

# Knowledge, Attitude and Behaviour of International Students towards Seasonal Influenza in Auckland, New Zealand

Syed M. Shahid<sup>ab</sup>, Muhammad Jawed<sup>c</sup>

<sup>a</sup>Faculty of Healthcare & Hospitality, Aspire2 International, Auckland, New Zealand  
*syed.shahid@aspire2.ac.nz*

<sup>b</sup>Faculty of Medical & Health Sciences, University of Auckland, Auckland, New Zealand  
*m.shahid@auckland.ac.nz*

<sup>c</sup>Department of Biochemistry, College of Medicine, Qassim University, Saudi Arabia  
*mjawed@qumed.edu.sa, drmjawed@yahoo.com*

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## Abstract

This study analyses the knowledge, attitude and behaviour of international students towards seasonal influenza in Auckland, New Zealand. Respondents in this study were limited to those who have completed the survey questionnaire and the amount of time and resources provided to finish the research following institutional ethical guidelines. The demographic profile revealed that the age of the respondents belong to young adults (under the age of 30 years). Majority of respondents were male, with postgraduate qualifications, and have been living in Auckland for over 10 months.

Respondents' perceptions on knowledge revealed that the government is serious on their campaign measure to prevent influenza; and that the students are aware of the control measures on the spread of flu. Results on perceived attitudes, gathered from the collected data, implies that educated people use effective flu control measures, and that people who practice personal hygiene are more often free from getting the flu. The respondents also believe in the importance of being well informed on issues regarding the disease.

The findings suggested following physician's advice on the prevention and cure of the disease, and that respondents should practice hand hygiene regularly. Findings on perceived factors show that the respondents got first-hand information of flu at home and are aware that personal hygiene is strongly influenced by family members. Respondents declared that they do not attend seminars, symposiums and lectures about influenza regularly at school/ workplaces. With regard to societal factors, only a few health and sanitation awareness drives sponsored by socio-civic organizations were known by the students.

**Keywords:** International students, Personal hygiene, Sanitation awareness, Seasonal influenza, Societal factors

## 1. Introduction

It is globally accepted that students in universities and schools have the right to a safe and stable environment, protected from abuse, neglect and illness as well as to have their developmental needs properly addressed. Every person in the education service play a vital role in keeping the students safe. Students' protection from diseases such as seasonal influenza is now considered an emerging issue both in the local and international communities. Students'

sustainable health development goals have become increasingly topical with the increase in the recognition of harmful effects of influenza on people. The family, school and community serve as the base units of individual protection, and there is a need to build these social institutions on their capacity to safeguard the health of the people (Seale et al., 2012).

New Zealand government ensures that the entire population is provided with good healthcare, quality education, and a safe environment by developing a multidisciplinary, multiagency and multiprolonged approach to safeguard from influenza pandemics. Influenza is a significant public health issue in New Zealand. Each year it has a large impact on our community, with 10-20% of New Zealanders infected (Ministry of Health, 2019). Ministry of Health warrants that everyone can get the flu vaccine, but provides priority to clients that include pregnant women and others with medical conditions such as diabetes or heart disease that put them at greater risk of influenza; it provides the vaccine to ensure good health (Ministry of Health, 2018).

Schools and universities are considered second home for students where the safety and healthcare of students are to put to test. As such, these institutions consider 'Students safety first' as part of their discipline and healthcare policies. Educational institutions' compliance with government directives is essential to arrest the outbreak of flu. Students' knowledge, attitudes and behaviours have significant impact on the spread of influenza. Further, educational institutions should provide information to students to help prepare them for future outbreaks of the disease, which includes promotion of affirmation public health behaviours among young people and students (Van et al., 2010).

A recent study conducted in Korea by Park, et al. (2010), showed that there was an increase in the frequency of hand hygiene practices during the peak outbreak period of flu. It showed that there was a significant gender difference in the reviews and behaviours associated with the use of hand hygiene as a means of controlling the spread of influenza, between male and female respondents. As Auckland is considered a hub of international students across all educational institutions, universities and schools, this study was designed to assess the knowledge, attitude and behaviour of international students living in this city towards seasonal influenza.

