Original Article

Crit Care & Shock (2004) 7: 99 - 106

The Psychological impact of SARS on health care providers

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Abstract

The Severe Acute Respiratory Syndrome (SARS) triggered a devastating and deadly outbreak in Singapore. The impact that this deadly disease caused was like no other; healthcare facilities were overwhelmed with patients, healthcare providers continuously fell victims of the disease, and the uncertainty of the natural history of the disease kept the world in a general state of panic.

Though numerous studies have been developed regarding SARS, this study focuses on the emotional issues that healthcare providers faced during the outbreak.

During the time of the study and in the midst of the outbreak, the psychology team developed a program for mental health among healthcare providers. The program consisted of group session therapy where a total of 16 groups were developed mainly comprised of nurses and physicians. The emotional stress that healthcare providers faced during the outbreak was overwhelming creating confusion and mixed emotions that made their jobs an extraordinary challenge.

Keywords: psychological impact, isolation, emotional conflicts, peer support

Introduction

The first cases of SARS were reported in Singapore on March 2003. These were of three individuals who had just returned from a trip to Hong Kong. Briefly after their admission to a Healthcare facility, the disease began to spread rapidly to medical personnel and visitors of the hospital. (**Figures 1** and **2**) [1].

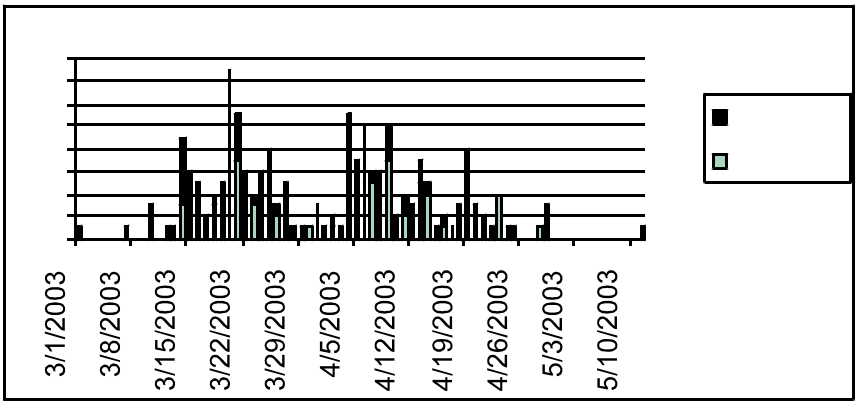

FIGURE 1. NUMBER OF SARS CASES BY ADMISSION DATE

A total of 206 cases of SARS were admitted during the outbreak, of these 32 deaths, four of them being healthcare providers. Statistics of the outbreak are still being modified fortunately containment of the outbreak still up to date (**Tables 1** and **2**).The unprecedented situation led to the complete shut down of several wards in the

