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Dying and caring on the edge: Taiwan's surviving nurses' reflections on taking care of patients with severe acute respiratory syndrome

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Abstract

In 2003, Taiwan's nurses were terrified by severe acute respiratory syndrome (SARS), and four of them sacrificed their life in the course of their work with SARS patients. This study attempted to identify the stage-specific difficulties encountered by Taiwan's surviving frontline nurses during the anti-SARS process. A two-step within-method qualitative triangulation research design was used to obtain the in-depth and confidential thoughts of 200 participants during the precaring, tangible caring, and postcaring stages. Six major types of stage-specific difficulties with and threats to the quality of care of SARS patients were identified according to each specific stage of the caring process. Four themes were further explored; these are discussed to provide a background context in obtaining better understanding of the multifaceted needs of nurses during this crisis. Consequently, a conceptual framework was developed to depict this complex phenomenon.

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1. Introduction

Arnold (2002) indicated that one of the factors likely to generate natural hazards in the 21st century is the interface between the human world and the microbial world. During the past 20 years, more than 30 new disease-causing organisms, including severe acute respiratory syndrome (SARS), have been identified; these organisms became visible to science as a result of environmental factors, demographic factors, and a marked increase in international commerce and travel

(Kumate, 1997; World Health Organization [WHO], 2003a). Lee (2004) stated that SARS was the first disease to affect the entire world since globalization. From November 1, 2002, to August 7, 2003, across 32 countries/regions, the total cumulative number of cases (CNC) of SARS was 8,422 and the number of deaths (ND) was 916. The top five countries/regions by CNC and ND (WHO, 2003a) were China (CNC = 5,327, ND = 349), the Hong Kong Special Administrative Region (China; CNC = 1,755, ND = 300), Taiwan (CNC = 665, ND = 180), Canada (CNC = 251, ND = 41), and Singapore (CNC = 238, ND = 33).

SARS cases erupted in major cities throughout Taiwan over a very short time. The entire national health care system, in the metropolitan Taipei area in particular, approached collapse, and the first level of the health care warning system was triggered. In Taiwan, 18.2% ($n = 121$) of the probable SARS cases were health care workers, including nurses (9.5%, $n = 63$), physicians (2.6%, $n = 17$), and allied

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Table 1
Characteristics of the sample ($N = 200$)

Demographic characteristic	<i>M (SD)</i>	<i>n (%)</i>
Age (years)	27.6 (4.5)	
20–30		165 (83)
31–40		30 (15)
41–50		5 (2)
Sex		
Female		191 (96)
Male		9 (4)
Education		
College and university		195 (98)
Graduate		5 (2)
Marital status		
Single		162 (81)
Married		37 (18)
Other		1 (1)
Religion		
Confucianism		97 (49)
Buddhism		61 (30)
E-Quan Taoism*		4 (2)
Protestantism or Catholicism		14 (7)
Other		24 (12)
Status		
RN		179 (90)
Assistant head nurse		10 (5)
Head nurse		9 (4)
Acting supervisor		1 (1)
Duration of total nursing career (years.months)	3.5 (2.3)	
≤1.0		6 (3)
1.1–2.0		50 (25)
2.1–3.0		48 (24)
3.1–5.0		45 (22)
5.1–10.0		33 (16)
10.1–15.0		18 (10)
Duration of nursing career at working site (years.months)	2.6 (1.7)	
≤1.0		12 (6)
1.1–2.0		57 (29)
2.1–3.0		54 (27)
3.1–5.0		40 (20)
5.1–10.0		26 (12)
10.1–15.0		11 (6)
15.1–20.0		2 (1)
Working site		
Floor unit		145 (72)
Intensive care unit		20 (10)
Emergency department		24 (12)
Operation room		8 (4)
Other		3 (2)

* A well-known branch of Taoism in Taiwan.

personnel (6.2%, $n = 41$). The fatality rate in Taiwan reached 27% ($n = 180$), and 17 (2.6%) health care workers, including nurses (0.6%, $n = 4$), physicians (0.5%, $n = 3$), and allied personnel (1.5%, $n = 10$), died from SARS (Department of Health, Executive Yuan, Taiwan, 2003).

