New Zealanders’ self-reported uptake and attitudes towards the influenza vaccine in 2012

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Abstract

Aims This study sought to assess New Zealanders’ uptake of the influenza vaccine in 2012, identify the demographic characteristics of people least likely to take up the vaccine, and identify the main reasons why some did not get the vaccine.

Method We analysed responses to questions in the 2012 Health and Lifestyles Survey (HLS) about the influenza vaccine. The 2012 HLS was an in-home survey with a nationally representative sample of 2672 New Zealanders aged 15 years and over.

Results Two-thirds of New Zealanders said they did not receive the influenza vaccine in 2012. Younger adults and those who thought they were not eligible to get the vaccine for free were least likely to have received it. The most common reason for not receiving the vaccine was a low perceived susceptibility to influenza. Other common reasons were related to dislike or distrust of the vaccine.

Conclusions This study provides information that could be used by health professionals, health promoters, and government agencies to improve the targeting and effectiveness of communication messages related to the influenza vaccine. Such communications are important because they can help encourage those New Zealanders who would benefit most from receiving the vaccine to take it up.

Influenza places a considerable burden on employers and health systems, with many days of lost work and increased demand on health services during the influenza season. For example, at the peak of the influenza season in 2012, influenza-like illnesses accounted for 154.1 consultations per 100,000 patient population; across the year they accounted for 34.4 per 100,000 hospitalisations and 27.3 per 1000 deaths.

In an effort to reduce this burden, the New Zealand Ministry of Health invests a significant amount of money in purchasing and promoting the influenza vaccine each year ($18.6 million in 2011/12; Ministry of Health Immunisation Team, personal communication, 2013).

Given this significant investment, it is important to understand New Zealanders’ attitudes and behaviour towards the seasonal influenza vaccine. It is further important to understand those attitudes and behaviours since, as shown by a recent study in the US, they correlate highly with attitudes towards vaccination against more serious population health threats (such as the H1N1 virus). Therefore, understanding New Zealanders’ attitudes towards the seasonal influenza vaccine could provide insight into how people are likely to respond to a call to be vaccinated during an influenza pandemic.

To examine the characteristics of New Zealanders who were least likely to take up the influenza vaccine, and to understand the reasons why some people did not get the
vaccine, the current study used data from a nationally-representative survey conducted between May and August 2012.

Previous international research has shown that perceived susceptibility to influenza, perceived effectiveness of the vaccine, concern about side-effects, and prior experience (either positive or negative) with influenza vaccination are relatively consistent correlates of influenza vaccine uptake. While such studies are typically from the US and limited to specific “high risk” populations such as elderly adults and healthcare workers, there are a number of studies indicating that similar attitudes are associated with vaccine uptake in the general adult population.

This is the first New Zealand study to examine attitudes and behaviour towards the influenza vaccine at the population level.

**Method**

Data are from the 2012 Health and Lifestyles Survey (HLS), the methodology of which (including the design, sample composition, data collection procedures, coding procedures, and weighting procedures) has been described elsewhere. In brief, a nationally representative sample of 2672 New Zealanders aged 15 years and over took part in the in-home survey, which assessed respondents’ attitudes and behaviours relating to tobacco, sun safety, healthy eating, gambling, alcohol, exercise, child immunisation, influenza vaccination, mental health, breast feeding, and cancer screening. The survey interviews were conducted between autumn and winter (May to August) 2012.

This report focuses on responses to the questions relating to the influenza vaccine. Specifically: “Will you receive the ‘flu vaccine this year?” “Are you eligible to get the flu vaccine for free?” and (for those who said they would not get the vaccine) “Why don’t you think you’ll get the flu vaccine this year?” For the final question, people could give multiple open-ended responses, which the interviewer either (i) coded at the time of the interview if the reason given had the same meaning as one of the pre-coded answers (based on likely reasons for not taking up the vaccine); or (ii) recorded verbatim for later analysis if the reason given did not have the same meaning as one of the pre-coded answers. The interviewer recorded the relevant code(s) and verbatim response(s) by typing them into a laptop computer.

**Results**

**Analysis**—Following data collection, two researchers from the Health Promotion Agency analysed the open-ended responses that were recorded verbatim but not coded at the time of the interview. The researchers determined recurrent themes arising from the verbatim comments and then assigned a unique code to each of the new themes. All verbatim comments were then back-coded into the appropriate categories (determined by consensus), with those comments that were unique to a single person coded as ‘other’ (3.3% of respondents gave a reason identified as ‘other’).

The aim of this coding procedure was to represent what people said as closely as possible rather than collapsing the themes into broad categories. As a result, some of the codes (e.g., “I never get the flu” and “I’m healthy so I don’t need it”) contain similar ideas (e.g., low perceived susceptibility to influenza), but still represent somewhat different reasoning (e.g., one is that they have a lack of experience with getting the flu and the other is that they believe being a ‘healthy’ person who lives a healthy lifestyle means they will not contract the virus).

