

Chinese Angles in White in the Fight against the Novel Coronavirus Epidemic: Medical Ethics of Nurses and Its Implication for Nursing Education

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ABSTRACT

The medical ethics education of nurses has attracted extensive attentions since the first charter of American Nurses Association called for higher ethical standards in the profession in 1897. Recently, COVID-19 broke out in China, and a large number of Chinese nurses volunteered for providing support in epidemic areas, thus becoming a tower of strength in fighting against the epidemic. This paper is based on the hot discussion articles on the medical ethics of nurses in the novel coronavirus epidemic in the mainstream new media of WeChat in China. There are three steps in this paper. Based on the hot articles of nurses' medical ethics during the novel coronavirus epidemic published in China's mainstream new media such as WeChat, this paper carries out the research in three steps. First, the Qingbo public opinion index is used to dynamically demonstrate the whole process of the behavioral and emotional transformation of nurses' medical ethics during the epidemic. Second, NLPPIR big data semantic intelligent analysis system is used for text analysis. It is found from the weights of the keywords that the development trend of the epidemic and the nurses' performance on medical ethics are the focuses of the current event. Based on online comments about the ranking of keyword weight, the public's current attitudes toward the event can be reflected in their respect on nurses and supports on promoting preferential policies and highlighting medical ethical construction. Finally, NVivo12.0 for qualitative analysis is used to dig the medical ethics of nurses based on grounded theory and form the activation model of public stereotype. In view of the medical ethics of Chinese nurses fighting against epidemic disease, some suggestions on medical care and nursing education were proposed.

1. Introduction

The patients with COVID-19 have been successively found in Wuhan, Hubei Province since December in 2019. The disease spread rapidly and the number of the infected continued to rise. As of 11:08 on 1 March 2020, there were 79,968 confirmed cases, 851 suspected cases, 41,679 cured cases and 2,873 death cases in China. The countries including Japan, Singapore, Thailand, South Korea, Malaysia, Germany, Australia, Vietnam, the United States and France are also in the midst of the epidemic, with a total number of 7, 022 confirmed cases abroad. The epidemic that spread rapidly and extensively has aroused widespread concerns both domestically and globally. And China continuously took strict protective measures to prevent the epidemic from further expanding. Nurses played an important role in the fight against COVID-19 as the "backbone" of epidemic prevention. Nurses accounting for more than a third of the total hospital population were assigned to different posts in the fight against the epidemic. They often had to spend a lot of time with patients and provided services such as rescue, treatment,

observation and nursing. It is nurses who had to deliver medicines to patients and operate medical equipment. Countless critically patients survived from the epidemic thanks to nurses' meticulous care and close observation. But sometimes patients have to suffer more pain because of the mistakes made by nurses. Therefore, nurses' medical and professional ethics will have a direct influence on medical quality and patients' health.

So far, medical staff are always the first one to provide supports in the midst of a massive outbreak of disease at home and abroad. The epidemic prevention is extremely difficult because major sudden diseases are often unpredictable and infectious. Chinese nurses have been conscientious in their daily jobs to maintain their medical ethics since the SARS outbreak in 2003. Ding Xiulan, a medical worker working silently on an ordinary post. In the face of SARS, she had no grand words, but firm eyes and hasty steps. Ding Xiulan, a medical worker who was doing what she was supposed to do on an ordinary post, was only determined to fight against the SARS without making any heroic claim. She volunteered to provide supports on the front line during the SARS outbreak. But unfortunately, she was infected and

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passed away. The children were threatened by the EV71 virus in 2008. Angles in white did not hesitate to jointly fight against the hand, foot and mouth disease right after it broke out. They saved children's lives with their own strength in spite of tremendous workloads and complete exhaustion (Wang, Liu & Wang, 2008). Ebola fiercely broke out in Guinea in 2014, with a high fatality rate. The medical staffs from worldwide immediately joined in the battle against the epidemic. China also sent medical teams to Libya, and most of them were nurses. They were committed to provide supports in the front line after being rigorously trained and made a great contribution in the fight against Ebola (Zhang & Yu, 2016). Nurses play an important role in epidemic prevention. Therefore, their medical and professional ethics will have a direct influence of patients' health and epidemic prevention.

