

Immunization Hesitancy in the Midst of the Pandemic

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Abstract – Immunization hesitancy among parents has become rampant and poses a great relevance during this time of pandemic. With set limitations due to COVID-19 protocols, 45 respondents with children ages 0-5 residing in Tierra Verde Subdivision, Pallocan West, Batangas City, were chosen. Specifically, this paper aims to determine the prevalence of compliance and non-compliance to vaccines, identify factors that contribute to the hesitancy of parents towards immunization, find out the difference of responses on the factors that contribute to the hesitancy of parents to immunization when grouped according to the prevalence of parents' compliance and non-compliance to immunization, and lastly, formulate a plan of action geared to addressing this phenomenon. The method of gathering pertinent data used explanatory sequential, mixed-method research to support the quantitative data with the responses of parents through an elicited interview of 15 representative individuals of the said community. Firsthand, a survey questionnaire was distributed, imparted with interview guides for the chosen respondents. Gathered findings deemed evident hesitance of parents to submit their children for vaccination, which is highly correlated to having insufficient knowledge about vaccines. Herewith, proposals for holistic health education were recommended for the provision of a high-standard training program not only for health care providers but also for the barangay health workers. In doing such action, the alleviation of worries, concerns, and inevitable negative thoughts of parents regarding vaccination will be achieved.

Keywords – immunization hesitancy, vaccine, compliance

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INTRODUCTION

As the world progresses, various kinds of communicable diseases arise. The creation of vaccines allowed people to be prevented from these diseases. Vaccines serve as protection from disease invaders, which stimulate the immune system for the production of antibodies. Unlike other medicines that treat or cure a certain disease, these vaccines prevent them. However, many factors affect people's compliance with vaccines and immunizations, which leads to vaccination hesitancy. With the presence of the COVID-19 Pandemic and various communicable diseases spreading locally and even globally, the relevance of Immunization Hesitancy is likely to be seen. Vaccination hesitancy, as defined by the World Health Organization (WHO), is the "delay in acceptance or refusal of vaccines despite availability of vaccination services". Even today, "1 out of 5 children around the globe fail to get hold of habitual immunization", and approximately "1.5 million children die every year of diseases that would be averted through vaccination." [1]. These vary across different countries, cultures, and people. According to WHO, the vaccine hesitancy model includes factors affecting compliance with vaccines: complacency, convenience, and confidence.

Vaccine hesitancy could lead to numerous problems in the future that primarily involve the health of people. This is evident in the Philippines due to unfortunate events of failed handling, malpractice, or improper dissemination of instructions and information on vaccines and immunizations. An outbreak of measles occurred in the Philippines last 2018, affecting the health of many and even death. This has led to the loss of trust and confidence of the public in vaccines and immunization due to the Dengvaxia controversy. From that time, parents have been reluctant for their children to be vaccinated. The COVID-19 pandemic has greatly affected the world's health and beliefs especially regarding the development of coronavirus vaccines bringing different perspectives and outlooks on acceptance of vaccines and immunizations thus leaving

a severe impact on low and middle-class countries in relation to vaccine hesitancy.

Through the promotion of health and the acquiring of knowledge about immunization, the prevalence of various diseases can be prevented. This paper aims to help in collecting information and enhancing common knowledge about Immunization Hesitancy and develop a contingency plan that would minimize the risks of acquiring vaccine-preventable diseases. The results of this study will provide useful information about the effects of immunization hesitancy on the health of the community as well as the perception of complying with vaccines and immunizations as a primary preventive tool. It will also serve as a basis for students to develop a comprehensive contingency plan for the dissemination of proper health education about vaccines and in addressing decreased rates of compliance to vaccines. Lastly, this paper will serve as a reference for the future researchers in developing research with similar context, nature, and terms.

