

Knowledge, Attitude, and Practices of Mothers on Child's Immunization Among Selected Barangays of Alicia, Isabela

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Abstract: *The number of births in the year 2020 did not tally to the number of vaccinated children in Alicia, Isabela. A total of 960 live births occurred in that year, but statistical data revealed that only 842 babies received and complied with the Hepatitis B vaccination, leaving 118 infants unvaccinated. This study was conducted to determine the level of knowledge, attitude, and practices of mothers on child's immunization among selected Barangays of Alicia, Isabela. A questionnaire was adopted from previous research with the title Knowledge, Attitude, Practices of Maguindanaoan Mothers on Child's Immunization in Selected Barangays in Batulawan, Pikit, North Cotabato (Kulintang, 2017). The study utilized non-probability purposive sampling with 50 respondents and were given to mothers with children ages 0-5 years old. The data was analyzed using frequency counts, mean, percentages, Analysis of Variance (ANOVA), and Independent Sample T-Test. The result indicated that the respondents have a high level of knowledge on childhood immunization. They also have a good attitude which was shown by their agreement with the positive effects of childhood immunization. In addition, they always practice good habits in terms of immunizing their children.*

Keywords: Knowledge; Attitude; Practices; Immunization.

I. INTRODUCTION

The principal goal of every health institution is to provide quality care to their constituents thus immunizations are forms of taking good care of newborn babies that help them to further develop and grow into healthy individuals. As discussed in the twenty-sixth day of July year 2010, the Mandatory Infants and Children Health Immunization Act of 2011 (Republic Act 10152) imposed that mandatory basic immunization will be given free for the children. It also included health education for pregnant mothers and the need in emphasizing the importance of complying with these programs.

In addition, Republic Act 10152 opens opportunity to every household in giving and treasuring optimum-functioning level of health of the children for free. The said act aims to combat different diseases such as tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis, and measles. Other than that, is to prevent newborn acquired diseases to further alleviate it at a young age. This act is also related to the Extended Program on Immunization (EPI) which aims to reduce the morbidity of the diseases on which vaccines are available. This research paper used the act to be the legal basis for the EPI that has been established in 1974 as they are correlated. Under it, Garantisadong Pambata is one of the programs which totally offers a bundle of health care services for children and provides quality health education to guardians, parents, and caregivers as well.

The United Nations International Children's Emergency Fund (UNICEF) found out that childhood immunization rates are low, and in some cases declining, in the Philippines. Between 2013 and 2015 the routine immunization coverage rate dropped from 89 % to around 62 % and low immunization rates contributed to increased incidence of vaccine-preventable diseases such as rubella in 2011 and measles in 2014. On the other hand, in 2017 the proportion for fully vaccinated children with EPI programs was at 48.4% according to the Philippine Statistics Authority (PSA). The given

statistical data indicate how alarming the outcomes would be if it continuously happens over time. There is also significant disparity in immunization coverage across the country, with only 18 % of children in ARMM receiving all their basic vaccinations in 2017, compared to 87 % in other areas. (UNICEF Organization Situational Analysis of Children in the Philippines,2018).

Last May 9, 2019, in Isabela, a memorandum from the Department of Education was released subjected to the Advisory in the Continuation of Measles Outbreak Vaccination and Implementation of School-based Immunization Program. However, it hasn't reached all barangays of different municipalities.

In Alicia, Isabela, parents are attending various seminars and programs in childcare was visible. Alicia has been one of the municipalities of Isabela South that actively engaged with its people in providing better health care through immunization programs. Alicia, Isabela had 960 live births in 2020, yet only 864 babies were vaccinated with Hepatitis B shot, which should be administered within 24 hours, and fully vaccinated babies posted for only 842.

Knowingly that the Immunization Act of 2011 was presented since 2010, the result showed that there were still lapses in implementing it. This outcome prompted the researchers to determine the level of knowledge, practices and attitude of mothers on child immunization among rural areas like Alicia, Isabela. Researchers of this study aimed to determine the knowledge, attitude and practices of mothers on childhood immunization. The curiosity regarding the extent of knowledge of parents with this certain dilemma and with the goal to further connect information with a viable communication led the researchers in conducting the study. In line with the current situation, the existing COVID-19 pandemic became one of the preexisting factors for the researchers to conduct this study since parents specifically mothers are bound to stay at home with their children for their safety. This outcome prompted the researchers in successfully assessing the knowledge, attitude and practices of mothers on childhood immunization of far-flung barangays of rural areas in Alicia, Isabela those factors will be essential in alleviating child health problems and resolving issues about childhood immunization.

