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SPECIAL ISSUE ON PSYCHOLOGY OF SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

The psychology behind the masks: Psychological responses to the severe acute respiratory syndrome outbreak in different regions

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Severe acute respiratory syndrome (SARS) was first reported in China, and spread to 29 regions, affecting over 8000 people worldwide. For the general public, the psychological impact of SARS may have been greater than the physical health danger of the disease. The present paper proposes the influence of psychological factors on people's cognitive, affective, and behavioral responses during the SARS outbreak. The various papers in this special issue of the Journal reveal how people have reacted during the SARS outbreak: People's general coping styles may be related to their health behavior during the outbreak. Cultural differences were evident in the perception of SARS, and individuals' perceptual styles may have influenced their ability to cope with the outbreak. The way in which individuals coped with SARS-related stressful events was different from their usual practices of managing daily stress. Individual differences in the adoption of preventive measures were related to the distinct susceptibility to several social-cognitive biases.

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Severe acute respiratory syndrome (SARS) was first reported in Guangdong, China in November 2002, followed by an outbreak in Hong Kong in early March, 2003. The disease

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then spread to East Asia, and further to Canada and other parts of the world. The virus was reported in 29 areas and affected over 8000 people, with more than 770 deaths. The unknown nature of the virus immediately encouraged researchers to unveil its biomedical mechanisms. The epidemiological, laboratory, radiological, and clinical features of SARS were published shortly after the onset of the outbreak (Drosten *et al*., 2003; Lee *et al*., 2003; Tsang *et al*., 2003; Wong *et al*., 2003). The most important finding was that a new coronavirus, unlike any known member of the genus coronavirus, was the major causative agent of the disease.

However, during the SARS outbreak, there may have been two diseases looming. In addition to the actual physical health danger posed by SARS, a new psychological problem appeared. This problem can be termed 'SARS phobia' (Cheng C., in press). On 1 April 2003, a hoaxer in Hong Kong caused public panic by hijacking a major newspaper website and posting a bogus news item, which claimed that Hong Kong would soon be declared a SARS-infected region and sealed off from the rest of the world. This news quickly spread around the city, causing panic-stricken people to mob stores to buy necessities. On 26 April 2003, a 48-year-old man from Taiwan who suspected that his family members had contracted SARS committed suicide in a hospital ward. In Canada, although less than 50 Canadians died of SARS, a significantly greater portion of people were affected by the psychological effects of the disease (Carr, 2003). Moreover, the psychological anxiety and hype related to SARS even led some people to claim that SARS was to the Chinese what the September 11 tragedy was to the Americans (Einhorn, 2003). This analogy was based on the sudden occurrence of the incidents, both of which caused a considerable number of deaths and economic turmoil in the affected regions. The worldwide impact of the SARS outbreak has also been compared to that of the 1918 flu pandemic that killed 50 million people, and to the current HIV crisis (British Broadcasting Corporation, 2003). This suggests that the fear of SARS has become a more severe pandemic than the disease itself (World Health Organization, 2003).

The disease has been widely publicized as 'fatal pneumonia', 'lethal pneumonia' and 'killer pneumonia' by the media. The life-threatening aspect of SARS was vividly described and frequently brought to people's minds. According to the availability heuristics (Tversky & Kahneman, 1973, 1990), an individual's judgment of the likelihood of an event is biased by the ease of recall from memory. Consistent with this heuristic, a population survey conducted in Hong Kong in early April 2003 (Lam *et al*., 2003) revealed that about 10% of the respondents believed that the probability of contracting SARS was greater than that of contracting a common cold and dying from a traffic accident. This perception seems to have been irrational and biased, which may be attributable to the dearth of information regarding the causes, modes of transmission, and methods of treatment of this novel virus. The dearth of information allows individuals to interpret the disease in an idiosyncratic manner.

To cope with this health threat, governments in many regions introduced a number of strategies, such as health declarations at immigration checkpoints and setting up quarantine systems. Publicity campaigns were launched to inform the public about the disease (see the websites of the Department of Health, Hong Kong; Ministry of Health, Singapore; and Health Canada). Apart from providing more information about SARS, the campaigns also included the dissemination of information about precautionary measures, such as urging people to wear face masks, to pay more attention to personal hygiene, to build up physical health, and to see a doctor if they had pneumonia- or influenza-like symptoms. People in SARS-affected regions adopted precautionary measures. The most common included wearing face masks on the street and at work, seeking information and monitoring up-to-date news about SARS, and avoiding crowded areas. Individuals differ considerably in the type and extent of preventive measures undertaken.

Psychologists were quickly aware that psychological factors played a role in the SARS outbreak, and were interested in a number of important questions. Could the current knowledge yielded from coping research help in the understanding of people's attempts to handle the SARS outbreak? Because SARS affected a number of regions, including people from both Asian and Western cultures, did individuals from different cultures perceive and cope with the crisis in distinct manners? Did people attempt to handle the SARS epidemic in ways that were similar to those with which they attempt to handle stressful daily events? To cope with the outbreak, why did some people engage in preventive health behavior while others ignore the use of preventive measures?