2. Literature Review

The first charter of American Nurses Association called for higher ethical standards in the profession in 1897. A few years later, Isabel Hampton Rob published a nursing textbook on ethics, in which ethics is clearly distinguished from etiquette. In 1915 and 1916, the American Nurses Association (ANA) organization and its publications called for a code of practice again. In 1921, a committee was convened to draft and introduce the code in the national assembly in 1926. The code aroused heated discussions among nurses (McCann, 1990). Since then, more and more attention has been paid to nurses' medical ethics. In fact, nurses' medical ethics in China are different from those in western countries. Therefore, this paper will expound the evolution of nurses' medical ethics in China and in European and American countries.

From the perspective of the evolution of nurses medical ethics connotation in European and American countries, John Ladd modi developed the concept of intrinsic morality that Fuller used in his legal philosophy in 1983 and applied it to medical ethics (Ladd, 1983). Later it was developed into the internal morality of medical science. He intended to use membership in the medical profession to specify a set of regulations that would be binding on medical staff. He believed that the first principle of medical ethics is to serve the interests of patients, which is also an important connotation of nurses' medical ethics. On the basis of his theory, Pellegrino (2001) pointed out that all ethical systems, including medical ethics, had to be based on the principle of doing well and avoiding evil, indicating that any theory or professional behavior claiming moral justice has to be centered on good deed and ends with good deed. According to McCann (1990), the connotation of nurses' medical ethics mainly refers to various rules that should be followed in practice, such as "always tell the truth to patients". But more general concepts may be needed for nurses to make ethical decisions. In addition, medical ethics also means being merciful, doing good deeds, prevent or avoid hurting others. Meanwhile, nurses' medical ethics include the responsibility to respect the decisions and privacy of clients and their families. Nurses are required to allocate time, expertise, and resources as equally as possible among patients for justice. Pellegrino and Thomasma (1993) believed that "good medical workers" should have such virtues as "respect, compassion and honesty". Good medical ethics should be service-oriented and characterized by social and interpersonal skills, cultural ability and adaptability, the ability to work in a team, and also being honest and ethical (Koenig, Parrish, Terregino & et al 2013). It is surely important to master knowledge and practice skills, but the improvement of moral concept is also conducive to training excellent nursing professionals. The education of medical ethics is very important in nursing education. The ethical and humanized knowledge, skills and behaviors make students majoring in nursing more professional, accountable and flexible, which are critical for formulating modern professional

physician ethics (Doukas, Kirch, Brigham, et al., 2015). From the perspective of the evolution of the connotation of nurses' medical ethics in China, Shanghai Zhongshan hospital put forward the *Nurse Code* in 1982, advocating improving nurses' medical ethics through the education and study of medical ethics. In addition, the "four hearts" of nurses are summarized as follows: Nurses should be enthusiastic in receiving the patient, concerned about the patient's sufferings, patient in explaining, and mindful for the patient's diets and suggestions (*Nurse Code*, 1982). This is an earlier requirement for nurses' ethics. When discussing nurses' moral quality, Liu Qijing (1994) summarized nurses' ethics as good manners, high responsibility and continuous improvement. In terms of the requirements on nurses' medical ethics, a nurse's prior task is to master refined operation technologies and excellent service attitude. Attitude is an important index to measure the quality of their service. Nurses should learn to be good at controlling their own dominant mood, It is important for nurses to control their mood and correctly treat and give more sympathy and care to patients with their strong professional esteem. They should not quarrel or even fight with others...They should enthusiasm, sympathy, considerate, initiative, patient and careful (Zhang, 1995). A nurse's another prior tasks is to have a noble moral sentiment and correct outlook on life, values, self-esteem, self-improvement, self-control of the ideological quality and be a person with ideals, culture, discipline and morality so that they deserved to be called as "angles in white" (Li, 2002). Zhou (2002) believed that nurse' medical ethics consist of three aspects, which are cognition, emotion and behavior. In terms of cognition, nurses are required to realize that nursing is to help patients relieve pain, improve adaptability and become healthy. Emotion mainly refers to a nurse's emotional state and experience, such as the passion on profession, the study of technology and the care about patients; in terms of behavior, nursing staff are required to have a clear understanding of their own career and emotional choice, thus forming a basic preference to professional behavior. In terms of the cultivation of medical ethics, Zhou (1995) firstly pointed out that the three factors influencing the formation of medical ethics were environment, management system and nursing team. The cultivation of medical ethics is advised to start from four aspects, i.e. the construction of management personnel, the support of leaders, the guidance of correct public opinion and the encouragement of nurses' working enthusiasm. In terms of training methods, induction, participation and motivation can be adopted to improve the cultural quality of nurses and strengthen academic exchanges (Yu & Liu, 1996). From the perspective of the evolution of medical ethics of nurses, its connotation is a process of gradual enrichment: from the initial focus on the work level to the later more and more attention to the emotions and thoughts of nurses. The medical ethics of nurses involves not only their professional ethics, but also their own values and attitudes.

