




## ORIGINAL ARTICLE

# Providing targeted psychological support to frontline nurses involved in the management of COVID-19: An action research

Shao-Hua Chen RN, MSN, PhD Candidate<sup>1</sup>  | Jun-E Liu RN, MSN, PhD, Professor<sup>1</sup>  | Xiao-Yu Bai MD, Postdoc in Psychology, Assistant Researcher<sup>2</sup> | Peng Yue RN, MSN, PhD, Associate Professor<sup>1</sup>  | Shi-Xiang Luo RN, MSN, PhD, Psychological Counselor<sup>1</sup>

<sup>1</sup>School of Nursing, Capital Medical University, Beijing, China

<sup>2</sup>Institute of Psychology, Chinese Academy of Sciences, Beijing, China

## Correspondence

Jun-E Liu, School of Nursing, Capital Medical University, Beijing, 100069, China.  
Email: liujune66@163.com

Xiao-Yu Bai, Institute of Psychology, Chinese Academy of Sciences, Beijing, 100101, China.  
Email: baixy@psych.ac.cn

## Funding information

This study received fund from Institute of Psychology, Chinese Academy of Sciences (EOCX301008).

## Abstract

**Aim:** To develop and implement a targeted psychological support scheme for frontline nurses involved in the management of coronavirus disease 2019 (COVID-19).

**Background:** Nurses play a vital role in managing the ongoing COVID-19 pandemic, while confronting enormous challenges and psychological problems.

**Methods:** Action research design was adopted to develop and provide a targeted psychological support scheme to 1,496 frontline nurses. Data regarding nurses' feedback were collected from WeChat group chat, letters and comments on theme lectures. Subsequently, qualitative content analysis was conducted using MAXQDA.

**Results:** A targeted psychological support scheme was formed via three action cycles according to nurses' needs. Frontline nurses received psychological assistance from a research team, which offered (1) a sense of belonging, (2) a sense of professional value and pride, and (3) a sense of being protected and confident.

**Conclusion:** The researchers successfully provided targeted psychological support to nurses, and nurses were motivated and became more confident when their needs were addressed.

**Implications for Nursing Management:** Nurses have various types of psychological needs, which could be addressed by targeted support. It is suggested that nurse managers should identify nurses' needs in real time and provide appropriate support through multidisciplinary collaboration to improve their confidence and enhance their resilience.

## KEYWORDS

action research, coronavirus disease 2019, nurse, psychological needs, support

## 1 | INTRODUCTION

In December 2019, a novel coronavirus disease 2019 (COVID-19) emerged and spread worldwide. The World Health Organization (WHO) raised the global risk to the highest level of alert (WHO & 28 February, 2020). As of 3 September 2020, a total of 26.12

million individuals were infected; of those, 85,102 were reported in China, particularly in the Hubei province, the original epicentre of the outbreak (WHO & 4 September, 2020). In the early stages of the pandemic, 30 provinces in China announced the first-level response to a public health incident on 26 January 2020 (New China News Agency, 2020). At the same time, to cope with the epidemic,

the National Health Commission (NHC) of the People's Republic of China classified COVID-19 as a class B infectious disease, while implementing the prevention and control measures corresponding to class A infectious diseases (NHC, 2020). Across China, >42,000 medical professionals responded to this mobilization from the NHC and went to Hubei to provide medical assistance, at a time when COVID-19 was poorly understood; of those, 28,600 (68%) were nurses (Government of Hubei Province, 2020).

Studies on COVID-19 (Maben & Bridges, 2020; Mo et al., 2020; Shahrour & Dardas, 2020; Skoda et al., 2020; Sun et al., 2020) have argued that some nurses encounter intense psychological stress or trauma (e.g. insomnia, fear, anxiety) during an emergency response due to the environment, shortages of staff and personal protective equipment (PPE), heavy workload, and shortage of knowledge and skills relevant to infection control. Moreover, previous studies (Chen et al., 2020; Zhou et al., 2015) highlighted that these psychological problems encountered during an emergency response negatively affect safety and work efficiency, thereby increasing occupational risks.

In addition, several studies (Chen et al., 2020; Raveis et al., 2017; Zhou et al., 2015) reflected that some nurses are highly concerned with safety in an emergency response, such as personal health in the face of direct contact with an infectious disease (Fernandez et al., 2020; Nickell et al., 2004). Therefore, it was suggested that appropriate measures (e.g. stress-reduction strategies through offering consecutive rest days) should be implemented to ensure the safety of nurses (Shahrour & Dardas, 2020). Besides self-security, studies (Fernandez et al., 2020; Negar et al., 2017; Nickell et al., 2004) have shown that nurses are also concerned regarding their family; thus, it is indispensable to provide the means for nurses to communicate with their families and address relevant concerns. Furthermore, Chen et al. (2020) indicated that the support of friends and colleagues was important to emergency responders in their coping with incidents. In particular, having a supportive peer relationship during the emergency was essential, as they were more willing to share their experiences with people having the same experiences, which could alleviate the psychological and emotional trauma. Furthermore, nurses focused on the need for information during an emergency response. Lee et al. (2020) and Negar et al. (2017) have shown that nurses often experience uncertainty and anxiety because they are unaware of the working situation at the site. Moreover, according to Wu et al. (2020), frontline nurses focus on their goals rather than the personal impact during this process, which may indicate that personal growth is also essential for nurses.

In general, providing support to frontline nurses is crucial. Similarly, numerous measures (e.g. fulfilment of basic needs, social support, utilization of psychosocial and psychological help) were recommended in prior studies (Maben & Bridges, 2020; Petzold et al., 2020; Raveis et al., 2017) to help frontline nurses cope with psychological problems during an emergency. Providing support based on nurses' needs is particularly important.

Since 24 January 2020, an increasing number of nurses were transferred to Wuhan to support the local health care service in managing the COVID-19 outbreak. Some were part-time students from an unofficial Nursing Education Institution (NEI) located in Beijing. This continuing education institution is engaged in disseminating knowledge regarding the management, education and nursing research online. The NEI includes students (nurses) from all over China, who learn online and interact via a WeChat group. Thus, their needs and experiences were reported in this platform. For example, they discussed methods for dealing with insomnia, utilization of PPE, local working mode and environment in Hubei, and knowledge regarding COVID-19. The aim of this study was to evaluate changes in the psychological needs of nurses as the situation of the epidemic is changing, and provide precise support in addressing these needs.

