

Progress of Research on Mental Health and Intervention Methods for Frontline Nurses in the Control of the New Crown Pneumonia Epidemic

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Abstract: In the continuous spread of the new crown pneumonia epidemic, front-line nurses fighting the epidemic have been experiencing mental health problems such as anxiety, insomnia, and somatization symptoms one after another. And these problems not only damage nurses' physical and mental health, but also affect the efficiency of epidemic prevention work. In order to reduce the decrease in work efficiency caused by psychological problems, this paper reviews the mental health problems and common psychological intervention methods that occur among frontline nurses in the prevention and control of the new coronary pneumonia epidemic, with a view to providing frontline nurses in epidemic prevention with more scientific psychological intervention methods to maintain physical and mental health, as well as providing a reference basis for nursing managers to develop psychological interventions for nurses after the return of the epidemic fight.

1. Introduction

Up to now, the global outbreak of novel coronavirus pneumonia (“neo-coronavirus pneumonia”) epidemic is still raging, and the epidemic is also recurring in China. In this battlefield, health care workers are the main force, and while they have completed the task of fighting the NCCP epidemic with quality and quantity, psychological problems have emerged and need to be solved. The health care workers experiences a series of psychological and physical symptoms after a major public health event, mainly anxiety, depression, somatization symptoms, insomnia, and even suicidal tendencies in severe cases, which greatly affect the effective implementation of epidemic prevention and control work. At present, domestic scholars' studies on the mental health of NCCP nurses focus on surveys and nurses' experiences, but there is little research literature on mental health interventions for frontline NCCP nurses (hereinafter referred to as “frontline nurses”). Taking this as a starting point, this paper will focus on the psychological problems and common psychological

intervention methods of frontline nurses in the prevention and control of the epidemic, in order to help them choose more scientific psychological intervention methods, and to provide a reference basis for nursing managers to develop psychological intervention programs for nurses returning from the epidemic, so that they can return to work in a healthy psychological state.

2. Common Mental Health Problems of Front-Line Nurses in Epidemic Prevention

2.1 Fear, Anxiety and Depression

Xu Mingchuan et al.^[1] The results of a psychological condition survey done on the first batch of nurses supporting the epidemic showed that 85.37% of nurses had psychological problems such as depression and anxiety within two weeks. Guo et al.^[2] conducted a qualitative study on the psychological experience of nurses who collected biological samples of novel coronavirus and found that virus sampling nurses generally had negative psychological states of fear, loneliness, and helplessness. Huang, Li-Kui et al.^[3] also did a survey on the mental health status of nurses after return from anti-epidemic, and the results showed that the symptom self-rating scale (SCL-90) scores of nurses after return were higher than normal adult norms in somatization, obsessive-compulsive symptoms and anxiety factor scores. Some studies showed that anxiety, depression, and obsessive-compulsive psychological behaviors were more prominent among nurses in key departments such as pre-screening triage, fever clinic, and isolation wards than in other departments^[4]. The reasons for this are that in the face of sudden major public health events, people do not understand the onset of the disease due to the initial lack of training in emergency protection, and nurses have to be in close contact with patients, coupled with the mutation of the virus, which is extremely contagious, nurses are worried about their family members and relatives being infected; the use of protective equipment, so that nurses suffer great physical and mental shock, these will undoubtedly make nurses fear and anxiety^[5] These will undoubtedly make nurses fearful and anxious; the epidemic front continues indefinitely, the work intensity of nurses on the front line of epidemic prevention is high, and they have to return to the isolation living area after work, so they have two points of contact every day, and their negative emotions are not replaced in time.

2.2 Fatigue and Insomnia

Ge Jing et al.^[6] conducted a qualitative study on the work experience of frontline nurses in epidemic prevention and learned that they not only have to complete professional treatment but also have to do tedious basic nursing care, while observing strict sterilization and isolation systems. In particular, nursing staff need to be more cautious when dealing with patients with severe underlying diseases due to their respiratory symptoms and rapidly changing conditions. Especially in intensive care wards, nurses even find it luxurious to eat, and coupled with individual patients' disrespect and lack of understanding, in such high stress situations, nurses not only suffer from physical exhaustion but also from psychological fatigue, which greatly affects their psychological health and work quality. The nurse population is mostly female, especially the middle and senior nurses as mothers, children, wives and other important family roles, facing the pressure of family and work, they are prone to worry, over-excitement and insomnia. The results of a foreign meta-analysis to assess mental health problems during the NCCP epidemic showed that 44.0% of the 101,017 frontline health care workers surveyed had insomnia^[7].