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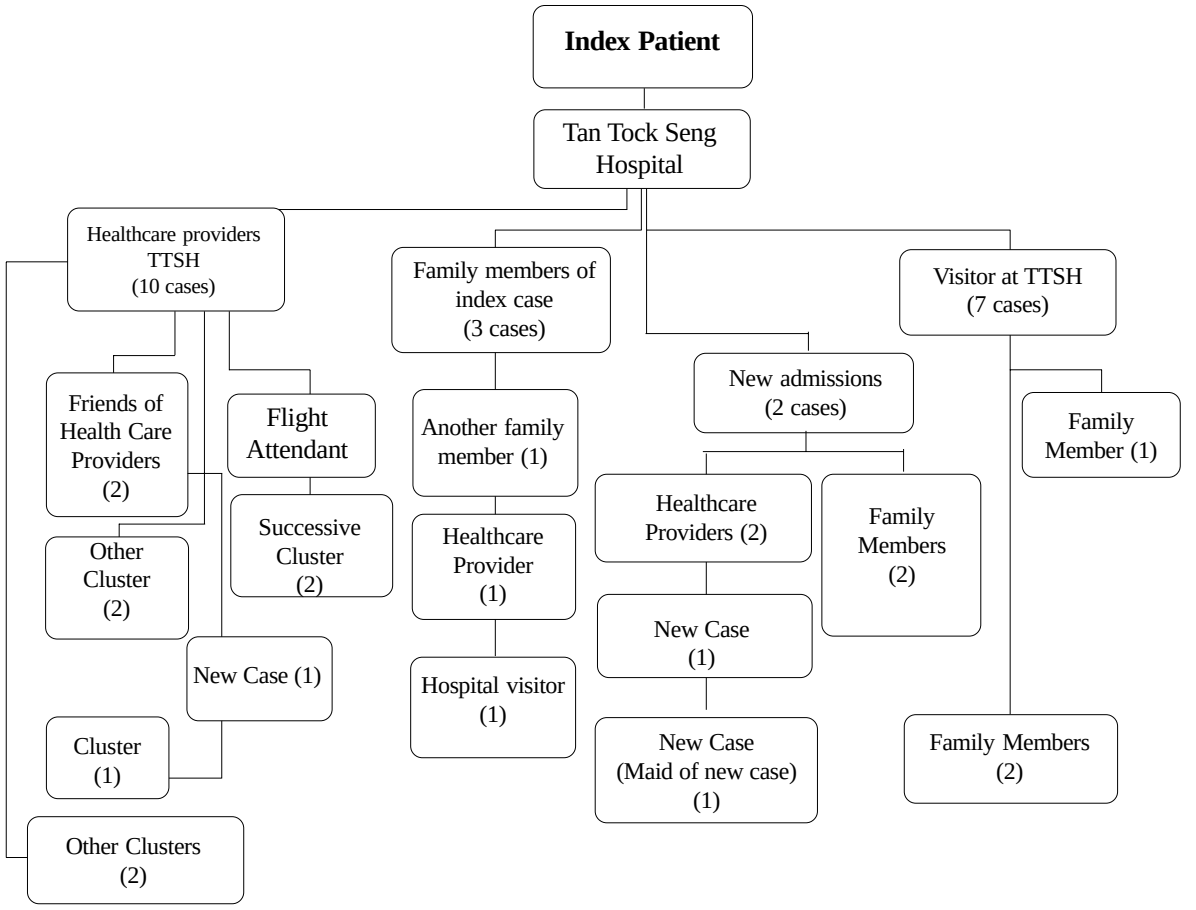


FIGURE 2. SUMMARY OF CHAIN OF TRANSMISSION TRACED BACK TO INDEX PATIENT.

facility and soon enough this hospital was assigned as the official center for the treatment and management of SARS in Singapore. All suspicious cases of SARS in the community were to be referred to this institution which had adopted a "ring fencing" strategy to prevent further spread of the deadly disease. When a new outbreak occurred in another hospital, two whole surgical wards had to be relocated to the treatment center where the original outbreak occurred.

Within the treatment center, healthcare providers had to be redeployed; all ICU's were modified to meet the needs of the overwhelming demand of critical care management. The workflow and procedure protocols had to be redesigned according to new policies for the treatment and prevention of SARS.

This crisis was an extraordinary event in the history of the hospital. All medical personnel were faced with serious physical and emotional stress. The psychology team promptly responded providing mental health support individually or in group sessions with a total of 16 groups established at the time this article was written. The groups were comprised only of healthcare providers, but mainly consisted of nursing personnel from different services including front line intensive care teams, isolation wards, and other supportive roles in the hospital.

A series of events continuously developed since the onset of the outbreak, Table 1 illustrates a chronological aspect of the events that contributed to the emotional impact that the SARS outbreak brought upon health care providers.

This article analyzes some of the emotional phenomena reported during the psychological support group sessions formed in response to the SARS outbreak.