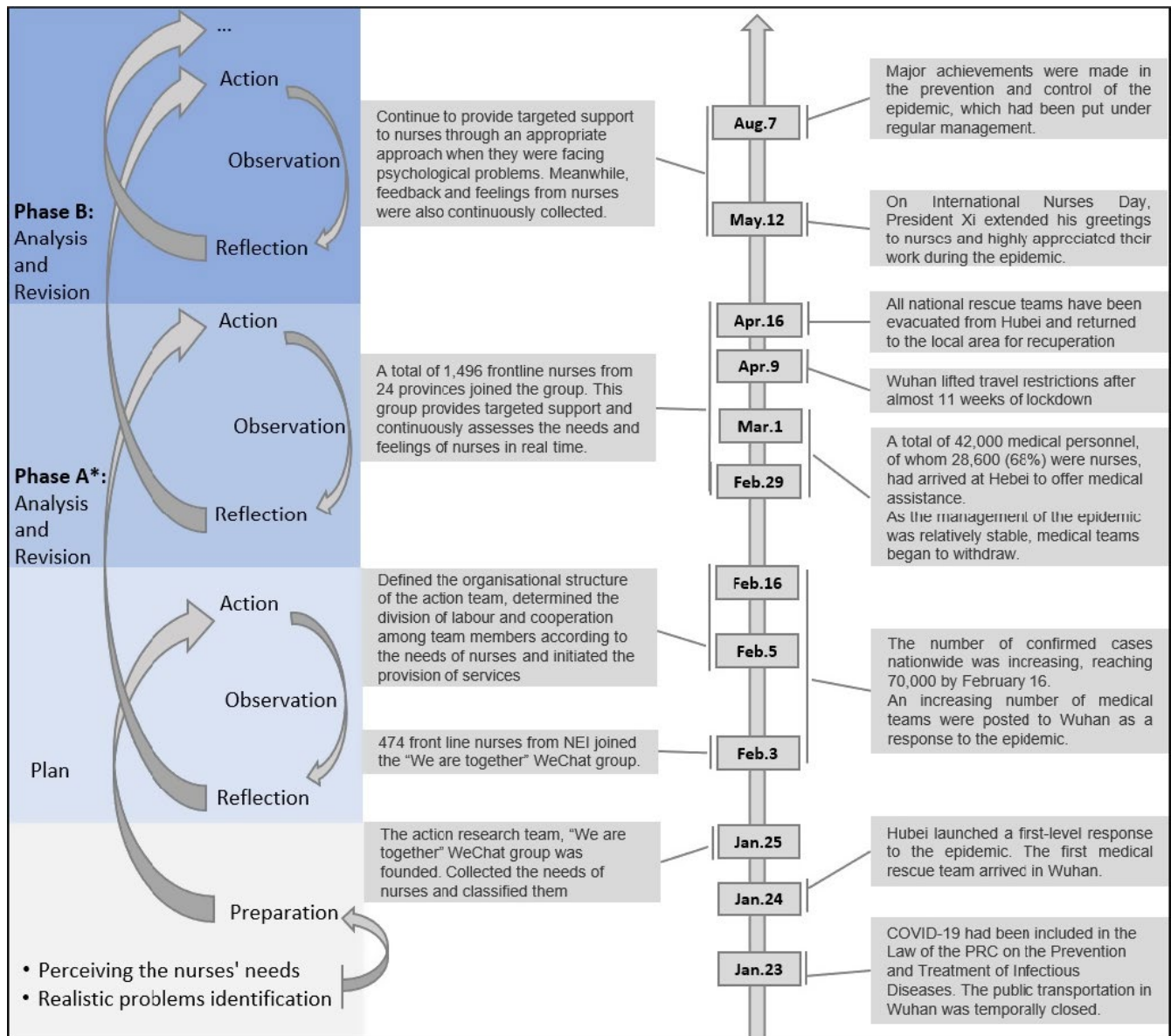
## 2 | METHODS

### 2.1 | Design

An action research design was adopted. This approach identifies practical solutions to pressing concerns by the combination of action and reflection with the participation of practitioners and researchers (Dickens & Watkins, 1999). This is especially relevant to psychological support to frontline nurses during the COVID-19 outbreak, given that it requires teamwork between frontline staff and support teams, particularly when the situation of the outbreak is uncertain. According to the time and situation, the action group identified problems, perceived nurses' needs and took extraordinary measures to deal with current circumstances by formulating cycles of plan, action, observation and reflection. This approach provided a framework for the design and implementation of this study (Figure 1). Data generation and analyses were conducted throughout the whole research process. In each cycle, data from the action group and participants were generated to improve the next cycle.

### 2.2 | Participants

We selected participants by convenience sampling and snowball sampling using the following inclusion criteria: nurses providing care to patients with COVID-19 and willing to participate in this study. An online electronic consent form and a basic information questionnaire were sent to candidate nurses. Subsequently, the researcher reviewed the questionnaire and sent invitations to those who qualified for inclusion. Following agreement, they became a member of the 'We are together' WeChat group created by the NEI on 25 January 2020. Initially, a total of 474 nurses from the NEI joined, a number which was subsequently increased. In this group, nurses could ask for help, share experiences and feelings, and receive information. Consequently, many of their needs were revealed and understood. Finally, 1,496 frontline nurses



**FIGURE 1** Action research and the process of action based on time and situation. COVID-19, coronavirus disease 2019; NEI, Nursing Education Institution; PRC, People's Republic of China. \*Phase A: Cycle I → Cycle II; Phase B: Cycle II → Cycle III [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.com)]

from 24 different regions of mainland China joined the WeChat group. Demographic information of these nurses is shown in Table 1.

