

Practitioner Report

Psychological Intervention with Sufferers from Severe Acute Respiratory Syndrome (SARS): Lessons Learnt from Empirical Findings

Sammy K. W. Cheng* and Chee Wing Wong
Clinical Psychology Service Unit, Kwai Chung Hospital, Hong Kong

In 2003, severe acute respiratory syndrome (SARS) severely hit Hong Kong. We conducted a series of five studies examining the psychological impacts of SARS on the sufferers. Results showed that (1) various psychiatric complications emerged in the acute treatment phase; (2) certain types of behavioral and verbal responses of health-care workers (HCWs) were able to ameliorate the psychological distress of the sufferers in the acute phase; (3) the short-term adjustment outcomes of the sufferers were unsatisfactory; (4) 'being an HCW' and 'having a family member killed by SARS' were risk factors predisposing individuals to the development of high distress after discharge; and (5) after controlling for the effects of demographic and risk factors psychosocial factors such as social support, negative appraisal (or perceived impact), positive appraisal (or post-traumatic growth) and self-efficacy could account for substantial variances of differential outcomes including symptoms of anxiety and depression, quality of life and perceived health of the sufferers. This practitioner report aims to summarize the key findings, which have significant clinical implications in the provision of psychological intervention to the sufferers of SARS or other comparable infectious diseases. Copyright © 2004 John Wiley & Sons, Ltd.

INTRODUCTION

Severe acute respiratory syndrome (SARS) is caused by a novel strain of coronavirus that has affected 29 countries with more than 8400 cases reported in 2003 (Peiris et al., 2003; SARS Expert

Committee, 2003). The first case is known to have emerged in mid-November 2002 in Guangdong Province, China (World Health Organization, WHO, 2003). From February to July 2003, a cumulative total of 1755 SARS cases and 299 deaths were reported in Hong Kong alone (SARS Expert Committee, 2003). One central feature of the 2003 SARS outbreak lay in its inherent scientific uncertainties that had consequently led to epidemic fear and distress in the community (Lau, Yang, Tsui, & Kim,

*Correspondence to: Dr. Sammy Cheng, Clinical Psychology Service Unit, Kwai Chung Hospital, Hong Kong, China.
E-mail: sammykcheng@cuhk.edu.hk

2003; Leung et al., 2003). The fear and distress may be related to the widespread and escalating impacts of SARS in the society. All schools including universities had been closed for about three months. Health education was stepped up, and the community was encouraged to practice personal protective measures such as wearing masks in public areas. Quarantine measures, not enforced for nearly 40 years, were executed. Health-care workers (HCWs), who became a high-risk group vulnerable to contracting SARS and made up 22% of all infected cases in Hong Kong (SARS Expert Committee, 2003), experienced prominent distress in the plague (Koh, Lim, & Chia, 2003; Maunder et al., 2003).

To the sufferers, the impacts of SARS could be worse. During the 2003 outbreak in Hong Kong, we conducted a series of five studies examining the psychological impacts of SARS on the sufferers. In the present report, we intend to summarize the results of the studies and highlight the key lessons learnt pertinent to psychological intervention for SARS sufferers in the acute and convalescent phases.

DISTRESS DURING THE ACUTE PHASE

Contracting SARS can be a traumatic experience. The course of illness is often debilitating and distressing. At the acute phase of presentation, common symptoms include fever, influenza-like chills, myalgia, malaise, dizziness, diarrhoea, soreness of the throat, and loss of appetite (Donnelly et al., 2003; Lee et al., 2003). In many cases, rapid and drastic loss of respiratory functioning necessitated the patient being put on a ventilator in the intensive care unit (ICU). The case-fatality ratio of SARS is as high as 17% (SARS Expert Committee, 2003). Given the highly contagious nature of SARS, barrier nursing is compulsory and family support such as bedside visit and company is lost. Furthermore, to combat the cytokine storm and reduce the inflammatory responses in the treatment for SARS, massive doses of steroid are commonly used (Lee et al., 2003) and may cause different psychiatric complications (Sirois, 2003).