OBJECTIVES OF THE STUDY

This study aims to determine the immunization hesitancy among parents amid the pandemic in Batangas City. Specifically, this study seeks to determine the prevalence of parents that are compliant, non-compliant, hesitant, and non-hesitant to immunization; to identify the factors that contribute to the hesitancy of parents to immunization; to find out the difference of responses on the factors that contribute to the hesitancy of parents to immunization when grouped according to the prevalence of parents' compliance and non-compliance to immunization. Finally, a plan of action will be formulated to address immunization hesitancy.

MATERIALS AND METHODS

This chapter imparts the methods and procedures applied in the conduct of this study by its proponents. In addition, a brief discussion of the research design, the respondents, data gathering tools and procedure, as well as the statistical treatment of data is included.

Research Design

Mixed-method research seen as the most appropriate research design to deal with immunization hesitancy, conveys both philosophical assumptions and methods of inquiry. Both the premise of a quantitative and qualitative design were used to develop a better understanding of the research problem presented. Specifically, explanatory sequential was used wherein the quantitative method was done before the qualitative

one. This is to enhance the explanation of mechanisms building behind the quantitative results and then embed toward qualitative examination. In this manner, the results were connected for a more reliable interpretation of the findings.

Participants

Purposive sampling, a type of non-probability sampling was used to determine the respondents for this study. It is wherein the respondents were chosen with the purpose and judgement that they are the population with utmost knowledge about the issue under study which is Immunization Hesitancy. Due to the limitations set by adhering to COVID-19 protocols, instead of having respondents from the entire vicinity of Batangas City, 45 parents in Tierra Verde Subdivision, Pallocan West, Batangas City, served as the population size. They are with children in ages 0 to 5.

Instruments

The collection of data was done through the use of an appropriate gathering technique and instrument. The researchers obtained data from the residents of Tierra Verde Subdivision, Pallocan West, Batangas City, who are parents with children ages 0 to 5. An interview guide and survey questionnaire were prepared to obtain statistical information and to elicit factual answers. Here, instruments were validated and underwent reliability testing. The questionnaire offers probable answers to each question in the respondents chose the best answer based on their opinions. In this manner, tabulation of results was easily obtained since the choices were converted into numerical values for analysis of data.

Data Gathering Procedure

In data gathering, the proponents of the study used a defined strategy to comprehensively process pertinent information related to the research dealt. First and foremost, constructing the working title and identification of the specific purpose of the study is vital to be executed. In line with this, to further assist the researchers into fully grasping their study, searching for relevant literature and studies was performed. Furthermore, the questionnaire must be aligned with the study's objectives, the information to be gathered, and patterned in a way that is easily analyzed by the researchers as well as the readers. After a rigorous set of recommendations and approval, the researchers administered their instrument to the participants of the study. To attain the final result of the research conducted,

interview was done, and questionnaires were collected, tallied, analyzed, and evaluated.

Data Analysis

Quantitative Data Analysis

Analysis and interpretation of the data involve complex and sophisticated methods in order to fully understand the depth of information that was gathered from the respondents. Specifically, for this study, Descriptive statistics was utilized for the synthesis of data. This is wherein a calculation of parameters was executed to make a reliable estimate of the target population. To perform data analysis, the following statistical tools were used. Frequency and percentage distribution were used to describe the prevalence of parents' compliance and non-compliance to immunization. Weighted means and ranking were used to assess the factors that contribute to the hesitancy of parents to immunization. To test the hypothesis of the study, Analysis of Variance (ANOVA) was used. The following Likert Scale was used in assessing the variables: 3.50-4.00 – Always; 2.50-3.49 – Often; 1.50 – 2.49 – Seldom; and 1.00 – 1.49 – Never. In addition, all data were treated using a statistical software known as PASW version 26 to further interpret the result of the study using an alpha level of 0.05. Afterward, the drawing of appropriate inferences and conclusions to test the association and significance was accomplished. To facilitate comprehension and appreciation of trends that appeared in the study, a graphical method of data presentation was made.