Methods

A total of 188 health care providers were divided among 16 different therapy groups. The groups mainly consisted of nurses from different services, including the Intensive Care Unit (ICU), observation units, and even some units that had not been affected by the outbreak. No specific

TABLE 1. CHRONOLOGY OF EVENTS THAT CONTRIBUTED TO THE IMPACT OF SARS

Date, 2003	Events	Possible impact
March 1	1 Singaporean admitted to TTSH	-Beginning of the spread
March 12	WHO issued a global alert; named disease SARS	
March 14	Outbreak of 6 cases of atypical pneumonia, all had close contact with the index case	-Clinical awareness of disease and possible spread
March 15	Ministerial Task Force formed	
March 17	SARS was declared an emerging infectious disease	
March 22-27	TTSH designated as the SARS hospital; adopted a ring-fencing strategy -shutting down of all other functions; non-SARS patients diverted to other hospitals -Emergency department closed to general public except for screening for SARS -setting up of pediatric wards for children with SARS -demarcation of "clean" (non-SARS) and "unclean" (SARS) areas; full protection gears in "unclean" areas, mask and hand disinfection at clean areas after patient contact. -3-time temperature monitoring for all staff	-Intensification of discrimination of nurses in uniform and particularly, staff of TTSH
March 25	1st death, a previously healthy man	-whole ICU team on duty broke into tears.
March 26	2nd death, another previously healthy man	-the reality of the disease's fatality set in.
March 27	Temporary closure of schools and centralized institutes	Health care workers faced difficulties in looking for child-minding facilities
March 28	First counseling group	Less formal supportive counseling took place earlier.
April 5,6	Trans-location of two surgical wards from another hospital to TTSH as a new cluster was detected in the hospital of origin.	
April 7	A medical officer died	-he was known to the ICU team
April 18	1-visitor rule	
April 22	Death of a Vascular surgeon.	-a former staff of TTSH
April 25	No-visitor rule for SARS patients	
April 29	No-visitor rule	
May 11	-Last case diagnosed -Death of a head nurse	-Staff under her supervision were particularly affected.
May 31	Singapore declared SARS free	

TABLE 2. REPORTED CASES OF SARS TO WHO (AS AT 26TH JUNE 2003)

	China	Hong Kong	Taiwan	Singapore	Canada	All countries
Total no. of cases	5,327	1,755	682	206	251	8,456
No. of deaths	348	296	84	32	37	809
Case-fatality rate (%)	6.5	16.9	12.3	15.5	14.7	9.6

psychotherapeutic model was adopted as baseline since the main goal was supportive therapy. A great deal of flexibility was allowed to cover all needs of the different groups. The primary goal of therapy was to externalize all emotions, and bring support to each other. For the majority of the staff, this would be their first experience in group session therapy. All participants were committed to overcome issues encouraging one another to express their emotions. The scheduled period of time for each session was one hour and fifteen minutes although

some sessions lasted up to two hours.

After analyzing all group sessions, the main issues and concerns that all health care provides faced are developed below. The issues that surfaced in the psychological support sessions were analyzed by two mental health counselors.

Results

Two main trends were observed in this study. The first observation made was a dynamic development of specific behaviors. That is fear, anger, and blame being the main emotions experienced at the beginning of the outbreak. The groups that were assessed after the death toll had risen experienced a great sense of grief and loss. The second trend observed was the development of serious issues after specific events had occurred, for example, a significant sense of grief and frustration after the death of a colleague. The most prevailing issues are described below:

(1) Fear

Fear was the most commonly reported emotion. Most healthcare providers reported the feeling of being in a state of "shock and fear" confronting the emerging situation. The nursing staff reported a great sense of fear that they were facing a disease that was unknown and unnamed. An unremitting sense of fear continued to proliferate among staff mainly when their own medical personnel began developing symptoms. At the height of the crisis, disbelief and anger became the prevailing emotions among health care providers. Soon enough the high of the incidence among health care workers made fear, disbelief and anger the most prevalent emotions. The fear of acquiring and spreading the virus it to others, especially their families, haunted many. Coupled with suspicions of the efficacy of protective measures, the aforementioned emotions were aggrandized by the uncertainty of the natural history of the disease and the means of acquiring it. The lack of knowledge about the disease made healthcare providers feel helpless and fearful when facing a situation that they had no control over.