3. Research Methods

Stereotype was proposed in 1922 by Lippman in his book *Public Opinion*. It refers to social classification according to gender, race, age or occupation to form a fixed impression of a certain type of person (Wang, Yang & Zhao, 2010). From the perspective of cognitive theory, stereotype is a cognitive structure involving perceiver's knowledge, concept and expectation of a certain group of people. From the perspective of social identity theory, it includes three central points of view: categorization, identity and comparison. Categorization not only helps us to simplify a large number of people, but also defines what certain types of people are. Stereotype is a direct product of social categorization. Identification is to identify oneself as a member of a certain group. In terms of comparison, a

person's opinions and abilities are expressed through a task and evaluated by being compared with others'. Wheeler and Petty (2001) proposed the stereotype activation theory and defined it as a group of characteristic attributes that a particular group of social members quickly associate with. For example, Asians are associated with intelligence, quiet personality, short stature and other attributes. Studies have found that stereotypes can be activated by a lot of stimuli (He & Liang, 2006). Based on the major epidemic in China, this study intends to demonstrate the focus of public concerns by collecting textual data from the Internet, establish a model of nurses' medical ethics behaviors and emotions based on grounded theory and dynamically illustrate the moral adherence of Chinese nurses during major epidemic, striving to provide a new perspective for nursing education.

No one is an outsider during an epidemic. Our medical staff needs to be medically ethical, cautious and conscientious so that we can succeed in fighting against the epidemic. Nurses, in particular, are widely assigned to various positions in hospitals and have great responsibilities. The medical ethics behavior and performance of medical staff fighting in the front line will be exposed to the public through network media and become a hot topic of public discussion. WeChat official account, as a new media, is quite influential with excellent dissemination and wide coverage in the field of public opinion. It is now one of the most popular self-media tools among users. With a large audience, it is characterized by efficient information transmission and convenient user interaction (Xiang & Shen, 2019). Based on the propagation power and interactive service of WeChat platform, this paper searched the articles with keywords such as "nurse" and "COVID-19" on WeChat, selected top 50 articles and comments from hot articles published from January 26, 2020 to February 23, 2020 and carried out the weight analysis and emotion analysis of keywords through text analysis. The following three questions are sorted out:

1. What are the concerns in the hot articles about nurses on WeChat?
2. What are the main concerns of online reports and public comments?
3. What implications will be caused if nurses' medical ethical issues are communicated online?

