

# **Psychometric validation of a questionnaire for assessing paranormal health beliefs and statistically modelling the effects of the construct on health outcomes longitudinally**

## **ABSTRACT:**

### **Background**

Paranormal health beliefs (PHBs) denote the inclination to endorse illusory supernatural notions about well-being/treatment. Researchers in Italy developed the Paranormal Health Beliefs Scale (PHBS). However, the construct and PHBS properties have remained under-researched.

### **Aims**

To psychometrically validate the PHBS with an English-speaking sample. In addition, to develop and test a model assessing how PHBs relate to health-related outcomes over time.

### **Method**

This project comprised four published studies. Study 1 ( $N = 14$ ) used cognitive interviewing to evaluate PHBS comprehension and item applicability. Study 2 ( $N = 850$ ) assessed the modified PHBS using exploratory factor (EFA) and Rasch analysis. Study 3 ( $N = 2,138$ ) extended latent structure analysis by employing exploratory structural equation modelling (ESEM) and multidimensional Rasch analysis. Study 4 ( $N = 1,507$ ) utilised structural equation modelling (SEM) to examine the influence of illusory health beliefs on health behaviours/outcomes over time.

### **Results**

Issues with culturally particular content and phraseology of the PHBS existed. Hence, a modified PHBS was produced (renamed the Illusory Health Beliefs Scale, IHBS). EFA revealed six underpinning dimensions (verified in ESEM): Religious Belief, Superstition, Precognitive Belief, Health Myths, Skepticism, and Health Pseudoscience. Rasch analyses demonstrated good item/person fit and item/person reliability. SEM revealed that illusory health beliefs aligned with distrust of conventional medicine and the pursuit of unvalidated therapies.

### **Conclusions**

The project established a more effective paranormal health beliefs measure for English-speaking samples and revealed how PHBs impact health-related outcomes over time.

### **Keywords**

Cognitive interviewing, Illusory thinking, Paranormal health beliefs, Paranormal Health Beliefs Scale, Questionnaire scrutiny

### **Published Work:**

Denovan, A., Dagnall, N., & Drinkwater, K. G. (2024). The paranormal health beliefs scale: an evaluation using cognitive interviewing. *Frontiers in Psychology*, *15*, 1306372.

Denovan, A., Dagnall, N., & Drinkwater, K. G. (2025). The Illusory Health Beliefs Scale: Validation using exploratory structural equation modeling and multidimensional Rasch analysis. *Frontiers in Psychology*, *16*, 1491759.

Denovan, A., Dagnall, N., & Drinkwater, K. G. (2025). The relationship between illusory health beliefs, recommended health behaviours, and complementary and alternative medicine: An investigation across multiple time points. *Behavioral Sciences*, *15*(5), 614.

Denovan, A., Dagnall, N., Drinkwater, K. G., & Escolà-Gascón, Á. (2024). The Illusory Health Beliefs Scale: Preliminary validation using exploratory factor and Rasch analysis. *Frontiers in Psychology*, *15*, 1408734. <https://doi.org/10.3389/fpsyg.2024.1408734>

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