(2) Vigilance

Distress and fear led every group participant to be extremely aware of the natural history of the disease especially the development of different symptoms. This heightened state of anxiety present among all healthcare providers influenced everyone to believe that any symptoms that they had were related to SARS even though they were clearly suggestive of distress and fear. All members of the groups felt "haunted" by the fact that at any time they too could fall victims of the disease.

(3) Detachment

In some cases, health care providers began to unconsciously distance themselves from others. In other cases, the distancing was imposed. The fear of spreading the virus that they could possibly be passing to others made some unconsciously detach themselves from their loved ones to the point of not kissing their own children.

Some of the healthcare providers reported that their "significant others" saw them as a source of infection and demanded them to thoroughly clean themselves before entering their own homes. Moreover a great number of parents in the medical team were forbidden to see their own children and some couples even stopped sharing a bed.

The outcome of detaching themselves from their families and loved ones led some healthcare providers to limit their emotions and concerns for each other. The evident lack of support was one of the chief concerns encountered by the healthcare providers.

(4) Separation anxiety

The increasing mortality rates among healthcare providers led some of the clinical staff to have to provide medical care for their sick colleagues. The obvious reaction of associating themselves with their ill colleagues triggered a series of emotional issues. For example, some struggled to depersonalize the treatment of their colleagues and others over involved themselves in the treatment of their colleagues. Many reported having flashbacks of their colleagues undergoing mechanical ventilation even after their shift had ended. Some felt the need to telephone their ward once they had gone home just to check on the status of their ill colleague.

(5) Mortality Concerns

SARS triggered a dramatic increase on mortality rates in the ICU. The impact of this devastating outbreak was intensified when one of the physicians from the institution died shortly after acquiring the disease. The close proximity and identification with the ill shattered everyone's sense of mortality, some stated "suddenly we realized that we can fall ill too".

Serious existential crises emerged. As people acknowledged their vulnerability to fall ill or even to die, many experienced guilt towards their survival. Questions and statements such as: "Why not me?" "How can I be

so bad to think this way?", "Thank god it is not me", were commonly made. The medical team could not help identifying themselves with the ill especially when a physician or a nurse was undergoing mechanical ventilation in the intensive care unit.

Many spiritual concerns surfaced in the group sessions. Some came to appreciate the smaller things in life evident by such comments such as "everyday when I drive to work, I'm thankful that I am able to do that". Many were troubled by pragmatic existential issues such as the care of their families should anything happen to them.

(6) Death

When the first death due to SARS occurred in the ICU, mixed feelings emerged. A sense of failure to rescue a previously healthy person created grief and a great sense of self-identification with the ill especially when it involved young physicians.

The multiple losses made the SARS crisis an overwhelming challenge for the entire hospital staff. One patient had lost her parents, her uncle, and her pastor to the disease. Heath care providers never had the time or the place to deal with the issues that affected them. Senior staff found themselves unable to debrief themselves on this situation.

(7) Deprivation

Limited resources led to the shut down of several services in the hospital. Inadequate amounts of food were provided for the staff. Sometimes these healthcare providers were limited to only a single item from the menu for days. As the supply of protective gear diminished a general state of panic was evident in the community. The hospital was facing difficulties arranging a medical benefit policy for its employees and health care providers reported a growing concern for the lack of medical coverage for themselves and their families.

(8) Disruption

Due to the shut down of many essential services in the hospital, many of the nurses and physicians had to be constantly relocated. Medical and surgical ICU's consolidated to increase hospital coverage for the critically ill patients. In other cases entire wards had to be relocated to assigned institutions. The constant moving and rearranging of personnel and equipment caused great disruption on the general workflow of the hospital. Having to deal with new staff and coping with new directors on the wards brought additional stressors. Some reported feelings of being homesick and making statements such as "there is no place like home".

