Competency expectations of nurses in rapid response teams: an interview-based qualitative study

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Background: The rapid response teams (RRTs) are early intervention Teams made up of physicians, nurses, and/or other designated personnel that conduct early assessment and intervention of patients with changing conditions outside the intensive care unit (ICU) in order to reduce ICU admissions and prevent further deterioration or promote early admission to the ICU in critically ill patients. Numerous studies have shown that RRT can effectively reduce the incidence of cardiac arrest and accidental death in patients. Nurses are the most indispensable members of multidisciplinary teams (MDT), and their ability is closely related to the success rate of RRT.

Methods: Using the phenomenological method of qualitative research, we conducted semi-structured interviews with 16 non-nurse members of RRT, including 6 doctors, 5 anesthesiologists and 5 respiratory therapists, in a third class a general hospital in Shanghai. Colaizzi content analysis was used for data analysis.

Results: After analysis and collation, three themes were extracted: professional theoretical knowledge, professional practical skills, and personality traits. Professional theoretical knowledge includes basic medical knowledge and knowledge of rapid response system. Professional practical skills include quick reaction capability, ability to assess illness, first aid skills and communication skills; Personality traits include imperturbable and cooperative spirit of group.

Conclusions: Non-nurse members of the RRT expect the response team nurses to possess solid professional theoretical knowledge, skilled professional practical skills, and good personality qualities. Nursing managers should pay attention to the training of professional theoretical knowledge, professional practical skills and personality quality when carrying out the training practice of nurses' competency in RRT, so as to truly improve the success rate of RRT operation and further promote patient safety.

Keywords: Rapid response team (RRT); competency; qualitative research

Introduction

Rapid response teams (RRT) refers to a team of medical staff specially trained to respond quickly to signs of change in a patient's condition when they are detected by other hospital nursing staff (1). Numerous studies have shown that RRT can effectively reduce the incidence of cardiac arrest and accidental death in patients (2-4). It is important to have operative RRT. The composition of RRT members varies from hospital to hospital, generally consisting of nurses, doctors, anesthesiologists, or respiratory therapists (5). Nurses are the most indispensable members of multidisciplinary teams (MDT), and their ability is closely related to the success rate of RRT (6). In

Table 1 Participant characteristics (n=16)

RRT member type	N (%)
Doctor member (Case D1–D6)	6 (37.50)
Respiratory therapist member (Case R1–R5)	5 (31.25)
Anesthetist member (Case A1–A5)	5 (31.25)
Gender	
Female	3 (18.75)
Male	13 (81.25)
Age, years	
26–35	10 (62.50)
36–45	6 (37.50)
Years of clinical work	
5–10	5 (31.25)
11–18	11 (68.75)
Education (degree)	
Bachelor	5 (31.25)
Master	4 (25.00)
Doctor	7 (43.75)
Professional title	
Primary	4 (25.00)
Middle rank	10 (62.50)
Advanced	2 (12.50)

RRT, rapid response team.

2012, China's Ministry of Health issued guidelines on the implementation of hospital nurse post management, which clearly pointed out that the core of nurse training should be post competency (7). However, we were unable to locate any current research on RRT nurse post competency. Non-nurse members of RRT, as major stakeholders in the practice of RRT nursing, should consider their expectations when discussing the competency of RRT nurses. Competency expectation refers to the expectation of other members of the RRT group, other than the nurse, of the competencies required for the nurse to be competent for the position. To our knowledge, none have explored the competency expectations of nurses in RRTs because RRT is a relatively new concept. A deeper understanding of the competency expectations of nurses in RRT may help training RRT nurse. Furthermore, there is no standard validated questionnaire to investigate the competency

expectations of RRT nurse. Therefore, this study aimed to understand the expectations of non-nurse RRT members on RRT nurse competency using a phenomenological research method in qualitative research, and provide a basis for nurses' post training and assessment of RRT. We present the following article in accordance with the COREQ reporting checklist (available at https://apm.amegroups.com/article/view/10.21037/apm-22-566/rc).

