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Research Article

Comparing the Uptake of Seasonal Influenza and Pneumococcal Vaccines among Older Adults in Australia and Hong Kong between 2016 and 2018

Lynne Briggs[1*], Patricia Fronek[2], Judy Yuen-Man Siu[3,4]

[1]School of Health Sciences and Social Work, Griffith University, Queensland, Australia;[2]Menzies Health Institute Queensland, Griffith University, Queensland, Australia;[3]Law Futures Centre, Griffith University, Queensland, Australia;[4]Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hung Hom, KLN, Hong Kong

ABSTRACT

Background: Public health strategies in Australia and Hong Kong recommend influenza and pneumococcal vaccination for adults' ≥ 65 years who are particularly at risk of severe illness yet there are differences in uptake between countries.

Aim: This qualitative study was conducted in two parts. The first, previously reported, aimed to gain a better understanding of the perceptions and barriers to receiving seasonal influenza and pneumococcal vaccines among Australian and Hong Kong adults aged ≥ 65 years. This article addresses part two which compares the findings between the Australian and Hong Kong participants.

Methods: Overlapping themes developed from the analysis of the Australian and Hong Kong data were compared and key issues of difference and alignment between participants in both countries were identified.

Results: Vaccine uptake for the two diseases was found to be considerably lower in Hong Kong than in Australia. Common and divergent issues identified include the impact of different health systems, the promotion of vaccination by health professionals, beliefs about hospitals and clinics, traditional and alternative medicines, perceptions of risk and personal responsibility.

Conclusion: The importance of health systems that enable access to vaccines and promotion by health professionals are important factors in vaccine uptake. Certain health beliefs can pose barriers to receiving vaccinations.

Keywords: Influenza; Pneumonia; Vaccine uptake; Older adults; Health behaviour

INTRODUCTION

Aging populations contain a growing number of people with multiple age-related illnesses making the ≥ 65 years. population more vulnerable to infectious diseases such as influenza and pneumonia [1]. People who are having ≥ 65 years of age and have other existing chronic health conditions are at greater risk of contracting and developing a severe case of influenza which, in turn can exacerbate other medical conditions and lead to bacterial pneumonia [2]. As with most developed countries, vaccination of persons at increased risk for complications from influenza and pneumococcal disease is a key public health strategy in both Australia and Hong Kong with the primary goal being the prevention of hospitalization and deaths.

Improving vaccination rates serves to reduce circulating disease and, thereby, lessening the health and socioeconomic impact on populations and health systems. A study comparing the disease burden between Hong Kong and Brisbane, Australia, noted how government support and monetary subsidies greatly increased the incentives for older adults in Hong Kong to get vaccinated [3]. In Hong Kong, older adults with chronic conditions receiving follow-up treatment in public medical practices are entitled to receive the vaccines free of charge. The Government's elderly Health Care Voucher (HCV) and Elderly Vaccination

Correspondence to: Lynne Briggs, School of Health Sciences and Social Work, Griffith University, Queensland, Australia, E-mail: l.briggs@griffith.edu.au

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Subsidy Scheme (EVSS) are also an incentive for adults aged ≥ 65 years to receive the vaccines in private medical centers [4]. In Australia, the National Immunization Program (NIP) provides free Influenza for people aged ≥ 65 years and pneumococcal vaccinations for people ≥ 70 years. through general medical practices.

Despite the availability of vaccines through national programs in both countries, people continue to die from these preventable diseases each year [5]. Although a much milder season occurred in 2018, the 2019 influenza season saw the highest number of influenza cases ever recorded in Australia [6]. In Hong Kong, the Centre for Health Protection report shows that between 2012-2015 pneumonia was the second most common cause of death. In comparison, the 2015-2019 winter influenza season saw a reduction in the number of confirmed influenza cases (63.2%) resulting in a much lower death rate (62.3%) in adults [7-9].

People decide not to be vaccinated for reasons that are complex and varied between countries. The World Health Organization [10] identified that complacency and inconvenience in accessing vaccines, and lack of confidence are key reasons underlying hesitancy. Confidence involves having trust in the health system that delivers the vaccine alongside the safety and efficacy of the vaccines. Complacency is about perceiving the vaccine-preventable diseases being a low risk making vaccination not necessary. Vaccination convenience is a significant factor when physical availability, affordability and accessibility affect uptake [11]. It is important to explore the factors that might support or inhibit the uptake of vaccines for older adults in different cultural contexts.

METHODOLOGY

Overlapping themes developed from the analysis of the Australian and Hong Kong data were compared and key issues of difference and alignment between participants in both countries were identified.

