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Experiences of compassion fatigue among Generation Z nurses in the emergency department: a qualitative study in Shanghai, China

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Abstract

Background Due to the unique working environment and nature of work in emergency departments, nurses are prone to experiencing compassion fatigue (CF), leading to job burnout and attrition. As more Generation Z (Gen Z) nurses enter the emergency department with distinct personality traits compared to previous generations, studying their experiences with CF will inform future management strategies.

Methods The qualitative phenomenological research method was utilised to investigate CF among Gen Z emergency nurses at a hospital in Shanghai, China. Data were collected through face-to-face semi-structured interviews and analyzed using Colaizzi's seven-step phenomenological analysis method. Study participants were purposively selected.

Results Three main themes and nine sub-themes emerged from the study: secondary traumatic stress, including physiological symptoms, psychological symptoms, and behavioral changes; cumulative effects, including impaired empathy, interference with family life, and post-traumatic growth (PTG); coping strategies, including cognitive reconstruction, seeking support, and facilitating action.

Conclusions The aim of this study is to investigate the experience of CF among Gen Z emergency nurses, providing managers with a reference for future management strategies. The significance of multi-dimensional support for Gen Z emergency nurses is underscored by our findings. Additionally, interventions that enhance resilience and competency can facilitate their psychological transformation after experiencing CF and promote accelerated personal growth.

Keywords Compassion fatigue, Emergency nurses, Generation Z, Qualitative study

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Introduction

The emergency department serves as a comprehensive emergency medical service and research centre, encompassing emergency diagnosis, treatment, and intensive care. As an integral component of the emergency medical service system (EMSS), it represents the hospital's primary hub for managing acute and critical patients, addressing a wide range of diseases, and undertaking demanding rescue and management responsibilities [1]. Moreover, it is the sole point of admission for emergency patients to the hospital. Due to the critical condition of patients, the myriad of diseases, intensive rescue interventions, and complex treatment measures, among other factors, emergency nurses (ENs) engage in prolonged periods of high-intensity physical and mental exertion. Consequently, their psychological state remains highly tense, experiencing greater levels of physical and mental pressure compared to medical personnel in other departments [2]. Additionally, due to the unique working environment of the emergency department, nurses frequently encounter a diverse range of critically ill patients and bear witness to the suffering and trauma experienced by both the patients themselves and their family members. They consistently provide empathetic care without adequate adjustment, which can result in compassion fatigue (CF) [3].

CF refers to a behavioural and emotional outcome that arises during the provision of assistance services, resulting in a decline in helpers' attention or interest due to their empathetic response towards victims' suffering or understanding of traumatic events experienced by them [4]. Both "compassion" and "direct contact with victims" serve as fundamental prerequisites for the occurrence of CF [5]. Compassion is an essential and pivotal professional attribute within nursing practice. Emergency nurses encounter patients of varying ages, diverse traumas, and distinct disease processes on a daily basis, consistently engaging with acute trauma populations such as those affected by car accidents, physical assaults, burns, and respiratory distress. CF arises when the cumulative level of nurses' empathy surpasses their capacity for coping and recovery, leading to a range of physiological, social, emotional, spiritual, and cognitive effects [6]. These effects manifest as desensitisation, irritability, withdrawal from activities or interactions, insomnia, exhaustion, and feelings of diminished self-worth [7]. Hooper et al. investigated nurses in the intensive care unit, nephrology department, oncology department, emergency department, and other departments. They found that 86% of emergency nurses experienced moderate to severe CF [8]. Several studies have shown that 50% of nursing staff are at high risk for CF; additionally, more than 80% of nurses in the ICU, emergency department, and oncology department reported experiencing a

moderate to high level of CF [9, 10]. Failure to promptly recognise and intervene in CF can not only compromise the quality of care and patient satisfaction but also contribute to nurse job burnout, turnover, and subsequent social costs.

In recent years, the nursing profession has witnessed a gradual influx of Generation Z (Gen Z) individuals (those born between 1995 and 2012), who are increasingly exerting a growing influence [11]. They represent the most recent cohort of nursing graduates who have completed their education and entered clinical practice. Approximately 19% of China's population comprises Gen Z. They live in China's "4-2-1 families" (four elderly, two young, and one child), as shown in Fig. 1, with unique intergenerational characteristics [12]. Influenced by the prevailing economy, culture, and society of their time, Gen Z exhibits a broad perspective, rational thinking, cautious deliberation, and a distinctive set of cognitive standards. As digital natives compared to other cohorts of young individuals, they possess an enhanced familiarity with the Internet and demonstrate independence while emphasising self-expression and prioritising quality of life [13].

Undoubtedly, the early career phase is characterised by susceptibility to various factors, negative emotions, and trauma, ultimately leading to the manifestation of job burnout. This vulnerability extends to Generation Z emergency nurses (Gen Z emergency nurses) who face a high risk of experiencing burnout [14]. Due to the unique population attributes and characteristics of Gen Z emergency nurses, they possess a distinctly divergent experience compared to previous generations. However, there is a dearth of pertinent research on compassion fatigue (CF) within this particular population. Investigating their experiences and coping strategies related to CF will help bridge the existing gap in academic literature and offer insights for nursing managers to better comprehend the psychological needs of Generation Z individuals, thereby facilitating effective support provision. Therefore, this study focuses on Gen Z emergency nurses in Shanghai, China as the research subjects and employs a phenomenological qualitative research method to explore their experiences of CF in clinical work. The aim is to enhance understanding of the favourable factors that enable Gen Z emergency nurses to effectively cope with CF in nursing practice, while also investigating how these factors can be optimised and unfavourable aspects of CF mitigated. Ultimately, this study provides a novel perspective and theoretical foundation for interventions aimed at promoting psychological rehabilitation among Gen Z emergency nurses following CF.