2.3 Somatization, Obsessive-Compulsive Symptoms

When an emergency situation is encountered, the body experiences a series of physical and

psychological stress reactions due to its normal state being disrupted. During this new crown pneumonia epidemic, people felt their health and survival were greatly threatened, and a series of stress reactions such as fear and anxiety ensued; these emotions could not be relieved in time, and then somatization symptoms related to fatigue, pain, panic, chest tightness, loss of appetite, etc. may occur^[8]. Research results^[11] It was found that of the 35 frontline nurses in prevention, 9 of them developed somatization symptoms and 6 of them developed obsessive-compulsive symptoms after two weeks. OCD is a stress-responsive disorder with a positive correlation between symptom severity and stress level^[9]. Due to the special nature of their work, front-line nurses in epidemic prevention need to face unknown and complex working environment, and they are more sensitive to stress and more prone to stimulation and obsessive-compulsive symptoms due to fear of infection and lack of cooperation and understanding of individual patients. This is manifested by suspicion of illness, wearing multiple layers of masks at work, excessive fear of infecting family and friends, and repeated hand disinfection.

2.4 Post-Traumatic Stress Disorder (PTSD)

PTSD is a delayed-onset and long-term persistent psychiatric disorder caused by unusually threatening or catastrophic psychological trauma^[10] It is a mood disorder dominated by fear and dread, which may lead to anxiety, depression, memory impairment, reduced quality of work and other adverse effects.^[11] Li Chuansheng et al.^[12] studied the current status of PTSD in 104 frontline nurses of epidemic prevention and found that the incidence of PTSD was 50.73%. The results of a foreign systematic evaluation of mental health problems of health care workers during the new crown pneumonia epidemic showed that the prevalence of PTSD among health care workers reached 49%, ranking first, followed by anxiety, depression and distress^[13]. During the epidemic, front-line nursing staff were strained in resources, worked long hours, wrapped in protective clothing for a long time and were impermeable, and if they encountered physiological periods, they could not be changed in time and suffered great physical and mental shocks, which, together with the continuous mutation of the virus and greater contagiousness, brought more panic and helplessness to nurses. If the nurses go to the field to support, because they are not accustomed to the local diet, customs, cultural values, etc. are more likely to suffer a greater psychological impact.

3. Common Psychological Intervention Methods

3.1 Group Psychological Intervention

Group psychological interventions are divided into structured and unstructured group psychological interventions, and during the epidemic, psychological interventions were mostly conducted with the help of online forms.

3.1.1 Network Structured Group Psychological Intervention

Structured group psychotherapy is an experiential activity in which a professional psychotherapist guides the participation of study participants through a pre-designed psychotherapy program, borrowing the positive effect of interaction among group members to help members analyze and accept themselves and learn new attitudes and behaviors to solve their mental health problems through learning and experiencing^[14] The study was conducted by a professional psychotherapist. Chang, Shu-Ying et al.^[15] With the help of Tencent video software, a two-week group psychological intervention was conducted with 31 frontline nurses in epidemic prevention, which was divided into three parts (four activities): participants established the group and released

their emotions; members interacted and recognized themselves; and supported each other and looked forward to the future. The results at the end of the intervention showed that this method was effective in reducing anxiety, depressive states and somatization symptoms, and sleep quality of nurses in isolation wards. Janzarik et al.^[16] conducted an eight-week group psychotherapy intervention to develop resilience in nurses and showed that the number of mental health problems in the intervention group was significantly reduced after the treatment and this positive effect persisted six months after the intervention. It is evident that group psychological interventions are widely applied, have long-lasting effects, and save time and effort in order to prevent large-scale cross-contamination with the help of the Internet. However, there are limitations to this online non-face-to-face communication, and for nurses with introverted personalities, group leaders need to consider their actual participation so as not to fail to achieve the intervention effect and cause resistance among nurses.