The research process is divided into three stages. Firstly, the event development is visualized and analyzed through Qingbo public opinion index to clarify the development characteristics and data characteristics of medical ethics incidents in nurses during the epidemic. Secondly, the Natural Language Processing to Information Retrieval (NLPIR) system produced by Zhang Huaping's team of Beijing Institute of Technology is used for text analysis and the keyword weight analysis and emotion analysis on the text of reports and messages of the official account are conducted to clarify the communication characteristics of the main subjects of the official account in the network reports. Thirdly, grounded theory is adopted for analysis, and NVivo12.0 is used as the analysis tool to conduct qualitative analysis of the collected online texts. By deeply analyzing the underlying research contents of texts and clarifying the detailed status and medical ethics performance of nurses in the epidemic situation, the author hopes to provide inspiration and suggestions for cultivating nursing professionals during and after the epidemic.

4. Research Results

4.1. Stage Analysis Based on Qingbo Public Opinion Index

With big data as the core technology support, Qingbo Public Opinion in China monitors and collects public opinions from the entire network in a timely manner and provides a one-step service such as public opinion monitoring, analysis report and crisis warning through data mining and visual analysis technology. Qingbo Public Opinion Index is a big data-based mobile terminal index launched by Qingbo Public Opinion. The popularity to be displayed is based on the comprehensive analysis of articles and hot events on public accounts. This study searched for the keyword "nurse" from the articles and comments published from February 10, 2020 to February 23, 2020. Through visualization processing, it is found that such event exhibits a periodic characteristics, as shown in Figure 1. According to the social psychologist Gustave Le Bon's research on group psychology, individuals in a group exhibit a distinct conformity, which is called "the Psychological Law of Group Spiritual Unity", and it has three basic characteristics, which are infectivity, conformity, and emotion (Liu, 2007). According to this theory, we divided the public's concern about the evolution of female image in the epidemic into the following three stages:

The first stage (from February 10 to February 13) is the initial stage of the event and also the stage of public empathy. An article called the Process of Self-healing in a Nurse's COVID 19 attracted public attention on February 10. It is a message posted on Weibo by Jia Na, 24 years old, a nurse from the Emergency Department of the People's Hospital of Wuhan University, telling a story how she survived by taking drugs and relying on her immunity system within 11 days after she was firstly infected and isolated at home. Overnight, her "self-healing" diary attracted 1.79 million fans, got more than 250,000 thumbs up, and aroused widespread attention and heated discussion on WeChat and other media platforms. This article demonstrates a nurse's strong will and confidence when being isolated at home. Instead she pulled herself together and fought against fear right in the bottom of her heart. She said that she hoped to go back and help more COVID-19 patients after recovery. The incident aroused emotional resonance among the public, especially COVID-19 patients.

The second stage (from February 14 to February 19) is the climax of the event and the empathy shared by the public. On February 18, The Municipal Government of Wuhan responded to netizens' questions about the death of nurse Liu Fan and her family in Wuchang Hospital. Liu Fan, female, 59 years old, deputy chief nurse, was engaged in nursing in the injection room of Liyuan Street Community Health Service Center affiliated by Wuhan Wuchang Hospital. Comrade Liu Fan was diagnosed with COVID-19 after she went to see a doctor with symptoms of physical discomfort and fever. She was immediately admitted to hospital on the same day. The hospital tried its best to provide treatment for her during her stay in hospital, however, the disease became increasingly serious as she was suffering a lot of basic diseases, later she passed away at 18:30 on February 14, 2020. Her parents and brother died of COVID-19 before her passed away. The news that she was infected with COVID-19 and her family passed away quickly spread over the Internet. A dedicated nurse died of COVID-19. The

"nurse event" immediately reached a climax. In addition to professional identity, a nurse is also an ordinary citizen. Her dedication during the epidemic easily aroused the public's empathy.

The third stage (from February 20 to February 23) is the follow-up stage of the incident. The public also conveyed their critical comments while showing their respect for nurses. Public attention to nurses' medical ethics has declined. A report that the female nurses were forced to cut their long hair aroused a heated discussion among the public, and many people were concerned that female medical workers fighting in the front lines were in urgent need of sanitary napkins and safety pants, and they had to suffer a lot of issues during their menstrual period. But some hospitals responded that it was not a priority. At this time, Online citizens no longer praised for nurses for their dedications during the epidemic, but took a dialectical attitude, re-examined what nurses' conditions, and demanded respect for their legitimate rights and interests.