One of the behaviors reported after the merge of medical and surgical ICU's was that the staff had issues addressing themselves to the visiting team, and were always searching for their respective physicians to state there concerns.

(9) Discrimination

After the Health Services Department assigned an institution as the official center for the treatment of SARS, all of its medical personnel were underrated. Outside the hospital, some reported being evicted from their homes by their landlords, others were denied access to public transportation when seen in uniform, and when allowed on public transport, other passengers would walk away from them.

A sense of discrimination and lack of appreciation was felt, especially after the fact that they were willing to risk there own lives. Some reported feeling "contaminated" and "dirty".

(10) Sense of duty

Many health care workers faced serious personal conflicts having to choose between their own self-preservation instinct over their duty as health care providers. This dilemma included choosing between the well-being and concerns of their families over caring for their ill patients by staying at the hospital. Some senior physicians felt obligated to stay strong and appear confident despite those stressful times. They believed that their duty was to set an example of courage for the sake of all junior staff.

(11) Discrepancy

As more facts emerged about the disease, rapid changes were made in healthcare policies. Medical personnel experienced numerous discrepancies on workflow parameters. Even among institutions, different policies were adopted. Some were told to use all means of protective equipment while others were told it was not necessary.

(12) Frustration

There was a commonly expressed sense of anger and frustration as a result of the build up of doubtful new medical policies, grief from the loss of some colleagues, distancing themselves from their families, and other emerging issues. Transferring their frustration to others was very common even though they realized that this

was an irrational behavior. Some felt the need to blame it all on the first case that triggered the outbreak though they knew that this patient was also an innocent victim of the virus. The work environment was extremely stressful and people tended to be "on edge".

(13) Sense of Unworthiness

In the midst of the state of emergency a great deal of people were working in all departments of the health care facilities. Since not all roles of health care workers dealt directly with the critically ill patients, some considered to be "not essential" by the authorities, thus creating a sense of unworthiness among them, accentuated even more when the public expressed their sense of gratitude to the whole team not taking into account the role of everyone in the hospitals.

(14) Déjà vu

To some of the senior staff this was a familiar scenario, having lived trough outbreaks in the past like the tuberculosis epidemic. They had to face a new disease, decades later with great sadness and disbelief.

(15) Abnormal behaviors

Some health care providers experienced a change in their own lifestyles; a change in their usual behavior was evident. Trying to avoid interaction with others, some opted for new hobbies that involved fewer people or no one at all, distancing themselves and experiencing a sense of loss and loneliness.

(16) Disclosure

Some of these healthcare providers found it hard to decide how much to disclose about the situation to their families overseas. Some minimized detail and some remained factual. Some of the staff who acquired the disease only told the family about it after they recovered from the disease.

Despite all of the negative feelings, much positive feedback emerged when the counselors asked the medical staff to share how they coped with this difficult situation:

(1) Broadcast of Information

Although the national daily update of the status of the disease was embraced by the community bringing them a sense of total awareness, it also raised doubt and uncertainty. For example at the beginning of the outbreak everybody had questions as to the effectiveness of wearing a facemask for protection against the virus. After the staff was officially informed that personnel who wore a face mask at all times had not developed any symptoms, a very positive response from the public was observed. This caused such impact that many felt secure enough to get close to their relatives after work.

The continuous situation updates helped many healthcare providers overcome the physical and psychological barriers that they had set for themselves. The more they learned about the disease the safer they felt among each other.

(2) Dynamic development

Many providers noted that the greatest sense of uncertainty was felt during the initial ten days of working in a highly contagious SARS zone. This was primarily due to the fact that the incubation period of the virus was three to ten days. Once that period time had elapsed without developing any symptoms, this brought a sense of relief to the healthcare providers. Probing their hypothesis they experienced first hand the effectiveness of the precautionary measures taken.

