

# Emotions, knowledge, attitudes, and behaviours during the COVID-19 pandemic: a mixed-methods study (abridged secondary publication)

DHK Shum \*, Y Cao, JYM Siu

## KEY MESSAGES

1. The prevalence of potential post-traumatic stress disorder 1 year after the onset of the COVID-19 pandemic was 12.4%.
2. Greater psychological trauma symptoms were associated with a lower education level, an unemployed status, no income, and spending  $\geq 1$  hour per day watching pandemic-related news.
3. Participants' perceptions of, and hesitancy toward, COVID-19 vaccination were affected by various factors across individual (trust, confidence, and social support networks), microsocial (stigma toward healthcare workers), intermediate-social (government), and macrosocial (cultural

stereotypes, civic and collective responsibility, and economic considerations) levels.

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<sup>1</sup> DHK Shum, <sup>2</sup> Y Cao, <sup>3</sup> JYM Siu

<sup>1</sup> Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong SAR, China

<sup>2</sup> Department of Social Work and Social Administration, The University of Hong Kong, Hong Kong SAR, China

<sup>3</sup> Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong SAR, China

\* Principal applicant and corresponding author: david.shum@polyu.edu.hk

## Introduction

Socially disadvantaged groups, such as older adults, are more vulnerable to the impacts of infectious diseases. This study aimed to examine the psychological trauma and behaviours regarding COVID-19 prevention among Hong Kong residents, and to determine sociodemographic factors associated with psychological trauma and health behaviours. Reasons for adopting appropriate preventive measures were explored.

## Methods

For the quantitative study, data were collected between 18 December 2020 and 2 February 2021 through a telephone survey targeting Cantonese-speaking Hong Kong residents aged  $\geq 18$  years. Symptoms of post-traumatic stress disorder (PTSD) were measured using the Revised Impact of Event Scale.<sup>1</sup> Compliance with preventive measures, vaccine acceptance, and willingness to participate in voluntary testing were measured using the Questionnaire of Knowledge, Attitudes and Practice Towards COVID-19.<sup>2</sup> This questionnaire includes 14 items focused on preventive behaviour, rated on a four-point Likert scale from 3 (always) to 0 (never). Questions regarding exposure to the COVID-19-related news were also included.

For the qualitative study, 31 older adults (age  $\geq 65$  years) who had not received the COVID-19 vaccine at the time of the study and could

communicate in Cantonese were recruited using purposive sampling. Additionally, 38 ethnic minority individuals aged  $\geq 18$  years who had resided in Hong Kong prior to January 2020 (the start of the pandemic) were recruited using purposive sampling. They were interviewed to explore the motivations and reasons for their health behaviour decisions.

## Results

For the quantitative study, 3011 individuals completed the survey; 12.4% of them scored  $\geq 33$  on the Revised Impact of Event Scale, suggesting potential PTSD, which was associated with having completed primary education or below, being unemployed, having no personal income, and spending  $\geq 1$  hour per day watching pandemic-related news. The mean score on the Questionnaire of Knowledge, Attitudes and Practice Towards COVID-19 was  $2.42 \pm 0.41$ , suggesting frequent adherence to government health advice. The vaccine acceptance rate was 45.6%. Female, older, and more educated participants showed better compliance with preventive measures.

For the qualitative study, among older adults, barriers to COVID-19 vaccination included a lack of trust in the vaccine, safety concerns, perceptions of limited long-term efficacy, feelings of personal unsuitability for vaccination, peer pressure, and concerns about insufficient support. Vaccine hesitancy was influenced by stigma towards

healthcare workers during the pandemic, a lack of trust in government accountability for adverse events, cultural beliefs, and perceptions of vaccines as toxic or involving viral injection. Participants who were male, older, married, or had lower education levels showed greater acceptance of vaccination and voluntary testing. Perceptions of, and hesitancy toward, vaccination were affected by various factors across individual (trust, confidence, and social support networks), microsocial (stigma toward healthcare workers), intermediate-social (government), and macrosocial (cultural stereotypes, civic and collective responsibility, and economic considerations) levels.

Ethnic minorities were often viewed as a high-risk group and scapegoated for virus transmission, leading to experiences of segregation and seclusion. South Asian participants, in particular, reported such experiences, which were rooted in pre-existing stereotypes and stigmatisation of ethnic minorities. The Government's focus on ethnic identity when reporting COVID-19 cases contributed to this seclusion. Consequently, ethnic minorities had difficulty accessing infection control information, and many experienced job loss. The pandemic acted as a catalyst, amplifying existing issues of segregation and seclusion among ethnic minorities in Hong Kong.

## Discussion

This study found that 12.4% of participants exhibited symptoms indicative of potential PTSD, probably due to uncertainty and repeated outbreaks. Unemployment and lack of personal income were associated with a higher likelihood of PTSD-like symptoms. Spending more time watching pandemic-related news was associated with more severe PTSD symptoms and also with increased compliance with preventive measures. Personal experiences and social networks influenced vaccination barriers and incentives. Trust and confidence in the vaccine were key determinants of motivation for vaccination. Stigma towards healthcare workers during the pandemic and the lack of trust in government impacted vaccination decisions at the microsocial and intermediate-social levels. Cultural perceptions of vaccines contributed to hesitancy at the macrosocial level.

Mental health support for lower-income individuals is required, in addition to financial assistance. Accurate health messages should be disseminated to the public to encourage adherence to preventive measures. The public should be advised to avoid repetitive exposure to identical COVID-19-related news, with the goal of protecting mental health. The public should be reminded to verify information before relying on or sharing it with family and friends. Social support should be prioritised

when promoting COVID-19 vaccination among older adults. Strengthening social support networks or offering targeted assistance after vaccination may reduce hesitancy and increase motivation to receive the vaccine among older adults.

## Conclusions

Greater psychological trauma symptoms were associated with a lower education level, an unemployed status, no income, and spending  $\geq 1$  hour per day watching pandemic-related news. Participants' perceptions of, and hesitancy toward, COVID-19 vaccination were affected by various factors across individual, microsocial, intermediate-social, and macrosocial levels. Socially disadvantaged groups have difficulty adopting preventive health behaviours, due to individual perceptions, economic constraints, and social isolation. Participants reported relying on non-governmental organisations for support during the pandemic. This highlights the importance of collaboration between government agencies and community organisations to promote the well-being of socially disadvantaged groups during future public health crises.

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## Disclosure

The results of this research have been previously published in:

1. Cao Y, Siu JY, Shek DTL, Shum DHK. COVID-19 one year on: identification of at-risk groups for psychological trauma and poor health-protective behaviour using a telephone survey. *BMC Psychiatry* 2022;22:252.
2. Siu JY, Cao Y, Shum DHK. Perceptions of and hesitancy toward COVID-19 vaccination in older Chinese adults in Hong Kong: a qualitative study. *BMC Geriatr* 2022;22:288.
3. Cao Y, Siu JY, Choi KS, Ho NC, Wong KC, Shum DHK. Using knowledge of, attitude toward, and daily preventive practices for COVID-19 to predict the level of post-traumatic stress and vaccine acceptance among adults in Hong Kong. *Front Psychol* 2022;13:1103903.
4. Siu JY, Cao Y, Shum DHK. Stigma and health inequality experienced by ethnic minorities during the COVID-19 pandemic in a Chinese community: an implication to health policymakers. *Front Public Health* 2023;11:1184209.

## References

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2. Zhong BL, Luo W, Li HM, et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci* 2020;16:1745-52.