Short Communication

The health belief model: How public health can address the misinformation crisis beyond COVID-19

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ABSTRACT

Objectives: This paper proposes an intervention into health misinformation that relies upon the health belief model as a means to bridge the risks associated with health misinformation and the impact on individual health, beyond the current recommendations for fact checking and information literacy.
Study design: This is a short theoretical paper.
Methods: N/A.
Results: N/A.
Conclusions: Misinformation researchers and public health practitioners and communicators can benefit using the infrastructures afforded by public health offices to mobilize the health belief model as a site for misinformation education.

It is widely acknowledged that COVID-19 misinformation is a major public health issue, one which complicates societal efforts intended to make sure that people access the most accurate and relevant information about how to prevent and respond to the disease [1]. But health misinformation more generally has long been a public health issue, even before the pandemic and the infodemic it has precipitated, given, for example, the proliferation of vaccine misinformation, false disease preventions, bogus wellness products, and conspiracy theories around pharmaceutical companies and illnesses. Moreover, misinformation works in broader ways to threaten public health through production of anti-science sentiment and skepticism in experts, and erosion of trust in media and democratic processes, all of which undermine government efforts to manage public health [2]. Grappling with COVID-19 misinformation therefore must simultaneously address not only misinformation tied specifically to COVID-19, but also the broader influence of general health misinformation. We propose that one strategy for doing so is through raising awareness of the relationship between health, information, and the digital landscapes the public interacts with through the lens of the health belief model (HBM). This approach can help people understand the risks and potential health impacts associated with all

kinds of health misinformation and also provide a valuable framework that misinformation researchers, health practitioners, and health educators/communicators can use to collaboratively address misinformation.

1. The health belief model: shifting perceptions

The HBM (Fig. 1) provides a framework for understanding how people negotiate and respond to perceived risks to their health. It relies upon an understanding of the relationship between motivation and health behaviours. The overall outcome with the HBM, ideally, is to develop and provide community-based support from health practitioners to positively affect health behaviours and therefore health outcomes. At the core of the HBM is the recognition that health-related behavior is guided by (a) people's desire to avoid illness or desire to get well, and (b) their belief that a specific action will positively impact an illness. There are six elements to the HBM including a person's perception of susceptibility to an illness or disease before they will make choices to address such risks; belief in severity of risk; belief that taking action would reduce severity or susceptibility and therefore have

benefits; belief in capacity to perform the necessary skills or steps (e.g., to quit smoking); belief that the benefits of such actions outweigh the costs (e.g., that nicotine withdrawal is better than lung cancer); and finally, exposure to prompts for action or behaviour change, such as through ads, mobile phone apps, or educational materials online or in clinicians' offices [3].

While this model can be readily applied to COVID-19 misinformation specifically (e.g., that one may have to believe they are at risk of severe illness or spreading severe illness in order to refrain from activities that would spread the illness), it's possible to use it to frame and approach health misinformation generally by more effectively exposing the connections between risks of health misinformation, susceptibility to these risks, and self-efficacy, i.e., the capacity for an individual to make changes with respect to relevant factors like exposure and common misinformation warning signs.
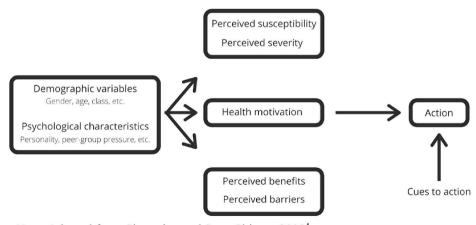
2. The HBM and misinformation

To effectively connect the HBM to health misinformation and apply it to public health management is to first make abundantly clear that health misinformation is itself a threat to the general public, and then to address this threat in a way that parallels previous research and public health interventions that have used the HBM. Consider intentions to vaccinate and the impacts of misinformation. Since its development in the 1950s, the HBM has been widely applied to encouraging vaccination [5]. Whether applied to childhood vaccination, caregiver vaccination, or vaccination during the H1N1 pandemic, studies consistently demonstrate that intentions to vaccinate are positively associated with high perceptions of disease severity, personal susceptibility, vaccine benefit, and self-efficacy, and negatively associated with low perceptions of the same. If perceptions of an illness like COVID-19's severity and susceptibility, and the benefits and accessibility of vaccines are influential upon vaccination intentions, then misinformation that skews these perceptions can influence vaccine hesitancy in the wrong direction [6]. Therefore, intervening in exposure to and the effects of misinformation becomes one strategy in decreasing vaccine hesitancy.

