Intelligent Resilience of Pediatric Burn Nurses: A Qualitative Study

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Abstract

Background: One of the most important human abilities in adaptation to professional stressors is resilience, especially in nurses working in burn centers. The present study was conducted to understand how nurses develop intelligent resilience strategies while providing care for burnt children.

Materials and Methods: In this qualitative study, 20 burn nurses working in the burn center of Imam Reza Hospital were selected through purposeful sampling. Semi-structured interviews were conducted. Nurses were asked general and specific questions pertaining to their experiences about stress-coping strategies while providing care for burnt children. Data analysis was carried out using the content analysis method.

Results: A total of 198 initial codes were classified into four themes including "intelligent communication", "multifaceted support", "maturity in difficult and high-risk conditions", and "belief in abilities".

Conclusion: Via identification of the most important strategies used in this field, effective steps can be taken in reducing the emotional and physical exhaustion of nurses.

Key Words: Adaptation, Burn Units, Pediatric Nursing, Qualitative Research, Resilience.

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1- INTRODUCTION

Nurses face a variety of harmful conditions, caused by their stressful occupational environment (1). They must respond to these stresses by the adoption of coping strategies and need to be equipped with the power enabling them to improve and return to the normal state, defined as resiliency (2, 3). Since resiliency is confirmed to be correlated with burnout (4), acquiring more resilience can lead to more stable and satisfying work experience for the nurses.

The nurses working in critical situations such as pediatric burn centers are exposed to a higher level of occupational stress (5, 6). Poor pain control, the extent of burn wounds, and the symtoms showing end of patient life are some of challenges which make nurses feel powerless (7). Paediatric death is one of the most stressful situations in nursing care with severe negative effects on the physical and psychological health of nurses (6). These threats can increase burnout and diminish nurses' desire to continue working in the burn unit. However, despite the presence of all these stressors, some of them continue to care for patients in such challenging and high-pressure wards. The underlying causes of such approaches were explored by some researchers. For example, Imani (2018) believed that nurses use patience and wisdom, reverence, situational self-control, and appealing to religiosity to cope with their stresses (8). Cronin (2001) has also mentioned coping strategies of burn unit nurses (9). Some of the nurses' strategies to develop resilience were reported in a review study by Hart (2014) as an individual, group, and organizational strategies (10). But a short review of the published studies reflects that few of them have focused on strategies used intelligently by pediatric burn nurses to improve their resilience (2, 9, 11). So, the present study was conducted to understand how burn nurses develop intelligent resilience strategies while caring burnt children.

2- MATERIALS AND METHODS

2-1. Design

The exploration of the opinions of individuals experiencing specific events can be accomplished by a qualitative research design with a latent content analysis approach (12). Accordingly, the current research adopted this method with an inductive approach to extract various codes and categories, which were then conceptually ordered based on their properties and dimensions (13, 14).

2-2. Participants and Setting

This study was conducted on 20 burn nurses working in the burn center of Imam Reza Hospital, in Mashhad, the only burn center in the Northeast of Iran. Nurses who had the experience of working as a pedictric burn nurse for a minimum of one year were purposefully selected from various age groups, educational levels, work experiences, and job positions.

2-3. Ethical considerations

Research approval was obtained from the Ethics Committee of Mashhad University of Medical Sciences (code of ethics: IR.MUMS.NURSE.REC.1398.064).

2-4. Data Collection and analysis

Data collection was done using unstructured interviews. The interviews included both general (e.g. Please, describe your experience of one working day at the pediatric burn unit) and specific (e.g., would you please describe your experiences about providing care for burnt children? How did you cope with these challenges?) questions. Furthermore, the nursing managers were interviewed to discuss their experience regarding the promotion of resilience among their nurses (e.g., please, describe how you encourage your subordinates to increase their resilience?). In addition, in-depth questions

were asked depending on the responses provided. For example, they were asked: "Could you explain more about this?"

Content analysis was done using Graneheim and Lundman's approach (16). Each interview was conducted in Persian by the corresponding author who was an expert in qualitative studies and lasted from 30 to 80 minutes. The interviews were recorded after obtaining the interviewees' consent and transcribed verbatim. In the open coding phase, all the transcriptions were read several times, and then the keywords, phrases, incidents, and facts were extracted. The extracted primary codes were compared to detect their similarities and differences. Then the themes and subthemes were developed. In this regard, a preliminary set of codes, themes, and subthemes were derived from the first interview, and the emerging codes were considered as the results. A single interviewer performed all the interviews following the content analysis methodology (15, 16).