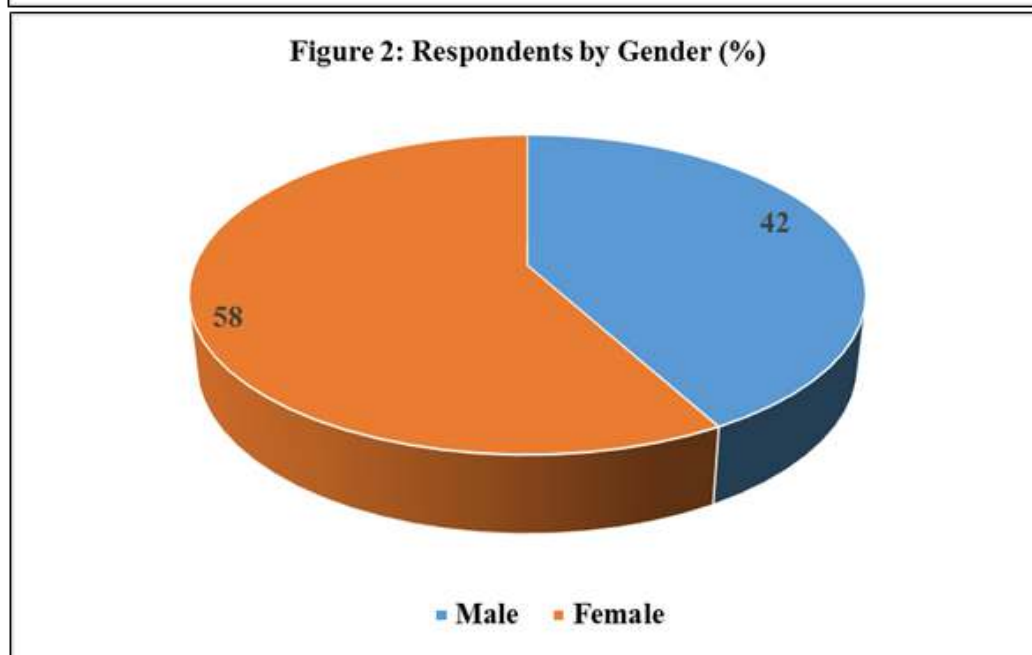
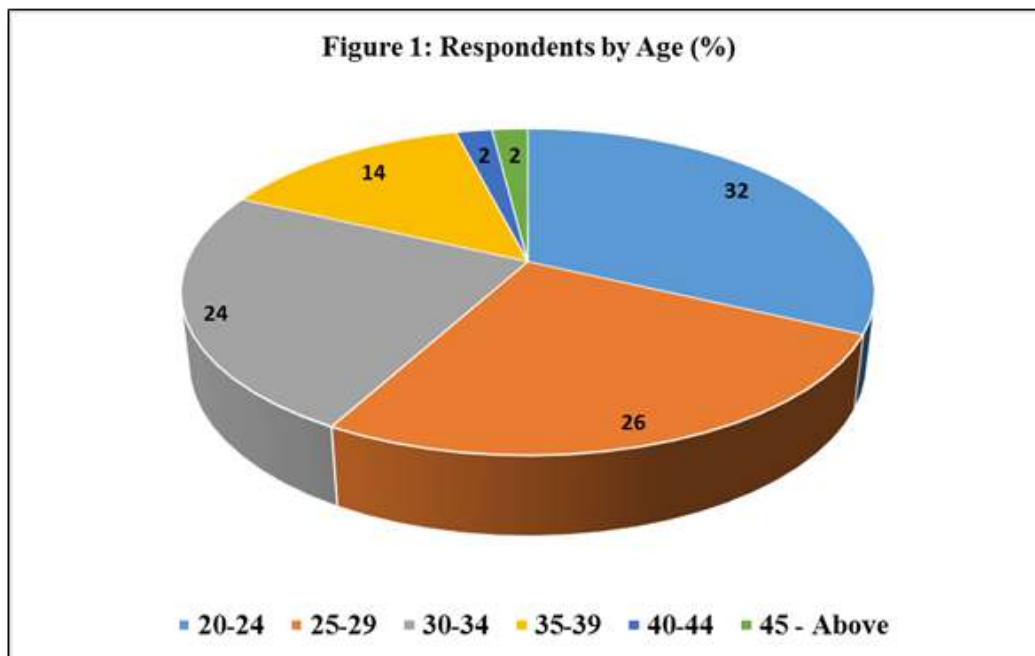
## **2. Methodology**

A pre-structured survey-questionnaire was used to collect responses from 150 randomly selected international students, studying in various universities, training institutes and schools situated in Auckland CBD, followed by informed consent. The students' participation in the study was entirely voluntary, and their responses have been kept anonymous by not collecting any possible identifiable information. The survey-questionnaire consisted of two sections. Section A dealt with the general profile of the respondents, such as age, gender, educational qualifications, length of stay in Auckland and their field of study. Section B included the perceived knowledge, attitudes and behaviours of the respondents towards seasonal influenza.