The various critical situations contributing to this worldwide threat have been discussed mainly from the perspectives of public health and infection control teams rather than from the experiences of nurse clinicians (Chan, 2003; Gottlieb, 2004; Hall et al., 2003; Lee, Liao, & Lu, 2003; Lee, Chan, Chau, Kwok, & Kleinman, 2005; Lee & Lin, 2003; Maunder

et al., 2003; Ministry of Education, 2003; Nickell et al., 2004; Parish, 2003; Singer et al., 2003; WHO, 2003b).

Among health care providers, nurses were exposed to the highest risks because of their long working hours in close contact with patients. To carry out their routine nursing duties, they encountered intense physical and psychological challenges during the SARS epidemic (Chan, 2003; Lo, 2004; Mok, Chung, Chung, & Wang, 2005; Tzeng, 2003). Moreover, many frontline nurses were the last person to learn of a patient's SARS-related diagnosis and the actual as well as potential dangers inherent in the practice setting; neither were they warned or provided with adequate protection to ensure their safety at an early stage (Mok et al., 2005). Finally, feelings of being devalued and sacrificed as well as other related complaints came out and were discussed by nurse clinicians and leaders from nursing associations, legislators, and schools of nursing (Hall et al., 2003; Lee et al., 2003; Lee & Lin, 2003; Lu, 2003; Nickell et al., 2004; Parish, 2003).

The threat of such a stigma-loaded social construction as SARS and its living crisis management experiences cannot be understood using applied strategies per se; rather, they are better understood through continuous stage-specific processes (Christopher, 2004; Lin, 2003). This project attempted to identify the stage-specific difficulties encountered by Taiwan's frontline nurses and reveal the background context framing this life-threatening phenomenon to better understand the nurses' needs during the anti-SARS process in Taiwan.

2. Methods

2.1. Design and sample

A two-step within-method qualitative triangulation research design was used. This design involves the use of more than one qualitative research method or data collection technique to measure the same variable(s). By doing this, the completeness of the phenomena of interest that are being explored could be enhanced (Shih, 1998). Data were then analyzed by qualitative content analysis. A purposive sample was obtained using the following inclusion criteria (Table 1): (a) having worked as a Taiwan RN taking care of SARS patients in medical centers or teaching hospitals; (b) being willing to share his or her experiences; and (c) having no history of alcohol abuse, drug abuse, or mental disorder.

2.2. Data collection

Data were collected in two steps. First, face-to-face semistructured interviews were conducted in the form of focus groups. An invitation to participate in this project was announced through the formal posting systems of three hospitals. Any nurse clinician who had frontline anti-SARS experiences and met the inclusion criteria was welcome to contact the principal investigator (PI) of this project by e-mail or voice mail; the PI then helped clarify individual concerns and confirmed the invitation. Finally, 200 of

266 qualified nurses (75%) expressed interest in participating in this project; because it was difficult to make an appointment with each of them individually, 25 semistructured focus group interviews (6–10 persons per group) were held at each participant's convenience (Lee et al., 2005).

Next, each participant was asked after the focus group to complete an open-ended questionnaire enclosed in an envelope. The questions were the same as those used in the focus group. This step allowed each participant to address his or her individual concerns and suggestions confidentially; the PI picked up the envelope 3 days later. The questions for the interview guide and the questionnaires included (a) the respondents' personal profile of their professional and anti-SARS experiences; (b) the semistructured questions related to the difficulties encountered during their precaring stage (starting with the day they were informed to prepare themselves for caring for suspected SARS patients in the near future until the day before their first contact with SARS victims), the tangible caring stage (starting with the first day and ending with the last day of their direct care of suspected SARS patients), and the postcaring stage (the 6-month period starting with the day they no longer had contact with suspected SARS patients until the day they were interviewed for this project); and (c) a background context including conditions/situations and rationales for the identified difficulties. These questions were developed from an extensive literature review, from the PI's empirical anti-SARS experiences, and in consultation with five well-known experts with anti-SARS experience, the Taiwanese culture, and the nursing crisis management programs. Each focus group lasted for 50–60 minutes ($M = 52$ minutes).

2.3. Ethical considerations

After obtaining approval for this study from the institutional ethics committee, we approached participants individually and carefully explained the purpose and procedures of this project to them. The study tried to keep the anonymity and confidentiality of participants by ensuring that the data could not be directly linked to any specific participant when the study was published.

