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Associations of risk perception of COVID-19 with emotion and mental health during the pandemic
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Abstract

Background: Although there are increasing concerns on mental health consequences of the COVID-19 pandemic, no large-scale population-based studies have examined the associations of risk perception of COVID-19 with emotion and subsequent mental health. **Methods:** This study analysed cross-sectional and longitudinal data from the PsyCorona Survey that included 54,845 participants from 112 countries, of which 23,278 participants are representative samples of 24 countries in terms of gender and age. Specification curve analysis (SCA) was used to examine associations of risk perception of COVID-19 with emotion and self-rated mental health. This robust method considers all reasonable model specifications to avoid subjective analytical decisions while accounting for multiple testing. **Results:** All 162 multilevel linear regressions in the SCA indicated that higher risk perception of COVID-19 was significantly associated with less positive or more negative emotions (median standardised $\beta = -0.171$, median SE=0.004, $P < 0.001$). Specifically, regressions involving economic risk perception and negative emotions revealed stronger associations. Moreover, risk perception at baseline survey was inversely associated with subsequent mental health (standardised $\beta = -0.214$, SE=0.029, $P < 0.001$). We further used SCA to explore whether this inverse association was mediated by emotional distress. Among the 54 multilevel linear regressions of mental health on risk perception and emotion, 42 models showed a strong mediation effect, where no significant direct effect of risk perception was found after controlling for emotion ($P > 0.05$). **Limitations:** Reliance on self-reported data. **Conclusions:** Risk perception of COVID-19 was associated with emotion and ultimately mental health. Interventions on reducing excessive risk perception and managing emotional distress could promote mental health. © 2021 Elsevier B.V.

Author Keywords

COVID-19; Emotion; Mental health; Risk perception

Index Keywords

adult, aged, Article, attitude to illness, controlled study, coronavirus disease 2019, cross-sectional study, disease association, emotion, emotional stress, female, follow up, human, human tissue, longitudinal study, major clinical study, male, mental health, pandemic, priority journal, response variable, risk management, sensitivity analysis, emotion, mental health, perception; COVID-19, Cross-Sectional Studies, Emotions, Humans, Mental Health, Pandemics, Perception, SARS-CoV-2

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