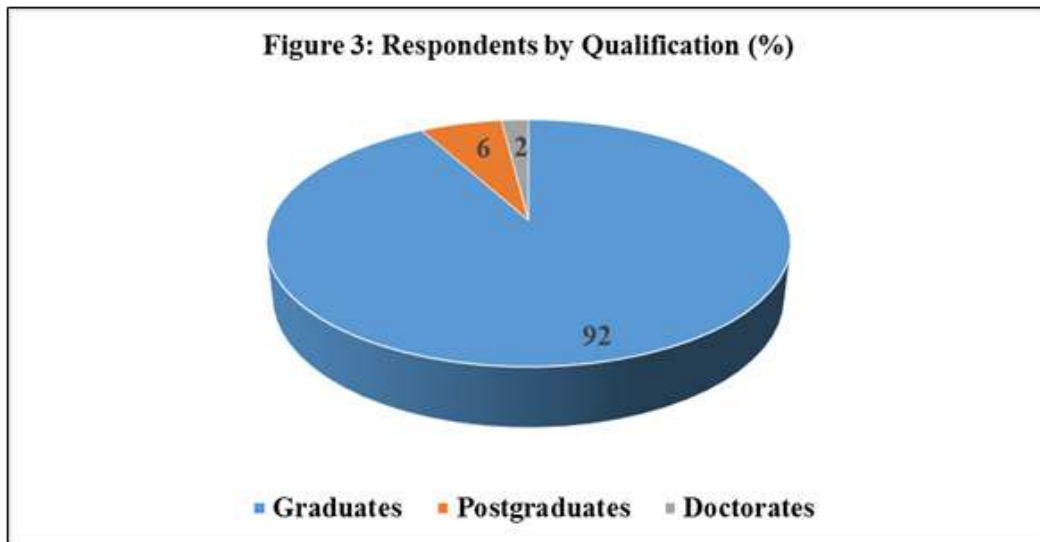
The respondents were given 15-20 minutes to answer the survey questionnaire. The researcher was responsible for the clarification of some points raised by the respondents. Confidentiality of data collected was strictly observed, and access to information is subject to knowledge and approval of respondents. The collected responses were visualised and analysed using Microsoft Excel 2013 for Windows, by means of frequencies and percentages to reflect on the respondents' perceptions and factors influencing knowledge, attitude and behaviour towards seasonal influenza.

### 3. Results and Discussion

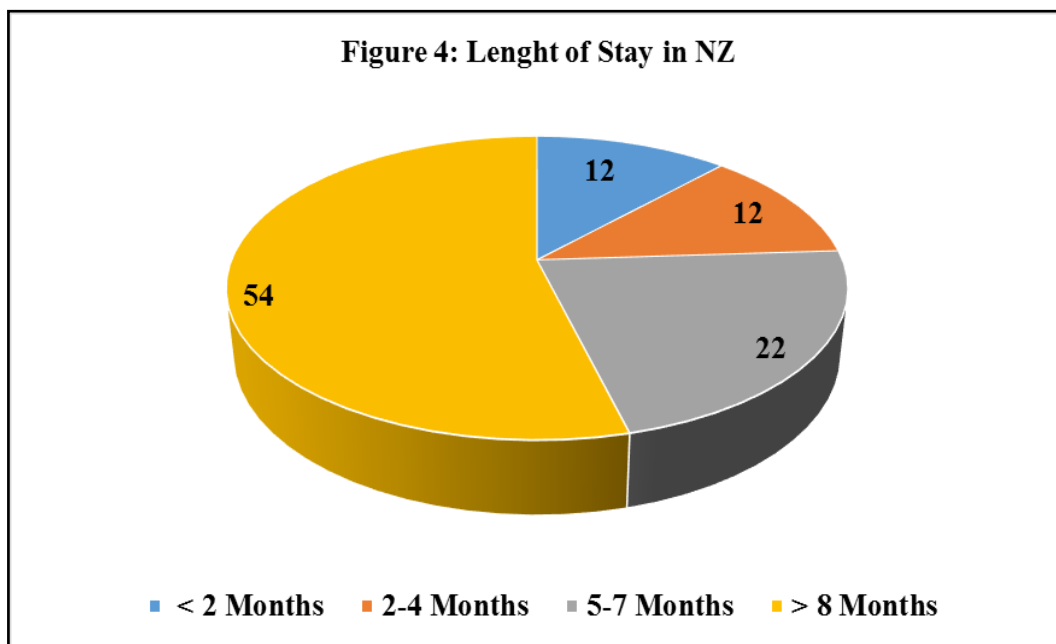
As per random selection of participants, majority of respondents (50%) were in the age group of 25-34 years, whereas only 4% were in 40-45 years age group and above (Figure 1). Out of them, 42% were male and 58% were female (Figure 2).



