Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Public Health 197 (2021) e4–e5

Contents lists available at ScienceDirect

Public Health

journal homepage: www.elsevier.com/locate/puhe

Letter to the Editor

Behavioural change theories: a necessity for managing COVID-19

The World Health Organization (WHO) announced that the novel coronavirus disease 2019 (COVID-19) had become a pandemic on March 11, 2020. Countries were called upon to take immediate actions to curb the rapid spread of COVID-19. Despite this, to date (May 10, 2020), more than four million people have been infected and more than 230,000 have died around the world, according to official reports.[1]

Epidemiologists designed models to predict the course of disease and several scenarios were developed. According to these scenarios, countries chose different policies to control COVID-19. However, in these epidemiological models, complete compliance/adherence to introduced measures was assumed and behaviour was not incorporated into any formula or calculation. The asymptomatic nature of COVID-19 for a large section of the population is also an important factor to consider when assessing the effectiveness of scenario-related measures. Diagnosing and isolating infected people may not always be effective or sufficient. In addition, it is also important to consider the rapid and continuous development of the new coronavirus. Despite the implementation of severe restrictions around the world, the pandemic is not over, which could be a result of the lack of adherence to preventive recommendations.[2]

Despite repeated announcements to stay at home and widespread publicity to maintain social distance, some individuals do not follow these recommendations. This could be a result of a wide range of psychological responses, including confusion, fear, anger, sadness, numbness, anxiety and insomnia, as a result of movement limitations, such as quarantine and social distancing. Disruption to normal life and reduced social and physical contact with others can lead to boredom, frustration and feelings of isolation, which can be exacerbated by the inability to participate in routine daily activities, such as shopping or participating in social relationships and ceremonies.[3,4]

Concerns within society have also intensified during the pandemic as a result of the large amount of incorrect information that has been disseminated via social media. Evidence shows a high prevalence of misinformation related to COVID-19; this misinformation has become an additional crisis of the COVID-19 pandemic. Unfortunately, the popularity of unconfirmed information sources is greater than that of the WHO and the US Centers for Disease Control, and this has led to disastrous consequences, such as the deaths of several hundred people due to alcohol poisoning, which they had been lead to believe could prevent COVID-19.[5]

In this context, it is essential for health promotion professionals to advocate behaviour change interventions and to provide advice to policymakers. The focus of health promotion should be encouraging participation and empowering self-care within the population. Several studies have identified behaviour change as a priority to ensure proper understanding of the disease and to educate the population about the need for quarantine. Understanding the risks will impact the protective behaviours of an individual; however, perceived uncertainty and exaggeration are associated with a reduced likelihood of adherence to recommended behaviours.[1]

At the start of the COVID-19 outbreak, attempts were made to prevent the spread of the disease by providing basic instructions, such as correct hand washing. However, some individuals did not follow these instructions because behaviour is not entirely influenced by knowledge. Additional factors such as perception of the situation and threat of disease have an impact on behaviour. To follow the recommended behaviours, it is necessary for people to consider themselves susceptible to infection (perceived sensitivity) and to understand the complications and risks of the disease severely (perceived severity). Combined perceived sensitivity and perceived severity lead to an understanding that the threat of disease is serious. And, when the threat of disease is considered serious, there is an incentive to focus on the issue and comply with recommended behaviours. Self-efficacy is another concept presented by Bandura; if individuals do not have an understanding of the effectiveness of their individual behaviour change, they will not be able to control the risk or comply with protective behaviours, despite perceiving the disease as a serious threat.[6]

Fear and anxiety are also strong predictors of behaviour associated with COVID-19 and should be incorporated in health promotion theories and behaviour change models. This will lead to increased effectiveness of behaviour change training and influence guidelines and recommendations in societies.

Studies have identified threats, self-efficacy, adaptability, awareness, fear and anxiety, health literacy and information bias, subjective norms, empowerment and enabling factors as influencing factors of preventive behaviour.[7]

In summary, the following recommendations are suggested to help manage the COVID-19 pandemic crisis:

1. In addition to restrictive policies for the community and patients, theoretical interventions to promote adherence to protective behaviours should be introduced.
2. Health messages should be designed using the constructs of behaviour change models and theories such as the health belief model, transtheoretical model, protection motivation theory, theory of planned behaviour and social cognitive theory.
3. In training programmes provided to the public, efforts should be made to deal with incorrect messages and inappropriate interpretations of social media messages.
4. Health messages designed in accordance with the structures of perceived sensitivity and perceived severity are required to help people understand the disease threat. Proper

https://doi.org/10.1016/j.puhe.2020.10.010

understanding of the threat of COVID-19 can help individuals control their exaggerated fear and anxiety.
5. The concept of subjective norms could be useful when creating social norms for maximum adherence of preventive behaviours.
6. Educational interventions should focus on helping the population to understand the benefits of compliance with preventive behaviours and the harms of unhealthy behaviours.
7. To improve the imposed lifestyle as a result of quarantine and social distancing, theoretical-based educational programmes should be designed and implemented in accordance with the factors impacting behaviour change. During a pandemic, changes in diet, physical activity, stress, smoking and alcohol consumption can have irreversible physical effects on the health of an individual.
8. Increasing the perceived control over behaviour and health of individuals within society should be considered.
9. Factors enabling protective behaviours, such as remote working policies and the provision of protective equipment, should be encouraged and existing barriers should be reduced.
10. And, finally, both healthy and infected individuals should be reminded of their responsibilities to ensure successful intervention programmes.

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20 September 2020
Available online 20 October 2020