II. METHODS

This study employed a descriptive-survey approach to assess distinct circumstances among the subjects. The research collected quantitative data using a questionnaire distributed to a sample of the population, aiming to evaluate the knowledge, attitude, and practices related to child immunizations. The investigation was carried out in five Barangays in Alicia, Isabela, focusing on mothers with children aged 0-5 years. The selection of respondents followed a non-probability purposive sampling method. The data gathering instrument was adopted from a previous study, which consisted of four parts: respondent's profile, knowledge on child immunization, attitude towards child immunization, and practices related to child immunization. Content validation and reliability testing were conducted to ensure the questionnaire's significance and accuracy. The data gathering procedure involved seeking permission and obtaining informed consent from the Barangay Captains and respondents, conducting face-to-face interviews while adhering to health protocols, and ensuring the confidentiality of participants' identities. The collected data were analyzed using statistical tools, including the Statistical Package for Social Sciences (SPSS). Descriptive statistics, such as frequency counts, mean, and percentage, were utilized to present and analyze the data. The Likert scale was employed to assess attitudes and practices, while analysis of variance (ANOVA) and independent sample T-Tests were utilized to determine differences in knowledge, attitude, and practices.

III. RESULTS AND DISCUSSION

Table 3: Demographic profile

PROFILE	Frequency N = 50	Percent 100.00
AGE		
20 years old and below	7	14
21- 30	22	44
31 years old and above	21	42
Number of children		
1-2	40	80

3-4	9	18
5 and above	1	2
Civil Status		
Single	1	2
Married	48	96
Separated	1	2
Majority Area of Childbirth or Delivery		
Clinic	23	46
House	3	6
Hospital	24	48
Occupation		
Government Employee	2	4
Private Employee	2	4
Self-employed	11	22
Unemployed/ Housewife	35	70
Educational Attainment		
Elementary Level	3	6
Elementary Graduate	6	12
High School Level	13	26
High School Graduate	11	22
College Level	6	12
College Graduate	9	18
Others	2	4
Family Monthly Income		
Php 5,000 and below	26	52
Php 5,001 -10,000	14	28
Php 10,001 – 15,000	3	6
Php 15,001 and above	7	14

Table 3 presents the frequency and percentage distribution of the respondents' profile.

The data was acquired by having 50 respondents completed a survey questionnaire. From the data, 14% of the respondents were aged 20 and below, 44% were aged 21-30, while 42% are aged 30 and above. Therefore, most of the respondents were aged 21-30 and is similar to the findings of Quero et al. (2019) who performed a cross-sectional study on the knowledge, attitude and practices of mothers and caregivers on immunization in Quezon City. The preponderance of the 211 respondents in their study were between the ages of 24 and 30.

From these respondents, majority (80%) have 0-2 children, 18% have 3-4 children, while 2% have 5 or more children. In terms of civil status, almost all (96%) of the respondents were married, while 2% were single and 2% were separated. Most of these respondents gave birth in either a clinic (46%) or hospital (48%), while the remaining 6% gave birth in their house, according to the study by (Amor, 2021) indicated that parents still portray traditional roles in their homes in which fathers are caregivers and protectors, but have little control over children's daily lives, while mothers take on the task of procreating, disciplining and managing the family.

In terms of educational attainment, 6% stopped at the elementary level, 12% graduated elementary, 26% stopped at high school, 22% graduated high school, 12% stopped at the college level, 18% finished college, while 4% noted others as their education. As such, majority of the respondents reached high school as their educational attainment. According to international study, children of educated mothers were significantly more likely to get vaccinated because more educated women tend to come from wealthier homes and reside in areas with better access to healthcare and services, socioeconomic status and contextual factors can explain some of the relationship between mother's education and children's vaccine coverage. Children of younger women without schooling, for example, face a double whammy of disadvantage, which is worsened if they come from a low-income family. Kibreab et al., (2020) also stated that children of educated mothers were more likely to complete their vaccinations because maternal education encourages a mother

to engage in health-seeking behaviors that benefit her child's vaccination, whereas the father's role was to handle all financial and emotional support through the completion of their child's immunization.

In terms of occupation, majority (70%) were unemployed/housewives, followed by being self-employed (22%). 4% of the respondents were private employees while the remaining 4% were government employees. Lastly, majority of the respondents (52%) have a family income of Php 5000 and below, 28% have an income between Php 5001 to 10,000, 6% have an income between Php 10,001 to Php 15,000, while 14% have an income above Php 15,000. Research by (Amor, 2021) examined the depth of knowledge strongly depends on the education and income of the parents. High income coupled with good education leading to more information about compared to low income or no formal education. Likewise, the profession has taken on the same meaning in which work leads to being knowledgeable, as they have different resources and access to information, be it from the boss, co-parents, or discussions.