## 2.3 | Research team

The multidisciplinary team (e.g. psychology, nursing psychology, infectious disease nursing, disaster nursing, nursing education and information technology) was led by a clinical nursing psychology professor who supervised the entire project and consisted of 28 members. There was a clear organisational structure (Figure 2) of the action programme; each member belonged to at least one subgroup according to their majors. Researchers provided targeted psychological support to frontline nurses through division and cooperation.

Meanwhile, regular online meetings were held on a weekly basis to share information between subgroups and jointly decide on further plans.

## 2.4 | Procedure

### 2.4.1 | Problem identification

To better understand nurses' needs and identify existing problems, we collected data from their chat records, including messages, documents, videos, pictures and web links. Finally, nurses' psychological needs were summarized as basic, growth, relatedness and psychological experience and coping (Figure 3).

**TABLE 1** Demographic information of the participants in this study (N = 1,496)

Variable	No. (%)
Gender	
Female	1,372 (91.7)
Male	124 (8.3)
Age (year)	
≤30	627 (41.9)
31–40	572 (38.2)
41–50	229 (15.3)
>50	68 (4.6)
Years of working experience (year)	
≤5	502 (33.5)
6–10	468 (31.3)
11–20	320 (21.4)
>20	206 (13.8)
Professional title	
Junior	705 (47.1)
Intermediate	537 (35.9)
Senior	254 (17.0)
Working location <sup>a</sup>	
Hubei	1,169 (78.1)
Other regional hospitals	327 (21.9)
Management role	
Yes	144 (9.6)
No	1,352 (90.4)
Public health emergency experiences	
Yes	98 (6.6)
No	1,398 (93.4)

<sup>a</sup>Locations where nurses responded to COVID-19 outbreak.

## 2.4.2 | Plan

Based on the four types of needs, researchers developed a targeted support scheme (Table 2) by internal discussions and feasibility analysis.

## 2.4.3 | Action

### *Editing questions and answers (Q&A) manual*

Three researchers managed the WeChat group and paid attention to the discussions of nurses. On one hand, they collected useful information related to work and life in the area of the epidemic that concerned nurses, such as the COVID-19 nursing guidelines, ward management system and professional operation manual. On the other hand, they answered questions in a timely manner and provided solutions through searching authorized materials. These Q&A questions and answers were subsequently edited to produce a Q&A manual, which was constantly updated with content from the WeChat group. Furthermore, the timeline was divided into three

parts. Each part contains narratives at both individual and organisational levels: (1) preparation period, including materials and goods preparation, knowledge, skills, psychological support, etc. (2) rescue period, containing work pattern, daily schedule, workflow and policy, professional training, etc. and (3) recuperation period, covering physical and mental relaxation, summary of personal experience, lessons learned, etc.

### *Peer communication and sharing*

Frontline nurses could communicate and share experiences and feelings with their peers who were also responding to COVID-19. Meanwhile, we contacted non-governmental organisations and entrepreneurs, seeking sponsorship to meet nurses' needs in terms of materials, such as sanitary napkins, diapers and PPE.

### *One-to-one psychological support*

Researchers set up an online psychological support team and opened a hotline to provide one-to-one psychological counselling. Nurses could receive psychological support by personal WeChat or telephone.

### *Targeted theme lecture*

According to the questions raised by nurses in the WeChat group, several experts in infection control, nursing and psychology were invited to conduct lectures on infectious disease management, professional knowledge on COVID-19, management of critically ill patients and personal psychological coping skills. Meanwhile, experts in the field of epidemic management were invited to share their experience. All lectures were conducted via the live streaming platform of NEI. Nurses could directly participate in the lectures through links at any time and freely post questions or comments on the relevant message boards. All targeted theme lectures are available and can be repeatedly watched.

### *Daily express*

To provide nurses with current news and keep them abreast of the developments of the outbreak, we used an e-poster named 'Daily Express', which provided updated information on the battle against COVID-19. The first issue was published on 4 February 2020. The *Daily Express* contains two columns—latest news on COVID-19—and wishes and blessing to nurses from the public.

### *Letters to loved ones*

We encouraged nurses to express their feelings and concerns to those they care about by opening a 'letters to loved ones' submission channel. Nurses could release their emotions by writing letters. All received letters were compiled into a web page with text and pictures and published on the official website of the NEI with the authors' permission, so that the nurses could forward the letter to the loved ones.

### *Group psychological counselling*

Some nurses wished to participate in psychological counselling with their peers. Hence, researchers formed a team to provide



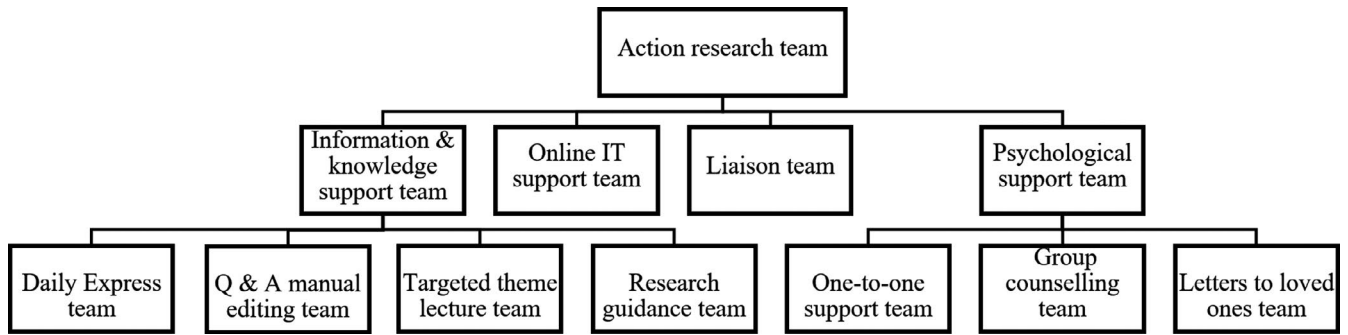


FIGURE 2 Organizational structure of the action research team. Q&A, questions and answers; IT, information technology