Symptom Manifestation in Acute Phase

Though the impacts to the sufferers in the acute treatment phase were regarded as enormous, it was not viable to gauge the psychological or psychiatric symptoms through lengthy face-to-face

assessment. Using the method of retrospective recall, Sheng and colleagues (2005) mailed questionnaires to SARS survivors and their family one month after discharge and found that neuropsychiatric symptoms during the acute treatment phase were prominent. In a cohort of 103 sufferers, about 10% reported the presence of frequent psychotic features such as auditory and visual hallucinatory symptoms, and paranoid belief. Over 60% reported the occasional presence of at least mild manic symptoms such as euphoric and labile mood, and pressured speech. Approximately 90% experienced different degrees of cognitive impairments such as disorientation to place and times, poor concentration and impaired memory. Respectively over 80 and 90% of responders had at least a mild level of depressive and/or anxiety symptoms.

In the study examining the association of psychological distress and negative appraisals among sufferers of SARS (Cheng, Wong, Tsang, & Wong, 2004c), it was found that in the acute phase worries for the negative impact of SARS such as survival threat, physical damage and social impact were common and intense. These negative appraisals could account for the substantial amount of emotional distress such as anxiety and depression symptoms among the sufferers in the acute phase.

Furthermore, in a series of 10 patients with psychiatric complication referred for psychiatric or psychological consultation, according to the ICD-10 (WHO, 1992), five patients were diagnosed to have adjustment disorder (AD), two organic hallucinosis (OH), two organic manic disorder (OMD) and one had no diagnosis (Cheng, Tsang, Ku, Wong, & Ng, 2004b). The probable causes of these psychiatric morbidities were found to relate to the direct and indirect effects of SARS. For instance, patients with AD reported prominent distress resultant from symptom severity and isolation treatment, whereas patients of OH and OMD had mental disturbances associated with the massive dose of steroid treatment.

Psychological Management in Acute Phase

Given the presence of great emotional distress, the need for psychological intervention among the sufferers in the acute phase appears warranted. However, under strict infection measures, non-essential personnel including clinical psychologists, psychiatrists and social workers entering isolation wards are strongly discouraged. There-

fore, to mitigate the distress of the sufferers, we advocated that as the first-line intervention, immediate face-to-face counseling should be offered primarily by the health-care workers (HCWs) such as the nursing and medical staff in the isolation ward (Cheng et al., in review). As the second-line intervention, tailor-made services delivered by clinical psychologists and/or psychiatrists should be provided to those with psychiatric complications (Cheng et al., 2004b).

First-Line Intervention: Therapeutic Responses of Health-Care Workers

Therapeutic responses that soothe the distress of sufferers can have pragmatic values in guiding HCWs to deliver effective counseling to patients in the future outbreak. To explore these therapeutic responses of HCWs in the acute phase, 20 SARS survivors were interviewed one month after recovery. Results revealed that four thematic therapeutic phrases and five thematic therapeutic acts emerged in the qualitative analysis. The inter-coder reliability for the transcripts and themes was satisfactory (range = 68–85%; mean = 76%, SD = 7.2). The therapeutic phrases and acts are unique verbal or behavioral responses that serve specific functions to ameliorate the distress of the sufferers. The responses are therapeutic because they could buffer the negative effects of SARS and consisted of elements of supportive counseling (Cheng et al., in review). In view of the poor short-term adjustment outcomes of the survivors and the salutary value of emotional support in the acute phase on the outcomes (Cheng et al., 2004c, Cheng et al., 2004a), face-to-face counseling offered by HCWs in the isolation ward is opined as particularly important. Below is a summary of these therapeutic phrases and acts (Cheng et al., in review).

Therapeutic Phrases

1. *Induction of hope.* This type of therapeutic phrase can give patients' positive anticipation of outcome and sense of security. The primary purpose is to reduce their anxiety and worries.
2. *Suggestion.* This type of therapeutic phrase is to offer concrete options to reduce distress or problems of the patients.
3. *Care and concern.* This kind of therapeutic phrase serves to soothe the patients' emotional distress with concern and humor.
4. *Normalization.* This category of therapeutic phrases aims to normalize the presence of emotional distress or behavioral outcomes.

Therapeutic Acts

1. *Listening and support.* The HCWs listen to patients' concerns and proffer tangible or intangible support to the patients.
2. *Diligence and service.* This kind of act includes the delivery of professional nursing care and service to satisfy patients' needs.
3. *Physical proximity.* This kind of act serves to create a sense of acceptance by shortening physical distance with the patients.
4. *Professional competence.* This type of act allows patient to have a sense of security through the expression of professional knowledge, judgment and bearing of HCWs.
5. *Social support.* The HCWs attempt to facilitate or generate an atmosphere of social support in the ward.