3.1.2 Networked Unstructured Group Psychological Interventions

Unstructured group psychological interventions are psychological interventions that are conducted by group leaders without specific processes, steps, and protocols, taking into account the current state of the members, their needs, and the development of the group process.^[17] The following are some examples. During the Newcastle pneumonia epidemic, this type of psychological intervention was more flexible, focused on solving the current problem, and was more efficient. Deng Kaiqin et al.^[18] conducted group psychological interventions for frontline nurses in the New Coronary Pneumonia epidemic through Tencent meetings, Tencent QQ, and nailing platforms. The intervention topics included five topics: psychology, management, patients, technology, and life. Each nurse used 10 minutes to elaborate on the problems they encountered, communicate with group members about the problems, and the group leader dissected and guided on the problems once every 2 days for a total of 5 sessions. The results showed that the nurses' negative emotions and stress scores decreased compared with those before the intervention. It indicates that this method can effectively alleviate the negative emotions and reduce the stress of frontline nurses in epidemic prevention. This method is highly feasible and especially applicable to the immediate psychological intervention of frontline nurses in epidemic prevention, but the long-term effect is to be evaluated and requires high intervention strategies and techniques for group leaders.

3.2 “Three Good Things” Positive Psychological Intervention

“Three good things” positive psychological intervention is a new psychological intervention model based on positive psychology theory proposed by American psychologists Seligman et al.^[19] He believes that people should pay more attention to the good things in life in order to overcome the negative preferences of the brain due to evolutionary reasons. For example, there is a need to record why something good happened, how it happened, and how it made the person feel, so that the person often focuses on the positive aspects of life and work, thus becoming more optimistic and confident and improving the quality of life and work. Han Dan^[20] Through positive psychological interventions for maintenance hemodialysis patients, this method was found to be effective in improving the patients' self-feeling burden and negative emotions, and enhancing their general self-efficacy and optimism level. Deng Xingyue et al.^[21] found that this method significantly reduced the total score of SCL-90 and the scores of hostility, paranoia, and terror. Although this method can improve nurses' mental health status, positive psychology theory and its therapies are still in a mature stage of development, there is less literature on its use in nursing, there are no uniform standards for intervention programs, and there is a lack of multicenter, large-sample

empirical studies.

3.3 Narrative Therapy

Narrative therapy refers to counselors' narration of their own experiences to others for the purpose of emotional catharsis and externalization of their own problems, benefiting both the narrator and the listener.^[22] Both the narrator and the listener benefit. Currently, narrative therapy is widely used and has significant effects. Bao Yanqiao et al.^[23] A narrative nursing intervention was given to 45 frontline nurses with newly coronary pneumonia by professionals via telephone or WeChat voice, twice a week for 2 weeks. The results found that this method was effective in improving psychological symptoms such as anxiety, fear, interpersonal sensitivity, and compulsivity in nurses. Xing Limin et al.^[24] conducted a two-week narrative nursing intervention with 40 front-line nurses of epidemic prevention and control, and used the SCL-90 symptom self-rating scale to assess the nurses' psychological health status. The results found that the nurses' SCL-90 total score and each symptom factor score decreased significantly after the intervention. It can be seen that narrative therapy does work, but this method is never a running account of life events. The practitioner needs to have high questioning skills to guide the narrator's narrative in order for the narrator to accurately vent his or her emotions and achieve emotional empathy. Secondly, narrative therapy requires a fixed time and a private place, while most hospitals in China do not have a corresponding confession room, mostly in noisy wards, coupled with a full workload of nurses, which restricts the implementation of narrative therapy.