Once the coding was completed, statistical analyses were conducted using STATA IC (version 12.0) software. Responses were weighted according to the 2006 Census data.
to ensure that the sample accurately represented the New Zealand population aged 15 years and over. All proportions were calculated using the delete-a-group jackknife method. Differences between demographic groups were assessed with logistic regression.

The independent variables considered in the logistic regression analyses were age (continuous), gender (males compared with females), ethnicity (Māori compared with non-Māori; prioritised), neighbourhood deprivation status (New Zealand Deprivation Index 8 to 10 and 4 to 7, compared with New Zealand Deprivation Index 1 to 3), perceived eligibility to get the vaccine for free (thought they were eligible compared with thought they were not eligible), and employer subsidy of the vaccine (employed respondents only: employer not paying for the vaccine or not knowing if employer paid for the vaccine, compared with employer paying for the vaccine).

The dependent variables were self-reported uptake of the vaccine and the reasons respondents gave for not receiving the vaccine.

**Self-reported vaccine uptake**—When asked if they would receive the influenza vaccine in 2012, 26.8% (95%CI 24.5–29.1) of respondents said they had already received it. A further 7.8% (95%CI 6.2–9.3) said they had not received the vaccine but intended to. Approximately two-thirds (63.7%; 95%CI 61.1–66.3) of respondents said they would not get the vaccine and a further 1.8% (95%CI 1.0–2.5) either refused the question or said “don’t know”. For the following analyses, self-reported vaccine uptake was defined as having already received the vaccine at the time of the survey; all other responses were counted as not having taken up the vaccine.

Initial bivariate logistic regression analyses indicated that people more likely to have already received the vaccine were: older (likelihood increased with age; t=12.44, p<0.001), non-Māori (compared to Māori; 28.0% versus 17.9%, OR=1.77, 95%CI 1.34–2.34, p<0.001), and people who thought they were eligible to get the vaccine for free (compared to people who thought they were not eligible; 44.7% versus 12.9%, OR=5.53, 95%CI 2.78–11.00, p<0.001). There were no differences by gender (p=0.318), neighbourhood deprivation (p=0.894), or employer subsidy of the vaccine (employed respondents only; p=0.723).

Subsequent multiple logistic regression with age, ethnicity, and perceived eligibility as independent variables indicated that only age (OR=1.03, 95%CI 1.02–1.05, p<0.001) and perceived eligibility (OR=3.57, 95%CI 2.38–5.35, p<0.001) were significant correlates of vaccine uptake; ethnicity was no longer significant after adjusting for the other variables (OR=1.33, 95%CI 0.83, 2.13, p=0.228).

**Reasons for not getting the vaccine**—Table 1 shows the reasons respondents gave for not getting the influenza vaccine and the percentage of respondents reporting each reason. Almost all (99.7%) respondents provided at least one reason for not getting the vaccine (including “I don’t know” responses), with the majority (83.9%) providing one reason only. The mean number of reasons given by each respondent was 1.2.
Table 1. Percentage of respondents reporting particular reasons for not getting the influenza vaccine

<table>
<thead>
<tr>
<th>Reason</th>
<th>%</th>
<th>95% CI</th>
</tr>
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<tbody>
<tr>
<td>I never get the flu</td>
<td>21.6</td>
<td>18.8–24.6</td>
</tr>
<tr>
<td>I’m healthy so I don’t need it</td>
<td>18.9</td>
<td>16.0–21.8</td>
</tr>
<tr>
<td>I don’t like the ingredients in the vaccine</td>
<td>11.1</td>
<td>8.7–13.6</td>
</tr>
<tr>
<td>I'm concerned about possible side effects</td>
<td>11.0</td>
<td>9.1–13.0</td>
</tr>
<tr>
<td>I'm skeptical about vaccines in general</td>
<td>9.8</td>
<td>7.7–11.9</td>
</tr>
<tr>
<td>I don’t know</td>
<td>7.5</td>
<td>5.4–9.7</td>
</tr>
<tr>
<td>It costs too much</td>
<td>5.3</td>
<td>3.8–6.8</td>
</tr>
<tr>
<td>It's only flu, it won't kill me</td>
<td>5.3</td>
<td>3.7–7.0</td>
</tr>
<tr>
<td>I have doubts about its effectiveness</td>
<td>4.1</td>
<td>2.6–5.6</td>
</tr>
<tr>
<td>I'm afraid of needles</td>
<td>3.8</td>
<td>2.5–5.2</td>
</tr>
<tr>
<td>Other</td>
<td>3.3</td>
<td>2.1–4.6</td>
</tr>
<tr>
<td>I use natural prevention methods</td>
<td>3.0</td>
<td>1.8–4.1</td>
</tr>
<tr>
<td>It will reduce my immunity</td>
<td>2.5</td>
<td>1.4–3.6</td>
</tr>
<tr>
<td>I've never had the vaccine before</td>
<td>2.0</td>
<td>1.1–3.0</td>
</tr>
<tr>
<td>I can't be bothered</td>
<td>1.7</td>
<td>0.6–2.8</td>
</tr>
<tr>
<td>It's too hard for me to get to the doctors to get it</td>
<td>1.4</td>
<td>0.7–2.2</td>
</tr>
<tr>
<td>I missed it when it was on offer</td>
<td>1.2</td>
<td>0.4–1.9</td>
</tr>
</tbody>
</table>

Note: Responses given by fewer than 1% of respondents are not shown.