Majority of the respondents were graduates (92%), with postgraduates (6%) and doctorates (2%) (Figure 3).



As far as length of stay in New Zealand is concerned, 54% have been in the country for more than 8 months, whereas only 12% have recently arrived i.e. less than 2-4 months (Figure 4).



**Table 1:** Knowledge and awareness of international students about seasonal influenza

<b>Knowledge</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Somewhat Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
Impact of Influenza on personal health	4%	0%	18%	50%	28%
Control measures in spread of influenza	4%	2%	26%	40%	28%
Government campaigns on influenza	4%	12%	32%	34%	18%

Only 28% participants strongly agree that they know about the impact of influenza on personal health as well as the preventive measures to minimize its spread. Similarly, only 52% were aware of any campaigns by DHBs (District Health Boards), Ministry of Health or any other state agencies regarding seasonal influenza in Auckland (Table 1).

**Table 2:** Attitude of international students towards seasonal influenza

<b>Attitude</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Somewhat Agree</b>	<b>Agree</b>	<b>Strongly Agree</b>
Influenza poses real health threat	2%	12%	22%	24%	40%
Prefer non-traditional preventive measures	2%	10%	32%	38%	18%
Regularly read updates on influenza	8%	24%	38%	18%	12%

Table 2 describes that 40% respondents were concerned about the real and serious health issues that influenza can lead to. A total of 56% international student participants prefer to adopt non-traditional measures to prevent seasonal influenza other than pharmaceutical and medicinal measures. Only 30% of the participants check for regular updates on seasonal influenza in Auckland, which is alarming as far as spread, control and preventive measures of influenza among international students are concerned. The CDC (Centre for Disease Control) strongly recommends preventable diseases such as influenza, which occurs due to lack of vaccination and failure to adopt preventive measures such as non-pharmaceutical interventions (Akan, et. al., 2010).

**Table 3:** Behaviour of international students to control seasonal influenza

Behaviour	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
Personal hygiene change influenced by family members	4%	0%	20%	20%	56%
Hand hygiene is critical in spread of influenza	0%	2%	14%	34%	50%
Attended seminars, lectures conducted for awareness	2%	8%	70%	16%	4%
Personal hygiene and sanitation drives by socio-civic organisations	4%	4%	42%	34%	16%

Majority of participants agreed on personal hygiene situation changes influenced by family members and roommates. They were also of the opinion that hand hygiene has been a critical factor in the spread of seasonal influenza among international students. Only few were aware of and attended the seminars and lectures conducted by socio-civic organisations on the topics (Table 3). A number of similar surveys revealed similar findings. Another study conducted on Korean students found that the frequency of hand hygiene was improved during the peak outbreak of influenza in a particular population. The purpose of mentioned study was to assess the perceptions, motivating factors, and behaviours associated with hand washing to prevent the transmission of influenza in Korea (Park et al., 2010).

Ministry of Health (2018) ensures that everyone in New Zealand gets influenza vaccine to avoid experiencing the severe impact of influenza on their health. CDC recommends by encouraging people to observe personal hygiene through self-isolation and social distancing (CDC, n.d.). The educational institutions/ workplaces are bound to provide necessary information to its students/ clients on various control measures of influenza (Van, et al., 2010).

