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A qualitative study to assess the perceived benefits and barriers to the pneumococcal vaccine in hospitalised older people

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ABSTRACT

Pneumococcal vaccine is now recommended for all people aged 65 years and over in Australia, yet many in this age group remain unvaccinated, especially those from Non-English Speaking Backgrounds (NESB).
Aim: Our aim was to assess some of the perceived beliefs, benefits and barriers to pneumococcal immunisation in older people.
Design and setting: We conducted qualitative open-ended interviews among elderly hospital inpatients aged receiving care in the geriatric, cardiology, and orthopaedic departments of a large, 800-bed tertiary referral hospital.
Methods: 24 participants who had not received pneumococcal immunisation, and who were aged 60 years and over, were mentally competent and well enough to be interviewed were selected for our study.
Results: Three topics were addressed: patient attitudes towards vaccination, knowledge of vaccines and their purpose, and accessibility of patient education materials about vaccines and their purpose. Patients who accepted pneumococcal immunisation (acceptors) generally were unaware of the vaccine or did not know it was recommended for them.

Patients who refused the pneumococcal vaccine (refusers) either would not consider it without the recommendation of their general practitioner or they maintained the belief that the vaccination would cause illness or symptoms. Knowledge about the availability and purpose of the pneumococcal vaccine was poor amongst our group.
Conclusion: Poor knowledge of the availability and purpose of pneumococcal immunisation was prevalent in our subjects. Appropriate education campaigns and trusting and positive relationships with the general practitioners are likely to improve immunisation uptake.

1. Introduction

Invasive infection by *streptococcus pneumoniae* (pneumococcus) is the most common cause of community-acquired pneumonia [1] and a major cause of morbidity and mortality in infants, individuals with chronic health conditions, and individuals older than 65 years of age. World-wide, pneumococcus is responsible for more deaths than any other single pathogen [2], causing between one and two million deaths per year in children less than 5 years of age alone [3].

Several vaccines are now readily available to immunise against many forms of pneumonia. Although vaccine efficacy in the prevention of all causes of pneumonia is still disputed, there is evidence supporting the efficacy of existing vaccines against invasive pneumococcal disease (IPD) in adults [4,5]. Despite the availability of effective vaccines [6], vaccination rates around the world have generally remained suboptimal [7].

Recent implementation of a publicly funded vaccination program for the elderly in Australia appears to have had an impact on vaccination rates [8]. In the state of Victoria, pneumococcal vaccination rates rose from 7% to 51% within 2 years of the program's introduction [8]; similar increases have also been observed following the implementation of a national program [9]. Despite the provisions of publicly funded vaccination programs, up to 30% of the elderly still remain unvaccinated. This is a growing concern given the rapidly aging population in Australia and all other developed countries. Without vaccination, the mortality rates in elderly subjects due to streptococcus pneumonia exceed 20%, even with the best available antibiotic treatments [10]. This is compounded with increasing antibiotic resistance amongst many strains of pneumococcus.

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Studies of vaccination coverage have identified high-risk groups which have high exposure rates and low immunisation rates; these groups include Aboriginal and Torres Strait Islanders (ATSI), migrants (including Non-English Speaking Background people), and the elderly [11,12].

Factors characterizing such target groups as Non-English Speaking Background (NESB) families indicate a poor understanding of the diseases that vaccines can prevent. Many of these individuals have had little access to the education needed to understand the purpose of vaccines, have had problems gaining access to health care, and have experienced difficulties due to language barriers. These at-risk subjects may not consider disease prevention and may wait until afflicted with acute disease before seeking medical advice. Another important issue is that many of these individuals may not trust the health care system and may believe that their health will be jeopardized by such interventions. There are many barriers to immunisation, the most common reasons can be classified as: provider related, subject related, or system related [12,13].

Studies of vaccination rates have repeatedly indicated that the major determining factor in whether or not a subject receives the appropriate vaccinations is physician recommendation. If medical practitioners offer and advocate vaccination to their patients, then a significant majority of patients will accept it, even when the patient has a negative attitude towards vaccination [14]. The largest cause of missed opportunities for vaccination is the failure of physicians to offer it [15]. This is partly attributed to the difficulties in determining the vaccination status of a subject and the uncertainty as to the safety of revaccination [16], as well as the increasing mobility of subjects and the transient nature of many patient-physician relationships. Since pneumococcal disease presents a serious risk of mortality in elderly people and there is no significant danger in repeated vaccination with pneumococcal vaccine [17], it is quite reasonable to treat a subjects whose vaccination status is unknown as unvaccinated. There is no significant danger in repeated vaccination with pneumococcal vaccine and it is quite reasonable to treat a subjects whose vaccination status is unknown as unvaccinated. However, there are researchers who reported that a repeated doses of PPV can produce immune hypo-responsiveness and that a prior dose of 23-valent PPV severely restricts the subsequent immunogenicity of the conjugate vaccines [18,19], which could be used in the future for adults and elderly people especially new conjugate vaccines with high-serotype coverage for use in adults.

