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Review Paper

Factors influencing seasonal influenza vaccination behaviour among elderly people: a systematic review

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ABSTRACT

Objectives: To explore the behaviour-related factors influencing influenza vaccination among elderly people using a framework derived from the Health Belief Model (HBM) and the Theory of Reasoned Action (TRA).

Study design: Systematic review.

Methods: Five databases were searched using predetermined strategies in March 2016, and 1927 citations were identified. Articles were selected according to inclusion and exclusion criteria. Key information was extracted from selected studies using a predesigned sheet. Both authors assessed study quality using the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) or Critical Appraisal Skills Programme (CASP) checklist.

Results: Thirty-six articles were selected. A new framework was proposed that contributes to shared understanding of factors influencing health behaviour. Possible determinants of influenza vaccination among elderly people were knowledge, health promotion factors, all constructs of the HBM, and some concepts of the TRA. Key factors were threat perception, behavioural beliefs, subjective norms, recommendations, past behaviour and perceived barriers.

Conclusions: This is the first systematic review to analyse the factors influencing influenza vaccination behaviour of elderly people using a framework integrating the HBM and the TRA. The framework identified key factors of influenza vaccination and presented the inter-relation of behaviour-related variables. However, further well-designed studies are required to explore the inter-relationships accurately and comprehensively.

Introduction

Seasonal influenza is an acute infectious disease that may lead to severe illness and death, especially among young children, elderly people and those with chronic illnesses. The annual burden of seasonal influenza is estimated to be 3–5 million cases of severe illness and approximately 250,000–500,000 deaths globally.[1] In the United States, elderly people (aged ≥65 years) account for approximately 90% of

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influenza-associated deaths.[2] Vaccination is recommended as the most effective way to prevent seasonal influenza by the World Health Organisation,[1] the US Centers for Disease Control and Prevention[3] and the European Centre for Disease Control and Prevention.[4] These agencies urge elderly people to be vaccinated against influenza each year. Evidence suggests that the influenza vaccine has a moderate preventive effect among elderly people and that it significantly decreases the morbidity of influenza and pneumonia,[5] respiratory or cardiovascular complications[6] and risk of hospitalisation and death.[7–10] A Cochrane review[11] confirmed the safety of the influenza vaccine but found no convincing evidence for its effectiveness. However, the use of inappropriate analytic techniques cast doubt on these findings. Beyer et al.[12] reanalysed the same data using a biological and conceptual framework and found meaningful predictions for the effectiveness of the influenza vaccine that supported ongoing efforts to vaccinate elderly people.

The 10th Resolution of the World Health Assembly in 2003 set a vaccination coverage goal of above 50% by 2006 and 75% by 2010 among the elderly population.[13] Few countries have achieved this goal despite national campaigns and interventions implemented in local settings.[14] In the United States, 66.2% of elderly people received seasonal influenza vaccines during the 2012/2013 influenza season.[15] Most European countries maintained a vaccination rate of 50–60% among elderly people during the 2010/2011 influenza season, with 82% in the Netherlands and 75% in the UK.[16] The situation is worse in developing countries. In Mainland China, only 4.3% of adults aged ≥60 years reported receiving the influenza vaccine during the 2011/2012 season.[17] The vaccination coverage of those aged >65 years was 10% in Romania, 12% in Poland and 14% in South Africa in the 2005/2006 influenza season.[18,19]

It is imperative to understand key factors influencing influenza vaccination among elderly people to develop effective strategies to increase vaccination coverage. Previous studies have tried to summarise the reasons for accepting or refusing vaccination[20] or to identify predictors of vaccination with more attention on organisational factors.[21] Another literature review[22] analysed studies conducted in the UK or research findings that could be transferred to the UK setting; it thus failed to acknowledge cross-cultural practices. Few studies used seasonal influenza vaccination as health behaviour or explored behaviour-related factors.

The Health Belief Model (HBM, see Fig. 1A)[23] and the Theory of Reasoned Action (TRA, see Fig. 1B)[24] have been used widely in health behaviour studies. Researchers have criticised the HBM for neglecting the influence of social factors (i.e. social norms).[25] Subjective norms in the TRA complemented this with individual behavioural perception under various cultural backgrounds. On the other hand, the TRA also has limitations,

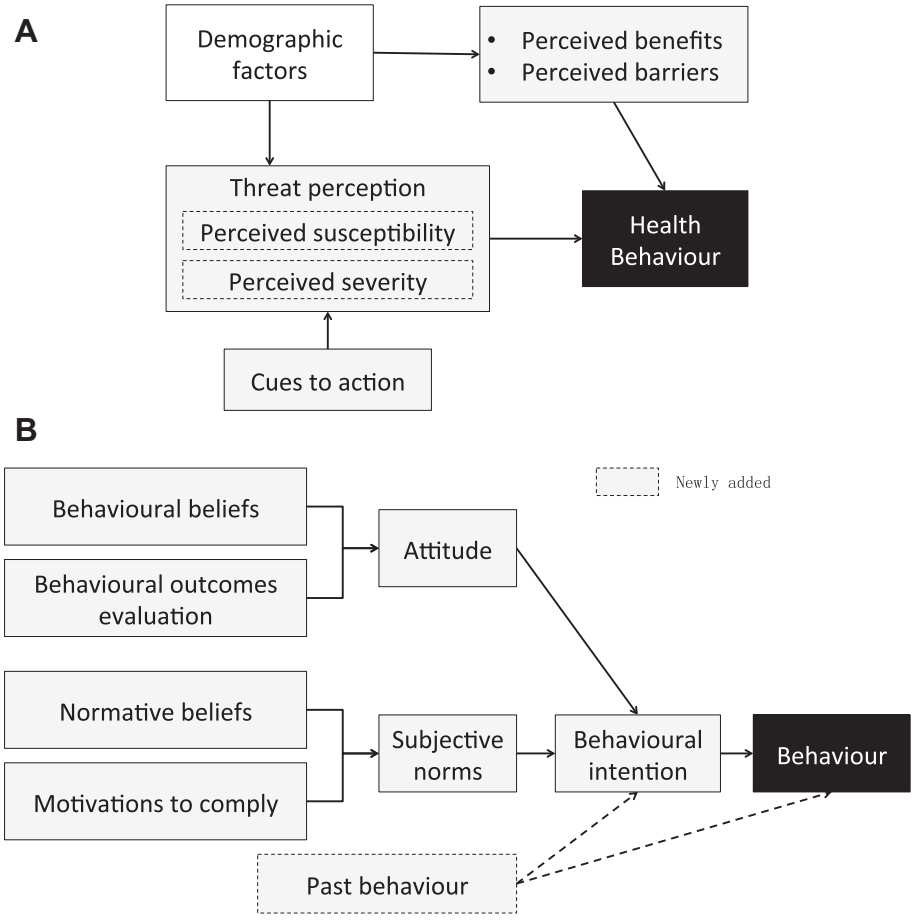

Fig. 1 – (A) Health Belief Model and (B) Theory of Reasoned Action.