Second-Line Intervention: Tailor-Made Services for Those with Psychiatric Complications

Though we recommend that psychological support to the SARS sufferers should be provided by HCWs in the isolation ward in the first instance, consultation from professional helpers such as clinical psychologists and psychiatrists may be needed if psychiatric problems such as suicide attempts and steroid-induced mental disturbances arise. Two modes of service delivery, telephone interviews and face-to-face interviews, with different exposure risks, were designed to manage the psychiatric complications of the sufferers. Patients with mild symptoms received telephone interviews, whereas those with more severe symptoms would receive face-to-face interviews on a need basis after consulting with the treating physician (Cheng et al., 2004b).

We suggest that the aims of telephone interviews are to identify the nature of patients' problems, educate them with the skills to alleviate symptoms of distress and teach the family proper ways to convey support. To enhance therapeutic alliance, these patients and their respective families would be given a mobile phone number for contact with the clinician. They would be encouraged to seek counseling and consultation at any time of the day during the period of hospitalization. If psychiatric complications such as mania and psychosis were present and severe enough to warrant psychiatric treatment and medication, face-to-face interviews would be necessary and recommended. Such modes of service delivery were a rational response to strive for the balance between strict isolation measures and face-to-face psychiatric assessment.

Our experience found that the psychological and psychiatric complications such as depression and steroid induced mental disturbances could still be well controlled, and that the tailor-made services yielded unexpected appreciative responses from the SARS sufferers and their family members (Cheng et al., 2004b).

DISTRESS AFTER DISCHARGE

After the sufferers of SARS were discharged from hospital, several important questions emerged. First, what are the adjustment outcomes of the SARS survivors following short-term recovery? Second, who is more likely to develop high distress after discharge? And third, which psychosocial correlates could account for significant amounts of variance of adjustment outcomes of the survivors? Three studies were designed and conducted to address these questions.

Short-Term Adjustment Outcomes of Survivors

The impacts of SARS on the survivors after discharge have been anticipated to be salient for several reasons. First, contracting SARS can be a traumatic experience. For instance, the case-fatality ratio is approximately 17% (SARS Expert Committee, 2003). While the physical symptoms are highly debilitating in the acute phase, social support is lost due to strict infection measures and isolation. Distress and poor quality of life (QOL) may persist after the short-term recovery. Second, as carriers of this new, highly contagious, and lethal disease, SARS survivors tend to experience prejudice, alienation and social repulsion. The self-esteem of SARS survivors may be adversely affected. Third, because SARS is so new to us and we have little knowledge about its impacts, worrying questions such as 'Will my family catch the infection from me?', 'Will I have any permanent physical damage?' and 'Will the heavy dosage of steroid have any severe adverse effects on me?' may often emerge among patients during the acute treatment and convalescent phases. Different amounts of negative appraisals may serve to induce and maintain the levels of psychological distress. Finally, steroid related mental disturbances during the acute and convalescent phases could be excruciating (Sheng et al., 2005; Sirois, 2003), thus possibly worsening the recovery process.

In one of the studies, we found that adjustment outcomes such as psychological distress and

quality of life of SARS survivors one month after recovery (Cheng et al., 2004a) were rather unsatisfactory. With a standard cut-off score of 5 in the GHQ-28, over two-thirds of 100 SARS survivors were identified as distressed cases. Under the conservative cut-off score of 6, still 61% of the survivors were classified as distressed cases, whereas only 25% of a community sample (184 subjects with 19% suffering from a physical illness) were positive ones. Besides, as compared with the community sample, these SARS survivors had elevated scores in most of the sub-scales of the Chinese version of the GHQ-28 (GHQ-28, Chan, 1995) and the Hong Kong Chinese version of the World Health Organization Quality of Life Measure-Abbreviated Version (WHOQOL-BREF; Leung, Tay, Cheng, & Lin, 1997). In another cohort 180 SARS survivors discharged from the hospital for 4 weeks or more participated in a psychological screening (Cheng et al., 2004c). Interestingly, two-thirds of the participants again reported having a mild level or above of psychological distress as measured by the Chinese versions of the Beck Anxiety Inventory (BAI, Cheng et al., 2002) and Beck Depression Inventory (BDI, Cheng, 2001). Specifically, 30% of them experienced a mild level of anxiety or depressive symptoms, 25% a moderate level and 10% a severe level. More importantly, only two per cent of these participants reported a history of receiving psychiatric services before (Cheng et al., 2004c). When compared with the community sample and psychiatric patients with either an anxiety or depressive disorder, these SARS survivors had the mean of the BAI and BDI lying approximately at the mid-point between the two comparison groups. These findings suggest that psychological distress of SARS survivors one month after recovery is real and significant, and that early psychological screening and intervention may be necessary to facilitate the adjustment of SARS survivors after short-term recovery.