2-5. Trustworthiness

Maximum sampling variation, along with member checking and peer debriefing, was used to validate the dependability and credibility of the data (16). A summary of the interviews was given to nine participants to confirm that the researchers accurately depicted their viewpoints and experiences. To perform peer checks, the transcriptions and a summary of the analysis process were delivered to two experts with a Ph.D. in nursing. In case of any differences, they were resolved through discussion (17). Our prolonged engagement in the research setting (from April 2018 to March 2019) allowed us to create a good rapport with the interviewees and collect the data accurately.

3- RESULTS

The personal characteristics of the participants are shown in **Table 1**.

Table-1: Personal characteristics of participants

Participant No.	Sex	Unit	Position	Age	Work history (Year)
1	F	Burn unit	Nurse	46	17
2	M	ICU	Head nurse	42	15
3	F	Burn unit	Nurse	45	16
4	F	ICU	ICU nurse	42	16
5	M	Emergency unit	Nurse	41	15
6	F	Burn unit	Head nurse	42	16
7	M	Emergency unit	Nurse	40	15
8	F	Burn unit	Nurse	41	16
9	F	ICU	ICU nurse	42	17
10	F	ICU	ICU nurse	29	5
11	M	Emergency unit	Nurse	39	12
12	F	ICU	ICU nurse	38	11
13	F	Burn unit	Nurse	41	15
14	F	Burn unit	Nurse	40	15
15	F	Emergency unit	Head nurse	47	25
16	M	Emergency unit	Nurse	45	16
17	M	Burn unit	Nurse	40	13
18	F	Burn unit	Nurse	37	14
19	M	Emergency unit	Nurse	42	18
20	M	Emergency unit	Nurse	32	8

The factors enhancing resilience in the burn center personnel were classified into four themes (**Table 2**).

Table-2: The main themes, categories, and related sub-categories

Theme	Category	Sub-category
Intelligent communication	Intra-unital communication of personnel	Sense of humor
		Arrangement of celebrations
		Physician-nurse interaction
	Relationship between the authorities and the burn center	Acknowledgment and appreciation of the staff
		Friendly staff meeting with psychiatrist colleagues
		Friendly/ confidential admonitions
		Encouragement of personnel to take leaves
Multifaceted support	Spiritual support	Trusting in God
		Asking for spiritual support
	Social support	Understanding of family members
		Emotional peer support /empathy
Maturity in difficult and high-risk conditions	Management of care challenges	Encountering occupational stress along with experienced colleagues
		Occupational peer support
	Readiness/ability to accept difficult conditions	Internal satisfaction
		Similar experiences from other care centers
Belief in capabilities	Self-esteem	High knowledge of burn diagnosis and care
		Skillfulness in applying dressing and bandages
	Self-efficacy	accurate assessment of life-threatening events
		Management of critical situations

3-1. Intelligent communication

Intelligent communication was one of the themes that emerged from the nurses' experiences and perceptions. This theme consists of two subthemes, namely the intra-unit communication of the personnel and the relationship between the authorities and the burn center/personnel.

Intra-unital communication among personnel was introduced as one of the strategies used by the nurses to deal with their stresses. Given the fact that the use of humor is effective in coping with stress, the personnel of the burn center also tried to recover physically and mentally in various ways, even during the short breaks, to overcome hardships and continue providing quality care services. Participant No.5 stated:

"When we get together for tea in the unit, we have fun, make jokes, and talk about funny stuff. This short period is relaxing and increases our tolerance."

Arrangement of celebrations was another factor that made nurses physically and mentally healthy and fresh. It is natural that the creation of a happy environment affects personnel. This issue was also highlighted by the head of the nursing center who claimed:

"We intelligently try to create an atmosphere of happiness in the center. Several days ago, we had a celebration serving chocolates and sweets." *(Participant No.6)*

Effective physician-nurse interaction was reported as another case that could lead to positive outcomes, such as increased information sharing, effective interventions, and cheerful employees. This issue was clearly pointed out by one of the subjects as she remarked:

"I'm happy about the fact that I can interact with the doctors about the patients' condition and the treatment process, and I enjoy working in this center." (Participant No.9)

The relationship between authorities and the burn center/personnel is another factor that was raised. The highest level of stress among the nurses was related to the feedbacks they received from nursing managers. Therefore, nursing managers not only tried to intelligently make remarks in a friendly and confidential manner, but also organized weekly or monthly meetings with their personnel to discuss the necessary points.