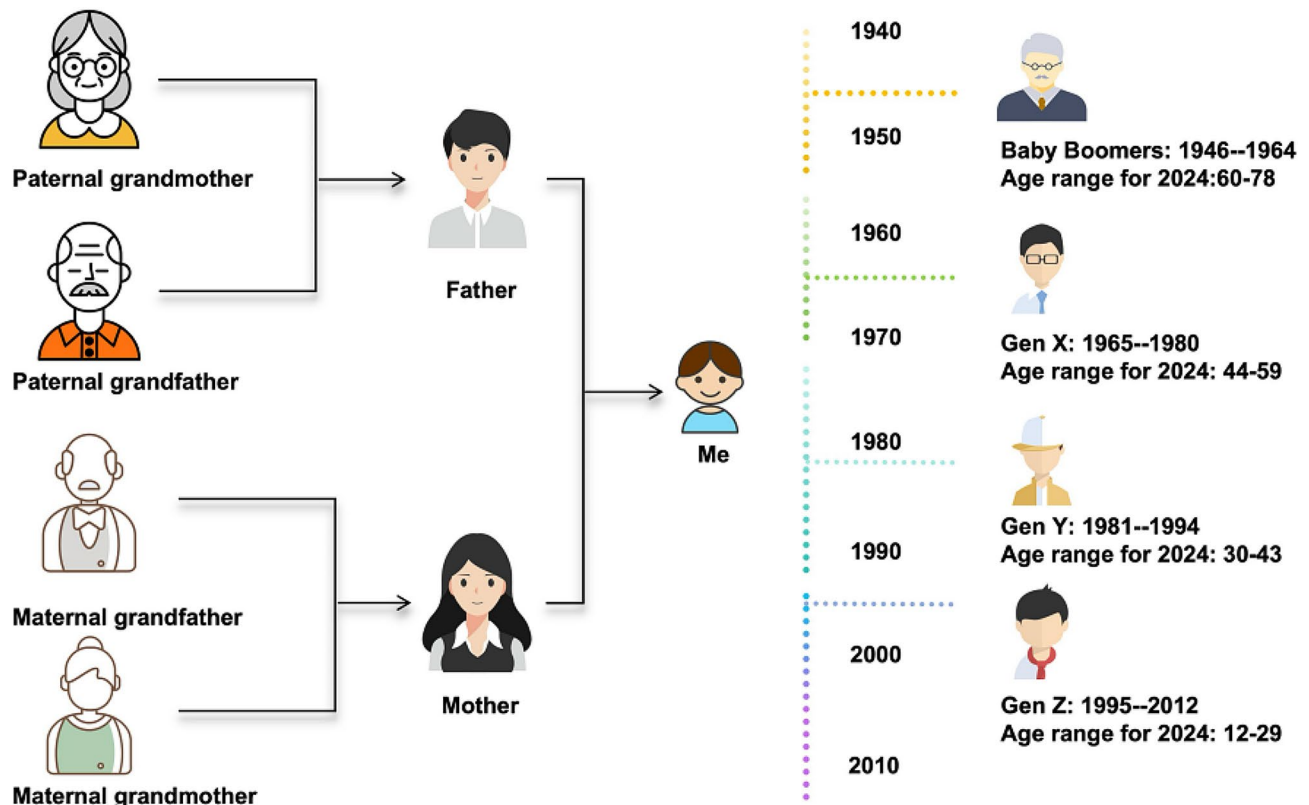


Fig. 1 China's Gen Z "4-2-1" family diagram

Methods

Study design

This study employed phenomenological research methods to investigate the phenomenon of compassion fatigue (CF) among Generation Z emergency nurses (Gen Z emergency nurses) at a hospital located in Shanghai, China. The phenomenological approach is a qualitative research methodology that aims to understand and explore the experiences and feelings of individuals encountering the same phenomenon from a first-person perspective [15]. This paper adhered to the SRQR (Qualitative Research Reporting Standard) [16], collected data through face-to-face semi-structured interviews, and analysed the data using Colaizzi's phenomenological seven-step analysis method [17].

Study subjects

The participants in this study were purposefully sampled from a hospital in Shanghai, China, which holds the highest medical service qualification granted by the Ministry of Health. The hospital accommodates a total of 1,860 beds and employs 3,364 individuals, with over 1300 dedicated to nursing. Nursing discipline is recognized as a national key clinical discipline. The inclusion criteria for this study were as follows: (1) possession of a nurse qualification certificate issued by the People's Republic of

Table 1 General information of the respondents

Characteristics	N (%) or Mean (SD)
Sex	
Male	4 (23.5)
Female	13 (76.5)
Age	27.4 (0.7)
Education level	
Diploma	1 (5.9)
Baccalaureate Degree	16 (94.1)
Marital status	
Single	14 (82.4)
Married	3 (17.6)
Work experience(Year)	3.8 (0.8)

China; (2) birth year between 1995 and 2012; (3) minimum one-year experience in the emergency department. The exclusion criteria included: (1) nurses who were currently not employed, such as those on vacation or pursuing further studies; (2) non-permanent unit nurses, including those on rotation and studying; (3) mentally ill nurses. Seventeen nurses were ultimately recruited, all of whom provided informed consent and voluntarily participated in this study without any withdrawals occurring during the interview process. Detailed information can be found in Table 1 presented below.

Data collection

Data collection took place through face-to-face semi-structured in-depth interviews, conducted in a quiet and private ward of the emergency department between December 2023 and January 2024. The specific interview schedule was communicated in advance via WeChat. All participants provided informed consent and willingly volunteered to take part in this study. The interviewer, the first author of this study, holds a doctoral degree and has extensive experience in qualitative studies, demonstrating proficient language skills and rich research expertise. The entire interview process was audio-recorded while ensuring the confidentiality of respondents' personal information. Interviews ranged from 30 to 60 min in duration, with an average of 46.7 min per participant. Before each interview, the interviewer introduced herself and explained the purpose and precautions of the interview to establish rapport with all participants. She also clarified the exact meaning of CF to ensure better understanding during the interviews. CF refers to the gradual decline in an individual's empathetic response due to prolonged exposure to others' pain, trauma, and negative emotions, resulting in feelings of boredom and fatigue [18]. Demographic inquiries were initiated at the start of the interview to gain insights into cultural disparities among respondents and foster mutual trust. Structured questions aligned with the interview outline were then posed, progressively delving deeper into the study's objectives. The interview sought prompt clarifications for any ambiguities in questions and thoroughly explored key aspects. Another researcher meticulously recorded the interview, capturing non-verbal cues such as facial expressions, vocal tone, and body gestures exhibited by the respondents. All transcripts were returned to the participants for review to ensure factual accuracy [19]. After each interview, participants received a complimentary towel. Data collection and analysis were conducted concurrently, with data analysis reaching saturation [20] after the fifteenth respondent, further confirmed through two additional interviews. Respondent information was treated confidentially, with names anonymised using numerical codes. The interview outline was synthesised by the interviewers based on their research expertise and

literature review, resulting in a finalised interview guide after two pre-interviews (data from these pre-interviews were not included in this study), as presented in Table 2.