2.4. Data analysis

Thirty percent of the participants ($n = 60$) returned their questionnaire. The participants' responses were further examined using qualitative thematic analysis. The themes framing the context of this phenomenon were analyzed using three-layer thematic analysis (Shih, Liao, Chan, Duh, & Gau, 2002; Shih, Liao, Chan, & Gau, 2002; Yang, Gau, Shiau, Hu, & Shih, 2004). First, inductive reasoning and deductive reasoning were used to create a conceptual analysis based on the participants' narrative descriptions. The response rate (number of responding persons/200 \times 100%) for each conceptual category was also calculated. Second, themes framing the background context of the participants' responses were identified, extracted, and discussed. This allowed the

influencing factors that contributed to the participants' conceptions of their anti-SARS experiences to be further understood. In this project, the unmet needs of nurse clinicians were a major background theme and framed the difficulties that they encountered across all stages of the SARS epidemic. Finally, a conceptual framework depicting the relationship between the participants' reflections and the attributed background context was developed to have a comprehensive and in-depth understanding of the issues discussed.

2.5. Trustworthiness

Several strategies were used to enhance the rigor of the methodology and the trustworthiness of the findings. Accurate transcriptions/translations of the interviews and the results of the analysis were prepared in a written Chinese version and e-mailed back to focus group members for confirmation. Negative cases whose appraisals were different from the majority's responses were not ignored and in fact were included, investigated, and analyzed (Berg, 1995). During the interviews, if the informants "got stuck" when expressing or distinguishing differences between their feelings and meanings (DeVault, 1990), they were encouraged to describe their perceptions in their own way or words rather than ignoring or giving up on those particular responses. Similarities and differences in the meanings and types of terms used were contrasted (Yang et al., 2004). Because the data set was profoundly rich and increased very rapidly, the results of the qualitative thematic analysis for each interview were carefully discussed by all the investigators of this project every 2 weeks.

3. Results

The SARS epidemic was an unpredictable and inevitable time frame during which nurses were required to be involved. It not only challenged their personal psychosocial and professional readiness but also forced them to deal with new and different situations that involved diverse responses to the individuals who were present during this disaster. The first-layer findings of this study regarding nurses' difficulties were sought and organized according to three stages of the caring process: precaring, tangible caring, and postcaring. The results revealed that each stage reflected on the background context of this sophisticated phenomenon, and they were approached as such noting that these stages are continuous rather than three static ones.

3.1. Precaring stage—Terror of being infected and sacrificed

3.1.1. Uncertainty about personal knowledge of available protection, personal capacity to cope, and environmental policy and facilities

In this beginning stage, the factors contributing to the nurses' fear about fatal infection by SARS were based on a lack of defensive protection against the disease. All the

participants reported having difficulties keeping up with daily changing knowledge and skills: “Both the infection control policies and SARS patients’ conditions changed daily.” The shortage of needed medical instruments, material, and nursing manpower was cited as another stressful aspect. In this stage, all the participants responded that no one was certain about the effectiveness of the protection afforded by the available equipment and material. Furthermore, the amount of highest standard equipment and material available to the first-line health care deliverers as suggested by WHO and Taiwan’s Centers for Disease Control was limited. Even the leading medical centers, not just the general hospitals, failed to provide good care for hospitalized SARS victims. One participant stated:

A big SARS outbreak occurred in the emergency department of a leading medical center in Taiwan. At that time, we were significantly worried that the government had failed to build up a clear picture of the SARS virus transmission pathways or reliable protocols for health professionals to use.

Nevertheless, 70% of the participants strived to develop alternative ways of protecting themselves. One remarked:

The government failed to provide adequate infection control material and the manpower we needed, but we couldn’t allow our patients and ourselves to lose hope. So, we brainstormed to try to figure out more appropriate alternatives. For instance, we did not have the head-to-toe one-piece isolation dress as recommended by WHO. So, we used a combination of crafted facemask, surgical gown, and disposable raincoat shoe covers to cover the whole body. We were lucky enough to get away with this and no one was infected.

3.1.2. High mortality risks to self, family, and others

All of the participants ($N = 200$) reported being anxious about their safety and the safety of their families, clients, and colleagues. They reported being afraid of the high risk for mortality caused by infection. Working in the hospital, the frontline health care providers themselves, nurses in particular, became a population at high risk for SARS.

Ninety-five percent of the participants ($n = 190$) complained about distressing daily publicity in the media. For instance, as one participant stated:

In the first 2 weeks, the TV reporters hourly placed stress on the terrible conditions in a certain hospital as a showcase for the high mortality and nurses’ complaints; it was so discouraging. It described nurses as if once we showed any hesitation towards staying at the bedside to take care of the patients, we became traitors or deserters from the war.