This special issue of the Journal, 'The Psychology of SARS', is devoted to answering these questions by exploring the psychological impact on people all over the world, especially the hard-hit regions of China, Hong Kong, Singapore and Canada. The studies herein unveil how individuals from different parts of the world perceived and attempted to cope with this life-threatening virus. These issues are addressed from a variety of perspectives, including the cognitive-behavioral, motivational, social-cognitive, and cultural perspectives.

Lee-Baggley, DeLongis, Greenglass, and Voorhoeave explore the relationships between strategy deployment and SARS-related health behavior. Their online questionnaire assessed global coping strategies and specific health behavior in response to the SARS outbreak. The participants were from different walks of life, and most of them were from regions that were not affected by SARS. The findings revealed that participants who tended to use wishful thinking were more likely to avoid going to public areas and avoid people who they believed to be affected by SARS. Those who tended to adopt empathic responses were more likely to undertake measures to prevent SARS, such as wearing face masks and exercising regularly. These results suggest a link between general coping strategies and specific health behavior to avoid contracting SARS, which applies to people in areas that were and were not affected by SARS.

Ji, Zhang, Usborne, and Guan examine cross-cultural differences in optimistic thinking between the Chinese and European Canadians during the SARS outbreak. The participants were recruited from Beijing and Toronto, and the two samples demonstrated unrealistic optimism, that is, the perception of oneself as less likely than an average person to contract SARS. Compared to their Canadian counterparts, the Chinese participants showed greater unrealistic optimism when estimating their own risks of being infected, but took more preventive measures. The authors concluded that the Chinese dialectical thinking style may have promoted the belief that both negative consequences and positive changes could coexist during the SARS crisis. This belief may have propelled the Chinese to think about their future in a more positive light, and enhance their motivation to adopt a preventive approach to cope with the crisis.

Chang and Sivam also examine how cultural factors influenced perception and coping tendencies in the context of SARS. They explored whether heritage values were related to SARS-related fears, defensive pessimism, and preventive measures in a sample of Singaporeans. Their results revealed positive associations among all of the psychological variables assessed in the study. Specifically, compared to Singaporean participants who endorsed fewer of the Chinese values (i.e. prudence, industry, and civic harmony), those with a greater tendency to adopt these values were characterized by higher levels of SARS-related fears, greater defensive pessimism, the adoption of more health behaviors, and the experience of more adverse outcomes related to the outbreak. The implication is that cultural factors are important to psychological research on SARS.

Gan, Liu, and Zhang compare how Beijing university students handled the SARS epidemic with how they handled stressful daily events. For these two types of stressful situations, they examined the participants' flexibility in cognitive and coping responses across a diversity of events. The participants tended to distinguish among different stressful daily events in the extent of controllability, and deployed more problem-focused coping to handle daily stressors with controllable outcomes. However, they tended to perceive most SARS-related stressful events as uncontrollable, and used more emotion-focused coping to handle such events. These findings indicate that individuals had a propensity to be less flexible, both cognitively and behaviorally, in their attempts to handle the SARS epidemic than in their usual practice of handling stress. Based on these findings, the authors proposed that encountering an unknown but contagious disease may hamper individuals' ability to: (i) distinguish among the characteristics of events related to the disease; and (ii) respond flexibly to meet the specific demands of distinct events.

Tam, Lau, and Chiu examine two samples of Hong Kong high school students in terms of social-cognitive biases after the SARS outbreak. They found that compared to those who practiced SARS preventive behavior (i.e. the practicers), those who did not (i.e. the non-practicers) were more prone to two types of social-cognitive biases: false consensus bias and the actor-observer bias. To elaborate, the non-practicers tended to underestimate the prevalence and importance of prosocial concerns in the preventive behavior that was commonly adopted by practicers during the outbreak. These findings shed light on how Hong Kong adolescents evaluated prevailing norms and their own motives in the prevention of an emerging epidemic. The authors pointed out that non-practicers of health behavior may believe that their behavioral pattern is widely shared and acceptable in the community, and may thus be less motivated to change their behavior.

Finally, Cheung contributes an insightful commentary on the importance of psychological factors to the SARS epidemic. The strengths and limitations of the five aforementioned studies are discussed. Cheung concludes by advocating the extension of the biopsychosocial model to the context of SARS. This commentary, together with the five articles, provides valuable information on the ways in which people from different regions of the world responded affectively, cognitively, and behaviorally to the SARS outbreak. This information may be useful not only for enhancing the understanding of the psychological impact of SARS, but, more importantly, for designing preventive workshops for the general public and intervention programs for people who have contracted SARS and their family members.

In conclusion, this special issue highlights the role of psychological factors in people's cognitive and behavioral responses to the SARS outbreak. The impact of psychological factors may even have had a greater impact than the virus itself. The articles in this issue may contribute to the identification of possible psychological mechanisms entailed in the interaction among the virus, people, and the social-cultural milieu. Apart from biomedical studies, psychological studies and cross-cultural studies are also instructive in fostering the understanding of SARS.

The SARS epidemic alerted the world that public health is no longer a local issue. In this era of globalization, not only people and information but also viruses flow freely without borders. The treatment and prevention of novel, unknown diseases require the joint effort of government bodies and health-care professionals from various countries. It is hoped that lessons can be learnt, and awareness of the possible psychological impact of SARS on the general public can be increased. Should SARS return in the future, fears will be kept in perspective, social-cognitive biases will be minimized, and effective preventive measures will be undertaken if we know more about the psychology of SARS.

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