Data analysis

The data collection and analysis occurred simultaneously, with data extraction and analysis facilitated by Nvivo 14.0 computer software in conjunction with Colaizzi's phenomenological seven-step analysis method [17]. To mitigate memory bias, each interview was transcribed in full within 24 h of completion. Any queries arising during data analysis were promptly addressed by contacting and seeking clarification from the participants via WeChat, as per the agreement to retain their contact information for subsequent studies. The two researchers who were systematically trained performed the data analysis following the steps illustrated in Fig. 2, which visually adapts Colaizzi's phenomenological seven-step analysis [17]. We offer a detailed visual representation of this comprehensive seven-step process, accompanied by corresponding reference.

Study rigor

The SRQR (Qualitative Research Reporting Standard) framework guided this study [16]. To bolster credibility, the research context and methodology were extensively elucidated. Furthermore, the interviewer possessed deep theoretical acumen, vast scientific research experience, and adhered to a rigorous data collection protocol. Employing phenomenological epoche throughout the research ensured no manipulation or intervention with the study subjects, guarding against personal value biases in comprehending the phenomenon [21]. Two researchers, rigorously trained, meticulously analysed the research data using Colaizzi's phenomenological seven-step analysis method [17]. The final themes and descriptions were validated by the respondents themselves [19], accurately reflecting the interviewees' psychology.

Ethical consideration

This study received approval from the Ethics Committee of Shanghai Tenth People's Hospital (Approval number: 23KN25). All participants provided informed consent and volunteered willingly for participation, with the option to withdraw at any stage. Participant privacy was prioritised, with numerical serial numbers replacing actual names.

Results

Following analysis, three overarching themes and nine sub-themes emerged: (1) secondary traumatic stress, encompassing physiological symptoms, psychological symptoms, and behavioural changes; (2) cumulative effects, including impaired empathy, interference with

Table 2 The interview outline

No.	Question
1	How do you perceive an emergency patient undergoing distress or vulnerability?
2	What emotional stress have you experienced in emergency care work?
3	In what ways does CF impact your professional and personal life?
4	What strategies do you utilise to manage CF?
5	Could you describe any recent experiences or emotions you've encountered?

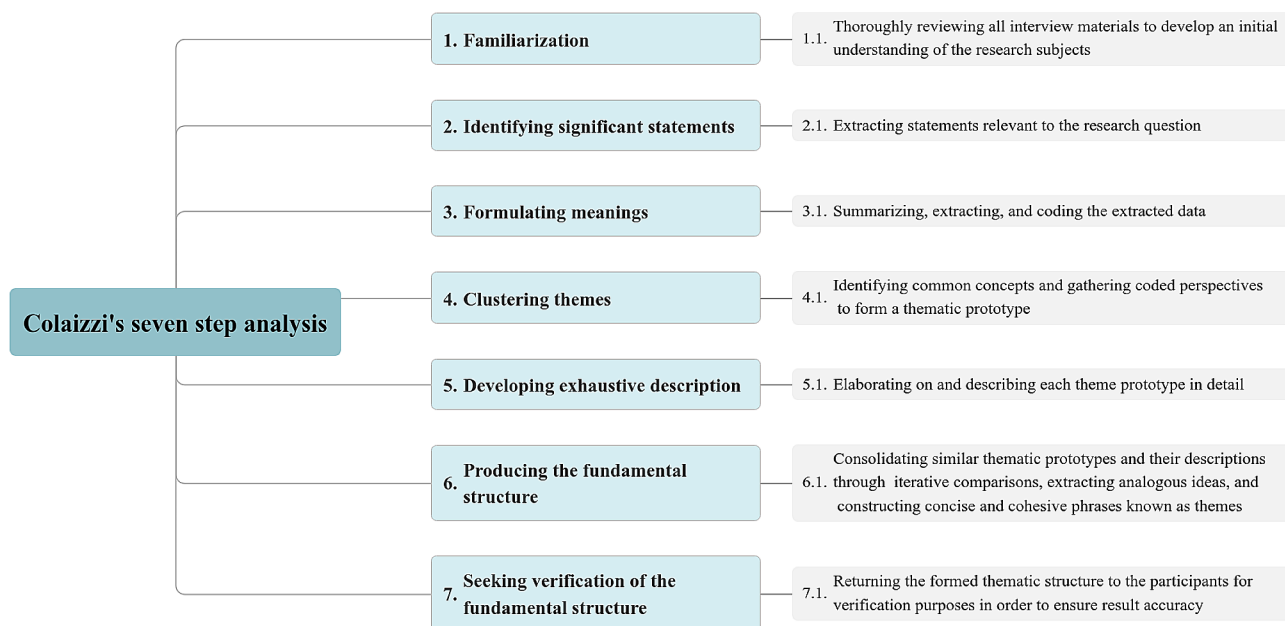


Fig. 2 Colaizzi’s phenomenological seven-step analysis method [17]