(3) Sense of duty

Despite the pain and uncertainty that was dealt with, all healthcare providers were determined to stay involved. When asked what their motivation was, many stated a sense of duty that compelled them to keep going *"We are all trained to do this, no soldier quits in a war, no firefighter quits in a fire"*, their sense of duty overcame any emotional obstacle.

(4) Team Spirit

Another major motivation that kept the staff going was their team spirit. Many had worked together for years, and were determined to pull through this crisis together. *"How can I possibly abandon my colleagues now?"*

(5) Self sacrifice

A matter of self sacrifice was greatly noted during the outbreak. Altruism was evident when facing the uncertainty of the disease. Someone stated that they had not kissed their own children for weeks "I've stopped kissing my child so that others can continue to kiss their children".

The first ICU team that was called to deal with the outbreak gathered all their essentials and kissed their fami-

lies goodbye in case they fell ill and had to be quarantined. At the time, nothing was known about the disease or the effectiveness of protective measures. They arrived at their ward expecting the worst.

(6) Divine Intervention

When faced with death-related situations, many found calm and peace entrusting themselves to their god.

(7) Reliable support

Even though many cases of public discrimination were reported, the crisis also brought genuine feelings of love and concern from families, religious groups, colleagues, superiors and public in general. Some found great support and reassurance in their own roommates.

(8) Overcoming negative thoughts

Self-assuring affirmations such as: "If nobody quits, I won't either", "I am strong, I won't get it."

"I will fight SARS", seemed to be useful and motivating for some.

(9) Delayed Emotions

Some healthcare providers found that having their emotions set aside during work time was helpful. They realized that allowing themselves to be overwhelmed by their emotions interfered with their work. Some learned to deal with their issues at a later time.

(10) Positive feedback

Some agencies publicly expressed the great appreciation they felt for all of those on the frontline in the battle against SARS. Feedback from patients that recovered form SARS was greatly motivating and brought a sense of worth and achievement for all.

Discussion

The study mainly revealed that the psychological impact of this catastrophe was directly related to the natural history of SARS. After analyzing the emerging issues it became apparent that the evolution the disease and the strategies adopted for its treatment had great influence on the psychological response of all healthcare providers. When the first cases of SARS began, nothing was known about this unusual and rare virus. Even before it could be named it had already triggered panic and fear all around the world. The lack of knowledge regarding the mode of transmission created a sense of helplessness and uncertainty that led to a general state of fear. Because of the mode of transmission, medical personnel caring for SARS infected patients were at higher risk than the rest of the community, this greatly increased morbidity among them. The fact that someone who was fighting against the disease fell ill, and had their own team nurse on him caused a very profound impact on healthcare workers.

With mortality rates increasing up to 15% in a matter of weeks, the fatality of the disease was now evident. A sense of failure was followed by profound sorrow. The highly contagious nature of the disease strictly required isolation as part of the treatment. As a result, discrimination from the public and emotional distancing among healthcare workers developed. The lack of trust and social support prevented healthcare workers from being able to express their emotions.

Regarding the emotional challenge that healthcare workers dealt with, two main observations were made: It was clear that the lack of social support created an even more difficult situation to confront especially when healthcare workers had a physical and psychological barrier to overcome. As stated by Pat Love, "Our sense of security, competence and belonging derives directly from our loved ones, our colleagues and our community" [2] The SARS outbreak brought out discrimination from the community and a distancing behavior from there own families (**Diagram A and B**). Health care workers were isolated from the world outside the institution.

Grief, anger, death, spirituality, failure and death were many of the issues experienced at a personal level.