Qualitative Data Analysis

To create a more cohesive research, an analysis of qualitative data was done. This is wherein interviews from 15 chosen representative respondents were reviewed and explored to create an understanding of the thoughts, ideas, and statements that the parents have. Moreover, recorded interviews were transcribed to thoroughly organize the contents of each encounter. Data was then categorized according to commonly occurring responses that aid in making a connection with the concerns the parents have regarding immunization protocols. Lastly, themes were established purposively in a manner of narrative analysis to provide support with the quantitative data collected and impart a deeper sense as to why parents have become reluctant to submit their children for vaccination.

Statistical Treatment of Data

The statistical treatment for quantitative data that was applied to the chosen study is by the data collected. Also, various measures were utilized to draw the rightful conclusions. One of which is "frequency distribution that shows the different measurement categories and number of observations in each category." Moreover, this "distribution" coincides the computation of frequency through the number of times a particular data appears. Percentage count, another statistical measure, applied in analyzing the data, is the part of a whole expressed in hundredths. It is obtained by multiplying a number by a percent.

Ethical Considerations

In the study, the researchers assured their participants of the three primary ethical principles to which the standards of ethical conduct is grounded. The first among the three is beneficence. Herewith, an emphasis is given with regard to the respondents' right to freedom from harm and discomfort as well as their right to protection and exploitation. Second is the respect for human dignity wherein the autonomy of participants was exercised and their right to full disclosure of the nature of the study, right to refuse participation, nature of commitment and procedures to be done were given utmost focus. The third and last is justice. Fair treatment in terms of the distribution of risks and benefits was weighed. Moreover, since the participants' privacy is vital, the practice of confidentiality and anonymity was executed. All in all, with the main principle to render the study while still protecting the ethical integrity of the whole research process, the conduct of this research underwent a series of ethics review which was approved by the LPU-B Research Ethics Review Committee.

RESULTS AND DISCUSSION

Table 1. Prevalence of Parents' Compliance, Non-compliance, Hesitance, and Non-Hesitance to Immunization

| | Frequency | Percentage (%) |
|---------------|-----------|----------------|
| Compliant | 20 | 44.40 |
| Non-Compliant | 7 | 15.60 |
| Hesitant | 13 | 28.90 |
| Non-Hesitant | 5 | 11.10 |

Table 1 briefly summarizes the population of parents' adherence to immunization. As shown above, there is a significant number of respondents who are compliant with submitting their child for immunization (20).

However, when accounting those who are non-compliant (7) and displays great hesitance (13) into adhering in immunization protocols for their offspring, an impending health threat is to be expected.

To further support the findings shown above, qualitative data gathered in the form of an interview revealed that there are several patterns relating to the compliance and non-compliance of parents. One of the parent's response was *"I don't believe in such because when I was young, vaccination protocols are not fully implemented by the government, less are prone to having diseases because back then foods are more priority than vaccines."* The comparison of outdated health practices with innovative ones reiterated that the respondent is non-compliant and shows great disbelief in the benefits or advantages vaccines have to offer. On the other hand, *"Oo naman. Kasi kaya nga nagvavaccine yung mga DOH para sa kaligtasan ng bata kaya naniniwala ako sa mga vaccine."* was one of the recorded responses of the parents that displayed compliance and trust towards the programs and protocols established by the DOH.

Table 2 presents the factors that contribute to the hesitancy of parents to immunization. The composite mean of 2.03 indicates that the respondents seldom performed the above indicators. Among the items cited, concerned about my children's safety when they receive immunizations (2.80), have seen/read negative information about vaccines from the media (2.71) and develop a fear from not knowing the result once vaccinated (2.58) were often encountered.

More often than not, when delving deeper into the underlying factors as to why parents have become reluctant to submit their children for immunization, running into the main concern which is safety considerations is almost always impossible to avoid being encountered. This may be related to the stigma implicated with vaccines and its corresponding side effects. What the population of parents need to understand more is the principle of materializing immunization, its scientific invention and development which is geared only towards having the benefits outweigh the risks.