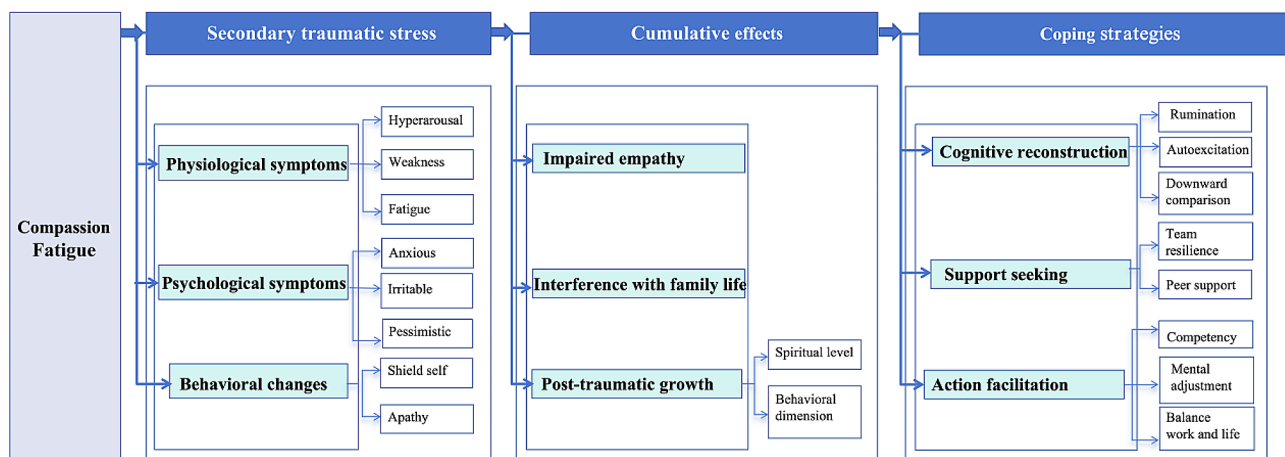


Fig. 3 Themes and sub-themes extracted from the data

family life, and post-traumatic growth (PTG); and (3) coping strategies, comprising cognitive reconstruction, support seeking, and action facilitation. Refer to Fig. 3 for detailed elucidation.

Theme 1: secondary traumatic stress

The term “secondary traumatic stress” denotes the emotional and behavioral reactions that naturally arise when learning about others’ traumatic experiences. It encompasses the stress experienced when assisting or wanting to aid traumatized individuals and is recognized as an occupational hazard for nurses. Gen Z emergency nurses frequently encounter a distressing work environment, where prolonged emotional exertion can easily lead to Compassion Fatigue (CF) and secondary traumatic

stress. These are primarily characterized by sleep disturbances, exhaustion, anxiety, emotional detachment, and various physiological symptoms, psychological manifestations, and behavioral changes.

Sub-theme 1: physiological symptoms

The majority of respondents noted that CF often presents with a range of physiological symptoms, including sleep disorders like insomnia, nightmares, and frequent awakenings, as well as physical ailments such as exhaustion and debilitation. One nurse mentioned relying on medication to temporarily facilitate sleep. Exposure to trauma, particularly among younger patients, significantly impacts the emotional well-being of Gen Z emergency nurses, leading to heightened emotional stress

and subsequent sleep disturbances like nightmares. For instance, one respondent recounted, *“There was a time when I dreamed about the 38-year-old dilated cardiomyopathy patient our team successfully treated. He was so young and constantly at risk of sudden death...”* (P2) Due to insufficient sleep, poor sleep quality, and other contributing factors, nurses often experience fatigue and lethargy, as expressed by one respondent, *“I always feel very tired and reluctant to move, so I basically rest at home.”* (P17).

Sub-theme 2: psychological symptoms

The majority of respondents reported experiencing psychological symptoms such as anxiety, irritability, pessimism, and helplessness following CF. The presence of high-intensity workloads and prolonged exposure to traumatic events significantly contribute to the negative emotional state observed among Gen Z emergency nurses. For example, one respondent shared, *“Sometimes when my husband talks to me, I get annoyed and feel like my temper is a bit on edge, just like firewood that’s ready to ignite (pouting).”* (P9) Some participants tended to project patients’ illnesses, particularly those in their own age group, onto themselves or their family members, leading to psychological distress. One respondent expressed, *“It’s horrible to think about the rest of life that will follow when we see a girl who initially came in because of eye trouble. I sometimes have bad eyes, I can’t get this disease too...?”* (P4) Additionally, traumatic experiences can exacerbate CF among Gen Z emergency nurses, resulting in manifestations of pessimism and helplessness. One respondent shared how a failed rescue attempt left a lasting impact, making her feel that life was fragile and short.

Sub-theme 3: behavioural changes

Many interviewees mentioned that CF further reduced their willingness to socialize, leading to behavioral changes such as withdrawal and apathy. As one respondent noted, *“I don’t bother others, and I don’t want to be bothered.”* (P4) Another interviewee said, *“I don’t want to think too much about it, and I’m too lazy to even bother (shaking head).”* (P7) Some interviewees also said they prefer to have only two to three close friends, as too complex social relationships can bring unnecessary pressure to themselves. Due to the unique nature of their work, long-term frequent exposure to trauma can make Gen Z emergency nurses prone to developing progressive emotional apathy and related phenomena. One respondent mentioned, *“Some family members signed a DNR (Do Not Resuscitate), not wanting to prolong the patient’s suffering. Seeing him lying there in pain, I knew he wouldn’t be with us much longer. Though my heart was heavy, there was nothing I could do (shrugging her shoulders).”* (P10).

Theme 2: cumulative effects

Due to prolonged exposure to negative emotions and complex environmental factors, Gen Z emergency nurses often experience the cumulative effects of CF. These effects include impaired empathy, interference with family life, as well as Post-Traumatic Growth (PTG) in CF.

Sub-theme 1: impaired empathy

The emergency department imposes a heavy workload, a high number of critically ill patients, and an elevated risk level, potentially leading to a cumulative CF impact on Gen Z emergency nurses and impaired empathy. Respondents reported increased resistance to working overtime compared to previous experiences and diminished passion they once had. One interviewee mentioned, *“I don’t have the same passion as when I first started working.”* (P11) Moreover, workplace violence, including verbal abuse and threats, exacerbates the adverse cumulative effects of CF. One respondent said, *“One thing that deeply impressed me was a patient with severe multiple injuries from a car accident, who was dying and had no family. We prioritized treating the patient’s severe injuries through the green channel, but we still felt powerless. However, upon the arrival of the family members, they immediately began accusing our first aid efforts, which left me particularly frustrated (sighing).”* (P7).

Sub-theme 2: interference with family life

The majority of respondents highlighted the profound impact of CF on their families, with many reporting a persistent preoccupation with work-related unhappiness that adversely affected the overall family atmosphere. One respondent said, *“I bring my emotions from work home, even though I know I shouldn’t, but it’s hard to control, I’m not happy, and the family atmosphere is depressed (pouting).”* (P16) Some respondents were also bothered by their unintentional dissemination of bad emotions, *“Sometimes I unintentionally pass on negative emotional experiences to my family members, and later deeply regret it.”* (P13).