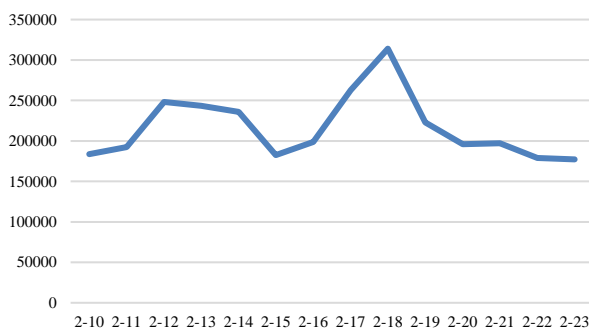


Fig. 1. Qingbo Public Opinion Index

4.2. Analysis Results of Text Characteristics of Online Reports

The study selected 50 hot articles with the keywords of "nurse" and "COVID-19" published on WeChat from January 26, 2020 to February 23, 2020. And NLPPIR big data semantic intelligent analysis system is applied for text analysis, and keywords in the articles are identified and statistically analyzed. And then the importance of text is automatically weighted by computer based on word frequency, word length, part of speech, position and Internet high-frequency words. The feature weight of keywords are calculated, and the selected feature words are output in descending order. The top 20 weighted keywords in the articles are shown in Table 1, in which

"medical staff", "doctor", "medical care" and "nurse" rank the 2nd, 8th, 13th and 16th, respectively, indicating that the public pays much attention to medical staff. Health care workers, as the backbone of epidemic prevention, are highly concerned about every patient's physical condition. The text shows that the public is not only concerned about the work of health care workers, but also their physical conditions. The suggestions on how to protect health workers during the epidemic have been proposed in a lot of articles. The keywords of "hospital", "epidemic prevention" and "epidemic resistance" rank the 1st, 4th and 17th, respectively. In the context of the national fighting against COVID 19, the public's focus on the issue about nurses is not limited to nurses, and more attention is paid to the issue about nurses in the context of epidemic prevention. "Work", "patient" and "patient" ranked the 3rd, 5th and 14th, respectively, indicating that the public is very concerned about the work of nurses. Their jobs of taking care of patients will involve their professional ethics in the work, namely, medical ethics.

The comments about the top 50 most-frequently-read articles were analyzed. The descending order of keyword weight reflects the focus of attention of the network media and the public on the issue about nurses. As shown in Table 2 below, hospitals and countries rank the 1st and the 14th, respectively, indicating that the public wants our country and hospitals to provide a better guarantee for nurses' work so as to make nurses less worried about the future consequences and enable them to be fully devoted to their work. Protection, protective clothing and protective equipment ranked the 9th, 10th and 14th, respectively, which expressed the public's concern for the medical staff, hoping that they could better protect themselves while working. The keyword "infection" ranks the 19th, indicating the public's concern about the possibility for nurses to be infected with COVID-19. In-depth analysis of the textual contents shows that comments were frequently made for the reports about the nurses' being infected with COVID-19 at work. Public comments indicate their sympathy for the nurses who were infected with COVID-19 pneumonia. Wang Yong also ranks in the front. He is a deliveryman, so why is he a hot word in the comments? That's because that Wang Yong was an anti-epidemic volunteer, mainly responsible for delivering meals for medical staff. The public's frequent comments on this topic are to express their desire to make contributions to helping medical staff who were working in the front lines.