The most common reasons for not getting the vaccine were related to a low perceived susceptibility to influenza: “I never get the flu” or “I’m healthy so I don’t need it”.

Other relatively common reasons for not getting the vaccine were related to a dislike or distrust of vaccines: “I don’t like the ingredients in the vaccine”, “I’m concerned about possible side effects”, or “I’m skeptical about vaccines”. The least common reasons (given by fewer than 1% of people) for not getting the vaccine were: “I’m too young to get it”; “I forgot”; “I didn’t get around to it”; “it hurt”; “I have a health condition that means I can’t have it”; “I’m too busy”; “I’m not interested”; “I’m pregnant and concerned about its effect on my baby” (women only); “I haven’t been offered it”.

The observed pattern of responses was similar across age, gender, ethnicity, perceived eligibility, and neighbourhood deprivation status, with people from these demographic groups giving similar reasons at similar rates for not getting the influenza vaccine.

Discussion

The purposes of this study were to assess New Zealanders’ self-reported uptake of the influenza vaccine in 2012, identify the demographic characteristics of people who were least likely to take up the vaccine, and identify the main reasons why some people did not get the vaccine.

The results indicate that around two-thirds of New Zealanders aged 15 years and over did not receive the influenza vaccine in 2012, with younger adults and people who thought they were not eligible to get the vaccine for free least likely to have received it (note that the age effect still held after adjusting for perceived eligibility). There
were no effects of ethnicity, gender, socioeconomic deprivation, or employer subsidy of the vaccine on self-reported uptake after adjusting for the relevant variables.

The most common reason people gave for not taking up the vaccine in 2012 was that they did not think it was necessary because they perceived themselves to be at low risk of contracting the virus (either because they do not typically get influenza or because they believed that being a generally “healthy” person would protect them from infection). It was also relatively common for people to say they would not get the influenza vaccine because they disliked or distrusted the vaccine (either because they disapproved of the ingredients or because they were concerned about side effects).

The reasons people gave were similar across age and other demographic groups, indicating that perceived invulnerability to influenza and dislike or distrust of the vaccine were common reasons for not taking up the vaccine among both low risk (e.g., adults aged under 65 years) and high risk populations (e.g., adults aged over 65 years).

The main reasons New Zealanders in this study gave for not taking up the influenza vaccine were relatively consistent with findings from a review of previous international research, indicating that perceptions about the influenza vaccine are similar across different locations and populations. Further, it appears that some concerns about the vaccine (e.g., about side effects) have persisted over time, with research published in the US as early as 1979 highlighting many of the same concerns reported by non-adopters in this study. This suggests that health professionals, promoters, and educators could more effectively communicate the risks and benefits of the vaccine to the general population.

A key strength of this study is in its provision of the types of information that have been identified as contributing to effective social marketing campaigns. In particular, this study identifies the segments of the New Zealand population that could be targeted in an influenza vaccination campaign, the attitudes that those campaigns could seek to change, and the competition to the desired behaviour (taking up the vaccine). Based on the results presented here, messages that could be included in such campaigns are those that depict the possibility of getting influenza as a healthy person who lives a healthy lifestyle, and those that seek to increase trust in vaccines generally.

While this study provides good insight into New Zealanders’ attitudes and behaviour in relation to the influenza vaccine, it has several limitations. For example, its cross-sectional retrospective design introduced the possibility of recall bias and may have led to inaccurate reporting of vaccine uptake rates and reasons for not taking up the vaccine. It is also possible that the reasons for not taking up the influenza vaccine are more complex than can be represented in the categorical responses used in this study. However, given the similarities between these results and previous research using a range of different methodologies, it appears unlikely that the design of this study had a major impact on the key findings.
Conclusion

This is the first New Zealand study to examine attitudes and behaviour towards the influenza vaccine in a nationally-representative sample of adults aged 15 years and over. By identifying the characteristics of people least likely to get the vaccine and the reasons why some people did not take it up, this study provides information that could be used by (i) health promoters to improve the targeting and effectiveness of influenza vaccination messages, (ii) health professionals to address their patients’ likely concerns about the vaccine, and (iii) government agencies when planning responses to the threat of an influenza pandemic.

Competing interests: Nil.

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