Sub-theme 3: post-traumatic growth

In addition to the adverse cumulative impact, some Gen Z emergency nurses experienced PTG following secondary traumatic stress induced by CF through multi-dimensional positive coping strategies. One interviewee expressed spiritual growth: *“The medical profession still has a long way to go in healing the wounded and saving the dying, and we must continue to make efforts on our journey of professional development. I am committed to constantly improving myself.”* (P1) Additionally, several participants highlighted the development of resilience, asserting that their resilience gradually improved following each first aid task assessment. This enhanced

resilience also equipped them with greater strength to confront diverse challenges in future professional endeavours. Some interviewees also expressed their professional happiness in the PTG process: *“The mindset is super important, even though it can be tough sometimes. But overall, I can lend a hand to others and it feels amazing when vulnerable groups rely on me (smiling).”* (P15).

Theme 3: coping strategies

Some Gen Z emergency nurses effectively use available resources, seek multidimensional support, adapt their mindset and cognition, ultimately fostering PTG in the face of secondary traumatic stress caused by CF.

Sub-theme 1: cognitive reconstruction

The participants consistently emphasised the significance of cognitive reconstruction, aimed at enhancing their physical and mental well-being, primarily encompassing purposeful reflection, self-motivation, and downward social comparison. Through cognitive reconstruction, individuals can reassess and adapt their initial cognition, thereby facilitating the alleviation of negative emotions and fostering psychophysical equilibrium. The constructive and profound contemplation of traumatic events contributes to personal development: *“I also need to reflect on myself and look at the positive side of things, hoping to realise my value in the work.”*(P1) Some nurses help themselves against negative emotions by giving themselves positive psychological hints and self-motivation: *“Although the help of others is important, the key is to rely on yourself, believe in yourself, please yourself and surpass yourself (smiling).”*(P3) Additionally, downward comparison is also a good way to channel bad emotions; a nurse witnessed the profound impact of illnesses and came to a realisation that her life was remarkably gratifying: she possessed robust health and a blissful family. Ultimately, she comprehended the genuine essence of contentment.

Sub-theme 2: support seeking

The respondents unanimously emphasized the pivotal role of social support in managing CF, particularly through team resilience guidance and peer support. A conducive team atmosphere serves as a fundamental element for enhancing team resilience. One interviewer highlighted the exceptional working environment within their department, characterized by strong cohesion and collective efforts to overcome challenges. Our research findings also indicate that Gen Z emergency nurses exhibit a preference for limited exposure to the public, instead opting for participation in close-knit circles characterized by peer support rooted in shared discourse systems and cultural practices. This approach enables them to attain emotional consensus within their inner circle,

thereby alleviating the distress of reality and facilitating emotional “healing”: *“I prefer not to talk to my family too much, as I worry about how it might affect them and they may not fully understand my work environment. My main intention is to share my emotions with friends who can relate, as we speak the same language and support each other through hard work and relaxation. I really enjoy this dynamic.”* (P14).

Sub-theme 3: action facilitation

The majority of respondents highlighted the significance of improving job competency and psychological adjustment abilities. One interviewee noted that Gen Z is a generation characterized by their courage to explore; thus, he expressed his commitment to enhancing theoretical knowledge and professional technical skills in order to better serve others. Another interviewee mentioned: *“Why is Teacher Wang (referring to the emergency professional tutor) able to handle many complex problems well? Because she’s experienced, she knows how to navigate complex clinical issues, so I’m actually learning all the time.”* (P17) Gen Z is inclined towards online socialization and relies on the Internet for expressing, transmitting, and acquiring information. The developmental trajectory of Gen Z closely aligns with the rapid growth of the internet in China. As digital natives, they exhibit a strong inclination towards independent learning through online platforms: *“To recharge my batteries more, I often go to Bilibili to learn some mind-body relaxation techniques in psychosomatic medicine, and I also go to Xiaohongshu and Douyin to release my mood (smiling).”* (P2) In addition, learning to maintain a balance between work and life can help cope with the negative effects of CF, as one respondent noted: *“I am not only a nurse, but also my parents’ daughter and my husband’s wife.”* (P9).

Discussion

Through conducting in-depth interviews with 17 Gen Z emergency nurses, this study reveals that the experience of CF within this particular group can be categorized into three main components: secondary traumatic stress, cumulative effects, and coping strategies. Previous research has demonstrated that CF is influenced by various factors, encompassing individual and environmental aspects [22, 23]. These influential factors exert their effects on individual nurses, leading to the manifestation of symptoms associated with CF, including physical, psychological, and behavioral dimensions. Ultimately, these symptoms can result in a range of significant consequences such as job burnout, diminished nursing quality, and even compromised patient safety [24] (as depicted in Fig. 4).

However, our study revealed that CF not only resulted in trauma but also yielded positive effects among Gen