In this regard, participant No.17 said:

"I gently warn my colleague about the importance of correct graft dressing for children, trying to remind them the necessities for good repairing process ..."

Encouragement of the staff by the authorities in different forms and for various reasons can be effective in eliminating the physical and mental fatigue of the personnel and boosting their resilience. Participant No.2 acknowledged:

"When the staff cooperate in holding educational sessions for new personnel and in fact, they feel responsible, they are appreciated and encouraged. Such encouragements boost nurses' energy."

The occupational stress of the burn center can affect all aspects of personnel's mental health. Therefore, it is essential that preventive and supportive measures, such as consultation with a psychiatrist, be taken to improve the mental health of the staff. In this regard, participant No.14 stated;

"I brought together all my colleagues to discuss their challenges with a psychiatrist, several times."

Encouragement of the staff to take leaves was identified as another factor in improving the professional health of this group. Participant No.20 remarked:

"I didn't feel good for a while. I even thought of leaving my job because of a problem with the center's director. The head nurse immediately offered me a vacation. I was slightly better after I got back."

3-2. Multifaceted support

Multifaceted support, which is one of the strongest mental health predictors, is another theme extracted from the analysis of the nurses' statements.

An important strategy for the personnel to overcome their challenges was to use spiritual support. Spiritual support is like an extraordinary power that equips individuals with spiritual strength and enhances their ability to deal with problems. The participants acknowledged that they began to provide better care to burn patients by trusting in God. Participant No.15 said:

"The children who refer to our center, usually have extensive burn injuries… Every morning, with trust in God, we spent a lot of time on changing their dressing with a team of colleagues."

The participants also mentioned that every day they resorted to spiritual support to control their emotions and feelings. Participant No.12 stated;

"As I saw a burnt child whose skin was completely severed, I asked for God's help, so I could control myself."

Another factor modulating the stress and tensions of the burn center is the social support of the burn center. Spiritual and

psychological pains of burnt children influence the personnel. Nurses acknowledged that the higher the understanding of their family members, the better their mental health would be. Participant No.19 uttered:

"When I'm at home, I talk to my husband, he understands my fatigue and tries to take the kids to the park, so the house is quiet and I can have some rest."

Another solution to resolving the emotional problems of the nurses was found to be emotional and empathic support that allows people to express their feelings. This display of emotion would reduce tension and facilitate occupational adaptation and acquisition of skills and abilities to overcome the difficult situations in new nurses. Participant No.11 mentioned:

"When I first encountered a burnt child, I became extremely stressed, especially because the child had an extensive burn injury. I told the managers that the job was not meant for me. But my colleagues patiently listened to me, they were sympathetic. I gradually got empowered and today, I can care for children with high TBSA burn injuries."

3-3. Maturity under severe and high-risk conditions

Considering the inevitability of nurses' exposure to work stress while providing clinical services, they need to receive comprehensive support from their experienced colleagues to gain valuable experiences and ultimately enhance their resilience. This issue was clearly stated by participant No.8 who said:

"Suddenly, the child had cardiac arrest... I got highly stressed. Fortunately, with the help of my experienced colleagues, that child was immediately intubated and survived."

In this regard, the participant held that colleagues' support is among the factors that reduce occupational stress. Burn nurses understand and try to help each other because of their heavy workload. Participant No.16 said:

"We help each other out. I dressed the wounds of the child I was attending to. Then, I immediately went to my colleague who had a patient with an 80% TBSA burn injury. In fact, when we are free, we look to see who is overstretched and we help her out quickly."

Being interested in the nursing profession and service provision for people makes nurses receive positive energy in their clinical work, thereby causing satisfaction with the patient care process. Participant No.4 reflected:

"The workload here in the pediatric burn center is heavy. But because I love serving people, I've accepted all the hardships ..."

Experience of working in other centers enables nurses to tolerate the pediatric burn center conditions. Participant No.10 acknowledged:

"I had previously worked in the emergency center, where I had seen emotionally devastating scenes, such as accidents or knife-related injuries... Because of those experiences, I was able to cope and work in the pediatric burn center."