With respect to general health misinformation, a similar approach can be taken in which promotion of an understanding of the risk factors of exposure (e.g., particular social media-use habits and networks) to general health misinformation can begin to prevent the harms associated with health misinformation. In other words, the HBM can be used to help people understand the dangers of exposure to health misinformation. This approach is not dissimilar in fact to how they might learn and think about exposure to sexually transmitted infection and pregnancy, for example, and therefore potentially may reduce the effect of

misinformation itself [7].

In short, the HBM may offer an innovative means of engaging the large-scale cultural problem of misinformation. Solutions to misinformation have often centred strategies like fact-checking and information literacy [8], even as a chorus of critiques in recent years has suggested that such strategies themselves carry risks and are only a partial way forward [9]. In part this is because exposure to misinformation has been demonstrated to have lingering effects, even after misinformation has been corrected [10]. But by applying the HBM to health misinformation, rather than solely relying upon a set of strategies that intervene in responses to misinformation post-exposure, researchers, public health workers, educators, and health communicators create an opportunity for people to more critically and deeply understand the effects of information in a digital context on the way they live their lives, and thereby, with support, begin to make different choices about risky forms of exposure. In other words, the HBM may afford a way to begin to think of health misinformation as much as an addressable problem of exposure as a question of information and digital literacy.

3. Implementation

Addressing misinformation must occur in numerous overlapping contexts, online and offline, in private and public gatherings, and in professional and personal settings. While online contexts and social media have been significant areas of investigation and concern, and are indeed areas where the HBM could be mobilised, there are numerous other locations that may to which the HBM could be applied to address the risks of misinformation. Importantly, in many places there is an infrastructure in place to begin translating these risks through the HBM: public health offices at times when people are already engaged with public health efforts. For instance, in many places, the early months and years of a child's life are marked by regular appointments with public health practitioners whose role it is to not just support the child's healthy development through things like vaccines, but also to ascertain the health and well-being of caregivers. This is the time, for example, when new mothers are assessed for symptoms of postpartum depression in order to determine if they need additional support. In the same way mothers undergo regular mental health risk assessments, risk assessment and education could be done for misinformation using the HBM as a guide. In other words, there are possibilities already built within our public health systems to direct resources (e.g., time with practitioners, research funding), towards the problem of misinformation vis-a-vis the HBM. Possibilities include working with any one of the constructs of the model in order to reframe misinformation for the public, such as helping people better understand the risk misinformation represents to

Note: Adapted from Champion and Sugg Skinner 2008[4]

Fig. 1. The Health Belief model.
Adapted from Champion and Sugg Skinner 2008 [4].

themselves and their family, or better, by using multiple constructs simultaneously to not just shift their perceptions of the risk of misinformation, but to also support the means by which people come to understand the benefits of avoiding and understanding such risks.

4. Conclusions

In the context of the infodemic it is easy and understandable to focus on the specifics of COVID-19 misinformation, but given the impact that misinformation has on society at large, a broader focus on addressing misinformation in general as a health issue is urgently required. The HBM enables this approach, and while it does not mean we should cast aside our focus on COVID-19 misinformation, or the strategies to address misinformation like improving digital literacy and increasing fact-checking capacities, supporting and facilitating people to think more critically about the relationship between information and their health is one potentially powerful way of intervening in and reshaping cultural norms around how we consume information and how we understand its impacts on our lives.

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Ethics

This paper did not require ethical approval as it is a theoretical paper examining potential methods for addressing health misinformation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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