To provide validation of the results shown, concerns about the safety and effectivity of vaccines were implied by some of the parents, *"Ay hindi muna siguro dahil titingnan ko muna kung talagang effective yan tsaka ko sila papaturukan."*, *"... maari ko silang pabakunahan kung dumaan na ito sa masusing pag-aaral at effectiveness at walang masamang maidudulot sa katawan."*, *"Hindi, kasi sisiguraduhin ko muna kung effective yung turok."*

Table 2. Factors that Contribute to the Hesitancy of Parents to Immunization

| Indicators | WM | VI | Rank |
|--|------|--------|------|
| 1. I don't have enough knowledge about vaccines. | 2.24 | Seldom | 6 |
| 2. I prefer traditional and religious alternatives over vaccines. | 1.67 | Seldom | 11 |
| 3. I don't commend immunization because it is misaligned with my cultural beliefs. | 1.51 | Seldom | 13 |
| 4. I develop a fear from not knowing the end result once vaccinated. | 2.58 | Often | 3 |
| 5. I have a fear of being injected incorrectly or inevitably contracting infections. | 2.29 | Seldom | 4.5 |
| 6. I perceive that injections are painful. | 2.29 | Seldom | 4.5 |
| 7. I have negative past experiences with vaccines and its side effects. | 1.51 | Seldom | 13 |
| 8. I don't have enough financial resources to comply with immunizations. | 2.22 | Seldom | 7 |
| 9. I live in a place where there is little to no access for health care facilities. | 1.53 | Seldom | 12 |
| 10. I find it difficult to comply due to the complexity of vaccine schedules. | 1.73 | Seldom | 10 |
| 11. I have seen/read negative information about vaccines from the media. | 2.71 | Often | 2 |
| 12. My decisions are affected by the misconception and perceived ineffectiveness of vaccines | 1.87 | Seldom | 9 |
| 13. I am concerned about my children's safety when they receive immunizations | 2.80 | Often | 1 |
| 14. I am surrounded by people who speak negatively of vaccines. | 1.49 | Never | 15 |
| 15. I receive insufficient information/health education from health care providers prior to immunization | 1.93 | Seldom | 8 |
| Composite Mean | 2.03 | Seldom | |

Legend: 3.50 – 4.00 = Always; 2.50 – 3.49 = Often; 1.50 – 2.49 = Seldom; 1.00 – 1.49 = Never

The gathered results reveal the utmost worry and consideration related to their innate protective instinct as

a parent which is aimed at maintaining the best health of their children.

As stated by Fredrickson et al. [2], news reports have been rampantly sensationalized when it comes to bringing attention to the untoward side effects of immunization. This is seen and relayed towards the effect of media in the decision-making and judgment of parents. Consequently, having such concerns and misconceptions regarding vaccination may lead to an impending fear of not knowing what to expect after having their child vaccinated.

Other items were rated seldom such as having a fear of being injected incorrectly or inevitably contracting infections, perceiving that injections are painful and don't have enough knowledge about vaccines with mean values of 2.29, 2.29, and 2.24, respectively.

“Oo, dahil required *yun ng DOH pero andun parin syempre yung takot.*”, said one among the 15 respondents interviewed. Submission of their child to vaccine administration is followed even with hesitance and fear developed. Analysis of fear and pain perception all draw back to the past experiences of the parents. This particular thought perception may have developed when they were still young and encountered a circumstance where they were injected incorrectly and have a low tolerance of pain when it comes to receiving injections. Moreover, the inevitable expectation of contracting infections may be an experience of someone they know or have seen in the media reports. Meanwhile, parents who claim that they have insufficient knowledge and background regarding vaccines are as follows— “*Wala akong alam eh dahil sa pedia kami nagpapa-vaccine.*”, “*Hindi ako masyado aware sa mga vaccines na ‘yan.*” “*Nako wala lang akong alam diyan sa mga ganyan at pinupuntahan laang ako ng taga-center dine eh para magsabi ng mga ipapabakuna.*” According to McKee, C., [3] parents may have been yearning for additional education about the advantages and disadvantages of vaccines and all of their aspects but never had access to reliable and sufficient information about it.

