



Risk perception research informing recommendations for COVID-19 preventative health measures and public messaging

Australasian Psychiatry
2022, Vol. 30(5) 601–603
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DOI: 10.1177/10398562221117060
journals.sagepub.com/home/apy


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Abstract

Objective: To provide a commentary on evidence-based recommendations for COVID-19 pandemic risk communication for more effective public health measures.

Method: We apply the principles of risk communication to address key issues in the COVID-19 pandemic.

Results: Risk perception and communication research usefully informs preventative health education and public messaging during disease outbreaks such as the current COVID-19 pandemic, especially for those with severe mental illness.

Conclusions: Key recommendations for pandemic public health risk communication are: clear, timely and balanced information from a reputable source; accurate and non-sensationalised depiction of infection, morbidity and mortality rates; awareness of fear as a powerful motivator for adoption of protective measures against the causative virus; promotion of self-efficacy and sense of control in terms of mitigating the health threats associated with a pandemic; correction of mis- and disinformation regarding the pandemic and associated protective measures; and messaging may need to be modified for people with a mental illness to avoid exacerbations of depressive and anxiety symptoms.

Keywords: risk perception, risk communication, pandemic influenza, COVID-19

“Awake, awake! Ring the alarum-bell!” William Shakespeare, Macbeth

communication for clinicians, health administrators and state and national governments.

Burgeoning research has demonstrated a clear link between how people perceive threats and how they respond to them.¹ Understanding risk perception and health behaviour may assist in planning and implementing risk communication during viral pandemics, including the current COVID-19 pandemic caused by the SARS-CoV-2 virus. People with a severe mental illness, such as, schizophrenia, are a particularly vulnerable group (due to increased medical comorbidities and related risks), necessitating a more assertive public health approach.^{2,3} We recently published a commentary for psychiatrists and trainees on the clinical relevance of risk perception for health behaviours and outcomes.⁴ We provide a further commentary that provides practical advice on applying these principles to key issues in COVID-19 risk

Risk perception and pandemics

At the time of writing (mid-April 2022), there are over 50,000 new cases of COVID-19 a day in Australia, including over 18,000 new daily cases in NSW alone.⁵ Although more than 95% of Australians (aged 16+) have received two vaccinations, only 68.8% have had a booster.⁶ Vaccine hesitancy contributes to economic and social disruption by

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slowing a community's ability to mitigate the pandemic trajectory.⁷

An understanding of risk perception may be helpful for clinicians, health administrators and governments in enhancing vaccination uptake rates, and dealing with the anxiety and sense of despair that many people are experiencing, associated with the pandemic. However, as we outline below, there remains a lack of contemporaneous research on COVID-19 pandemic risk perception, presumably because of the focus on direct prevention by vaccination. Fortunately, there is relevant research to inform public health practice drawn from previous pandemics, as well as from the AIDS epidemic.

Although the causative pathogens for the 2009 Swine Influenza pandemic (H1N109) and the current COVID-19 (SARS-Cov-2) were/are both highly infectious, the former was hypovirulent, with only 191 deaths in Australia during 2009 (e.g., compared with 1500–3000 deaths per year from seasonal influenza in Australia).⁸ In contrast, the COVID-19 delta variant has been considerably more lethal with a case fatality rate of 3.4%.⁹

Contemporaneous research is needed into how people perceive and act upon the COVID-19 pandemic risk, although there are likely to be parallels with our findings regarding the Swine Influenza pandemic in 2009. The positive predictors for perceived overall risk to self during the Swine Influenza pandemic for people with schizophrenia were: perceived *likelihood* of oneself contracting the virus, the perceived *seriousness* of contracting Swine Influenza and affective forecast of fear (a self-prediction that one would feel substantively afraid if they were to contract Swine Influenza).¹⁰ For people attending general practices without schizophrenia (reflecting a more general population), perceived likelihood of contracting Swine Influenza and perceived likelihood of death as an outcome were predictors of perceived overall risk to self from Swine Influenza. For people with schizophrenia, predictors of willingness to take up protective measures included: perceived overall risk to self from Swine Influenza, perceived efficacy of the protective action and affective forecast of fear (self-prediction of feeling afraid in the event of contracting Swine Influenza).¹¹ For people in the general population, predictors of willingness to take up protective measures included: perceived overall risk to self from Swine Influenza, perceived effectiveness and perceived adverse effects; self-efficacy; and affective forecast of fear.

