Acceptance of Influenza Vaccination Among Chinese Community-dwelling Elderly in Hong Kong

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**Introduction**

- Influenza and its related complications accounted for
  - excess deaths and hospitalizations
  - Up to 500,000 deaths in annual flu epidemics globally *(WHO, 2003)*
  - 30% increase in consultations during flu peak *(Center for Health Protection, 2005)*

- **Influenza vaccination**
  - cost-effective *(Nichol, 2005)*
  - associated with fewer nosocomial infections, out-patient visits and economic loss *(Liddle & Jennings, 2001; Nichol et al., 1999)*
Introduction
Factors affecting acceptance of vaccination

**Positive factors:**
- Flu is serious
- Suspicious of catching flu
- Vaccination is effective
- Recommend by health professionals

**Negative factors:**
- Flu is not dangerous
- Not at risk of catching flu
- Vaccination is ineffective
- Fear of needles and injections
- Fear of adverse reactions
Objectives

1. To explore the influenza vaccination rate of the Chinese community-dwelling elderly;

2. To determine the factors that influence the acceptance of flu vaccination;

3. To determine the interactive effects of the factors on the likelihood of receiving flu vaccine.
Method

Design:
- explorative, cross-sectional and descriptive

Samples:
- Chinese elderly aged 65 or above
- Attend GOPCs for consultations and nursing procedures
- Non-institutionalized

Approach:
- Face-to-face interview
Method

Instrument:
- 35-item questionnaire in Likert scale scoring
  - Perceived susceptibility towards influenza
  - Perceived severity towards influenza
  - Perceived benefits towards flu vaccine
  - Perceived barriers towards flu vaccine
  - Interpersonal influence
  - Activating cues

- Demographic information
- Vaccination history
- Intention to vaccinate in coming year
From mid-October to end-October of 2005, **205** participants completed the interview in five GOPCs.

<table>
<thead>
<tr>
<th>Vaccinated subjects</th>
<th>Unvaccinated subjects</th>
<th>Vaccination Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>131</td>
<td>74</td>
<td>63.9%</td>
</tr>
</tbody>
</table>
Demographic differences between vaccinated and unvaccinated participants (N=205)

<table>
<thead>
<tr>
<th>Demographic Details</th>
<th>N (%)</th>
<th>Vaccination</th>
<th>x²</th>
<th>p</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>51</td>
<td>35</td>
<td>16</td>
<td>1.18</td>
</tr>
<tr>
<td>70-74</td>
<td>69</td>
<td>45</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>75-79</td>
<td>51</td>
<td>30</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>80 or above</td>
<td>34</td>
<td>21</td>
<td>13</td>
<td>1.18</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>85</td>
<td>49</td>
<td>36</td>
<td>2.46</td>
</tr>
<tr>
<td>Female</td>
<td>120</td>
<td>82</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With spouse</td>
<td>142</td>
<td>89</td>
<td>53</td>
<td>0.3</td>
</tr>
<tr>
<td>Without spouse</td>
<td>63</td>
<td>42</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nil</td>
<td>98</td>
<td>64</td>
<td>34</td>
<td>2.25</td>
</tr>
<tr>
<td>Primary</td>
<td>78</td>
<td>47</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>26</td>
<td>17</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Tertiary +</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Financial subsidizing status</strong></td>
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<tr>
<td>Subsidy receiver</td>
<td>40</td>
<td>23</td>
<td>17</td>
<td>0.88</td>
</tr>
<tr>
<td>Non-subsidy receiver</td>
<td>165</td>
<td>108</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td><strong>Presence of chronic disease</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>196</td>
<td>126</td>
<td>70</td>
<td>0.28</td>
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<tr>
<td>No</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
Result

- Significant differences between vaccinated and unvaccinated participants noted in:
  - Perceived susceptibility $(t=2.20, p=0.05)$
  - Perceived severity $(t=2.76, p=0.01)$
  - Perceived benefits $(t=6.61, p=0.00)$
  - Perceived barriers $(t=-5.95, p=0.00)$
  - Interpersonal influence $(t=7.29, p=0.00)$

- NO significant difference in activating cues between vaccinated and unvaccinated participants $(t=1.16, p=0.25)$. 
Interactive effects of factors by backward stepwise logistic regression

- Perceived benefits  $ (p=0.00, \text{OR}=1.31, \text{95\%CI } 1.11\text{-}1.53) $
- Perceived barriers  $ (p=0.05, \text{OR}=0.88, \text{95\%CI } 0.77\text{-}1.00) $
- Interpersonal influence  $ (p=0.00, \text{OR}=1.67, \text{95\%CI } 1.33\text{-}2.09) $ 

Likelihood of vaccination –

$ \uparrow \text{benefits} + \downarrow \text{barriers} + \uparrow \text{human influence} $
Result

Intention to receive flu vaccine in coming year:

<table>
<thead>
<tr>
<th>Vaccination Status</th>
<th>Intention</th>
<th>$\chi^2$</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccinated</td>
<td>123</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Unvaccinated</td>
<td>38</td>
<td>36</td>
<td>48.77</td>
</tr>
</tbody>
</table>

Vaccinated participants: Higher
Unvaccinated participants: Lower
Implications

Vaccination promotion activities should focus on:

- Emphasize vaccine effectiveness and benefits
- Minimize barriers
- Promote more peer and family influence
- Targeting the elderly who had never received vaccination
Implications

Health care professionals should:

- Be more active in promoting vaccination, especially emphasizing the effectiveness and benefits
- Provide more recommendations and encouragement
Implications

Health care professionals should:

- Refresh their knowledge and information on influenza and vaccine

- Remind frontline staff on importance of recommending older people to vaccinate *(for health care leaders)*
Recommendation

Future studies on:

1. Prospective design

2. Random samples from different districts and community settings
Conclusion

- Provide reference information
- Maximize older people’s immunity and improve general health
- Reduce rates and cost for consultations, hospitalization and complication management
Thank You


Reference