Eighty percent of the participants ($n = 160$) worried about the potentially high risk of infecting their own vulnerable family members, such as children and the elderly:

I did not worry about myself; rather, I worried [about] my two kids and my elderly parents who might become infected through me as a carrier working at the hospital.

Seventy percent of the participants ($n = 140$) experienced self-doubt and external pressure to make a sacrifice. There

were a huge external voice and pressure that required nurses to stay on professional duty and stay at the bedside. One senior leader said:

I have my own family and also professional nursing role requirements. Facing this fatal disease, do I need to sacrifice myself even at the cost of losing all my family? What about my children’s future? My staff trusts me; do I really want them to make the sacrifice like me?

3.2. The tangible caring stage—Challenge of infection control and health care cooperation

3.2.1. Urgent need to control the risk for contamination and infection

Sixty percent of the participants ($n = 120$) complained about a lack of adequate time to prepare themselves, the material, and the settings for SARS-probable cases. This phenomenon was particularly true during the first 4 weeks and with patients who had a poor lung condition; for example:

We were often notified that a SARS patient would be transferred from another hospital or emergency department with only 2–4 hours’ notice.

Meanwhile, in remodeling some floor units to be SARS wards or hyperthermic wards for the rapidly increasing number of SARS patients, non-SARS-related patients needed to be relocated to safer wards. Nevertheless, 15% of the participants reported difficulties because the medical expenses in the new wards may not have been covered by public health insurance. In addition, the construction team building the new SARS ward constantly consulted the nurses. As a result, the nurses’ physical and emotional well-being suffered. One participant remarked:

Many patients insisted on staying in the insurance-paid beds to save money and complained a lot, and [they had] no idea about this critical disease and situation; few of their family members agreed with our tentative arrangement. I was totally exhausted after discussing this in several calls and taking care of patients in addition to constantly being bothered by the administrative department about the remodeling situation. I just wanted to cry.

The difficulties became critical especially when the patients’ health conditions began to deteriorate. As a result, 90% of the participants felt a lack of control over the patients’ health status and felt powerless to provide a reasonable quality of care.

3.2.2. Challenge of building consensus and cooperation among health team members

The initial 2 weeks were reported as the most chaotic. All the participants reported a lack of consensus for the assessment, treatment, and caring protocols; discrepancies and confusion were significant to them:

The SARS-probable patients’ signs and symptoms were not all alike. The protocols suggested for the frontline health care

providers, such as nurses, physicians, pharmacists, and housekeepers, did not adapt well.

The nosocomial infection control policies and procedures suggested by [the] infection control team were not practical enough. As such, every [sic] health professionals had their own ideas.

The physicians and pharmacists had different opinions about the medication options.

Facing these difficulties, some nurses took the initiative of spending a lot of energy and time trying to build a consensus among the health team members. A reliable consultation team and a daily case conference were used as ways of reaching consensus and creating good cooperation.

Eighty percent of the participants ($n = 160$) complained significantly about other health care providers' refusal to provide needed direct care for either non-SARS patients or SARS-related cases when required. The participants complained that many physicians refused to visit and delayed their response to a nurse's call for help. Some of them even asked the nurses to make decisions about treatment. One participant remarked, "We called and warned the physicians that their patient's health condition was not improving. Most of the time, they only gave orders over the telephone." Other health care providers also hesitated to be in contact with the patients: "The portable X-ray man did not want to touch the patients; rather, they asked us to position the patients for them." To ensure better compliance with policies, nurses needed to put their nursing duties aside and accompany these technicians in and out of the patients' rooms. Furthermore, as one participant said:

Most of the housecleaning staff [were] less well educated. They were not brave enough to stay in patients' rooms or careful enough when following the provided detailed cleaning procedures. Therefore, the bin was often too full of used clothes and garbage. The infection risk was thus further increased.

To ensure environmental safety and facilitate patient turnover, the participants reported having to help with housekeepers' cleaning duties in addition to their busy nursing schedules; for example:

One mentally ill male SARS patient urinated and defecated in different spots in his room. Since none of [the] housekeepers dared to clean his room, we went inside the room to clean the room in pairs to prevent any of us being attacked by him.

Lastly, half of the participants expressed strong disappointment at the negative criticisms received from other health professionals, including pharmacists, imaging technicians, hospital cleaning staff, and particularly physicians. The participants' complaints included impatience when talking to nurses taking care of hyperthermic or SARS-related patients, hesitation when having direct contact with patients, and speculations that nurses' motivation in caring for SARS patients was solely monetary.

