improve their emergency response speed. However, a sense of achievement and gradual calmness during the resuscitation process can help alleviate these emotions. It is recommended that nurses implement psychological support plans to better manage their emotions, enhance their psychological resilience, and better adapt to the stress of resuscitation work.

After resuscitation, nurses may face emotional stress and emotional fatigue. Providing timely psychological support and seeking supportive mechanisms are crucial for alleviating these stresses. Additionally, strengthening training in counselling for patient families to better handle their emotions can help reduce the psychological burden on nurses. Real-time manpower scheduling, hierarchical division, and reasonable arrangement of the resuscitation team are essential for ensuring adequate manpower. It is recommended that effective scheduling plans be formulated, team collaboration efficiency be improved through training and drills, and efficient cooperation in emergency situations be ensured, minimizing risks during the resuscitation process. The improvement of communication skills and the cultivation of team leadership are important factors in ensuring teamwork. Regular team training and drills can enhance mutual understanding and trust among team members, promoting more effective teamwork [25]. Learning and reflection after resuscitation events are crucial components. Skill enhancement needs and postresuscitation experience should be routinely reviewed. Through personal experience summaries and training in emotion management and psychological support, novice nurses' self-awareness and teamwork can be strengthened, enhancing their overall coping abilities during resuscitation events.

5.4. Strengths and limitations

In this study, an interpretive phenomenological research method was used to systematize and summarize the real psychological experiences of primary nurses involved in emergency resuscitation events with the help of Nvivo 20.0 software. Six core psychological experiences were distilled, and a preliminary model of the psychological experiences of novice nurses during emergency resuscitation events was constructed. This provides guidance for future researchers to develop targeted intervention measures. Due to the dispersed sources of psychological experience nodes in this study, the researchers did not analyse the differences between the educational backgrounds and genders of the study subjects. Future research could consider adopting diverse research methods to conduct more in-depth analyses of novice nurses with different educational backgrounds and genders to further explore the impact of various background factors on psychological experiences. The findings of this study contribute to revealing the underlying mechanisms of novice nurses' psychological experiences during resuscitation events, thereby providing more effective intervention strategies for enhancing the psychological well-being of novice nurses.

6. Conclusion

It is recommended that the knowledge base of novice nurses be enhanced, their rescue-related abilities be improved, and the psychological emotions and stress they experience during rescue processes be actively addressed. Furthermore, reasonable staffing arrangements should be made to promote effective cooperation among teams, forming a strong support system to better cope with

emergency rescue incidents and enhance the comprehensive capabilities of novice nurses. Management should promote the integration of information technology with clinical practice, assisting novice nurses in early warning preparation for emergency rescue events.

Data availability

The research data of this study are not deposited in publicly accessible databases. The data are included in the article/supplementary materials. If you need to access the relevant data from this study, please email the first author or corresponding author of this paper.

Ethical considerations

This study was approved by the Biomedical Ethics Review Committee of West China Hospital of Sichuan University, with approval number 2448.

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CRediT authorship contribution statement

Yiqing Wang: Writing – review & editing, Writing – original draft, Visualization, Software, Investigation, Data curation. **Yuanyuan Liang:** Resources, Conceptualization. **Xuemei Zheng:** Visualization, Supervision, Resources, Formal analysis. **Xiaoxia Zhang:** Software, Funding acquisition. **Liwei Feng:** Writing – review & editing, Validation, Supervision, Project administration, Methodology.

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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Appendix A. Supplementary data

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