Comparison of Hong Kong and Australia data

This article presents findings from part two of a qualitative, collaborative study. The first part of the study explored the perceptions and barriers to the uptake of seasonal influenza and pneumococcal vaccinations in two groups of participants, one group in Australia and one in Hong Kong which was previously reported [12,13]. Participants were ≥ 65 years and had chronic health conditions. Interview data was collected in Hong Kong during 2016 and between 2017-2018 in Australia. The study was funded by a Griffith University and the Hong Kong Polytechnic Collaboration Research Grant.

The second aim of the collaboration was to systematically organize and compare the data between the two countries. Overlapping themes across countries were identified and key alignments and differences extracted. This process was documented and cross-checked by a second researcher to ensure rigour [14]. This article presents the comparative findings between Australia and Hong Kong.

A total of 76 adults aged ≥ 65 years participated in the study. Demographic characteristics of Australian and Hong Kong participants are presented in Table 1.

The Australian participant group consisted of 26 (72%) females and 10 (28%) males (mean age=70.42 years: Std. Dev=5.12). Most of the Australian participants (78%) had received the seasonal influenza vaccination and 14 (39%) reported being vaccinated against pneumococcal disease (slightly below the Australian average). Although aware of free vaccinations for influenza, the majority were unaware of the availability of the pneumococcal vaccination for people aged ≥ 65 years.

In Hong Kong of the 40 participants recruited, 27 (67.5%) were female, and 13 (32.5%) were male (mean age=72.65 years: Std. Dev=5.75). None of the Hong Kong participants had received an influenza vaccination in the previous five years. Most of the participants were unaware of the vaccines and the need to vaccinate.

Table 1 highlights the demographic similarities and differences between the Australian and Hong Kong participant groups. Although well matched in terms of age and gender overall there were important differences. The majority of the Australian participants had held professional careers prior to retirement indicating that would have attracted salaries in the higher income bracket. Whereas the Hong Kong participants who had reported their previous occupation had been employed in retail, administration and office work, or labouring jobs indicating they were generally engaged in lower paid work. It could be assumed that these factors could impact on health literacy and access. These are important factors as a difference in socioeconomic status is a major determinant of health and health behaviour [15].

Gender total sample	**(n)**	**(%)**	**(n)**	**(%)**
Female	53	71	-	-
Male	23	29	-	-
Gender	Australia		Hong Kong	
Female	26	72	27	71.1
Male	10	28	13	28.9
Location	Australia		Hong Kong	
Queensland	31	86	-	-
New South Wales	5	14	-	-
Hong Kong	40	100	40	100
Previous Occupation-	Australia		Hong Kong	
Academic/ Education	10	28	-	-

Professional /Law/Arts	7	19.5	-	-
Government /Bank	4	11	-	-
Management /Administration	7	19.5	-	-
Community Work	3	8	-	-
Retired	5	13	34	82.5
Administration /office	-	-	3	7.5
Sales/Retail	-	-	1	2.5
Insurance	1	2.5	1	2.5
Labourers	1	2.5	5	14
Vaccinated-	Australia		Hong Kong	
Influenza: Yes	28	78	-	-
Influenza: No	8	22	40	100
Pneumococcal : Yes	14	39	-	-
Pneumococcal : No	22	61	40	100

Table 1: Frequency distribution: Total sample demographic characteristics (N=76). **Note:** Mean age=71.59 years; Std. Dev. 5.54; Range 65-85 years.

Several key issues arose during the comparison of overlapping themes identified in the analysis of each country data. The first highlighted the differences in the health care systems in terms of access and prevention. Australia and Hong Kong have very different health systems. Australia has a two-tiered health system with Medicare and the public hospital system providing free inpatient care with some user-pay services and subsidized access for all Australians for other health care and ancillary services. Private health insurance enables access to health services outside of the public health system and often involves additional fees for services. Private health insurance usually includes some degree of coverage for services such as dental, optical, and physiotherapy that are not covered by the public system and are expensive. In Hong Kong, the healthcare system is also a two-tiered system with public and private healthcare. The government provides all public healthcare services free of charge, or for a small fee. Private medical insurance is generally very expense [15]. In both countries, there is access to healthcare for people with low incomes.

In Australia, participants regularly attended medical centres and trusted the recommendations of their health care providers regarding vaccinations. In Hong Kong, healthcare providers did not promote vaccination to participants during consultations. In the analysis of the Hong Kong data this was an important indicator especially given the authoritative position of doctors in relation to their patients.

Hong Kong participants perceived medical centres or hospitals as places for the sick and dying therefore sought to minimize exposure as attending a vaccination clinic or hospital without being impelled to do so expose a person to the risk of infection unnecessarily. Culturally, these locations also have symbolic and unlucky meanings that are embedded in participants' social reality which was not the case for the Australian participants. In Australia, many workplaces including hospitals and clinics provide vaccination for their staff to preserve their health and the cost benefit in preventing absenteeism. Many of the Australian participants volunteered in health and welfare organizations and some were still working. Having access to vaccinations during a working life seemed to establish a pattern of vaccination for these participants.