3.3. Postcaring stage—Life after surviving the SARS disaster

3.3.1. Worry about financial reimbursement and the crisis at health institutions

Ninety percent of the nurse participants ($n = 180$) reported emotional distress caused by the devaluation of nursing care reflected in the lower governmental financial reimbursement for nurses (NT\$5,000) as compared with physicians (NT\$10,000) per SARS patient (US\$1.00 \approx NT\$32.0):

Due to our close contact with SARS patients over long working hours, like 10–12 hours a day, we [nurses] risked our lives to take care of the patients. In contrast, many physicians dared not [to] touch the patients but prescribed medicine over the phone. Why did they deserve double the pay of us?

Seventy percent of the participants ($n = 140$) from public or private hospitals complained about the postponement of promised rewards from the government and the health institution, particularly those nurses who were the sole family breadwinner:

My husband was laid off during the SARS outbreak, so we were very anxious to get the governmental financial reimbursement for taking care of SARS patients.... The government and the hospital should keep their promise. Otherwise, who will trust them during the next SARS outbreak?... I need money for my family. It is now 3 months after the SARS outbreak, but I have received nothing up to now.

Furthermore, 30% of the participants ($n = 60$) worried about the impending financial crisis at their private hospitals because these hospitals receive less financial support from the government. One remarked:

I was informed by the administrator that the hospital may soon have a financial crisis. So, I worried about my salary.

3.3.2. Reflection on personal growth and upcoming preparation

Seventy percent of the participants ($n = 140$) believed that nosocomial infection control has garnered the attention of both nurses and administrators. Several strategies were developed by the participants in attempts to survive the SARS ordeal. For example, two teams on 12- to 16-hour shifts should be organized; if one team was contaminated, another team would still be available. Some floor units in the hospitals were remodeled as dormitories for the health professionals who might work late and need to sleep near the contaminated area. One participant stated:

Since nurses had close contact with SARS-related patients, we were not sure who had been infected. So, we isolated ourselves in the dormitory after work, talked to our families by phone, and took turns working when someone was too tired to work.

Some nurses even stayed in the dormitory for 1 month taking turns to look after the SARS-probable cases. They told their parents that they were on vacation instead of telling them the truth, which would have frightened