Table 1. The Top 20 Keywords of the Article Text Based on Weight Sorting

Ranking	Keyword	Part of Speech	Weight	Frequency	Ranking	Keyword	Part of Speech	Weight	Frequency
1	hospital	n	117.37	454	11	what	n_new	50.86	57
2	medical staff	n_new	113.03	153	12	protective clothing	n_new	49.03	60
3	work	vi	82.31	236	13	medical care	vn	45.31	249
4	epidemic prevention	n_new	80.09	57	14	the sick	n	44.97	92
5	patient	n	75.99	205	15	ICU	n_new	44.84	28
6	epidemic	n	73.90	266	16	nurse	n	44.83	134
7	Wuhan	ns	70.10	214	17	fight against epidemic	n_new	44.81	42
8	doctor	n	66.12	175	18	medical workers	n_new	43.91	70
9	no	v	56.92	148	19	Jinyintan Hospital	n_new	43.30	15
10	isolated areas	n_new	56.89	16	20	endemic area	n_new	42.19	48

Table 2 The Top 20 Keywords of the Article Based on Weight Sorting

Ranking	Keyword	Part of Speech	Weight	Frequency	Ranking	Keyword	Part of Speech	Weight	Frequency
1	hospital	n	69.33	305	11	Wang Yong	nr	31.20	11
2	what	n_new	56.42	87	12	work	vn	29.86	267
3	epidemic prevention	n_new	46.58	196	13	country	n	26.83	98
4	medical staff	n_new	46.17	73	14	protective equipment	n_new	26.76	36
5	epidemic	n	42.68	362	15	anti-epidemic	n_new	26.38	53
6	no	v	41.04	88	16	leader	n	26.28	62
7	Wuhan	ns	40.01	148	17	nurse	n	25.48	87
8	hospital	n	35.53	159	18	medical worker	n_new	25.26	50
9	protection	vn	32.02	169	19	infection	v	25.07	173
10	protective clothing	n_new	31.52	41	20	front line	n	23.79	209

Emotional analysis of 50 texts can be used to deeply analyze the evolution law and behavioral characteristics of media attitudes and such events. The result of emotion analysis shows that the proportion of positive emotion is 33.56%, that of neutral emotion is 1.21%, and that of negative emotion is 65.14%, indicating most of the reports are negative about nurses' conditions during the outbreak of COVID-19. In order to fight against the epidemic, medical workers had to leave their homes, cut their hair and stay up late, and some of them even have sacrificed their life. Additionally, network media expressed their admiration for the selfless spirit of nurses and lamented the great sacrifice made by medical staff. Our country is still fighting against the novel coronavirus pneumonia nationwide. Only when every medical worker adheres to medical ethics and works conscientiously can we win in the battle against the epidemic.

4.3. Text Analysis of Articles on WeChat Based on Grounded Theory

Grounded theory is a systematic method and principle of collecting and analyzing data proposed by Glaser and Strauss, which highlights inducing the concept from the original data, data login step by step, constantly comparing data and concepts and systematically raising questions about the concept of generative theory (Chen,

2015). NVivo 12.0 was used for qualitative analysis of 50 hot articles published on WeChat. NVivo is computer-aided qualitative data analysis software developed and designed by QSR Company. Its biggest advantage lies in its powerful coding capacity. It can integrate a wide range of research topics and allow researchers to quickly capture information points in the literature. The process of text coding and analysis is divided into three steps: (1) open coding: The concept of open coding comes from the collected text information, follows the principle of "localization" of the grounded theory, and adopts the original texts of the articles to name the concept. By consolidating and coding 50 texts, 140 free nodes are formed. (2) axial coding: It is to find and integrate all kinds of concepts. The 140 free nodes are consolidated into 22 child nodes, a five-tree node is further summarized as nurses' working conditions, nurses' work groups, nurses' life emotions, nurses' psychological states and the public's attitude towards nurses, so about 50 texts are encoded and induced to form the nurse medical ethics behavior and emotional nodes at all levels and the coding of the reference point, as shown in Table 3. (3) selective coding: It is to select dominate core category from all categories through systematic analysis, and many related categories concentrated in a relatively broad theoretical range can continued to be analyzed and concentrated.