DIAGRAM A
BASELINE

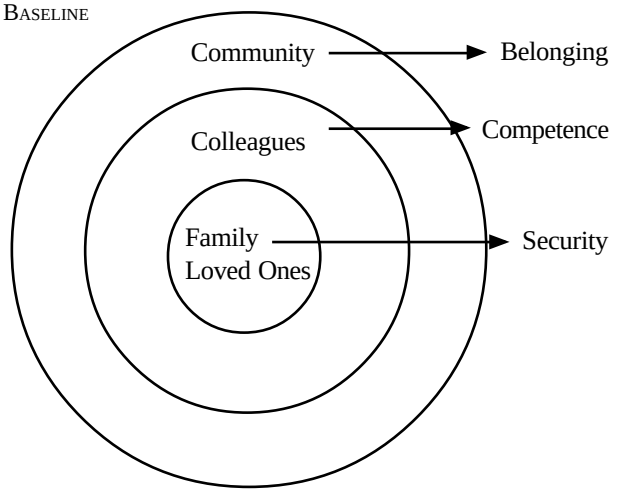
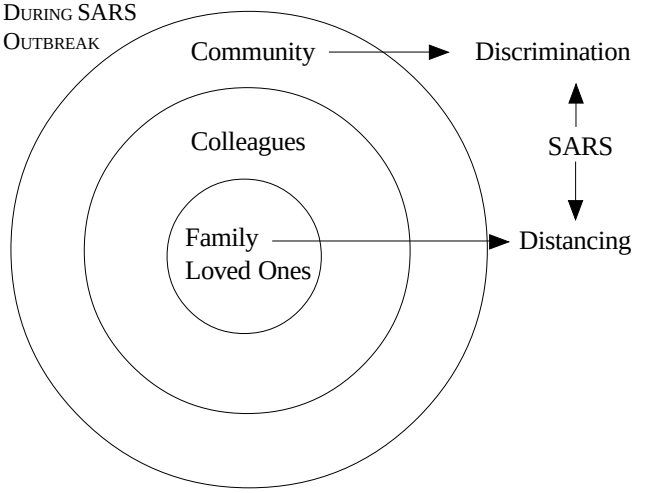


DIAGRAM B
DURING SARS
OUTBREAK



It was common among healthcare workers to struggle against these personal conflicts in silence and isolation. In our study, we noted that emotional support from peers was very helpful. Colleague sessions brought upon a sense of personal wellbeing and mutual learning. Through sharing with others [3], some became aware for the first time the mixed emotions they were experiencing. Many became aware that they were not alone in the situation and realized that they should not blame themselves for the anger they were feeling. This awareness led them to accept their emotions and better understand others. Once healthcare workers learned to deal with each other and accept themselves a common language was created among all facilitating communication during the sessions.

Many realized that courage was not the absence of fear and devotion to duty was very powerful in the face of adversity. Healthcare workers struggled between choosing themselves over their colleagues, their families over their patients and their duty over their fear. Their motivation was so strong that it overcame all obstacles and kept them in the team. A sense of belonging and the continuous motivation felt was greatly embraced at the time of crisis.

The distress brought upon by a conflict of emotions was the first negative influence that the institution experienced. We noted acknowledgment and acceptance of emotional distress. Many expressed relief after knowing that they were not alone when facing their fears, this made them feel accepted and unified.

Information passed about the disease and protective measures as well as updating the community on the current status of the outbreak concerning safe and unsafe zones was greatly embraced worldwide. Meeting the demands of the community and of healthcare personnel was of great importance. An adequate supply of protective gear, sufficient food, and medical coverage for all medical personnel and their families was imperative.

Testimony to the effectiveness of protective gear relieved the anxiety that health care workers were experiencing. After many colleagues overcame the incubation period without developing any symptoms, many felt secure and motivated. Many overcame their fears with inner strength while others felt encouraged by emotional support. Positive affirmations were commonly employed by some healthcare workers.

Conclusions

Every generation has lived through its own outbreak and disaster. The psychological impact that these outbreaks cause worldwide are by far greater than an economical one. In the current SARS outbreak, healthcare workers experienced a very unique situation with negative and positive aspects. Managing the emerging issues among healthcare workers appeared important on a personal level but was crucial in the overall battle against SARS. Group sessions seemed helpful; they brought upon a source of mutual support and also understanding among all which greatly impacted the overall strategies utilized in the battle against SARS.

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