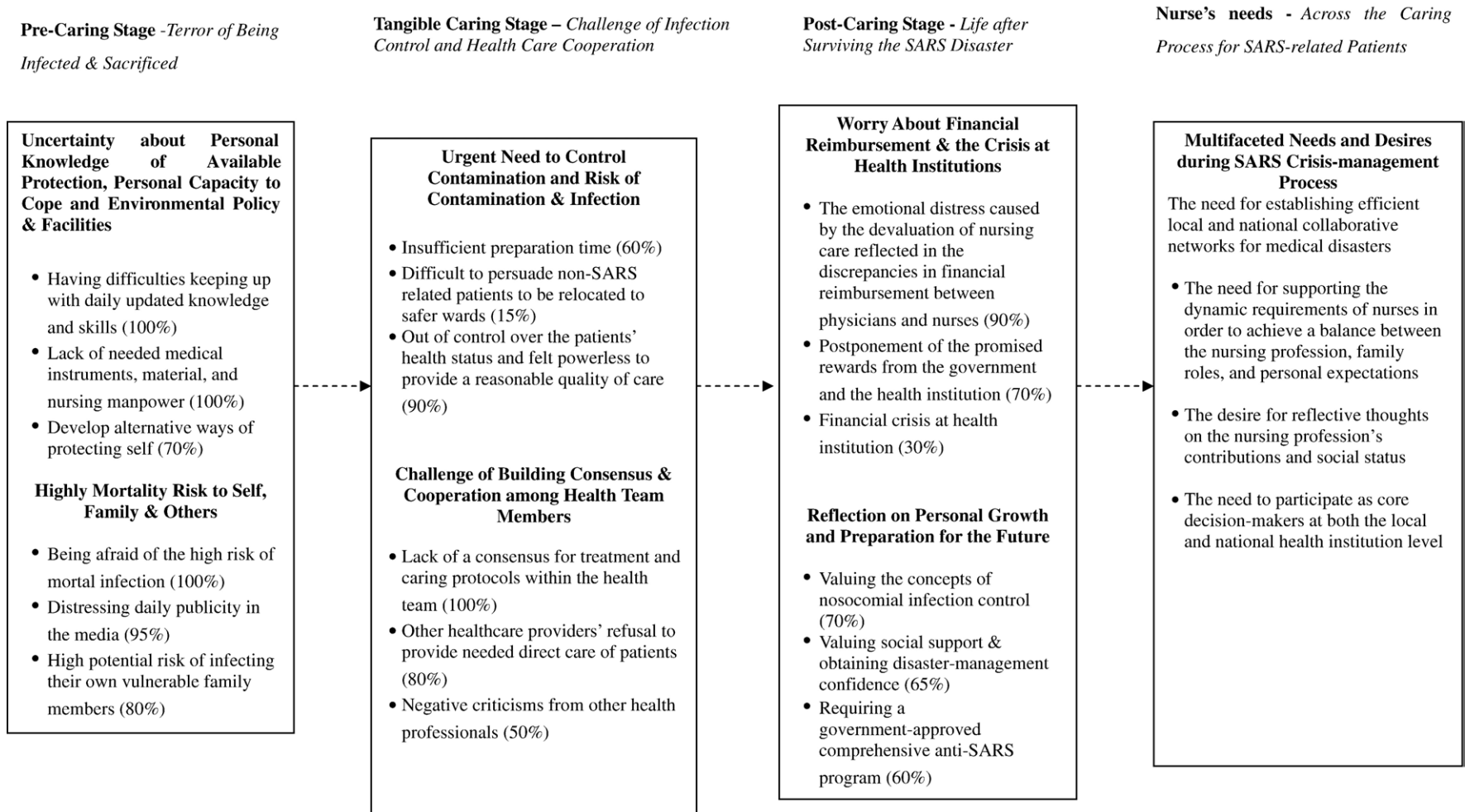


Fig. 1. Taiwan's frontline nurse clinicians' difficulties and needs across the caring process for SARS-related patients.

them or made them too anxious or given rise to many complex emotions.

Sixty-five percent of the participants ($n = 130$) valued social support and obtained disaster management confidence. They reported that their anti-SARS experiences were like a journey from self-doubt to a transforming process of self-defense, self-construction, and self-strengthening. In the precaring stage, they were overwhelmed and frightened. As they entered the early phase of tangible care, they were uncertain and physically, psychologically, socially, and spiritually weary. Nevertheless, as they proceeded into the later phase of tangible care, their sense of uncertainty was gradually empirically clarified. Moreover, as they gained more successful experiences and obtained as well as shared positive feedback with their patients and colleagues, their confidence gradually increased. Some of the remarks included the following:

I appreciated my nursing colleagues; we supported each other every day and shared all our successful and unsuccessful experiences. Based on the accumulated frontline care experience, the effective and efficient interventions were identified and proved.... When one nurse entered the patient's room, another one would watch the monitor and coach her how to practice her sterile technique and so on. We encouraged each other and never gave up on any colleague or patient.

My families and friends in church passed me daily messages through the cellular phone to encourage me.... In the later phase, we were encouraged by receiving more and more of the materials we needed such as masks, medical isolation dress, and food from many corners of society.... The most valuable part was carrying the panic patients through the recovery process, and their families wrote appreciation letters to us. We felt so rewarded.

Lastly, 60% of the participants ($n = 120$) criticized the lack of a government-approved comprehensive anti-SARS program including good models for interdisciplinary care aimed at monitoring, care delivery, and referral. By having such a program, the quality of patient care and cooperation between health professionals and the various health institutions would have been improved; as two participants said:

Up to the present, few governmental officials or nursing leaders have systematically and carefully evaluated the contemporary problems and difficulties that challenged the interdisciplinary care plans for the SARS epidemic across health institutions.

We need a reliable anti-SARS nursing care model for reference. The empirical experiences that we have obtained by risking our lives [need] to be consolidated as soon as possible and carried over to [the] next generation. Otherwise, we'll become too busy to forget these [treasures].

The frontline nurses believed that they were one of the most reliable personnel resources available and capable of providing sound rationales to identify successful and unsuccessful models for the direct care of SARS patients. This should be integrated into core training courses for acute care, community care, and disaster management professionals.