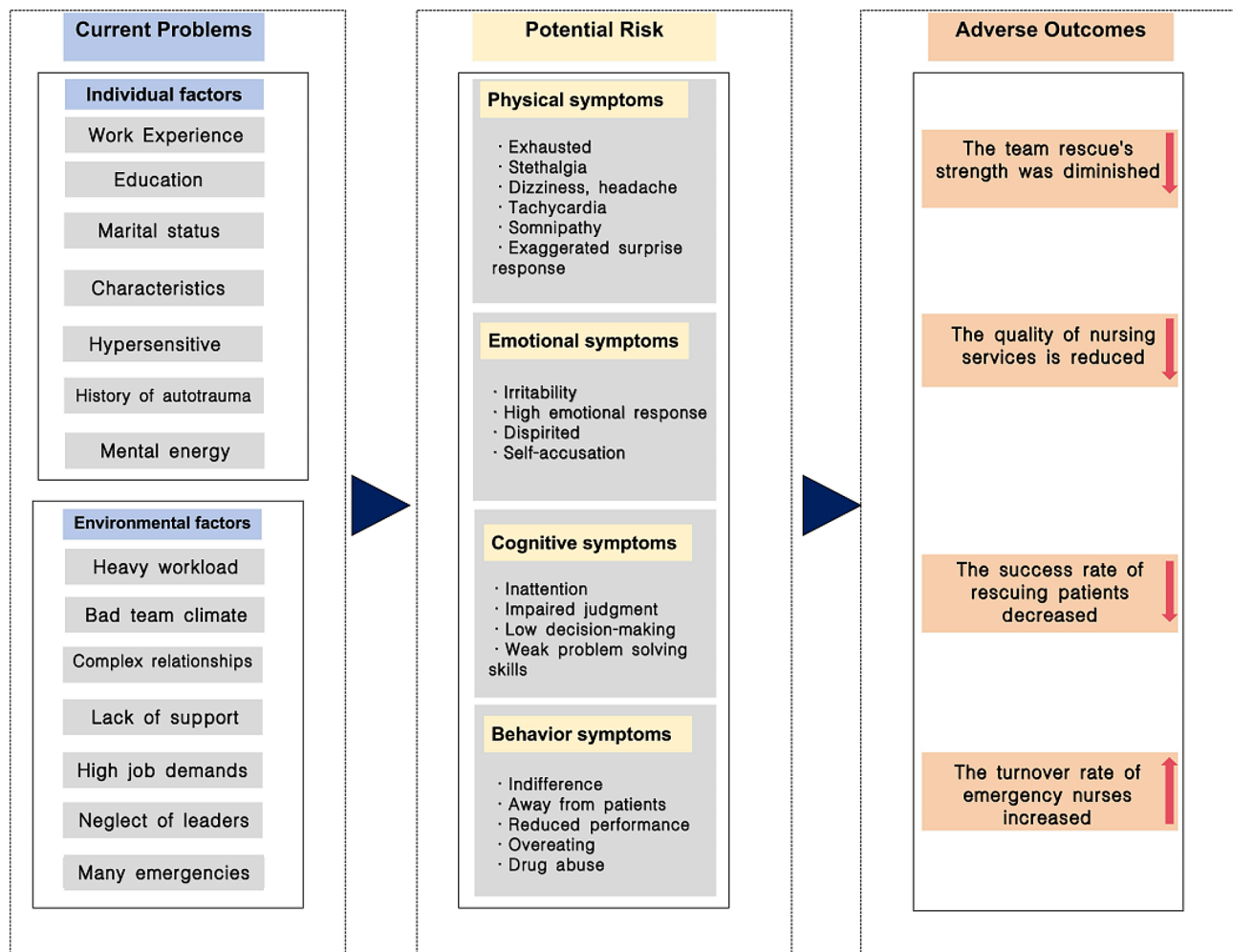


Fig. 4 Influence and results of CF

Z emergency nurses. Following the experience of CF, numerous nurses effectively combated negative psychological impacts by actively regulating their emotions and mobilizing available resources, ultimately leading to the realization of PTG. This serves as a valuable resource for managers in formulating effective management strategies to foster PTG and alleviate CF among Gen Z emergency nurses. Consequently, this paper will discuss the following aspects, including: mobilizing multi-dimensional social support, promoting job competency, and improving resilience.

Given the prevailing challenges faced by Gen Z emergency nurses, such as excessive work pressure, conspicuous nurse-patient conflicts, and inadequate familial and social support networks, it becomes imperative to offer multidimensional social support mechanisms for mitigating their adverse emotional experiences. The current situation in China's emergency departments is characterized by a pervasive lack of personnel and excessive patient volume [25, 26]. Addressing the issue of manpower shortage

during peak hours has garnered increasing attention. Establishing and enhancing a nursing pool has been empirically proven as an efficacious strategy for addressing the issue of nursing staff shortage [27]. By meticulously selecting nurses with exceptional comprehensive qualities and robust professional competencies, coupled with providing training on nursing skills and professional knowledge of relevant departments, they can proficiently manage staffing gaps arising from reduced nursing personnel or increased patient volumes. This not only facilitates the flexible allocation of human resources, thereby mitigating nurse fatigue, but also ensures that the high demands of the emergency department do not adversely affect the staffing of other departments. Effectively managing the nursing pool, however, involves overcoming several challenges, including the efficient allocation of resources across departments, seamless coordination of emergency responses, and the prevention of dissatisfaction that may arise from mismanagement or perceived unfair practices. Managers can address these challenges

by equipping nurses with diverse professional training to enhance the flexibility of resource allocation, ensuring no single department is overly burdened. Utilizing a dynamic staffing model and predictive analytics enables them to forecast patient volumes in various departments and proactively adjust staffing levels to meet the overall needs of the hospital. Regular evaluations are crucial to continuously monitor the impact of staffing adjustments, making timely modifications in accordance with hospital policies to support all departments effectively. Furthermore, managers can also implement a group flexible scheduling scheme to assign nurses of different ages, years of experience, and professional titles into groups. Research has demonstrated that this scheduling model can effectively alleviate the psychological pressure experienced by night shift nurses, enhance their overall competence, foster team cohesion, and improve nursing quality [28]. In light of the prominent contradiction between nurses and patients, it is imperative for managers to provide training in effective communication skills tailored specifically for Gen Z emergency nurses. Given that this particular group of nurses has a relatively short tenure and tends to prefer online interactions over active engagement in face-to-face communication [29], enhancing their communication abilities through targeted skills training becomes even more crucial. In 2020, the American Nurses Association proposed that nurses should uphold a therapeutic relationship with patients [30], highlighting the need for enhanced emphasis on therapeutic communication. Although the term therapeutic communication is no longer unfamiliar in the field of nursing, some current clinical practices may still rely on superficial and non-therapeutic forms of communication in certain cases, as indicated by findings from a subset of the literature [31]. Similarly, in a 2018 quantitative study conducted by Adistie et al. in pediatric wards, 53.5% of parents ($n=101$) reported that the nurses' therapeutic communication was poor [32], which was not conducive to the development of a good nurse-patient relationship. It has been mentioned in the literature that the main reason for such problems is that nurses have received less training related to therapeutic communication and lack understanding of specific methods of therapeutic communication [33]. Given this, managers should review current literature on therapeutic communication, employ techniques such as role play, case teaching, and scenario simulation, combined with artificial intelligence, virtual reality and other Internet technologies to assist Gen Z emergency nurses to learn related knowledge of therapeutic communication. Additionally, previous studies have indicated that the implementation of a narrative nursing model in nursing management can effectively mitigate nurses' job burnout and psychological pressure, while enhancing the quality of nursing care [34]. Hence, managers could

explore a comprehensive narrative support system based on network resources. By guiding appropriate narratives, facilitating positive emotional release, empathetic listening, diary writing, and other techniques, Gen Z emergency nurses were encouraged to express their inner emotions to various attentive listeners. This not only facilitates managers in gaining a deeper comprehension of nurses' genuine needs but also fosters mutual support and knowledge sharing among colleagues, enabling them to learn from one another and grow collectively, thereby attaining comprehensive support from families, friends, colleagues, and supervisors.