#### 4. Conclusions and Recommendations

The demographic profile revealed that age of the respondents belong to young adults, with graduate qualifications, studying and staying in New Zealand for more than 8 months. An estimation of participants' perception and knowledge revealed that the government seems serious about its campaign measures to prevent influenza, and that the students are aware of the control measures on the spread of flu. The collected information on international students imply that educated people use effective flu control measures, because people who practice personal hygiene are more often free from illness.

International students also believe that it is really important for them to be well informed on issues regarding health and diseases. They also agreed that they should follow doctor's advice on the prevention and cure of the disease, and that respondents practice hand washing hygiene regularly. On the societal factors including university, school and/or workplace factor, participants were not regularly attending to seminars, symposiums and lectures about influenza.

Only a few health and sanitation awareness drives sponsored by the socio-civic organization, are known by the international students. It is, therefore, recommended that international students should not stop educating themselves by supporting government health campaigns, by participating in these kind of survey activities and attending seminars to increase their knowledge and awareness on influenza prevention in the community. The international students should have active involvement in dissemination of information and education drive, and should update their knowledge on the disease. Last but not the least, the Ministry of Health should increase its campaigns, programmes and projects toward influenza prevention in every educational institution, university, school and workplaces.

## REFERENCES

- Akan, H., Gurol, Y., Izbirak, G., Ozdatli, S., Yilmaz, G., Vitrinel, A., Hayran, O. (2010). Knowledge and attitudes of university students toward pandemic influenza cross-sectional study from Turkey. *BMC Public Health*, 10: 413. <http://doi.org/10.1186/1471-2458-10-413>
- Centre for Disease Control and Prevention, (n.d.). Handwashing: clean hands save lives. Retrieved on June 10, 2019 from <https://www.cdc.gov/handwashing/index.html>
- Ministry of Health. (2019). Influenza. Retrieved June 10, 2019 from <https://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/influenza>
- Ministry of Health. (2018). Influenza. Retrieved July 31, 2019 from <https://www.health.govt.nz/our-work/preventative-health-wellness/immunisation/influenza>
- Park, J.H., Cheong, H.K., Son, D.Y., Kim, S.U., Ha, C.M. (2010). Perceptions and behaviours related to hand hygiene for the prevention of H1N1 influenza transmission among Korean university students during the peak pandemic period. *BMC Infectious Diseases*, 10: 222. <https://doi.org/10.1186/1471-2334-10-222>
- Seale, H., Mak, J.P., Razee, H., MacIntyre, C.R. (2012). Examining the knowledge, attitudes and practices of domestic and international university students towards seasonal and pandemic influenza. *BMC Public Health*, 12: 307. <https://doi.org/10.1186/1471-2458-12-307>.
- Van, D., McLaws, M.L., Crimmins, J., MacIntyre, C.R., Seale, H. (2010). University life and pandemic influenza: attitudes and intended behaviour of staff and students towards pandemic (H1N1) 2009. *BMC Public Health*, 10: 130. <https://doi.org/10.1186/1471-2458-10-130>



## AUTHORS

**Syed M. Shahid**, BSc, MSc, PhD, is working as Programme Leader, Health Services Management at Aspire2 International, Auckland and as Postdoctoral Researcher at Faculty of Medical & Health Sciences, University of Auckland. He has more than 10 years of administration, teaching and research experience in the field of health and disease. Dr Shahid has published more than 45 research papers in journals of international repute, supervised 4 PhD and 11 MSc students in the field of health and disease and has presented his research work in more than 60 national and international conferences, symposia and seminars.

**Muhammad Jawed**, MBBS, MPhil., PhD, currently working as Professor of basic health sciences (Biochemistry) at College of Medicine, Qassim University-KSA one of the top ranked and NCAAA (National Commission for Academic Accreditation & Assessment) certified university of public sector. Besides teaching, supervising four students in their compulsory research project. Reviewer for IJHS (international Journal of Health Sciences), Qassim University – Kingdom of Saudi Arabia. Prof Jawed has over 20 years of teaching and research experience in the field of basic health sciences at various levels in recognized Medical/Dental institutions, with more than 17 research publications in the field.