3-4. Belief in abilities

Belief in abilities was identified as another factor leading to the enhancement of resilience. Our participants believed that they were able to provide appropriate care with their competence and skill. They believed that their knowledge, information, and clinical skills regarding burn diagnosis and management had increased their self-esteem. This feeling caused positive adaptation to the burn center, thereby leading to resilience formation. Participant No.3 uttered:

"Always, the physician confirms my diagnosis and decisions. Having extensive

information and self-esteem is one of the nurses' capabilities in this center that helps us keep going in the pediatric burn center and deliver prompt clinical services to burnt children."

Still another ability of the burn center personnel was the ability to manage critical and life-threatening situations by relying on their self-efficacy, thereby saving the children lives. Concerning the assessment of the injury and the clinical interventions, participant No.1 said:

"After a quick inspection of the airways, fluid and oxygen therapy was performed and painkiller was administered, and child's wound was irrigated before the physician in attendance arrived. In fact, every time I perform timely and quick interventions for an injured child, I feel so satisfied..."

4- DISCUSSION

One of the useful strategies for the management of multiple stressors and effective adaptation with the risk factors for the nurses of pediatric burn centers is resiliency. Therefore, it is essential to understand how nurses are using strategies to adapt to occupational stress and exhaustion. In this study, we found better and deeper comprehension of intelligent resilience strategies adopted by the nurses working in the pediatric burn centers.

4-1. Specific findings

In this study, the analysis of the experiences of pediatric burn nurses resulted in the identification of four main themes, including intelligent communication, maturity in difficult and high-risk conditions, belief in abilities, and multifaceted support. Having their own subthemes, these themes are based on distinctive properties. The results of some studies are in line with those of our study; however, there are other studies with contradicting results. There were some similarities and differences among the results of this study and other ones; the point of discrepancy was that many of pediatric burn nurses in our study had not experienced job burnout and showed a certain degree of resilience (18, 19).

In the pediatric burn center, nurses used a variety of strategies to cope with stressful situations. They had created a platform for their growth and development based on the high-risk situations of the burn center. The findings of this study showed that developing intelligent communication between the nurses and the doctors/officials would be accompanied by significant positive effects on the occupational process and resilience of nurses.

According to our findings, one of the effective methods used by nurses to establish intelligent communication included a sense of humor and arrangement of celebrations in the center. The nurses in the burn center not only witnessed children groaning in pain but also observed horrible scenes. One of the ways to reduce tension is to use humor. Accordingly, the staff reported having been recovered during breaks using a sense of humor, which can be also effective in the promotion of resilience. Use of humor in stressful situations would lead to the enhancement of an individual's tolerance, reduction of stress, and even resilience enhancement (20). The findings of this study also showed that resilient people and those with a sense of humor have a strong desire for progress as well as high self-esteem.

As for creating a favorable environment, the authorities of the pediatric burn center believed that the establishment of a happy environment through the arrangement of celebrations would enhance vitality and good morale, thereby improving the nurses' resilience. Happiness in the workplace (including any pleasing activities unrelated to work) leads to the elimination of stress and anxiety.

Moreover, developing a sense of humor in the workplace is a vital element. The role of managers in creating a happy environment is of significant importance (21).

Our findings further suggested that physician-nurse interaction strengthens the exchange of patient-related information and participation in clinical decision-making. Therefore, professional communication is of prime importance. In the current study, the burn nurses believed that interaction with physicians and participation in clinical decision-making leads to the enhancement of their self-esteem and motivation to keep working in the center and promote morale in the personnel. The positive effect of good physician-nurse interaction on the quality of patient care has been also approved by other studies (22).

The analysis of the experiences of the pediatric burn nurses in this study indicated that valuing the psychological health of the staff and the treatment of burn injuries are equally important. Authorities must support nurses, build a good rapport with them, celebrate their success, appreciate them; and act in a way that the nurses can consider them as role models for improving positive behaviors against events and negative situations at work (11, 23-26).

The burn nurses are encountered with many stressors that can lead them to leave their jobs. Regarding this, the establishment of multifaceted support such as spiritual and social support would result in the promotion of their resilience. Social support plays an important role in maintaining the health of the personnel. The burn nurses had experienced a lower level of stress when provided with social support from family or colleagues. Social support is an important protector and an appropriate strategy for creating work-life balance (27). It is one of the important factors inhibiting the negative effects of occupational stress (28). Nice relationships with intimate and reliable people reduces the risk of psychological distress in the face of stressful situations. In the current study, support from colleagues was identified as one of the important reasons for the nurses to continue their work even when the other factors were not ideal. Based on the evidence, a supportive work environment can be considered as the most important factor for occupational satisfaction among nurses (28-30).