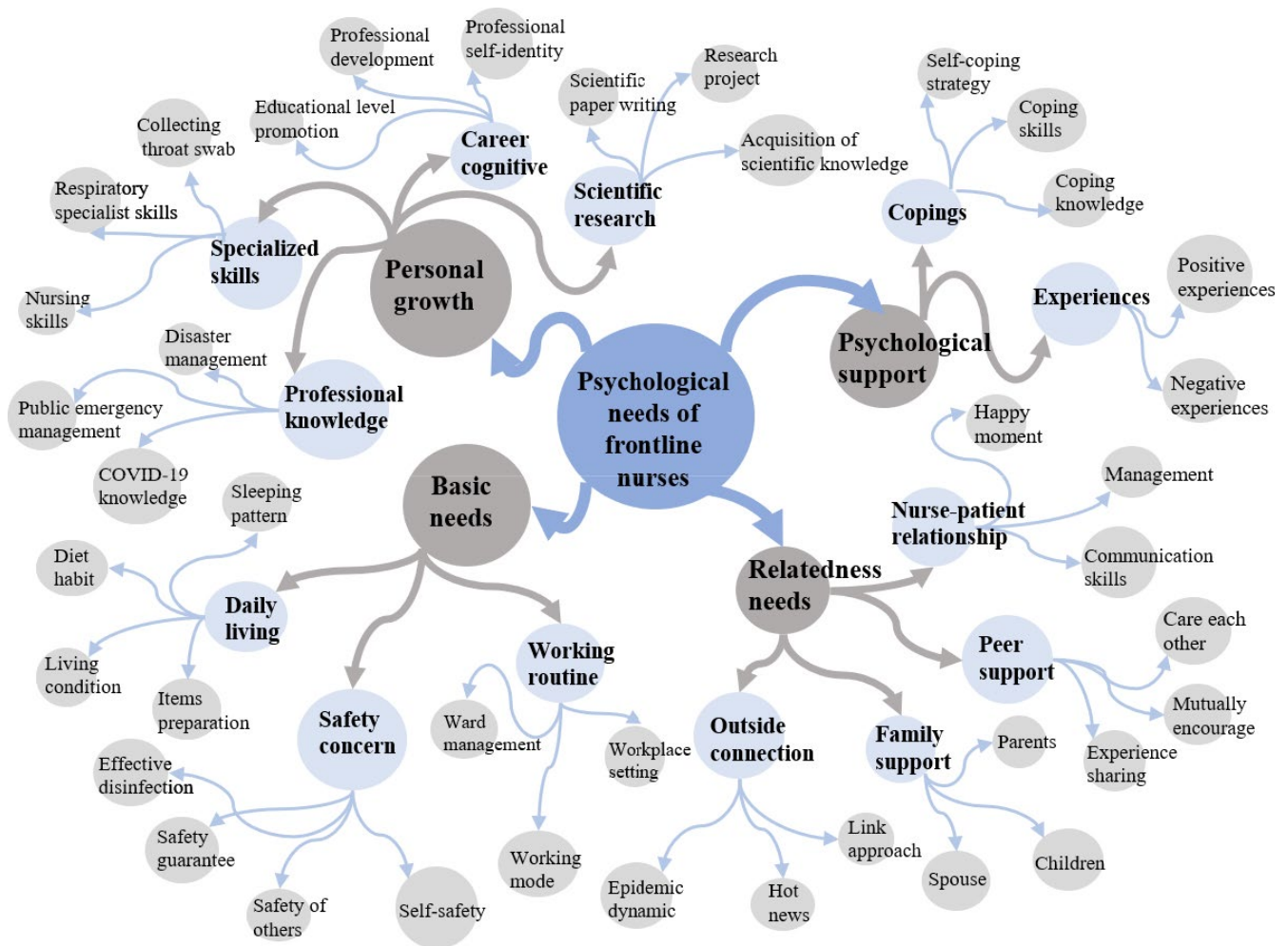


FIGURE 3 Visualization of the psychological needs of frontline nurses. Chat records in “we are together” WeChat group including: 7,481 pieces of conversation, 126 files, 401 web links, 530 images and 75 videos, totaling 8,613. Primarily, all the data were converted into text descriptions. For example, a nurse asked for advice on the use of PPE, and the researchers shared a PPE utilization video in response to this request. Subsequently, the video was represented by a text description titled “PPE utilization”. Afterwards, the text descriptions were managed through qualitative content analysis via MAXQDA by extracting word combinations, phrases, and sentences for further classification. Finally, the focal needs of nurses could be summarized as basic, growth, relatedness, and psychological support. The node size represented the coding weight, and the same color nodes meant the same level [Colour figure can be viewed at wileyonlinelibrary.com]

group counselling. Nurses could sign up by scanning the QR code and make an appointment for online group psychological counselling.

*Nursing research project fund*  
 Many nurses expressed a strong desire to improve their nursing research ability, and summarize their anti-epidemic experience

**TABLE 2** Targeted psychological support scheme for frontline nurses

Type of needs	Support module	Content and form
Basic	Editing Q&A manual	Collecting and summarizing expert literature, guidelines and experiences shared by experts and, subsequently, update them daily by WeChat.
	Peer communication and sharing	Nurses can discuss details regarding daily life or working routine in the WeChat group.
Relatedness	<i>Daily Express</i>	Using E-poser to share and show the latest situation of the outbreak in a timely manner
	Peer communication and sharing	Providing an option for nurses to support each other by sharing feelings at any time in the WeChat group.
	Letters to loved ones	Creating a 'letter to loved ones' submission channel to encourage the release of emotions by writing letters to loved ones.
Growth	Editing Q&A manual	Collecting knowledge on COVID-19 and management of infections, operation skills and job-related content, subsequently, include this information in the Q&A manual.
	Targeted theme lecture	Inviting respiratory specialists, nursing specialists and experts with SARS and COVID-19 experience to provide targeted theme lectures for nurses.
	COVID-19 nursing research project fund	Initiating a 'COVID-19 nursing research project' recruitment activity to provide research guidance for nurses.
Psychological experience and coping	One-to-one support	Nurses can receive one-to-one psychological counselling by personal WeChat and telephone.
	Group psychological counselling	Inviting psychologists to offer group psychological counselling support and conduct online seminars to provide knowledge and skills (e.g. psychological empowerment, stress release and PTSD recovery).