Risk Factors for Developing High Distress

The associations of psychosocial features with the high or low distress groups were examined for survivors discharge from hospital for one-month (Cheng et al., 2004c). To differentiate high or low levels of distress, the cut-off score 19 (i.e. 'moderate to severe' range) in the BAI or BDI was adopted. Of the 180 responding survivors, 64 patients met the criteria and were categorized into the high distress group. Among various psychoso-

cial variables, 'being an HCW' and 'having a family member killed by SARS' were two risk factors differentiating the high from the low distress groups (OR = 3.8 and 3.4 respectively). Indeed, the finding that 'being an HCW' was a risk factor was replicated in two other studies, where HCWs were found to have more distress, greater depressive and anxiety features, lower self-esteem and worse quality of life than the non-HCW survivors (Cheng et al., 2004a, in review). One plausible explanation is that HCWs have more negative appraisals of the SARS impacts because they have a higher awareness of the lethality and physical damages caused by SARS (Cheng et al., 2004c). These negative appraisals at the acute phase might have carry-over effects on distress even after short-term recovery. In addition, recovered HCWs might encounter prominent worries and anticipatory anxiety in returning to their workplace where they got such traumatic experiences. Thus associated fear, avoidance, and distress related to resuming duties may be particularly salient in the initial stage of recovery. Besides, the low self-esteem of HCWs may be related to the change of self-concept from 'health protector' to 'virus spreader' (Cheng et al., 2004a).

Psychosocial Factors that Account for Differential Outcomes

After controlling the effects of demographic and risk factors, several psychosocial variables were found to explain a significant portion of variances of adjustment outcomes. Identifying the salient variables can have important implications for psychological assessment and treatment.

Negative Appraisal

To SARS survivors, negative appraisal can be defined as the perceived adverse impacts of SARS. Since SARS was a novel disease, the sufferers tended to develop prominent worrying thoughts pertinent to its direct and indirect effects. For instance, they might worry whether their family would catch the infection from them, whether they had any permanent physical damage and whether they would experience social discrimination and repulsion after discharge. To examine these worries, we have developed a scale, the SARS Impact Scale, which is comprised of 12 items that we observed commonly encountered in the local SARS patients during the acute treatment and convalescent phases (Cheng et al., 2004c). Three mean-

ingful factors, that reflected the areas of concern of 'survival threat', 'physical impact' and 'social impact' of SARS, were extracted by factor analysis and accounted for 67% of the total variances. The negative appraisal at both the acute phase and convalescence explained large portions of the variances for anxiety (37%) and depression symptoms (34%), after the effects of demographic and risk factors were controlled.

Positive Appraisal

Evidence shows that 40–70% of people who experience a traumatic event later report some gains or benefits from their experience (Calhoun & Tedeschi, 1999). Such positive appraisal or post-traumatic growth can significantly account for some of the variances of differential outcomes. Post-traumatic growth may affect adjustment outcomes via the biological, psychological and social pathways. For instance, individuals who have grown psychologically from trauma may show quicker cortisol habituation to other stressors (Epel, McEwen, & Ickovics, 1998). Individual who acquires skills or knowledge in a traumatic event may develop a sense of competence in facing future life crisis. Receiving assistance from others in a traumatic situation may also facilitate a greater trust in one's social relationship (Carver, 1998). Using the Thriving Scale developed by Abraído-Lanza and colleagues for individuals with physical illness (Abraído-Lanza, Guier, & Colón, 1998), we found that three meaningful constructs emerged in the factor analysis for a group of SARS survivors 2 to 6 months after discharge from hospital (Cheng et al., in review). The first factor, 'Personal growth', included 12 statements such as 'I learned to be a more optimistic person' and 'I learned to be more confident in myself'. The second factor, 'Relationship growth', consisted of five statements such as 'my relationship with my family become more important' and 'I realized how much my family cares about me'. The third factor, 'Spiritual growth', is comprised of two statements, 'my faith in God increased' and 'my confidence in God increased'. Results of regression analyses showed that both the factors 'Personal growth' and 'Relationship growth' significantly explained variances for outcome variables of anxiety, depression and perceived health.