Some or all of these factors may also be predictors of willingness to adopt recommended public health measures during the current COVID-19 pandemic. Perhaps the recent improvement in vaccination rates may relate to fear of contracting SARS-CoV-2 and associated consequences, including death. Applying an understanding of risk perception may be helpful for clinicians, health administrators and governments to more effectively shape messaging to enhance uptake of booster vaccinations and dealing with the anxiety and sense of despair that many people have been experiencing, associated with the pandemic.

Recommendations for pandemic information communication based on risk perception and related research

Notwithstanding the limited information to date on specific COVID-19 pandemic risk perception, we offer recommendations based upon the existing evidence-base on health risk perception and vaccine hesitancy.^{10–14}

1. There needs to be clear, timely and accurate messaging from a reputable source of information, such as the government, while realising that some marginalised groups and those with experience of oppressive or corrupt government may be suspicious of authority.^{12,14,15} Communication of the best available health information to the public is a core component of the Australian Health Management Plan for Pandemic Influenza (AHMPPI). This information should clearly articulate the risks and benefits of available protective actions, including vaccinations.
2. Accurate depiction of infection, morbidity and mortality rates is essential to inform the perceived likelihood of contracting, suffering and dying from SARS-CoV-2.¹⁴ Factual knowledge of an illness has been shown to be a predictor of risk perception of health threats.¹⁶
3. Fear is an affect which is a powerful motivator for uptake of protective measures. Although a nuanced approach will be required it is appropriate to instil some degree of fear to encourage action on the risk – this was seen to be effective in addressing the AIDS epidemic, when handled sensitively and without stigma.¹⁰ Research showed that people with schizophrenia were more than 15 times more likely to be willing to adopt handwashing as a protective measure if they predicted they would be afraid if they contracted the pandemic influenza.¹⁰
4. Self-efficacy is also another important factor, and messaging needs to include information that effective measures can be taken by individuals to reduce or mitigate their risk of contracting SARS-CoV-2.^{11,14} This can be based on modelling of protective behaviour (masks, handwashing, physical distancing) by trusted information sources, including GPs, psychiatrists, other medical specialists and allied health professionals.¹² Having some sense of control over a health threat is a key factor which influences risk perception.¹⁷
5. Correction of misinformation and disinformation is necessary, as these distorted messages are likely to skew an individual's risk perceptions. There are examples of initiatives from governments as well as the WHO to correct mis- or disinformation.^{13,14,15} Our own research found that in people with schizophrenia the misconception that the Fluvax may cause influenza was a positive predictor of reduced

intention to receive a vaccination during the Swine Influenza pandemic.⁸

6. The communication of risk needs to be balanced against the development of anxiety, traumatic or depressive symptoms from excessive, media (especially social media) exposure to pandemic information, with a recommendation to limit media consumption to reputable sources (as in 1 above), and less than an hour a day.¹⁵
7. For people with serious mental illnesses, messaging for risk perception and protective action will need to be modified to address specific concerns, such as fear of loneliness from physical distancing during lockdowns expressed by persons with schizophrenia,¹¹ as well as for people suffering from anxiety (helping outline risk in context) and depression (emphasising self-efficacy).
8. Messaging encouraging the exploration of knowledge of the disease *experience* is recommended as this influences risk perception, and therefore, willingness to adopt protective measures.¹⁸ Knowledge of the disease experience for COVID-19 may relate to a previous COVID-19 infection by a patient or to a close relative or friend having contracted SARS-CoV-2, perhaps with a previously more virulent strain such as the delta variant.

Risk perception and related research usefully informs more effective communication and encouragement of individual agency in public health measures to address the COVID-19 pandemic for the general population and those with a mental illness. However, further research is needed regarding risk perceptions and decision-making in relation to pandemic health risks, perhaps especially in relation to how theory-related heuristics may affect decisions, and how an individual's decision-making can be improved.

As we write, the COVID-19 pandemic persists. Public health measures remain relevant to reduce the risk of infection and its complications, especially for vulnerable populations, such as those with a severe mental illness. Clinicians, including psychiatrists and trainees, as well as clinical administrators and government officials, are encouraged to apply evidence-based principles of risk communication to provide effective advice to patients and the community on reducing pandemic health risks. *Alarum bells need to ring true to avert a deadly toll.*

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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