A small number of Australian participants held strong beliefs in alternative medicines and these participants were generally against all vaccinations. A belief in traditional Chinese medicine in Hong Kong is different as traditional Chinese medicine is culturally and historically embedded within the population including many health practitioners. The Hong Kong participants' strong belief in traditional Chinese medicine also made them less motivated towards receiving any vaccinations. In comparison traditional Chinese medicine was perceived as strengthening and less harsh than Western medicine and therefore better for one's health.

This was sometimes combined with a belief that vaccinations are actually harmful. Perceptions based either on personal experience of side effects from receiving a vaccine or drawn from stories where others had experienced negative reactions resulted in a fear of being vaccinated were beliefs found in both groups. Some vaccine hesitant participants in Hong Kong felt vaccines were invasive while others did not feel the need to be vaccinated as it was not compulsory and perceived influenza as a mild disease especially if they were healthy. Similar observations were noted in Australia except that the majority of participants held pro-vaccination attitudes and reported less hesitancy. A very small number of people held strong anti-vaccination sentiments.

The Australian group generally held a belief in an individual responsibility towards taking care of their personal health and knew there were risks associated with influenza and pneumonia. Even though Australian participants generally held a sense of responsibility in taking care of their own and other peoples' health this was not noted in the Hong Kong participants. Whether this difference was associated with health literacy or perhaps it was due to the lack of provided information on, or about, the vaccines and the diseases they were preventing. For the Australian participants this same sense of individual responsibility acted as a strong motivator towards receiving vaccinations and also highlighted the role of financial and physical access that the Australian health system allowed.

RESULTS

Vaccine uptake for the two diseases was found to be considerably lower in Hong Kong than in Australia. Common and divergent issues identified include the impact of different health systems, the promotion of vaccination by health professionals, beliefs about hospitals and clinics, traditional and alternative medicines, perceptions of risk and personal responsibility. The results were tabulated in Table 1.

DISCUSSION

Regardless of context, cultural and socioeconomic differences, a shared conclusion was the complexity of those factors which influenced vaccine uptake. Overall, while the results showed there are differences in participant perceptions about the value of vaccination, a key barrier was the difference in the health systems between the two countries and the health provider's respective recommendations about the vaccines. Equally important is the belief among the Hong Kong participants about the use of traditional Chinese medicine and a small number of Australian participants who preferred alternative medicines which fuelled their lack of trust in the vaccines. As Siu[11] identified gender also plays a role as it culturally it is important for men to be perceived as strong. These factors indicated a need to be mindful of social and cultural considerations when planning health policy and promotional strategies.

It is also important to explore other factors that might support or inhibit the uptake of vaccines. The WHO identified complacency, inconvenience and confidence as important issues to address. Regardless of age, understanding the psychological, emotional and social factors that fuel vaccine hesitancy is important, but additional issues for older adults requires careful consideration. Vaccine centres must be based in convenient locations that are physically accessible or more conveniently provided in the homes or institutions of the frail elderly. Affordability is another practical consideration as many older people are on reduced incomes or are dependent on others. When income is limited, certain sacrifices are usually made when needs are prioritized. Complacency about receiving influenza and pneumonia infections risks lives unnecessarily in the older population and is of concern. Education that supports increased understanding of the complications arising from these two diseases can address confidence and complacency. However, education is insufficient on its own to change behaviours for older people. Neglect of the additional issues that concern older people such as affordability and physical access including locale, transport and access to buildings, affordability and establishing patterns earlier in life such as workplace vaccination programs need to be considered in promotional strategies. To counter vaccine hesitancy effective strategic planning requires commitment and collaborative, organized and concerted efforts from various governments, community and health services and health practitioners.

LIMITATIONS

The qualitative methodology enabled an in-depth exploration of the perceptions and barriers to the uptake of seasonal influenza and pneumococcal vaccinations and a comparison between two countries that share similar vaccination programs provided insights. However, there are limitations. Although consistent with much of the international literature, the findings of this study are not generalizable. The Hong Kong and Australian participants were mostly from different socioeconomic backgrounds making some comparisons between countries difficult. Despite limitations, the findings do point to gaps that need to be addressed for immunization programmes to be successful.

CONCLUSION

The study has shown there were differences in uptake of the two vaccines between Australian and Hong Kong participants, particularly in relation to the seasonal influenza vaccine. In the main the lower uptake in Hong Kong by adults' ≥ 65 years was attributable to differences in health systems including access and prevention, socioeconomic status and cultural attitudes. A concerted effort with more community-based interventions and a greater understanding of the needs of older people would enhance vaccine uptake for these two preventable diseases.

ETHICS

Ethics approval was granted by the Griffith University Human Research Ethics Committee (GU Ref No: 2017/338) and from the Human Subjects Ethics Sub Committee at the Hong Kong Polytechnic University.

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