Note: COVID-19, coronavirus disease 2019; PTSD, post-traumatic stress disorder; Q&A, questions and answers; SARS, severe acute respiratory syndrome.

and reflection in a timely manner. Therefore, researchers provided nurses with a variety of scientific research training and learning opportunities, including scientific research lectures, the COVID-19 dedicated nursing research fund and free counselling.

#### 2.4.4 | Observation

Observation is aimed at observing and recording the action process and outcomes analysis. Researchers observed nurses' feelings and experiences and collected feedback accordingly. In addition, weekly online meetings of the research group were held to gather feedback from the researchers.

#### 2.4.5 | Reflection and improvement

In each cycle of action, problems were promptly detected, and deficiencies were improved to optimize the targeted supportive scheme (Table 3).

### 2.5 | Data collection and analytic strategy

From 25 January 2020 to 3 September 2020, data were collected during the observation and reflection processes, including the WeChat group chat records, letters to loved ones, stories in WeChat moments, comments on the lectures and feelings during

psychological counselling. Qualitative content analysis was conducted using MAXQDA. Subsequently, data were transcribed into English; the transcription was counter-checked by the authors. Meaningful units were coded and combined into subcategories and categories. Eventually, they were organised into three themes by paired authors. During the analysis, researchers had several discussions to ensure that conflicts were resolved and a consensus was reached.

### 2.6 | Ethical considerations

An Institutional Review Committee approved this study (Approval number: H20013). Consent was obtained prior to involvement. All nurses were assured that their participation in this study was completely voluntary; participants could freely withdraw from the group at any time. The collected data were treated with strict confidentiality.

## 3 | RESULTS

To date, three action research cycles have been completed, and a targeted support scheme has been preliminarily formed and put into practice. Researchers produced a Q&A manual containing 364 questions associated with daily living, as well as working and psychological needs at individual and organisational levels. A total of 46 targeted theme lectures have been conducted online, and the total

**TABLE 3** Process of analysis and revision

Process	Existing problem	Improvement
Phase A: Cycle I → Cycle II	Difficulty in searching information among many records in the WeChat platform.	Setting up a special QR code for Q&A manual: Nurses can obtain timely information from the Q&A manual by scanning the QR code.
	Some nurses indicated that they could not receive the authors' affection by reading the letters to loved ones.	Converting letters into audio: To ensure good rest of nurses during their spare time, researchers organised declaimers to read letters and convert them into audio. This approach would help frontline nurses to listen during rest time, empower those who are physically and mentally exhausted and reduce their feeling of homesickness.
	Nurses have a wealth of experience in dealing with the outbreak that needed to be shared. However, some of them had limited scientific research knowledge.	Summarizing experience in scientific research guidance: The research seminar and group counselling were added along with the nursing research project fund to provide help in their nursing research.
Phase B: Cycle II → Cycle III	As the control of the epidemic was relatively stable, nurses gradually return to their own work. However, some were faced with new psychological problems, such as role adjustment, absent-mindedness and self-accusation.	Group psychological guidance in physical and mental relief: Considering this realistic problem, we set up a group concerning psychological guidance in physical and mental relief to help them return to normal life and work as soon as possible.

Note: Q&A, questions and answers; QR, quick response.

number of attendances was 59,823 person-time; 96 *Daily Express* e-posters have been published. In addition, we received 78 letters to loved ones and utilized them as a web page and audio content. The 107 nurses experiencing psychological stress (e.g. insomnia, anxiety and fear) received one-to-one psychological support. In total, 27 group psychological counselling sessions were organised, with 992 receiving counselling. A total of 113 research proposals were generated by nurses, and 30 of those were eventually supported by the NEI COVID-19 dedicated fund after a cross-assessment by five researchers.

Meanwhile, feedback from frontline nurses showed that they received strong psychological assistance from the targeted support, which offered (1) a sense of belonging (2) a sense of professional value and pride, and (3) a sense of being protected and confident.

### 3.1 | Member of a big family: A sense of belonging

During the epidemic, nurses promptly moved to Wuhan, worked in an unfamiliar environment and faced numerous uncertainties and worries, particularly in the early stage of the outbreak. By that time, they had plenty of questions and worries, but did not know how and where to search for help. After joining the 'We are together' groups, they felt they had found an organisation which they belong to. One of the nurses stated:

'I work as a nurse in Wuhan. The regular working routine was disarranged after the outbreak. I was sent to the COVID-19 department, which is newly opened; I

was almost lost as I was not used to this situation, I did not know what to do. After joining the group, I find support, belong in this group, and know there are many peers fighting against COVID-19 with me. We are in the same army'.

Meanwhile, after receiving support provided by researchers, nurses felt that they were well cared for. One nurse shared her feelings after participating in psychological counselling:

'Thanks to them, I feel I am a member of a big family, everyone in this family are trying to help each other. It is not just the nurses at the frontline, but also people in the rear area. I feel relaxed and don't worry about problems anymore, as I found it is common to face challenges in this extraordinary period. Also, I can search for necessary information that I need at any time, even when I have a night shift, the 'We are together' group is there'.

### 3.2 | A tiny speck of dust: A sense of professional value and pride

Although the fight was difficult and the frontline nurses encountered many problems during the process, they felt proud of their role. As a result, they developed further awareness regarding the professional values of nursing. A nurse from a primary hospital in Fujian wrote in her letter:

'As a nurse, I always felt that I am ordinary as a tiny speck of dust. After the outbreak, I feel proud of becoming a nurse. So many people help me solve problems... I wrote a letter to my baby when I missed her, and broke down in tears when I heard the audio of my letter that they recorded for me... They successfully increased my pride and sense of professional value, although I know I am not so great'.

In the WeChat group, nurses supported and encouraged each other by sharing information and experiences. Senior experts shared their professional experiences, while junior nurses shared tips. They felt satisfaction in helping others. A senior nursing specialist, who responded to the severe acute respiratory syndrome (SARS) outbreak in 2003, shared her experience in the WeChat group:

'From SARS to COVID-19, when I see that my 'comrades-in-arms' benefit from my experiences against SARS, I am so happy'.