Methods

Participants

An objective sampling method was adopted to select non-nurse members working in the RRT of a third-class hospital in Shanghai from April to June 2021 to participate in interviews. The study conformed to the provisions of the Declaration of Helsinki (as revised in 2013). The study was approved by the Ethics Committee of Zhongshan Hospital Affiliated to Fudan University (No. B2019-084R). The inclusion criteria were as follows: (I) work in RRT for at least 1 year; (II) good communication skills, willingness to cooperate with researchers; (III) agree to participate in the interview and sign informed consent. The sample size was based on the principle of "data saturation". After the in-depth individual interview, the information provided by the participants reached a state of theme recurrence, and no effective new information surfaced, even though new participants were interviewed. A total of 16 participants were included, and the general information of the participants is shown in *Table 1*. None of the participants refused to participate, and all of them provided signed informed consent.

Research method

The phenomenological method of qualitative research was used to collect data by semi-structured interview. Interviews were conducted with the researcher herself.

Researcher experience

The researcher has a bachelor's degree and is studying for a master's degree in nursing. She has more than 10 years of working experience in a hospital. Among the other three researchers, one holds a master's degree in nursing and the other two were head nurses. All project members have extensive clinical work experience and have received

systematic qualitative research training.

Create an interview outline

According to the research purpose, the researchers searched the relevant literature widely, and finally mastered the concept and research status of RRT. In accordance with the principle of qualitative interview, the outline of the interview content was initially formulated after detailed discussion with the members of the research group. The researcher purposefully selected 2 participants for pre-interview, and revised the outline according to the problems encountered during the pre-interview and feedback provided, and finally formed the interview outline. The main contents included the following: (I) What knowledge and skills would you like a RRT nurse to have? (II) What other qualities do you expect them to possess? (III) In the process of cooperation, are you satisfied with the performance of the nurses of the RRT? What is positive? What needs to be improved?

Data collection

Data were collected using semi-structured, face-to-face, one-on-one in-depth interviews. It was ensured that only the researcher and the interviewees were present during the interview. Before the formal interview, it was necessary to collect the general information of the participant.

Before the formal interview, the interviewees were introduced to the purpose, content, and methods of the research, informed privacy protection principles, and interviewees were informed that they could stop the interview at any time, and promised to use a code instead of their name to gain their understanding and cooperation. A quiet place was selected for the interview process, such as a ward office or conference room. The interview time for each interviewee was about 30–45 minutes, and the whole interview was recorded by recording pen.

During the interview, the researcher responded appropriately to the respondents, asked targeted questions if necessary, avoided any guiding language, paid attention to the changes of nonverbal information such as the respondents' expressions and actions, and made records in a timely manner.

Statistical analysis and quality control

After the end of each interview, the recordings were sorted into text materials within 24 hours, without any modification. After the text data had been sorted out, it was submitted to the respondents to confirm whether there were any omissions and errors requiring revision. Two researchers repeatedly read, analyzed and coded the research data, and constantly compared the results with the original data. The different opinions among researchers were discussed and analyzed by the research group. Data were analyzed using Colaizzi's 7-step data analysis method for phenomenological research, including: (I) Read all interviews carefully. (II) Extract significant statements. (III) Encode recurring ideas. (IV) Assemble the ideas after coding. (V) Write detailed and exhaustive descriptions. (VI) Identify similar ideas and sublimate the theme. (VII) Go back to the interviewee for confirmation.

Results

Topic one: professional theoretical knowledge

Basic medical knowledge

Many respondents expected RRT nurses to have knowledge not only in the field of nursing, but also basic medical knowledge, including anatomy, pathophysiology, and the clinical significance of examinations or tests. Case D1: "Rapid response team nurses need some medical knowledge, not just nursing knowledge. When you're trying to judge or evaluate a patient, the first thing you have to do is you have to have a rough idea of where the patient might have problems, which means you have to have a good understanding of the anatomical location. You also need to refer to a few laboratory or other examination reports. These are all indicators of professional competence, otherwise it's easy to make patients or family members doubt your competence and lose trust in you. It is very difficult to carry out the work behind that"; Case D4: "It is best to have some medical knowledge, for example, I want to know a patient's examination report, if she has some physiological knowledge. Well, if she had some knowledge of physiology, she would have understood immediately what I was doing and what the results meant. This will make you feel better and work more efficiently"; Case A2: "I think you need to have some medical knowledge, but not as much as a doctor. It's easier to understand the clinical significance of many tests or tests if you know something about them".