Resilience undoubtedly facilitates nurses in combating CF, recovering from setbacks, and fostering personal growth. Numerous intervention strategies have been proposed in the existing literature to enhance resilience. These strategies have been further enriched through their extensive application across diverse populations and situations, resulting in increasingly remarkable outcomes. For example, nursing managers can employ the resilience intervention strategy based on PERMA theory [35] to train Gen Z emergency nurses with low resilience. The specifics are illustrated in Fig. 5.

However, it would be unwise to solely focus on enhancing individuals' resilience and disregard the influence of peripheral factors. It is also necessary to develop resilient leadership while promoting team resilience, which helps the entire team actively combat setbacks and difficulties and set ambitious goals. Improving team resilience involves several key aspects: fostering a positive team atmosphere, enhancing team members' learning abilities, and facilitating information exchange [36]. Firstly, by strengthening team building and organizing collective activities, it helps to create a cohesive and friendly atmosphere within the department. Managers can establish clear team rules and norms while actively encouraging members to participate in group activities. Additionally, the implementation of group psychotherapy can effectively promote members' mental health and alleviate psychological symptoms. Studies have shown that music therapy, aromatherapy, acupuncture, and traditional Chinese medicine massage have certain effects in the field of psychological therapy and can be used in the treatment of nurses' burnout, CF, and other negative emotions [37–39]. Their simplicity, affordability, and low risk make them worthy of clinical promotion and use by managers. Secondly, managers can provide more opportunities for nurses to engage in communication and learning, guide team members to exchange and share information, and encourage senior nurses to impart experience, knowledge, as well as clinical operation skills to junior nurses. These measures will not only strengthen team resilience but also foster accelerated progress and greater cohesiveness within the entire team. Finally, the training of

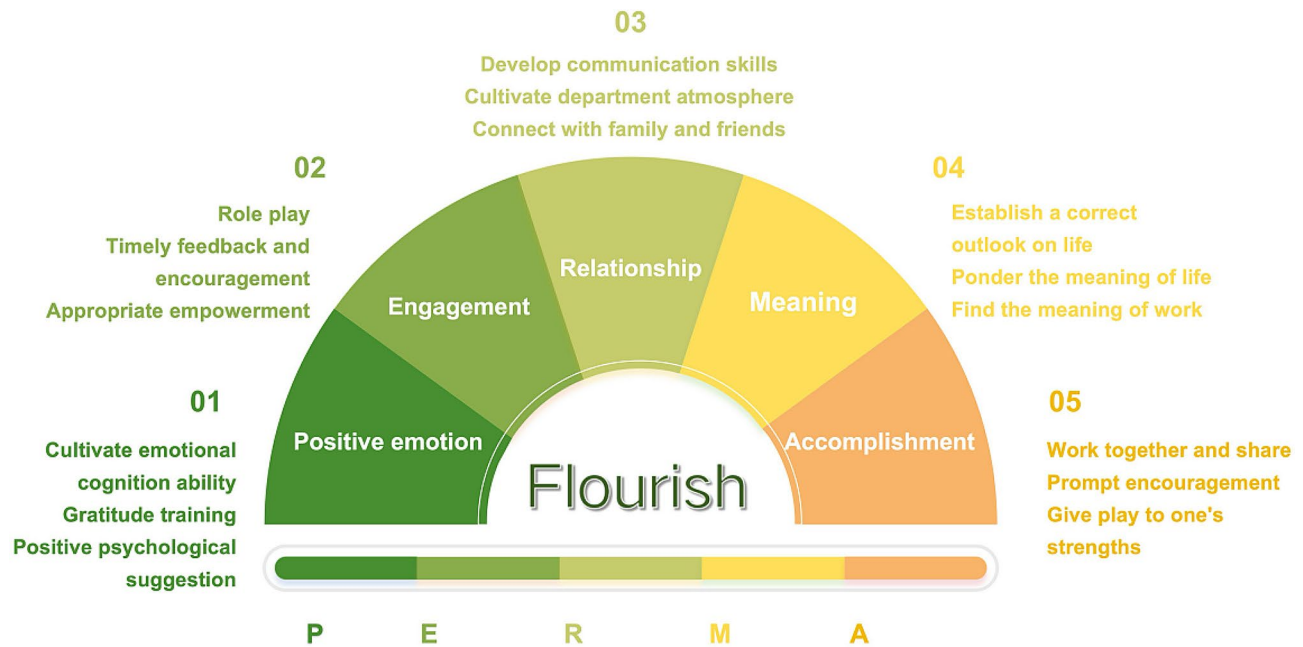


Fig. 5 Resilience intervention strategy based on PERMA theory

resilient leadership needs to strengthen managers' own resilience. According to the "trickle-down effect," the level of resilience and goal-setting by leaders significantly affects a team's development trajectory [40]. Therefore, managers should receive training in terms of resilience and cognitive thinking modes. When selecting leaders, hospitals can adopt a rigorous application process and comprehensive screening mechanism, supplemented by psychological testing as an auxiliary means. This helps prioritize candidates who are capable, resilient, and possess leadership skills [41].

