

# COPING WITH THE THREAT OF INFLUENZA A/H1N1

## THE IMPORTANCE OF EMPATHY IN VACCINATION UPTAKE AND TAKING HEALTH PRECAUTIONS



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### ABSTRACT

In previous research on severe acute respiratory syndrome (SARS) and West Nile virus, empathic responding has been associated with higher perceived threat during a pandemic as well as the implementation of recommended health precautions. The goal of the current study was to investigate the role of empathic responding outside of a Western context by examining the endorsement of specific health precautions during the 2009-2010 H1N1 pandemic in India. Responses to questions about CDC recommended health precautions, perceived threat, and empathic responding were collected from 100 individuals living in the city of Dharwad in India's Karnataka state. Analyses revealed that individuals who responded to the threat of H1N1 with greater empathy were more likely to endorse recommended health behaviours (i.e., vaccination, handwashing, and disinfectant use). These effects remained when controlling for gender, perceived threat of H1N1, and other disease-relevant coping responses of denial and wishful thinking. In addition, a synergistic effect of empathic responding and perceived threat emerged for vaccination and disinfectant use. When empathic responding was high, increased threat perception was associated with an increased likelihood of endorsing these key health precautions. When empathy was low, however, perceived threat displayed no significant effect. Findings confirm the important role of empathy in coping with the threat of infectious disease. In light of previous research suggesting a similar pattern, the potential universal nature of this model and its implications for practice and policy should be considered.

### METHODS & ANALYSES

This study was run in the city of Dharwad in India's Karnataka state between the months of February and March, 2010, during the height of the global H1N1 pandemic.

**Participants:** 100 English-speaking university students (40 males and 60 females) enrolled at Karnatak University with a mean age of 22.5 years (SD = 1.70, range = 20-28 years). The large majority of participants were of Hindu faith (93.1%).

**Methodology:** In addition to gathering demographic information (sex, age, and religion), participants responded to questionnaires assessing the following variables:

- **Health Precautions:** Intention to engage in CDC-recommended precautions.
- **Perceived Threat of H1N1:** Degree of personal concern over infection of H1N1.
- **Empathic Responding:** Perspective taking and helping others.
- **Other Coping Responses:** Wishful thinking & denial (Ways of Coping).

**Analyses:** A series of hierarchical logistic regressions were conducted in order to determine whether perceived threat of H1N1, empathic responding, or the interaction between the two were significant predictors of endorsing recommended health precautions. In all models, gender and perceived threat were entered in Step 1, followed by empathic responding, wishful thinking, and denial in Step 2, and finally the interaction between empathic responding and perceived threat in Step 3.

### INTENTION TO GET VACCINATED

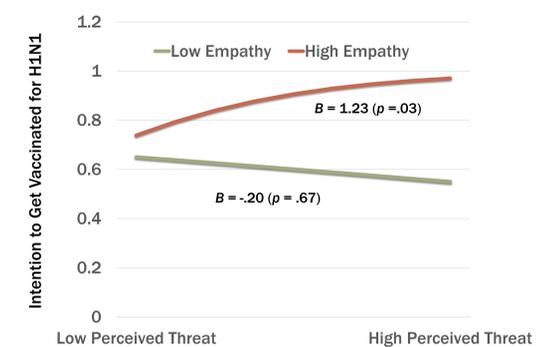
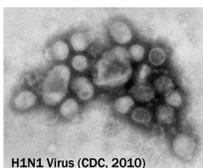


Figure 2. Interaction between perceived level of threat and empathic responding (moderator) predicting intention to get vaccinated for H1N1.

### THE 2009 H1N1 PANDEMIC



In 2009, the world witnessed the emergence of its first influenza pandemic of the 21st century – influenza A/H1N1. What began as a series of small outbreaks of flu-like illness in February grew to nearly 1000 cases and 59 deaths in Mexico in just 2 months. It was soon verified that the illness was a new strain of the influenza A virus, subtype H1N1. Genetic analyses indicated pig origin. By the end of April, a public health emergency of international concern was declared, while new cases were confirmed around the world (WHO, 2011). Despite early efforts, the virus continued to spread, and on June 11, 2009, the WHO Emergency Committee raised the alert level to **pandemic**. Over the course of the following year, H1N1 was reported in 214+ countries, with approx. 18,500 confirmed deaths and up to 200 million projected cases worldwide (WHO, 2011). Today, influenza A/H1N1 remains a part of the annual seasonal flu medley (CDC, 2014).