3.4 Positive Stress Reduction Therapy

Positive Stress Reduction Therapy is a practice of transformation or healing through the cultivation of attention by watching eating, breathing, body sensations, sound, head, emotions, and pure awareness.^[25] The practice of mindfulness is a transformative or healing practice that cultivates attention by watching food, breathing, body sensations, conceptual head, emotions and pure awareness. Research^[26] Research has shown that Positive Stress Reduction Therapy is effective in reducing stress and anxiety in nurses. However, research on positive stress reduction therapy in China has only just begun. Wen, Jing et al.^[27] used a workplace positive thinking approach (including positive smiling, breathing, journaling, relaxation, and sleep) intervention for 2 weeks with 120 frontline nurses in epidemic prevention. The results showed that the nurses' burnout scores, anxiety, and depression scores were significantly lower than before the intervention. Li Hui^[28] After the positive thinking stress reduction intervention for 96 nurses on the front line of the epidemic fight, their psychological stress was released, while their subjective well-being and sleep quality were improved. However, this method in China is limited to the field of psychology, and the application in nursing is relatively scarce, and there is a lack of collection of hard outcome indicators for the study subjects, and the content and timing of the course training are not unified for the time being, and its long-term effects need to be confirmed by a larger sample size and longer follow-up studies.

3.5 Barrett Group Activities

Barrett groups are used to improve the ability of health care providers to respond to their own emotions and those of their patients through basic techniques of empathy and counter-empathy in psychotherapy^[29]. Studies have shown that Barinet groups can reduce anxiety and depression in health care workers^[30]. In the activity, the case presenters will share their work experiences to the group members, and in the members' personal feelings and verbal feedback, they will understand

the case presenters' dilemma or impasse and express the feelings and emotions of the characters in the relationship, so that the case presenters will have the opportunity to gradually eliminate their blind spots in dealing with interpersonal relationships and form new perspectives, thus helping them to improve their emotional state and enhance the quality of their work. Guo Xiao et al.^[31] conducted qualitative interviews with frontline nurses who participated in the Balint group activity. At the end of the intervention, it was found that this activity enabled the nurses to achieve a positive experience of venting their bad emotions, increasing their sense of belonging, feeling peer support, and provoking their own thinking. Yan Yajun et al.^[32] implemented a Balint group activity intervention with 14 nurses in the fever clinic and isolation ward during the New Coronary Pneumonia epidemic and found that this activity improved the nurses' emotional state and promoted their own post-traumatic psychological growth. This method is simple to implement and effective, but high-quality randomized controlled studies are lacking.

3.6 Peer Support Therapy

Peer support refers to people with similar experiences who use their own experiences to build empathic relationships and share experiences to provide social-emotional support to each other.^[33] Some non-independent organizations have set up online psychological support teams for public interest assistance, such as the Online Peer Support and Crisis Intervention for Health Care Workers^[34], during the intervention, the implementer gains the trust of the counselor by telling his or her experience, and with listening, positive thinking therapy, and music therapy, helps the counselor relieve psychological stress through the WeChat platform. Online psychological interventions are also conducted abroad for frontline healthcare workers with NCCP. They help healthcare workers relieve psychological stress through the application of peer support and peer learning, while those with severe anxiety or who wish to maintain confidentiality can be helped through one-on-one interventions^[35] This approach is effective and easy to implement. This method is effective and easy to implement, and should be vigorously promoted in the future. Relevant government departments should introduce relevant policies and establish official online mental health service websites to relieve the psychological stress of frontline personnel responding to major disasters.

4. Conclusion

As the new pneumonia epidemic continues to emerge, frontline health care workers are constantly faced with highly infectious and critically ill patients who are under high physical and mental stress, and numerous psychological interventions have proven effective in keeping caregivers at ease and comfortable on the front lines of the fight against the epidemic. These psychological interventions have now become a remedy to alleviate the psychological problems caused by the epidemic. However, the psychological intervention methods currently used have the following shortcomings: (1) no standard implementation protocols, such as environmental requirements, frequency and duration of interventions, such as Barinette groups that require face-to-face communication among group members to achieve better intervention effects, which cannot be met by front-line nurses due to isolation restrictions; (2) lack of evaluation of study participants' experience with certain intervention methods; (3) lack of (3) the lack of a large number of randomized controlled trials and longer follow-up studies to verify the intervention effect; (4) the lack of collection and analysis of hard outcome indicators of the study subjects. In future studies, the study design should be optimized, and practical intervention programs should be developed from the actual situation of front-line nursing staff to build a firm line of psychological defense for front-line nursing staff and escort patient safety.

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