Other strategies, such as spiritual support, also serve a special role in the development of resilience and control of stress among nurses. In addition, the participants' statement revealed that they used their spiritual capacities to cope with the stress caused by exposure to burnt children. Furthermore, they stated that their religious beliefs protected them from stress; thereby, they continued caring for patients by maintaining internal energy. Religiosity and spirituality play an important role in self-perceived well-being of people, showing their positive effects on psychosocial status across the lifespan (31, 32).

Another concept derived from the nurses' experiences in relation to resilience was "belief in abilities" in the workplace. They believed that the achievement of knowledge in their field of expertise and acquisition of clinical and professional skills increased their self-esteem. One of the factors affecting the performance of each person is believing in his/her abilities and strengths. Regarding this, it can be said that this factor is an important element for successful performance and the acquisition of essential occupational skills (33). On the other hand, it seems that the ability to manage critical situations, which is developed by reliance on self-efficacy in the nurses participating in our study, is one of the important factors for of empowerment and enhancing the ability to better manage occupational stress. The

results of a study performed by Chang et al. (2008) also indicated the effectiveness of nurses' ability to manage critical situations in reducing stress. They also believed that this ability can lead to the improvement of the quality of nurses' performance and efficiency. Enhancement of nurses' abilities can affect the process of patient improvement, as well as organizational outcomes. Increased ability can also lead to the increase in motivation and the emergence of innovative behaviors, thereby improving job efficiency (34). The results of another study showed the significant effects of empowerment on the responses of the emergency staff to stressors in the workplace. In the mentioned study, it was reported that empowerment not only gives people the freedom of action but also normalizes their performance (35).

One of the main themes derived from the nurses' utterances was "maturity in difficult and high-risk situations", which itself included the two subthemes of "facing work stress along with experienced colleagues" and "peer support". In this respect, the findings of the study indicated that support from peers and experienced colleagues can facilitate the management of care challenges and reduction of occupational stress. Such support not only provides the nurses with a chance to give vent to their emotions but also leads to solutions for eliminating occupational stress. Other studies, in the same line, have also approved the positive effects of support at work from supervisors and colleagues on the job stress (36), specially for nurses working in the burn ICU (2). Burn ICU nurses learned from their senior colleagues, acquired necessary knowledge and skills required for good practice in their highly skilled unit (2).

The ability to accept difficult conditions was another subtheme of "maturity in difficult and high-risk conditions". This feature showed that inner satisfaction, acceptance of difficult working conditions, and experience of difficult situations in other centers led to nurses' maturity in dealing with difficult conditions. Gunnarsson (2009) stated that experienced nurses achieve a pattern of what they observe and understand referred to as "clinical eye" (37).

Based on the participants' statements, the knowledge and previous practical experience gained from working in other centers and situations, as well as exposure to stressful incidents in the workplace made the acceptance of the difficult conditions of the pediatric burn center feasible. Khoshaba and Maddi stated that zealous individuals do not surrender to the disease and its complications despite stressful events (38). Hardiness is a powerful preventive factor in occupational stress; it enhances occupational satisfaction and predicts mental health (39, 40).

With regard to self-efficacy, the nurses of the pediatric burn center believed that high self-efficacy is a protective factor that increases resilience as a multifaceted characteristic. High self-efficacy levels come along with a higher ability to fight against high-risk behaviors and affect behavioral outcomes (41).

The present study is the first attempt in Imam Reza Hospital, adopting a qualitative research method for examining the experiences of pediatric burn nurses regarding stress and resiliency strategies. However, despite using participants with a wide range of characteristics, these findings may not represent the experiences of all the nursing community members.

5- CONCLUSION

The findings of this study indicated that the pediatric burn nurses use various practical strategies intelligently to enhance their resilience. These resilient nurses not only can recover intelligently from stressful conditions but also can help and

teach other less-experienced nurses to better deal with their professional stressors. It is hoped that by identifying the most important and successful strategies used in this field, effective steps can be taken in reducing the emotional and physical exhaustion of nurses.

6- ACKNOWLEDGMENT

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