Subjects attitudes do still play a role with a patients' perceived usefulness of vaccinations and are significantly and independently associated with vaccination status [15]. Hospital-based vaccination programs may fail if patient acceptance of vaccinations from sources other than their personal physician is not addressed.

Diverse factors influence people's decisions relating to immunisation. Previous studies have showed that there are many reasons for failing to vaccinate, such as apathy and the belief that they are not susceptible to the disease. In addition, many elderly subjects may not have an understanding of the seriousness of pneumococcal disease or the benefits of immunisation [20–23].

It has also been shown that there is an association between vaccination status and belief in the effectiveness of the vaccination. These concerns are considered to be the most important cause of subjects declining vaccination. Other factors in declining vaccination include a fear of local reactions and an aversion to needles. Subjects with a positive perception of vaccination tend to interpret the side effects differently [24–26]. Most importantly is that the majority of subjects with a negative attitude towards vaccination would still accept vaccination if their health care provider recommended it [14,15,17].

It is important to understand the factors that are influential in the decision of whether or not to receive vaccinations among elderly people. These factors include their perception, attitude, and knowledge towards vaccination, particularly towards pneumococcal vaccination. This survey was conducted in an effort to investigate the potential associations between these factors and the vaccination status among elderly people.

Table 1
Interview topic guide.

1. *Background*: Where were you born? Who lives with you? Married, single, divorced, widowed
2. *General health*: What sort of health problems have you had? Are you able to do the daily chores? Do you need some help around the house? Do you do your own shopping?
3. *Knowledge about pneumonia*: Have you or any of your any one you know ever had pneumonia? How serious do you think pneumonia is?
4. *Knowledge about pneumococcal vaccine*: Are you aware of the pneumonia vaccine? What do you know about the vaccine? Do you know who recommends pneumococcal and influenza vaccine? Have you seen them advertised or read any information about it some where? If yes, where?
5. *Uptake*: Have you ever had the pneumococcal vaccine?
If yes, Was it your decision or was it recommended, if so by whom? Have you had any problems? Are they aware how often do you have to have vaccination, if so how?
If no, what made you decide not to have the vaccination? Has anyone ever recommended that you should have it?
6. *Uptake*: Have you ever had the flu vaccine?
If yes, Was it your decision or was it recommended, if so by whom? Have you had any problems? Are they aware how often do you have to have vaccination, if so how?
If no, what made you decide not to have the vaccination? Has anyone ever recommended that you should have it?

2. Research aims

Despite the availability of a free vaccine and a high-profile General Practice campaign promoting the vaccine, most patients aged 60 years and over chose not to have pneumococcal vaccination [27].

The purpose of this study was to explore some of the influences experienced by the elderly in deciding whether to accept or refuse the pneumococcal vaccine.

3. Methods

3.1. Setting and participants

A qualitative study was conducted in 2007 specifically targeting in-patients aged ≥60 years receiving care in the Geriatric, Cardiology and Orthopaedic Departments of a large 800-bed tertiary referral hospital in Sydney, Australia. The hospital is located in the west of Sydney, serves as a tertiary referral base for the western metropolitan area and also acts as the district hospital for the immediately surrounding community. The population served by this hospital in 2006 was 1,114,020 people (2005) [28].

The sampling frame was chosen from responders to a previous survey of patient's knowledge, attitudes and beliefs about pneumococcal vaccine [29]. Inpatients were screened on a daily basis from the above mentioned wards; each patient's current immunisation status was confirmed at the time of recruitment and validated with their General Practitioner (GP). Those who were not vaccinated were offered the pneumococcal vaccine in an ongoing randomised controlled trial.

Semi-structured, open-ended interviews using a topic guide as shown in Table 1 were conducted with the emphasis being on encouraging the interviewee to talk and give their views and opinions. Uninterrupted, the interviews lasted between 10 and 20 min.

We selected 24 patients in order to have 12 ESB and 12 NESB, individuals were categorised on the basis of background and included: 6 participants from NESB who had been offered immunisation but refused (refusers), 6 participants from NESB who had been offered immunisation and accepted (acceptors), 6 partici-