Table 3 Nodes at All Levels and Coding Reference Points

Tree Node	Child Node	Code Reference Point	Tree Node	Child Node	Code Reference Point
working condition (48)	intensive working hours	10	work group (14)	Persist though venerable age,	1
	long working hours	10		young but brave to take responsibility	3
	nurses get sick	2		large number, massive group	10
	infected with COVID-19	12	life emotion (27)	work comes first	19
	die of disease	1		family's support	2
	cut hair	5		no holiday	1
	strong and brave	4		love in epidemic	5
	comfort patients	4	psychological state (28)	fully understand patients	2
the public's attitude towards nurse (36)	with due diligence	33		full of confidence	17
	show respect	27		fearful	7
	propose preference policies	9		cope with crying patients	2

The stereotype of nurses is that they are supposed to take care of patients and make sacrifices because it is their job. However, in the face of a major epidemic, nurses' massive workload has changed public's awareness. Nurses' long and intensive working hours, as well as a large working group reported by media, have changed in public awareness. Everyone is a fighter in the war against epidemic. According to the text analysis, the public sentiment is divided into two categories: one is positive sentiment, which is to express respect and praise the angels in white; the other is negative. According to a report on the People's Daily, a residential community in Zhengzhou did not allow nurses into the community for fear of being infected. These emotions, in turn, can further arouse others' emotional reactions via the Internet. Emotions affect behavioral responses. A deliveryman named Wang Yong was an anti-epidemic volunteer, mainly responsible for delivering food to medical staff. A lot of people wanted to provide supports and join the volunteer activities such as delivering diapers, daily necessities and three meals a day to medical staff. At this time, stereotype activation occurs, and the public is not just a bystander, but in turn can become a supporter for nurses. It is precisely the information dissemination of the network media during the epidemic that triggers the public's empathy (Figure 2).

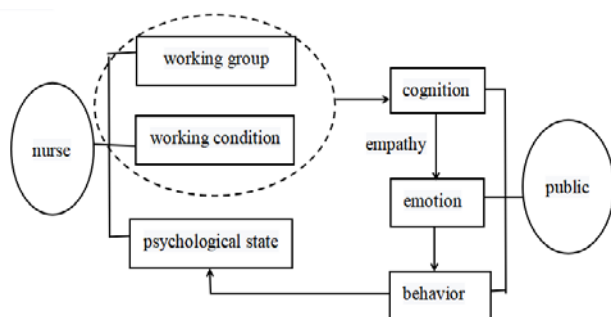


Figure 2 Conceptual Model of Public Stereotype Activation

5. Discussion

On February 22, 2020, a 3-year-old patient bowed to a nurse when he was cured and discharged from the isolation ward of Shaoxing Central Hospital in Zhejiang Province. And this beautiful scene was filmed. Coincidentally, the President of Hangzhou Guangji Hospital (the Second Affiliated Hospital of Zhejiang University Medical College), Mr. Mei Tenggen bowing a young patient in the last century was also filmed. The news was firstly published by Toutiao.com on August 23, 2020, along with a photo comparison as shown in Figure 3 below.



Figure 3 Comparison of Doctors and Patients Bowing to Each Other in One Hundred Years

The respect and care between doctors and patients have been passed on from generation to generation, the doctor-patient relationship has been continuously eased in the epidemic, and the status of nurses has been constantly improved. In order to better improve the doctor-patient relationship and cultivate nurses' medical ethics, the author believes that it is important to start the medical ethics education of nursing professionals from three aspects:

First of all, our country should improve the relevant safeguard policy and relieve nurses from the worries about the future consequences so that they can be fully devoted to their work. The State Health Commission and the Ministry of Finance recently issued the Notice on the Prevention and Control of Pneumonia by Novel Coronavirus, which stipulates as follows: The central government will provide subsidy of 300 Yuan per person per day for the medical staff who are in direct contact with the patients who are confirmed to be infected or who are to be investigated about whether they are infected, and the medical staff who are involved in diagnosis, treatment, nursing, infectious control, case specimen collection and pathogen detection, and 200 Yuan per person per day for other medical personnel and epidemic prevention workers who participate in epidemic prevention and control. The policy aims to meet medical staff's life demands and reward them for their dedication to the epidemic. Notice on 12 Practical Matters for the First-line Medical Staff of COVID-19 Epidemic Prevention and Control issued by the General Office of Shandong Provincial Party Committee and General Office of Provincial Government in which a number of measures related to the career development and personal security of medical personnel were proposed such as introducing talent engineering and science and technology project support, proposing preferential promotion policy, implementing industrial injury insurance benefits and providing commercial insurance. In addition, there is a policy for adding extra scores for front-line medical staff's children for their entrance examination. Such insurance measures based on external environment can effectively mobilize the work enthusiasm of medical staff.

