

## Abstract

**Background:** Severe Acute Respiratory Syndrome (SARS) was the first severe and readily transmissible infectious disease to emerge in the 21st Century. Various studies have explored the psychological impact of SARS on survivors during the acute and longer terms. However, to date, there has been a lack of study on the long-term psychiatric complications of these subjects using a longitudinal comparison.

**Objectives:** This is a longitudinal study to evaluate the long-term psychiatric complications and identify potential association factors in a cohort of SARS survivors at 10 years after SARS.

**Method:** The study was a prospective follow-up study on a cohort of SARS survivors who had participated in SARS research in the United Christian Hospital (UCH) post-SARS clinic from September 2005 to March 2006. This group of 90 subjects was shortlisted again in 2012. The subjects were traced and invited to participate in the current study. Psychiatric diagnoses were made according to the Structured Clinical Interview for DSM-IV (SCID). Subjects were also assessed using the Impact of Event Scale-Revised (IES-R), the Hospital Anxiety and Depression Scale (HADS), MOS 36-item Short Form Health Survey (SF-36) and Functional Impairment Checklist (FIC). Independent factors associated with psychiatric disorders were determined by univariate and multivariate analyses.

**Results:** Of the 90 subjects in the cohort, 2 were deceased. Sixty-one of the remaining 88 SARS survivors were successfully recruited into the study, resulting in an overall response rate of 69.3%. Fourteen of these participants (22.9%) had experienced at least one active axis I diagnosis, as determined by the SCID. The most common diagnoses were post-traumatic stress disorder (PTSD) (19.7%), followed by depressive disorders (14.7%) and panic disorder (4.9%). Psychiatric comorbidities were common, with 75% of the SARS survivors who suffered from current PTSD experiencing comorbidities of depressive disorder and/or panic disorder. Higher average intensity of pain was an independent association factor with current PTSD at 10 years post-SARS according to multivariate analysis.

**Conclusion:** This study demonstrated that the psychological impact of SARS was persistent and remained clinically significant among survivors in this long-term follow-up. PTSD remained the most prevalent psychiatric complication, with a high level of other comorbidities of depressive disorder and other anxiety disorders. The estimated prevalence was consistent with previous studies on other disasters. The association between intensities of pain and current PTSD in SARS survivors raised the possibility that the self-perpetuating interplay between PTSD and chronic pain might have sustained the participants' distress and functional disability. These findings may provide further insight into the treatment of mental health morbidities after SARS or other

massive infectious outbreaks. In the case of future infectious outbreaks, longitudinal studies with particular attention on thorough consideration of the use of standardized and reliable instruments and regular time frames for follow-ups would provide invaluable insight into this paucity of literature.