**IS4250**

**Community Psychological and Behavioral Responses through the First Wave of the 2009 Influenza A(H1N1) Pandemic in Hong Kong**

**Report**

By

Low Jia Wei

Liu Yue

**Tables of Content**

Introduction

Results

Contribution of Paper

Challenges & Limitation of Paper

Conclusion

Appendix A – Plot Replication

Appendix B – Plot Replication Details

**Introduction**

***Research Motivation***

In the event of an influenza pandemic, there are often close to no available vaccine. The only way to prevent or slow down the spread of such a pandemic is through “non-pharmaceutical” community intervention. This intervention usually includes promotion of health and hygiene preventative measure, symptom of the pandemic disease and what to do when met with issue regarding the pandemic. Prior to this paper, there are very little data on about community psychological and behavioral responses to influenza.

In response to prior paper on Severe Acute Respiratory Syndrome (SARS), this research experiment takes into account perception of risk and anxiety which were not measured in prior SARS related paper. There have been others studies done to examine the initial response of the people in pandemic affected country. However, this paper focuses on the response of the general community in Hong Kong throughout the wave of the pandemic in 2009. It also seek to find out what factors will result in greater use of preventive measure which are the “non-pharmaceutical” community interventions.

**Methodology**

This experiment uses telephone surveys for collection of data. The surveys are designed to be cross-sectional in nature and it records information on the subjects without manipulating the study environment which in the case of this survey is the daily lives of the community in Hong Kong. The surveyors hence should not influence the subjects when conducting the survey in a way that it would change their behavior towards the pandemic of H1N1.

Cross-sectional studies are suitable for the research purpose as the research require comparison of multiple variables at the same time. This will allow them to reduce cost as addition of variables will result in very little costs hence given the amount of factors being measured, this would definitely lower the cost of the research study. Cross-sectional studies are useful to serve as a guide or springboard for future research which are similar or can a further research to test for causation.

***Methods***

This research uses phone calls to collect the results. The phone numbers are randomly selected by a random-digit dialing of all the valid land-based phone numbers which are generated by computer system using a randomization algorithm. Phone survey is used as more than 98% of the populations in Hong Kong have a valid land-based phone numbers.

Interviewers of the survey are trained to increase chance of gathering reliable and valid survey results. These phone calls were made outside of working hours to prevent the exclusion of the working groups and overrepresentations of the non-working group. The criteria of a valid survey respondent are as below:

* They must be aged 18 and above
* They must lived in the house for at least 5 days per week
* They must speak Cantonese which is to identify them as Hong Kong citizens and not foreign expats as most Hong Kong citizen speaks Cantonese. (Citation)
* They must give their consent to participate in the survey before the questions are asked.
* They must be available by the 5th Follow-up call if they are busy during the first 4 or else they will be deemed as an invalid survey target.

There are a total of 13 surveys being conducted throughout the research period. Participants are separated by demographics characteristics of gender and age for each survey in terms of means and proportion. Each survey took approximately 15 minutes to complete and response to the survey were ordinal Likert-type. Below shows an example of an ordinal Likert-type response:

**Do you feel those masks are important during a pandemic outbreak?**

Strongly Agree Agree Neutral Disagree Strongly Disagree

The answer to the above sample survey is ‘Agree’. Participants were asked to answer around 100 of such question in a survey. 12 out of the 13 surveys have at least 1000 respondents and with that sample size, the sampling error is at most 3%. Sampling error is usually due to differences between the sample from the population and the population itself. Randomization is used in the selection process of the research in the form of randomly generated landline number by the computer and this helps to reduce sampling error in the research. Sampling error is impossible to eliminate as it require sampling of the entire population which is expensive and definitely not feasible. The sampling error of this research is within the confidence interval which is good.

The only survey to be deemed as invalid is the one with only 504 respondents which is well below the average of about 1000. Responses from people exhibiting flu like symptoms were also excluded as they behave differently from those who do not exhibit these symptoms. Multivariable logistic regression is used for each of the survey data which give dichotomous outcome and uses more than one variable on the right side of the regression equation as opposed to linear regression which outcome is continuous and consist of one variable.

Survey number one and two psychological responses are somewhat different from the other eleven remaining surveys and the first local case did not happen until survey three. This means that the first two surveys are measuring psychological responses against a potential threat while the remaining surveys are measuring psychological responses against a confirmed or a real threat. The responses to the survey from survey 3 to 13 excluding 6 which have only 504 respondents were very consistent which shows that the sampling error is within a good range.

We will hence look at the results of the survey conducted and how they are being analyzed to show the impact of the study on the general population.

**Results**

Results obtained from this research do indicate correlation among the different factors that were being measured. However, these results do not infer causation as they are cross-sectional in nature.

**Contribution of Paper**

This paper has been the basis for research regarding psychological and community behavior for pandemic.

**Challenges & Limitation**

The main challenges for this research and experiment is the gathering of the data.

**Conclusion**

**References**

<http://www.ncbi.nlm.nih.gov/pubmed/24101881>

<http://www.ncbi.nlm.nih.gov/pubmed/23516121>

http://www.healthknowledge.org.uk/e-learning/epidemiology/practitioners/introduction-study-design-css