Table 4. The Respondents Knowledge on Childhood Immunization

Statements	True		False	
	Frequency N = 50	Percentage 100.00	Frequency N = 50	Percentage 100.00
1. Immunization is the process by which vaccines are introduced into the body before infection sets.	43	86%	7	14%
2. Immunization helps the body to develop protection against a particular disease.	48	96%	2	4%
3. Vaccines are made from "weak or dead" versions of the viruses or bacteria that can cause disease	28	56%	22	44%
4. It is safe to vaccinate a sick child with minor illness (cough, cold, diarrhea, fever or malnutrition)	22	44%	28	56%
Immunization is not associated with side effects.	35	70%	15	30%
The BCG Vaccine is intended to prevent pulmonary tuberculosis in the future.	42	84%	8	16%
There are three (3) doses of BCG which will be given to child/children.	23	46%	27	54%
Polio vaccine will also help prevent measles occurrence.	44	88%	6	12%
It is normal to have a fever after Hepatitis B immunization.	47	94%	3	6%
10. If a person is immunized and he gets sick, his body generates antibodies to fight diseases, but it doesn't help you to get better.	34	68%	16	32%
11. Community immunity only applies to diseases transmitted from person to person such as measles, smallpox, rubella and chickenpox.	39	78%	11	22%
12. Vaccinated children are not only lesser risk of catching vaccine preventable disease but can also help improve community immunity.	44	88%	6	12%
13. Unimmunized persons are protected against some contagious Infection indirectly by being surrounded by immunized persons	31	62%	19	38%
14. Infants and newborn do not need to be vaccinated at an early age.	5	10%	45	90%

15. If a person is immunized and he gets sick, his body generates antibodies to fight diseases, but it doesn't help you to get better.	34	68%	16	32%
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Table 4 showed the frequency and percentage on the knowledge of the respondents

The knowledge of the respondents on childhood immunization in the survey contained 14 True or False questions that test how much the respondents know about the topic. After collecting the responses per statement, the researchers found that on average, the respondents got 11 correct answers out of 14 questions, which indicates that the respondents have high knowledge on childhood vaccination. However, the three statements were the respondents usually got a wrong answer were the following:

- It is safe to vaccinate a sick child with minor illness (Correct Answer: True)
- Immunization is not associated with side effects (Correct Answer: False)
- Polio Vaccine will also help prevent measles occurrence. (Correct Answer: False)

According to Ridad (2019), in his/her study, respondents' adherence to a moderate level was impacted by their degree of understanding. Despite the Department of Health's current efforts and strategies, these obstacles persist, implying that these programs must be reviewed, as well as a thorough follow-up and surveillance of under-vaccinated or unvaccinated children, particularly in remote or conflict-affected areas such as non-operational Health Stations. Furthermore, according to Valido (2018), the source of vaccination as well as the dependability of the organizations is far more important than the information collected. Acceptance rises when health practitioners gain confidence in discussing the vaccine and the vaccination procedure.

Table 5. The Level of Attitude of the Respondents on Childhood Immunization

Statements	Mean	Description
Immunization is more beneficial than harmful.	3.42	Agree
Child's immunization is not prohibited in religion.	3.51	Strongly Agree
Child cannot be infected after he/she has been vaccinated.	3.06	Agree
4. It is very important to comply with immunization schedule	3.74	Strongly Agree
Immunization keeps your child healthy.	3.76	Strongly Agree
Vaccines for child's immunization are safe.	3.78	Strongly Agree
Child's immunization is very important.	3.88	Strongly Agree
Immunization is important among newborns up to school entrants.	3.74	Strongly Agree
9. It is important to watch out for the side effects of vaccination.	3.64	Strongly Agree
Immunization makes my child/children better	3.74	Strongly Agree
11. Vaccination boosts the infant's immune system.	3.68	Strongly Agree
Vaccinations do not experiment on infants.	3.10	Agree
13. The Seven Expanded Program on Immunization Vaccine (EPI) is important for children	3.66	Strongly Agree
14. There is a need to immunize my child even if he looks healthy.	3.72	Strongly Agree

Table 5 presented the mean and its description on the attitude of the respondents.