However, being surrounded by people who speak negatively of vaccines was never experienced. This only goes to show that the environment one is residing in is a big deal of factor when establishing permissible health and lifestyle practices.

Table 3 displays the comparison of responses regarding the factors that contribute to the hesitancy of parents to immunization. It was observed that there was a significant difference since the obtained p-value of 0.011 was less than 0.05 alpha level. This means that the responses differ significantly and based on the post hoc

test conducted, it was found that those who are hesitant to immunization have a greater assessment on the factors enumerated.

Table 3. Difference of Responses on the Factors that Contribute to the Hesitancy of Parents to Immunization When Grouped According to Prevalence of Parents’ Compliance and Non-compliance to Immunization

| | n | Mean | Std | F-value | P-value | Interpretation |
|---------------|----|------|-------|---------|---------|----------------|
| Compliant | 20 | 1.79 | 0.535 | | | |
| Non-Compliant | 7 | 2.25 | 0.595 | 4.234 | 0.011 | |
| Hesitant | 13 | 2.44 | 0.717 | | | |
| Non-Hesitant | 5 | 1.59 | 0.595 | | | Significant |

Legend: Significant at p-value < 0.05

Parents who are non-compliant and show hesitancy towards the immunization protocol imposed on their children have corresponding concerns and reasons as to why they have a certain negative connotation regarding vaccines which consequently results in delaying adherence or even rejection of the matter. This is an essential phenomenon that must be thoroughly studied and resolved immediately to avoid the outward display of skepticism towards vaccines, be able to educate the parents and achieve health promotion for the young ones.

CONCLUSION AND RECOMMENDATION

Based on the findings presented, the researchers have formulated the following conclusions:

1. A great deal of possible health threat was still imposed on this concerned population due to the marked hesitance and non-adherence of the other parents which may influence the rest of the group.
2. Parents indeed are yearning for both tangible and intangible sources of education regarding immunization to further break down barriers of hesitancy.
3. Noncompliant and hesitant parents have a greater assessment of the factors that contribute to their adherence to immunization protocols.

4. Formulating a plan of action directed towards targeting an organized and thorough commencement of holistic health education will be proposed.

In lieu of the drawn conclusions from the medical and psychological standpoint, the researchers arrived at the following recommendations:

1. For parents who carry the same worries and considerations regarding immunization, this paper will serve as a comprehensive source of knowledge to which their awareness will be increased, and concerns will be resolved.
2. Among the factors contributing to vaccine hesitancy of parents, a common ground of insufficient knowledge about its essence, indications, and expected side effects was evident. Hereby, health care professionals, especially those geared towards being the main source of information regarding vaccines, are highly expected and encouraged to attend to the needs of parents, more so to their concerns and queries about the efficacy and safety of vaccines to be administered for their offspring.
3. For community health workers, may this study be a source of enlightenment concerning the common considerations of parents regarding having their children immunized? Most of the time, they are the ones who readily accommodate those within the vicinity and disseminate free vaccination. Hence, they must also be fully equipped and prepared to be a health educator for the concerned parents.
4. Implementation of a high-standard training program for healthcare professionals and community workers is a great deal of resolution to fully ensure competency and equip sufficient knowledge regarding immunization.
5. The researchers recommend organizing a seminar titled, "Breaking down barriers: Addressing Immunization Hesitancy", coordinated with healthcare professionals, with the guidance of barangay health workers in areas with evident non-adherence to vaccines, and the LPU-Batangas CON faculty and students as participants. Consequently, safety considerations, regulations for vaccine-preventable diseases, and contingency planning will be discussed.

6. Continuous research is highly recommended as the study offers many benefits and areas to be studied and resolved. The next researchers may focus on a larger scale of resolution imparted by the national government to further allocate improvements to addressing immunization hesitancy in the Philippines.

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