A young nurse, who is curious and likes to innovate during work, shared a tip for preventing the development of fog in eyepieces:

'I have collected some small tips from work. When I knew they can help other medical staff, I felt so proud'.

### 3.3 | Angels behind the angels: A sense of professional value and pride

Nurses were emotionally moved by the work that the researchers had done for them. One of the young male nurses wrote in his letter:

'It is my job to look after patients, whether diagnosed with COVID-19 or not. But it is not their (the action researchers) duty to help and support us. I am really touched by what they have done for us...We, who fight against COVID-19 at the frontline, are compared to angels. In fact, if we are angels, then they are the angels behind us who protect angels'.

During the response to the outbreak, many nurses felt that they had developed personally and became more confident. A nurse attending a lecture left the following comment:

'The targeted theme lectures are practical. In fact, before, I was just repeating the clinical work day after day and did not actively acquire new knowledge. But now, I learned a lot from those lectures; this has made me more confident to look after patients with COVID-19 also in my future clinical nursing work'.

Other nurses revealed that they appreciated the experience, understood the real meaning of life and would cherish their lives more in the future. For example, nurse Zhang found it difficult to adjust to personal life after returning from Hubei. She shared her feelings after completing psychological counselling:

'Counsellor Sun is really excellent. I still remember her words 'Love work, love life, love the world, and love yourself', just like the love after understanding the culture of the hot frying noodle (a classic cuisine of Wuhan). I have regarded this experience as a precious part of my life, enjoy it and take it easy, then endeavour my new life and work'.

## 4 | DISCUSSION

Our study aimed to develop and implement a targeted psychological support scheme for frontline nurses dealing with the COVID-19 outbreak. Researchers maintained contact with the frontline nurses to timely evaluate their needs and feelings. Meanwhile, the actions and latest feedback were constantly synchronized to improve the effectiveness of the scheme, which improved the targeted psychological support scheme and its implementation. This action study achieved initial results, which were attributed to the cooperation of multiple disciplines within the research team, as well as the integration of resources outside of the team. Through the exchange of professional knowledge of various disciplines, the boundaries are broken, while the advantages are complementary (Yin & Zhao, 2019). Members from multiple fields collaborated on every aspect, such as the assessment of nurses' needs, preparation of theme lectures, psychological counselling and operation of the online platform. This approach allowed them to take advantage of each other's expertise and unite to provide frontline nurses with targeted psychological support.

In addition, Dickens and Watkins (1999) indicated that the success of an action research requires mutual trust between researchers and participants and emphasizes the cooperation between them. Based on the mutual trust relationship established between the researchers and nurses from the NEI in the early stage of the outbreak, the action research was performed smoothly, and an increasing number of frontline nurses joined this study through peer referrals. Throughout the process, the frontline nurses were willing to seek help from the action team and share problems, doubts and feelings in the 'We are together' group. This was also important for the initial success of the programme. As Adams and Walls (2020) suggested, honest and transparent communication between researchers and nurses regarding daily life, childcare, protocols for arrival home after duty, etc., via the WeChat and psychological counselling could help to relieve stress and anxiety.

Furthermore, nurses stated that they had received strong psychological assistance from the targeted support. A previous study (Shahrour & Dardas, 2020) has shown that frontline nurses often



lack self-confidence in the face of major emergencies. Appropriate education, professional knowledge and skills training can improve the self-confidence of nurses in such situations (García et al., 2020). Nurses in this study were motivated and became more confident by attending the theme lectures, sharing experience between peers and learning from the Q&A manual. In addition, Sato et al. (2014) affirmed that, when those who were at the frontline were supported by others in the rear area, they considered that a larger team was striving for the same goal. As a result of the contribution from researchers and nurses, the emergency response became considerably easier for nurses, thereby increasing their confidence.

Additionally, we provided psychological support to nurses, which included one-to-one or group psychological guidance when nurses failed to adapt themselves to the changes. Notably, adaptability was one of the critical components of nurses' resilience (Hart et al., 2014). Resilience involves many personal characteristics, such as 'rebounding' and 'carrying on', self-determination, self-esteem and hopefulness, and can support nurses during stressful events (Duncan, 2020). Lai et al. (2020) indicated that resilience is one of the foundations of mental health. Therefore, psychological support that can improve resilience is essential to preserve the mental health of nurses in the short and long term (Maben & Bridges, 2020).

As the precise psychological support and data collection of this action research were performed exclusively online due to the epidemic, it was limited in terms of both sample setting and data collection. First, there was sampling bias as action via the Internet may not be considered reliable and sufficiently sincere in the eyes of some nurses who chose not to participate. Second, it was difficult to match the supports and needs of nurses on a personal level as we only collected data from their daily activities, such as the WeChat group chats, letters and comments on lectures. Thus, the approach to providing support and interacting with nurses requires comprehensive evaluation in future studies.

## 5 | CONCLUSION

This study reported precise actions to support frontline nurses using the action research method. The results suggested that frontline nurses paid attention to several aspects of their needs, including basic, growth, relatedness, psychological experience and coping during the outbreak. The multidisciplinary research team provided comprehensive support to the frontline nurses through the targeted psychological support scheme, which involved the production of a Q&A manual, peer communication and sharing, one-to-one psychological support, theme lecture, *Daily Express* e-posters, letters to loved ones, group psychological counselling and nursing research project funding. In addition, nurses were motivated and became more confident when their needs were addressed by this precise psychological support.

## 6 | IMPLICATION FOR NURSING MANAGEMENT

Our findings revealed that nurses have various types of psychological needs in the process of response to the ongoing pandemic. Some of those can be addressed by targeted support. It is suggested that relevant organisations should provide psychological support to nurses to enhance their confidence and resilience in the face of emergency situations. Furthermore, the cooperation of a multidisciplinary team benefited the formation and improvement of the targeted support scheme. It is highly recommended that nursing managers collaborate with professionals from various disciplines to consider problems from different perspectives. This sharing of knowledge will provide nurses with targeted and appropriate support from all aspects. In addition, with the development of the COVID-19 pandemic, the psychological needs of nurses will change accordingly. Therefore, it is essential to summarize the psychological needs of nurses in real time, and tailor appropriate targeted support schemes in a timely manner.