4. Discussion

The second layer of findings refers to four major background themes that serve as a context for better understanding of the multifaceted needs and desires of the frontline nurses during this crisis management process. The themes encompass (a) the need to establish efficient local and national collaborative networks for medical disasters, (b) the need to support the dynamic requirements of nurses in achieving a balance between the nursing profession, family roles, and personal expectations, (c) the desire for reflective thoughts on the nursing profession's contributions and social status, and (d) the need to participate as core decision makers at both the local and national health institution levels. Finally, a conceptual framework was developed to depict this complex phenomenon (Fig. 1).

4.1. *The need to establish efficient local and national collaborative networks for medical disasters*

The SARS epidemic was a new national and international crisis; nevertheless, disasters are a collective responsibility requiring a coordinated response from all parts of society (Der Heide & Lakond, 2001). Similar to this study result, Lee (2004) stated that the major difficulty in Taiwan at the early stage of the SARS epidemic was a lack of information and knowledge. Likewise, Hong Kong and Western scholars also pointed out that one of the major difficulties with natural hazards is knowing where to find accurate information and how to coordinate efforts by sharing accurate information in a quick and organized manner (Burkle, 1995; Libman et al., 1997; Mok et al., 2005). Providing nurses with SARS-related knowledge would decrease uncertainty (Mishel, 1990, 1997; Mok et al., 2005) and allow them to become involved in making decisions, thus making them aware of alternatives as well as the anticipated consequences of each possible course of action. Libman et al. suggested several strategies for improving medical disaster coordination and communication: (a) use of the Internet and availability of the electronic addresses of people in the areas of health and disaster relief to establish connectivity; (b) establishment of disease telemonitoring capability; (c) building up educational and training programs that are available through the Internet; (d) networking all nongovernment organizations and government agencies before a disaster occurs; and (e) establishment of a disaster information server.

4.2. *The need to support the dynamic requirements of nurses in achieving a balance between the nursing profession, family roles, and personal expectations*

Exposure to a highly contagious environment is a huge workplace stressor (Orji, Fasubaa, Onwudiegwu, Dare, & Ogunniyi, 2002; Tan, 1991; Wu, 1996). Most nurse clinicians were forced to weigh the serious and imminent health risks to themselves and their families against their professional duty to care for the sick during the initial SARS

outbreak. Canadian and Hong Kong staff also reported being fearful for their own and their families' health and found that caring for colleagues as SARS-related patients was emotionally difficult (Maunder et al., 2003; Mok et al., 2005; Nickell et al., 2004). During the SARS outbreak, the morale of the frontline staff was challenged as they shouldered an increasing clinical load when colleagues contracted the disease (Mok et al., 2005). The death of four of Taiwan's nurses was a further blow to staff morale. Lee and Lin (2003) described four negative impacts of the SARS crisis on the nursing profession. First, because of the shortage of protective equipment and manpower, nursing staff stayed around the clock working in a high-risk care environment. Second, the low responses and inadequate actions of officials and authorities and the resulting increased stress exhausted the nursing staff both physically and mentally. Third, it became increasingly apparent that the isolation and quarantine procedures resulted in a shortage of nursing manpower. Lastly, it raised additional issues about the education of the next generation of nurses in Taiwan, particularly where it concerns conflicts between nursing ethics and professional identity. When confronted with challenges to one's identity, the specters of self-doubt and insecurity can begin to loom large (Matthews, 2003). During the early anti-SARS process, the ideal moral concepts held by nurse clinicians and student nurses were challenged, and they began to feel powerless and helpless. Indeed, some of them considered switching careers.

However, a remarkable aspect of this crisis is that most of the surviving experienced nurses reasserted their commitment to providing the best care for patients with a similar lethal disease (Mok et al., 2005; Tzeng, 2003). As such, they were described as heroic and self-sacrificing and were portrayed as soldiers fighting an "invisible enemy" (Carscallen, 2003; Editorial, 2003; Lee & Lin, 2003). Some believe that under dire circumstances, professionals should have minimal self-regard and pursue their duties at the potential cost of their life. Others claim that it is unreasonable to expect extreme heroism as the norm—and even more unreasonable to demand that nurses' children and families be held hostage to professional duties. How these two positions can be balanced is intensely difficult and should not be considered as personal–professional–ethical performance, but this has vital implications for comprehensively handling pandemics in the future.