Self-Efficacy

Self-efficacy can be defined as the confidence to cope with the impacts of SARS. Findings revealed that the greater the perceived confidence or sense

of control, the better the adjustment outcomes such as perceived physical and psychological health would be (Lazarus & Folkman, 1984). Together with the perceived impacts of SARS, self-efficacy was found to explain substantial amounts of variances for anxiety, depression, and perceived health (Cheng et al., in review).

Other Factors that Affect Outcomes

Some other factors were found to mediate the adjustment outcomes of the sufferers (Cheng et al., 2004a). First, the dose effects of steroid and severity of SARS symptoms account for a portion of the variance of distress. These may reflect the side-effects of the drug and its residual impacts of the illness on individual patients. Parallel to the previous findings of the significant role of steroid in mood (McAllister-Williams, Ferrier, & Young, 1998), the findings lend support to the possible influence of steroid on distress of SARS survivors following short-term recovery. Also, social support in both the acute and convalescent phases has been shown to play a vital role in modulating the impacts of SARS. In the acute phase, isolation treatment may put one at a higher risk of developing negative self-perception such as 'I am contagious, bad, and causing harm to others'. Adequate social support in the critical period can have buffering effects against such possible damage to one's self-concept. In convalescence, better social support to survivors may embed pivotal values in emotional and practical terms, and hence can have salutary effects on QOL and distress (Cheng et al., 2004a).

Implications for Post-SARS Psychological Services

The above findings may shed light on several areas of psychological services after the sufferers are discharged from hospital. First, HCWs have been repeatedly shown to have worse adjustment outcomes (Cheng et al., 2004c, 2004a, in review). Our experience was that some of the HCW survivors were prone to bear negative behavioral and emotional responses such as grievance, bitterness, anger and fear that needed to be dealt in a sensitive way. For instance, tailor-made psychological screening such as a personal inquiry and invitation for the need of psychological consultation rather than arbitrarily distributing the postal questionnaires would be much appropriate and receptive for counseling. In addition, when facing future possible outbreak, psychological preparation such

as stress inoculation (Meichenbaum, 1993) may be needed to strengthen the sense of social support, reduce the associated social discrimination, facilitate the use of socially endorsed communication channels without reducing the amount of contact, brainstorm and share the possible coping, educate and adopt some realistic threat appraisal and boost the morale among the staff.

Second, in the psychological assessment for the SARS survivors, clinicians should include social support, negative appraisal (perceived impacts), positive appraisal (post-traumatic growth) and self-efficacy, which may be important parameters for monitoring the ongoing psychological and perceived physical health of SARS survivors. Third, these significant psychosocial correlates may embed important values in the clinical intervention for the SARS survivors. For instance, given the significant role of negative appraisal in the outcomes, cognitive techniques such as comparing with the disadvantaged and reappraising the catastrophic worries might be appropriate when specific maladaptive beliefs are elicited. Further, the clinicians should not only actively inquire about the impacts of SARS, but also elicit and educate various coping efforts that may boost the coping confidence, and reinforce their perceived ability to cope with the impacts. Also, allowing the survivors to review or reiterate the personal gain and growth from the traumatic experience may create positive meaning, reframe the impacts and possibly alleviate their distress.

CONCLUSION

SARS has significant adverse psychological impacts on the sufferers during the acute and convalescent phases. An appropriate understanding of its nature and impacts would allow one to formulate relevant psychological intervention strategies for the sufferers. In this paper, we summarize these strategies based on our empirical findings, and hope that the experience might facilitate the best practice of psychological intervention in the field, should there be another outbreak.

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