### ACKNOWLEDGEMENTS

The authors delivered their appreciations to all individuals who participated in this study, especially the frontline nurses. Special thanks were given to Institute of Psychology, Chinese Academy of Sciences, to provide a grant support for the Program.

### CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

### AUTHOR CONTRIBUTIONS

JEL, XYB and SHC conceived and designed the study. SHC, XYB and SXL acquired the data. JEL, SHC and PY analysed and interpreted the data. SHC and JEL drafted the article. JEL, XYB and SHC revised it critically for important intellectual content and finally approved the version to be submitted.

### ETHICAL APPROVAL

An ethical approval was granted by Institute of Psychology, Chinese Academy of Sciences (approval number: H20013).

### DATA AVAILABILITY STATEMENT

- Part of data in this study derived from public domain resources from Nursing Education Institution (NEI), including questions and answers (Q&A) manual, some letters to beloved ones, and nurses' comments on theme lectures. These data were derived from the following resources available in the NEI public domain:
  - Questions and answers (Q&A) manual
    - <https://shimo.im/docs/r53JVVvbbKSjFe3m/read>
  - Letters to beloved ones
    - [https://mp.weixin.qq.com/mp/homepage?\\_\\_biz=MzUxOTMxNzM1Mw==&hid=21&sn=bd808930ad0a48de0173ca9d7f79ed17&scene=1&devicetype=android-29&versi](https://mp.weixin.qq.com/mp/homepage?__biz=MzUxOTMxNzM1Mw==&hid=21&sn=bd808930ad0a48de0173ca9d7f79ed17&scene=1&devicetype=android-29&versi)

on=27001439&lang=zh\_CN&nettype=WIFI&scene=7&session\_us=gh\_aeb41208591a&wx\_header=1

### c. Theme lectures

- [https://wx579dafa9c546655a.h5.xiaoe-tech.com/v1/course/column/p\\_5f325757e4b07f8bd26dfd86?type=3&share\\_user\\_id=u\\_5ed7bfb80024a\\_UBHAT2PRv&share\\_type=2&scene=%E5%88%86%E4%BA%AB&entry=2&entry\\_type=2001&is\\_redirect=1](https://wx579dafa9c546655a.h5.xiaoe-tech.com/v1/course/column/p_5f325757e4b07f8bd26dfd86?type=3&share_user_id=u_5ed7bfb80024a_UBHAT2PRv&share_type=2&scene=%E5%88%86%E4%BA%AB&entry=2&entry_type=2001&is_redirect=1)
- [https://wx579dafa9c546655a.h5.xiaoe-tech.com/v1/course/column/p\\_5f325c1ae4b07f8bd26dff65?type=3&cacheClean=1604717254919&share\\_user\\_id=u\\_5ed7bfb80024a\\_UBHAT2PRv&share\\_type=2&scene=%E5%88%86%E4%BA%AB&entry=2&entry\\_type=2001&is\\_redirect=1](https://wx579dafa9c546655a.h5.xiaoe-tech.com/v1/course/column/p_5f325c1ae4b07f8bd26dff65?type=3&cacheClean=1604717254919&share_user_id=u_5ed7bfb80024a_UBHAT2PRv&share_type=2&scene=%E5%88%86%E4%BA%AB&entry=2&entry_type=2001&is_redirect=1)
- <https://m.qlchat.com/wechat/page/channel-intro?channelId=2000007609993962&sourceNo=app>
- <https://m.qlchat.com/wechat/page/channel-intro?channelId=2000007605926516&sourceNo=app>
- <https://m.qlchat.com/wechat/page/topic-intro?topicId=2000008459345011>

2. Some other data available on request due to ethical restrictions. The data are not publicly available due to privacy, such as nurses' chats, one-to-one and group psychological counselling and the other part of their letters to beloved ones.