Knowledge of rapid response system

Some interviewees expect RRT nurses to have a comprehensive understanding of the hospital rapid response

system, including RRT call standard, call handling, RRT collection, and so on. Case D3: "In fact, every one of us should be familiar with the hospital's rapid response system. Under what circumstances are members called? How to handle calls? How do we assemble and so on? Otherwise, it will be difficult to ensure smooth operation, and even if it does run, there will be a lot of problems"; Case R4: "You should have a thorough understanding of the group's standards and requirements".

Topic two: professional practice skills

Quick reaction capability

Some interviewees expected RRT nurses to be able to respond quickly and arrive at the calling department within a short time after receiving the call to assist the department staff to carry out intervention. Case D3: "In my opinion, the ability of quick reaction should be possessed by every member of the team. You should take action immediately in the face of the call, not remain indifferent"; Case R2: "You have to be quick. Fast here does not mean how fast you run, but that you can reach the call department in a relatively short time to carry out interventions and avoid adverse events. As opposed to the patient already having v-fib or something, then go to the rescue"; Case D5: "RRT nurses also need to be able to respond quickly to a call".

Ability to assess illness

Some respondents expected RRT nurses to have professional assessment skills, including physical examination, critical thinking, and application of assessment tools and strategies. Case D2: "If you run over and you see that the patient is having trouble breathing and oxygenating, you need to do an initial assessment. You can get a simple physical exam or other test and, based on your evaluation, get an idea of your condition"; Case D3: "Doctors generally hope that nurses can have the ability of quick thinking, observation and analysis of problems, especially RRT nurses should have the ability to discover, analyze, and solve problems"; Case D5: "The assessment of the condition is very important, and some specific assessment tools or strategies can be used to assess it. And then make a rough judgment about the general direction of the disease, for example, what might be the cause of decreased urine production? What might happen if blood pressure drops. Take this vital sign or these manifestations and make a preliminary judgment"; Case A5: "I feel that RRT nurses should have good critical thinking and be able to make the best clinical decision in a given situation".

First-aid skill

The overwhelming majority of respondents expected RRT nurses to be skilled in first aid, with advanced resuscitation skills in addition to basic first aid skills. Case D1: "First aid skills at least are to have, all the first aid operations to be very skilled. Can be used at any time, such as CPR, defibrillation, intubation and so on"; Case D3: "First aid skills are the most basic and important. As an RRT nurse, simple CPR skills are not enough. You also need to be familiar with the things that might be involved after resuscitation, for example, if you have a slow heart rate after resuscitation, then we usually think about using drugs to increase the heart rate or installing a pacemaker. All these needs to be completed with the help of nurses"; Case D6: "It's not just that you know CPR, but we've all been trained in advanced life support, so we might need to work on that"; Case R2: "I think we might need a little more work on the first aid, but it's not deep enough. Basic first aid skills are relatively skilled, but in post-resuscitation observation and cooperation need to be in-depth".

Communication skills

Several respondents mentioned that RRT nurses are expected to have professional communication skills to ensure that information is delivered quickly, accurately, and effectively. Case D3: "As a multidisciplinary team, communication is very important. The members may have known each other before, they may have met for the first time. How to ensure fast and accurate information acquisition and communication between members is a skill in the whole process of cooperation"; Case D4: "In fact, this kind of communication within our team is very exquisite, there should be a relatively standardized communication mode. I remember one time, I was doing a chest puncture, and I told the nurse to give me a lidocaine. But after more than ten seconds, she did not respond, I am not sure whether she heard, such communication is ineffective"; Case R4: "In fact, teams can try to use closed-loop communication mode, which is very mature in foreign countries and can be used for reference".

Topic three: personality traits

Imperturbable

Many respondents expected RRT nurses to be calm and imperturbable. Case D3: "Nurses should not be panic in

chaos situation, but should be calmer. So that the patient can trust you"; Case D5: "Be calm in an emergency. Of course, it has a lot to do with your experience. A few more encounters will take the edge off"; Case A4: "As an RRT member, you are there to help in a professional capacity. You must first have a clear and calm mind in order to work quickly and orderly".

Cooperative spirit of group

Almost all respondents expected RRT nurses to be team players. Case D2: "The hospital has established many MDT teams, such as pain MDT team, lung cancer MDT team and so on. Now it's all in the form of multidisciplinary team work. The team like our RRT is actually a multidisciplinary team. There are doctors, nurses, anesthesiologists, respiratory therapists, and so on. This requires teamwork to keep the work going"; Case R3: "We should have a spirit of unity and cooperation, just as a famous saying goes: people together is a party, heart together is a team. As a team, the spirit of teamwork is very important"; Case A3: "As an emergency medical team, teamwork is absolutely essential. What's a team if everyone's doing their own thing?".