Secondly, medical schools should attach importance to medical ethics education and strengthen its social practice. Some medical schools in Europe and the United States have proposed a Residency training program called The Residency Years (Fins & Nilson, 2000), which is to bring nursing students into hospitals and wards to get closer contact and have closer communicate with patients. Such training is based on social contract. The aim is to retain and develop nurses with respect, understanding, professional values and virtues. After the COVID-19 outbreak, it can be seen that medical ethics are not entirely formed in classrooms and "field practice" is also a direct and effective way to cultivate medical ethics. Professor Tian Runping (2014) once proposed a mode of two-way interaction between cognition, emotion, behavior and habit. In this process, medical students can realize the current situation and problems of the development of national medical and health undertakings through practice at different levels. The direct contact with patients stimulates doctors' sense of responsibility and responsibility, form a habit during treatment, and then evolve into the behavior style of nursing students, thus further cultivating humanistic care, which is naturally internalized without stimulation and finally internalizing such care into its own medical

ethics (Tian, Fu, Zhou, Chen, Lang & Yu, 2014).

Finally, nursing students are advised to enhance their internal and external quality and take the initiative to improve their skills and ability so that they are courageous to provide supports during major emergencies threatening our country. They should also actively communicate with head nurses when encountering problems during their daily work (Headrick, Moore et al. 1998) and constantly put into practice to enhance their responsibility and flexibility (Doukas, Kirch, Brigham, et al, 2015). Medical ethics is an internal moral standard (Ladd, 1983). Continuous learning and active practice, continuous self-education is required for medical students to cultivate medical ethics. They are suggested to have a deep insight about their career and internalize the medical ethics into the essence of their life. They should be patient, kind, intimate and benevolent to patients, especially those who are suffering great pains. It is an important criterion for nursing students to carry out self-education to insist on such quality.

6. Summary

Based on the hot articles and comments on WeChat official account, this study firstly analyzed the evolution of nurses' medical ethics during the epidemic through the Qingbo Public Opinion Index, and then analyzed the public's major concerns for network communication. It is found that the public are mainly concerned about the development trend of the epidemic, medical staff's working conditions, life and psychological states as well as the medical ethics of Chinese angels in white in major emergencies. According to text analysis based on the grounded theory, nurses' medical ethics and emotions during the epidemic were refined from four aspects: working status, working group, life emotion and psychological state. The comments reflected the public's attitudes towards nurses. The public expressed their concerns and proposed to offer preferential treatment, which indirectly illustrates nurses' medical ethics. Based on the existing literature, medical ethics cannot be quickly cultivated in schools. More importantly, it should be formulated by practicing and getting closer to patients. Hence, this paper puts forward suggestions from The perspectives of country, medical schools and nursing students. The state is advised to improve relevant policies to stimulate the enthusiasm of medical staff and free them from worries about the future consequence. Medical schools should actively carry out practice and nursing students are suggested to continuously refresh their knowledge and actively put into practice so as to enhance their medical ethics. Today, with the rapid development of Internet media, it is becoming increasingly easy for researchers to timely collect relevant information and understand the development trend of events by making use of network public opinions, which surpasses the previous limitation to post-event data collection, and it also shows that big data is time-efficient. The limitation of this paper is that it only conducts text analysis on hot articles on WeChat, and there is a small number of samples. It is necessary to further expand the research samples and combine with other research methods to further discuss how to mobilize the working enthusiasm of nurses, carry out effective medical ethics education, and improve the medical ethics of nursing students.

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