In this interview, numerous nurses emphasized that competency serves as a crucial tool in addressing CE. Studies have also emphasized the paramount importance of communication skills for nurses [42], encompassing both patient-nurse and nurse-medical worker communication. In addition to fostering effective nurse-patient communication, attention should also be directed towards enhancing nurse-medical and healthcare worker communication, as conflicts can detrimentally impact nursing quality and teamwork dynamics. Notably, divergent preferences in communication methods exist among different generations of nurses; while older nurses tend to favor face-to-face interactions, younger counterparts demonstrate proficiency in utilizing WeChat and email platforms [43]. Managers should possess a comprehensive understanding of and demonstrate utmost respect for the distinct communication styles exhibited by each generation of nurses while also focusing on enhancing the communication skills of Gen Z emergency nurses. Furthermore, considering the prevailing characteristics

of contemporary educational models and Gen Z's constant exposure to internet-based information, it is imperative to address the challenges faced by Gen Z emergency nurses during their transition from theoretical knowledge to practical application [44]. Therefore, managers should prioritize the continuous training of Gen Z emergency nurses after their induction. They should establish a support network for nurses and provide targeted guidance to enhance critical thinking ability, decision-making ability, and emergency response skills. By incorporating teaching methods such as situational simulation, nurses' capacity to handle different emergencies can be cultivated, and their professional skills can be continuously strengthened. The aforementioned training on communication skills and practical skills can be facilitated by the ADDIE model, which encompasses a set of systematic approaches for instructional design and development [45]. The acronym ADDIE represents Analysis, Design, Development, Implementation, and Evaluation [45]. Employing this model in training programs enables managers to more precisely define the objectives, strategies, and outcomes of instruction, as depicted in Fig. 6. Considering the inherent characteristics of Gen Z individuals, who may exhibit limited proficiency in teamwork [46], it is advisable for managers to motivate nurses from this generation to leverage their familiarity with the Internet and technological advancements. Encouraging their active participation in teams requiring assistance in these areas would enable them to effectively contribute their strengths towards collaborative efforts and enhance their professional identity.

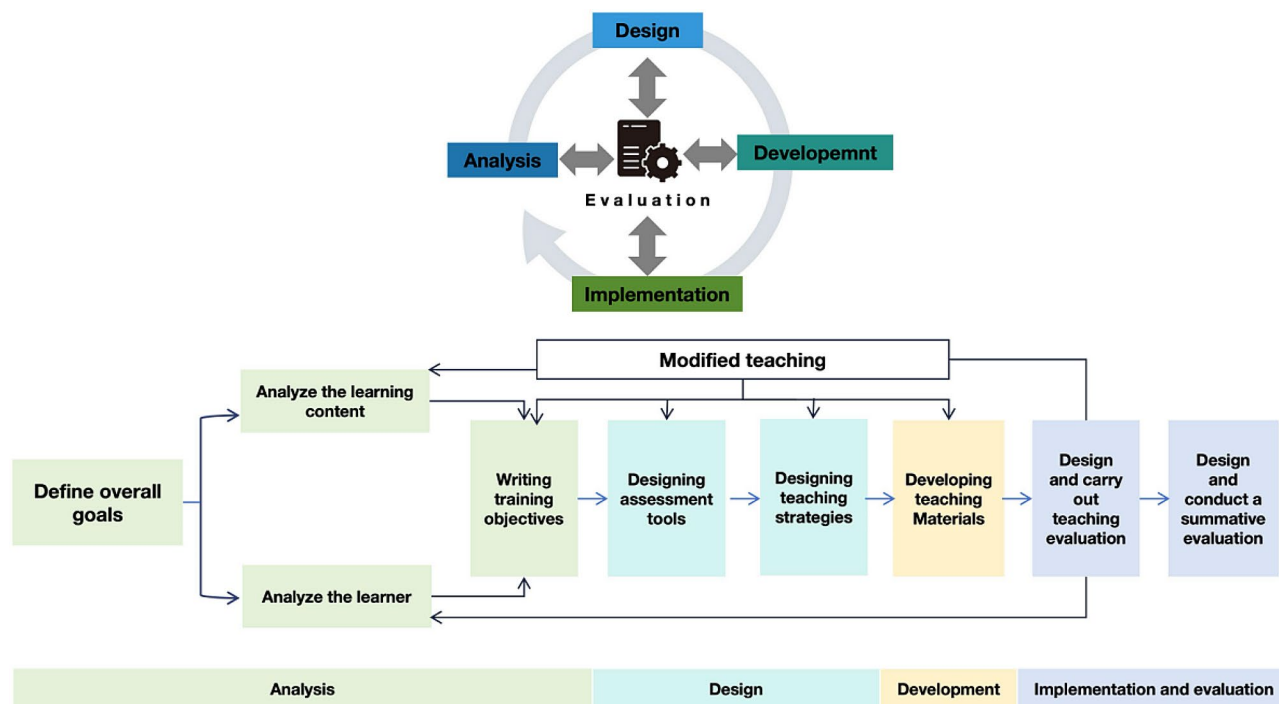


Fig. 6 Application framework of ADDIE model

Limitations

This study has the following limitations: the selected research subjects were only from Shanghai, China, and the management measures proposed in the discussion may not be applicable to the wider population, and cultural differences need to be further considered. However, this study offers valuable information for nursing management. In future research, we aim to broaden the scope of sample selection, employ a mixed-methods approach combining qualitative and quantitative research, and present more compelling insights.

Conclusion

Through interviews with 17 Gen Z emergency nurses, this study found that the experience of compassion fatigue of Gen Z emergency nurses shows dynamic changes, and some respondents can develop post-traumatic growth by actively mobilizing surrounding resources after experiencing compassion fatigue. In view of this, managers should pay attention to the importance of social support, provide or amplify the role of various protective factors, formulate scientific and effective management measures, accelerate the mentality change of Gen Z emergency nurses after compassion fatigue, and promote their growth as soon as possible.

Abbreviations

- CF Compassion fatigue
- Gen Z Generation Z
- PTG Post-traumatic growth

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Author contributions

JJ, SL and CC: conception, design and revising the article critically for intellectual content. JJ, SL, CC, JX and YL: acquisition of data. JX, CC, LZ, HP and LS: analysis, interpretation of data and drafting the article. All authors contributed to the article and approved the submitted version. All authors reviewed the manuscript.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of Shanghai Tenth People's Hospital (Approval number: 23KN25). Every participant in the study provided informed consent and willingly volunteered to participate.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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