4.3. The desire for reflective thoughts on the nursing profession's contributions and social status

Hall et al. (2003) stated that the SARS crisis and the resulting media attention on the nursing profession had opened a door for the nursing profession to continue its educational campaign toward the public. This will help call attention to the issues of nurses' heavy workload and their need for support and appreciation in times when fighting for public health in critical situations. As stated by the president

of Taiwan and the president of the International Council of Nursing, Christine Hancock, the SARS epidemic has highlighted the value and critical importance of nurses and their work everyday and everywhere (International Council of Nurses, 2003; Lo, 2004; Parish, 2003). The challenges from the SARS epidemic outbreak have not only empowered nurses' crisis management competence but also improved or challenged their appreciation of their self-identity.

From the results of this study, the SARS outbreak ought to have aroused the sensitivity of government officials toward important nursing issues that have long been ignored, including political involvement, manpower, benefits, financial incomes, and so on. There are several reasons why local and national health institutions should invite nurses with disaster management experience to participate in decision making and action plans. First, nurses have invaluable frontline empirical experience as well as immediate and reliable information. Gottlieb (2004) stressed that nurses have always played a key role in case detection, infection control, public education, risk mitigation, and risk containment. Second, nurses form the largest professional group in the health care marketplace; hence, their inputs should be seriously considered and incorporated in the design of institutional missions and policies (Des Jardin, 2001). Third, a significant part of nurses' responsibility is to act as patient advocates and ensure that patients retain their right to quality care and informed choice. DiGaudio (1993) asserted that the active involvement of nurses in policymaking would lead to better resource allocation. Meanwhile, increased participation would promote nurses' control over their practice and enhance the respect given to nurses as professionals. As such, political and action involvement at the local and national levels will offer nurses various opportunities to influence and seek changes in their workplace and to act as a voice for others.

4.4. The need to participate as core decision makers at both the local and national health institution levels

This project revealed that during the golden time including the preparation (preparing) and tangible care stages, invaluable timely data about the changes in disease facets, SARS victims' physical–psychosocial–spiritual problems, limitations in physical environment, and difficulties in delivering medical as well as nursing protocols across disease phases were not effectively or adequately accessible for the frontline health care providers. Few nurses with empirical anti-SARS experience were consulted when authorities at higher governmental levels, usually physicians in public health or infection control, made major decisions.

Involvement at the institutional, professional, and national levels is a basis for action to provide significant public education and demonstrate the importance and versatility of nurses' roles in public concerns (Des Jardin, 2001).

A need to empower nurses to become actively involved in policymaking and health crisis management is therefore

suggested. The following suggestions for empowering nurses' crisis management competence also require further observation: (a) nurses should be treasured and treated as equal to other health professionals; (b) sufficient nurse manpower should be provided; (c) practical nursing guidance and experience with disaster management should be valued and implemented at the national policy level; and (d) formal education programs should encompass these issues for all levels of nurses.

5. Conclusions

The lived experiences and factors frustrating Taiwan's frontline nurses in their quest to provide good quality care to SARS patients throughout the caring process are first identified herein. It appears that the SARS epidemic highlighted many significant problems not only in contemporary health care delivery systems but also in the interdisciplinary and international health care environments. The value of reciprocity does not only rely on individuals or paperwork: It also needs to be brought about by the support and protection by health institutions of their health care providers (Singer et al., 2003). Health care providers are expected to deliver services in an atmosphere of utmost integrity that will only occur when providers have courage, feel safe, and are supported to do the right thing in difficult situations (Kerfoot, 1999). As such, government and health institutes are expected to provide the following forms of help to nurses: (a) offering adequate personal protective material and equipment at all relevant sites; (b) fostering a reciprocal supportive relationship between health team members; (c) offering an accessible counseling "hotline" and anti-SARS program to provide timely mutual support and training during quarantine; and (d) providing plausible tangible reimbursement for staff who take extraordinary responsibilities during epidemics and disasters.

Some limitations are inherent in this study. First, face-to-face focus group interviews were used as the primary data collection method because the sample included 200 participants. Although significant efforts were made to ensure the rigor of data collection, some participants' private concerns might not have been fully discussed owing to a lack of adequate time or a wish to retain confidentiality. Second, a postinterview self-report questionnaire was used to facilitate the participants' expression of feelings and thoughts that might be confidential to them. Nevertheless, the interactions in focus group interviews might have influenced the responses obtained by 30% of the participants who replied via the questionnaire; this may have modified their original perceptions of their experiences. Lastly, 96% of the participants were female; thus, the perceptions of the difficulties and related background contexts for males might not have been identical. The final point particularly deserves further investigation before drawing comparative conclusions.

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