### THE ROLE OF EMPATHY

As concluded by the WHO's (2011) post-pandemic report on the 2009 pandemic, an improved understanding of personal protective measures such as handwashing is needed in order to control flu pandemics. Previous research on severe acute respiratory syndrome (SARS) and West Nile virus has underscored the importance of empathic responding in implementing health precautions during the threat of infectious disease (Lee-Baggle, DeLongis, Voorhoeve, & Greenglass, 2004; Puterman, DeLongis, Lee-Baggle, & Greenglass, 2009). Additionally, there is a need to raise perceived threat in order to motivate people to engage in precautionary behaviour. Within the context of the 2009-2010 H1N1 pandemic, we examined the interaction between empathic responding and perceived threat in predicting the endorsement of three key health behaviours recommended by the CDC: (1) getting vaccinated for H1N1, (2) increased handwashing, and (3) using disinfectants (CDC, 2010).

A second goal of this study was to examine whether previous findings regarding empathy could be extended outside a Western context; in this case, to India. The first case of H1N1 in India was reported on May 13, 2009, shortly after the outbreaks in Mexico and the U.S. By January 2010, India had confirmed over 27,000 cases of H1N1 and 1035 related deaths (Government of India, 2010).

### RESULTS: LOGISTIC REGRESSION

Modeling CDC recommended health precautions.

**STEP 1:** Perceived threat was associated with an increased probability of endorsing each precaution in Step 1. This main effect was not maintained in subsequent steps.

**STEP 2:** The addition of coping responses in Step 2 significantly improved models of handwashing and disinfectant use only,  $\chi^2s(3) = 7.96 (p < .05)$  and  $22.63 (p < .001)$ , respectively. Here, empathic responding was associated with an increased likelihood of endorsing handwashing and disinfectant use.

**STEP 3:** In the third step, the main effect of empathic responding significantly predicted endorsement of all three health precautions. The inclusion of the interaction between empathic responding and perceived threat contributed to significant improvement in models of vaccination and disinfectant use only,  $\chi^2s(1) = 4.86 (p < .01)$  and  $36.81 (p < .001)$ , respectively. See Figures 1 & 2 for graphs of these interactions.

### INTENTION TO USE DISINFECTANTS

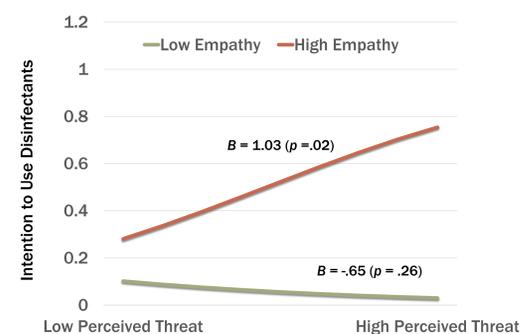


Figure 1. Interaction between perceived level of threat and empathic responding (moderator) predicting intention to use disinfectants in response to H1N1 threat.

### CONCLUSIONS & DISCUSSION

Supporting our first hypothesis, higher perceived threat of H1N1 was associated with an increased likelihood of endorsing all three primary CDC recommended health precautions (CDC, 2010). This is in line with the health belief model and further underscores the importance of perceived threat in taking health precautions during a pandemic. In support of our second hypothesis, and replicating findings by Lee-Baggle et al. (2004) and Puterman et al. (2009), empathic responding was associated with a greater likelihood of getting vaccinated for H1N1, handwashing, and using disinfectants. These main effects were evident when controlling for perceived threat and other key coping responses of wishful thinking and denial.

In examining the interaction between perceived threat and empathic responding, it was found that threat perception was associated with vaccination intention and disinfectant use only when empathy was high. Perceived threat may be a necessary, but not sufficient, prerequisite to engaging in health precautions during disease outbreak.

Although health agencies often focus on raising threat level during a pandemic (WHO, 2011), our findings underscore the importance of considering the interplay between threat and empathy. Encouraging people to consider the impact of infectious disease on others (family, friends, etc.) may increase the likelihood of those people getting vaccinated. The additional benefit of empathic responding is its potential capacity to dampen the societal costs of disease threat (e.g., discrimination, economic costs) via prosocial behaviour.

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