### ORCID

Shao-Hua Chen  <https://orcid.org/0000-0003-2667-4209>

Jun-E Liu  <https://orcid.org/0000-0002-6843-9322>

Peng Yue  <https://orcid.org/0000-0002-9422-4595>

### REFERENCES

- Adams, J. G., & Walls, R. M. (2020). Supporting the health care workforce during the COVID-19 global epidemic. *JAMA*, 323(15), 1439–1440. <https://doi.org/10.1001/jama.2020.3972>
- Chen, H. Y., Ahmad, C. A., & Abdullah, K. L. (2020). Disaster relief work: The experiences of volunteers in Malaysia. *International Journal of Disaster Risk Reduction*, 43, 101414. <https://doi.org/10.1016/j.ijdrr.2019.101414>
- Dickens, L., & Watkins, K. (1999). Action research: Rethinking Lewin. *Management Learning*, 30, 127–140. <https://doi.org/10.1177/1350507699302002>
- Duncan, D. (2020). What the COVID-19 pandemic tells us about the need to develop resilience in the nursing workforce. *Nursing Management*, 27(3), 22–27. <https://doi.org/10.7748/nm.2020.e1933>
- Fernandez, R., Lord, H., Halcomb, E., Moxham, L., Middleton, R., Alananah, I., & Ellwood, L. (2020). Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *International Journal of Nursing Studies*, 111, 103637. <https://doi.org/10.1016/j.ijnrstu.2020.103637>
- García, M. M., Roman, P., Rodriguez, A. M., del Mar Diaz, C. M., Soriano, M. P. J., & Roper, P. C. (2020). Novice nurse's transitioning to emergency nurse during COVID-19 pandemic: A qualitative study. *Journal of Nursing Management*, 1–10. <https://doi.org/10.1111/jonm.13148>
- Government of Hubei Province, China. (March 1, 2020). 28,600 nurses supporting Hubei Province played an important role in treatment. Retrieved from [http://www.hubei.gov.cn/zhuanti/2020/gzxxgzbd/qfqk/202003/t20200301\\_2164990.shtml](http://www.hubei.gov.cn/zhuanti/2020/gzxxgzbd/qfqk/202003/t20200301_2164990.shtml)
- Hart, P. L., Brannan, J. D., & De Chesnay, M. (2014). Resilience in nurses: An integrative review. *Journal of Nursing Management*, 22(6), 720–734. <https://doi.org/10.1111/j.1365-2834.2012.01485.x>
- Lai, C. C., Shih, T. P., Ko, W. C., Tang, H. J., & Hsueh, P. R. (2020). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *International Journal of Antimicrobial Agents*, 55(3), 105924. <https://doi.org/10.1016/j.ijantimicag.2020.105924>
- Lee, J. Y., Hong, J. H., & Park, E. Y. (2020). Beyond the fear: Nurses' experiences caring for patients with Middle East respiratory syndrome: A phenomenological study. *Journal of Clinical Nursing*, 29(17–18), 3349–3362. <https://doi.org/10.1111/jocn.15366>
- Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, 29, 2742–2750. <https://doi.org/10.1111/jocn.15307>
- Mo, Y., Deng, L., Zhang, L., Lang, Q., Liao, C., Wang, N., & Huang, H. (2020). Work stress among Chinese nurses to support Wuhan for fighting against the COVID-19 epidemic. *Journal of Nursing Management*, 28(5), 1002–1009. <https://doi.org/10.1111/jonm.13014>
- National Health Commission of the People's Republic of China (2020). Pneumonia caused by novel coronavirus was placed under the statutory infectious disease control. Retrieved from <http://www.nhc.gov.cn/xcs/zhengcwj/202001/44a3b8245e8049d2837a4f27529cd386.shtml>
- Negar, P., Kian, N., Fazlollah, A., Mohammadali, H., Hamidreza, K., & Saravana, K. (2017). Nurse in limbo: A qualitative study of nursing in disasters in Iranian context. *PLoS One*, 12(7), 1–12. <https://doi.org/10.1371/journal.pone.0181314>
- New China News Agency (2020). Level 1 response from 30 provinces!. Retrieved from <http://www.chinajsb.cn/html/202001/26/7681.html>
- Nickell, L. A., Crighton, E. J., Tracy, C. S., Al-Enazy, H., Bolaji, Y., Hanjrah, S., & Upshur, R. E. G. (2004). Psychosocial effects of SARS on hospital staff: Survey of a large tertiary care institution. *Canadian Medical Association Journal*, 170(5), 793–798. <https://doi.org/10.1053/cmaj.1031077>
- Petzold, M. B., Plag, J., & Ströhle, A. (2020). Umgang mit psychischer Belastung bei Gesundheitsfachkräften im Rahmen der Covid-19-Pandemie. [Dealing with psychological distress by healthcare professionals during the COVID-19 pandemic]. *Der Nervenarzt*, 91(5), 417–421. <https://doi.org/10.1007/s00115-020-00905-0>
- Raveis, V. H., Vandevanter, N., Kovner, C. T., & Gershon, R. (2017). Enabling a disaster-resilient workforce: Attending to individual stress and collective trauma. *Journal of Nursing Scholarship*, 49(6), 653–660. <https://doi.org/10.1111/jnu.12340>
- Sato, M., Atogami, F., Nakamura, Y., Kusaka, Y., & Yoshizawa, T. (2014). Remote community-based public health nursing during a disaster: An ethnographic case study in Japan. *Australasian Emergency Nursing Journal*, 17(3), 106–111. <https://doi.org/10.1016/j.aenj.2014.04.001>
- Shahrour, G., & Dardas, L. A. (2020). Acute stress disorder, coping self-efficacy and subsequent psychological distress among nurses amid COVID-19. *Journal of Nursing Management*, 28(7), 1686–1695. <https://doi.org/10.1111/jonm.13124>
- Skoda, E. M., Teufel, M., Stang, A., Jöckel, K. H., Junne, F., Weismüller, B., & Bäuerle, A. (2020). Psychological burden of healthcare professionals in Germany during the acute phase of the COVID-19 pandemic: Differences and similarities in the international context. *Journal of Public Health*, 42(4), 688–695. <https://doi.org/10.1093/pubmed/fdaa124>
- Sun, N., Shi, S., Jiao, D., Song, R., & Wang, H. (2020). A qualitative study on the psychological experience of caregivers of covid-19 patients. *American Journal of Infection Control*, 48(6), 592–598. <https://doi.org/10.1016/j.ajic.2020.03.018>

- World Health Organization (2020). WHO Director-General's opening remarks at the media briefing on COVID-19. Retrieved from <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-28-february-2020>
- World Health Organization(2020). Weekly epidemiological and operational update on COVID-2019. Retrieved from [https://www.who.int/docs/default-source/coronaviruse/situation-reports/wou-4-september-2020-approved.pdf?sfvrsn=91215c78\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/wou-4-september-2020-approved.pdf?sfvrsn=91215c78_2)
- Wu, Y., Wang, J., Luo, C., Hu, S., Lin, X., Anderson, A. E., & Qian, Y. (2020). A comparison of burnout frequency among oncology physicians and nurses working on the frontline and usual wards during the COVID-19 epidemic in Wuhan, China. *Journal of Pain and Symptom Management*, 60(1), e60–e65. <https://doi.org/10.1016/j.jpainsymman.2020.04.008>
- Yin, H. Y., & Zhao, J. (2019). A review of multidisciplinary team research in hospitals. *Nanjing Medical University Journal of Social Sciences*, 6, 476–479. <https://doi.org/10.7655/NYDXBSS20190612>
- Zhou, W. J., Turale, S., Stone, T. E., & Petrini, M. A. (2015). Chinese nurses' relief experiences following two earthquakes: Implications for disaster education and policy development. *Nurse Education in Practice*, 15(1), 75–81. <https://doi.org/10.1016/j.nepr.2014.06.011>

**How to cite this article:** Chen S-H, Liu J-E, Bai X-Y, Yue P, Luo S-X. Providing targeted psychological support to frontline nurses involved in the management of COVID-19: An action research. *J Nurs Manag.* 2021;29:1169–1179. <https://doi.org/10.1111/jonm.13255>