Increasing public awareness of Ebola virus disease symptoms using a pictogram-based poster

Dear Editor:

Public health practices have increasingly used risk communication to inform populations or individuals of industrial, medical, environmental, societal or catastrophic risks.[1] In order to minimize and/or manage negative health consequences, recipients of risk communication must: a) receive the information, b) understand it, c) understand whether it is applicable, d) know when they are at risk, e) decide whether action is required, f) understand which actions need to be taken, and g) be able to take action.[2] Unfortunately, with 55% of the Canadian population not possessing the literacy skills to comprehend and properly manage their health, the need arises to create easy-to-read materials supported by pictograms.[3]

It has been demonstrated that individuals with low literacy tend to think in more concrete terms, have less vocabulary, and are less able to interpret nuanced expressions.[4-6] Linking pictures to written or spoken text markedly increases attention to instructions and health education.[7] To be effective, pictograms need to be methodically designed and undergo a validation process.

Currently, the largest outbreak to date of Ebola virus disease (EVD), a hemorrhagic fever, is taking place in Africa.[8] Thus it is important for recent international travellers who become ill with the initial symptoms of fever, sore throat, severe headache, muscle pain, weakness, vomiting and diarrhea to be quickly diagnosed and isolated to prevent further spread.[8] This requires promoting education and awareness of Ebola to the public.

Consequently, a pictogram-based poster (Figure 1) aimed at increasing public awareness of EVD symptoms was created and validated. Pictograms were designed by a graphic designer and the validation process occurred in waiting rooms at the Children's Hospital of Eastern Ontario. The validation process was completed using a guessability test. Patients 10-17 years of age, or the caregivers of patients 9 and younger, were asked the significance of each pictogram and the poster's overall message (devoid of text). Their answers were written verbatim and rated as correct, partially correct or incorrect by three professionals independent from the study.

The initial five pictograms and poster did not achieve comprehension by 85% of the 37 participants; hence they were modified based on feedback and retested with 67 people (total of 104 participants). Two novel and three International Pharmaceutical Federation (FIP) pictograms were included in the modified poster sequentially as follows: attention, if travelled abroad, have a fever and vomiting, call a doctor. The five pictograms were understood by 91-97% of participants and comprehension of the overall poster achieved 82%.

The pictogram-based poster is an invaluable tool to enhance risk communication and help reduce the knowledge disparity for individuals with low health literacy. However in this study, 75% of participants were educated at a college level or higher. This presumably results from Ottawa's having a higher literacy level compared to Canada, with 60% of Ottawa residents having a post-secondary degree versus 52% of Canadians.[9] Nevertheless, pertinent information regarding the prompt identification of EVD symptoms and the need for medical care can be conveyed quickly and at an easily understandable level to the public using this validated poster. The poster is available at http://www.cheo.on.ca

Figure 1. Validated pictogram-based poster

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