Discussion

Expect solid professional theoretical knowledge

Professional theoretical knowledge is the cornerstone of RRT nurse competence. The interview results show that the interviewees have heightened expectations for the professional theoretical knowledge that RRT nurses need to master, mainly including basic medical knowledge and knowledge related to the rapid response system. Theoretical knowledge is the foundation of practice. Anatomy is the first basic medical course for nurses and the foundation of clinical nursing techniques (8). The RRT nurses in China are mainly from intensive care units, which is consistent with Stolldorf's opinion that RRT members should have expertise in intensive care and be an expert in intensive care (9). At the same time, a study on nurses' needs for critical care knowledge and skills training has shown that there is a high demand for basic medical knowledge (10). Currey *et al.* also mentioned in their study on the competency requirements of RRT nurses that RRT nurses need to have knowledge of the rapid response system (11). Therefore, RRT nurses need to master solid basic medical knowledge and knowledge related to rapid response system, which would render them better qualified for RRT nurse work.

Expect skilled professional practice skills

Professional practical skills are the guarantee for a competent RRT nurse. The results of this interview show that the interviewees put forward requirements for professional practical skills that RRT nurses need to master. Among them, they have high expectations regarding first-aid skills and communication skills. They believe that mastering basic first aid and advanced resuscitation skills is the most basic and important requirement for RRT nurses. This is consistent with previous studies. The RRT established by the Chinese researchers Chen Fang, Liu Yiqun, and Yu Li all contain advanced cardiac life support certificate as a necessary requirement for the selection of RRT members (12-14). Zhang Shaoguo investigated the first-aid ability of 1,008 nurses and found that their first-aid ability was affected by ability level, nursing age, and education background (15). It is suggested that stratified training should be considered when developing first aid skills training. An RRT is a professional emergency medical team. As one of the core members of the RRT, nurses have high requirements placed on the completion and effectiveness of their communication. Professional communication skills can not only improve the overall quality of nurses, enhance nurse-patient relationship, reduce nurse-patient disputes, but also circumvent adverse outcomes caused by ineffective information transmission (16). Therefore, RRT nurses should have skilled professional practice skills, with special attention given to first aid skills and communication skills training.

Expect good personality traits

Personality quality is the basis for nursing competency within an RRT. The results of this interview show that respondents expect RRT nurses to have a calm personality and teamwork spirit. A study has shown that teamwork is correlated with nurses' age, gender, working years, and functions (17). It suggests that relevant factors should be fully considered in the selection of RRT nurses. The higher the level of teamwork, the lower the rate of errors or accidents (18). A calm face to emergencies is inseparable from rich work experience (19). Studies have also pointed out that male nurses have stronger psychological endurance and can face critical patients more calmly in emergency situations and carry out emergency work in an orderly manner (6,15). This provides reference information for the selection of RRT nurses. With the deepening of the

medical system reform, it has become a part of the core competitiveness of hospitals to have a RRT with high teamwork and practical ability. It is also an important embodiment of the comprehensive strength of the hospital. Thus, for RRT nurses, we should pay more attention to the cultivation of team spirit.

Through semi-structured in-depth interviews with 16 non-nurse members of the RRT, this study investigated the expectations of different members regarding the competency of nurses in the RRT. In order to promote the development of RRT nurses, nursing managers should pay attention to the expectations of team members when selecting, training, and evaluating RRT nurses, strengthen the training of nurses' competency in the RRT, improve the success rate of RRT operation, and further promote patient safety.

Acknowledgments

Footnote

Reporting Checklist: The authors have completed the COREQ reporting checklist. Available at https://apm.amegroups.com/article/view/10.21037/apm-22-566/rc

Data Sharing Statement: Available at https://apm.amegroups.com/article/view/10.21037/apm-22-566/dss

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at https://apm.amegroups.com/article/view/10.21037/apm-22-566/coif). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study conformed to the provisions of the Declaration of Helsinki (as revised in 2013). The study was approved by the Ethics Committee of Zhongshan Hospital Affiliated to Fudan University (No. B2019-084R). All relevant personnel involved in this study have given informed consent to ensure the smooth conduct of this study.

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