In terms of the attitude of the respondents on childhood immunization, the survey contained 14 statements that indicate the positive outcome of getting their children vaccinated, (e.g "Immunization keeps your child healthy," "Vaccination boosts the infant's immune system," etc.) and the respondents were asked to rate these statements if they Strongly Disagree, Disagree, Agree, or Strongly Agree. The responses were then coded into numerical values, where 1 corresponds to Strongly Disagree, 2 corresponds to Disagree, 3 corresponds to Agree, while 4 corresponds to Strongly Agree. After collecting all of the responses per statement, the researchers found that the average score for all questions exceeds 3, and have an overall score of 3.6, which indicates that most of the respondents of the survey have high attitude, with regards of the positive effects of childhood immunization.

According to Gundogdu (2020), attitudes of parents have a significant role in the success of any vaccination program and the uptake of children's immunizations. It has been observed that a parental perception of the severity of the disease, in combination with information provided by health experts, was one factor in influencing the uptake rate of vaccine. Moreover, the acceptance of new vaccinations was based on a complicated combination of circumstances, but if the vaccine was introduced to the government's ministry of health immunization program, parents' attitudes may alter substantially.

Table 6. The Level of Practices of the Respondents on childhood immunization

Statements	Mean	Description
I ensure that my child receives adequate care and rest after immunization.	3.82	Always
I make use of the immunization card to keep track of my child's immunization schedules to ensure completeness.	3.78	Always
I do practice going to the health center during my child's immunization schedule.	3.82	Always
I listen to the instructions of nurses/healthcare personnel on immunization.	3.86	Always
I do practice referring to my child's age when to undergo immunization.	3.74	Always
I do ask the Health Center Personnel for the next immunization schedule.	3.88	Always
I make an effort for my child to receive complete immunization.	3.96	Always
I do confirm BCG vaccination by looking for the presence of the BCG scar.	3.64	Always
I prefer healthcare professionals to confirm my child's/children's BCG vaccination.	3.88	Always
I still go to the health center even after missing the scheduled date of immunization.	3.48	Always

Total: 3.79

Table 6 shows the mean and its description on the practices of the respondents.

In the practices of the respondents on childhood immunization, the survey contained 10 statements that indicate good practices of childhood immunization, (e.g making use of vaccination cards, visiting health centers, etc.) and the respondents were asked to rate these statements if they Never, Sometimes, Often or Always do these practices. The responses were then coded into numerical values, where 1 corresponds to Never, 2 corresponds to Sometimes, 3 corresponds to Often, while 4 corresponds to Always. After collecting all of the responses per statement, the average score for all questions exceeds 3, and have an overall score of 3.79 (~4), which indicates that on average, the respondents of the survey always practice good habits in terms of childhood immunization.

Like the results above, the study of Quero et al. (2019) also showed similarities with their respondents. For instance, majority of their respondents had a knowledge score below their indicated minimum passing level of 84.65, thus indicating that their respondents had poor knowledge on vaccines, similar to the case of the respondents in this study. In terms of attitude, the findings are similar with Quero et al. (2019) that the respondents had a positive attitude towards childhood immunization but differ in terms of practices where the respondents generally have better practices in childhood vaccination.

In another study by Mapatano et al. (2008) on Immunisation-related knowledge, attitudes, and practices of mothers in Kinshasa, Democratic Republic of the Congo, there was a similar profile of respondents to those in this study, where the mothers of Kinshasa also have relatively poor knowledge, but a positive attitude and relatively good practices on childhood immunization. The mothers in Kinshasa know what vaccines are but not the differences of each type, value their importance, and base their practices by simply listening to health personnel or just merely following the vaccine card.

Table 7: Difference in Respondent's Level of Knowledge when grouped according to their Profile

STATEMENTS	Age F Sig	No. of Children F Sig	Civil Status F Sig	Delivery F Sig	Occupation F Sig	Educational Attainment F Sig	Monthly Income F Sig
1.Immunization is the process by which vaccines are introduced into the body before infection sets.	0.82 (0.45)	0.12 (0.89)	0.16 (0.85)	5.04 (0.01)	0.05 (0.86)	1.58 (0.18)	0.79 (0.53)
2. Immunization helps the body to develop protection against a particular disease.	1.44 (0.25)	0.25 (0.78)	0.08 (0.96)	1.11 (0.34)	0.28 (0.84)	2.01 (0.09)	0.24 (0.87)
Vaccines are made from "weak or dead" versions of the viruses or bacteria that can cause disease	0.89 (0.42)	1.15 (0.33)	0.90 (0.41)	0.39 (0.68)	0.98 (0.41)	1.06 (0.40)	0.32 (0.81)
4. It is safe to vaccinate a sick child with minor illness (cough, cold, diarrhea, fever or malnutrition)	3.46* (0.08)	0.63 (0.54)	1.02 (0.32)	0.08 (0.92)	1.22 (0.31)	0.89 (0.51)	1.39 (0.26)
5.Immunization is not associated with side effects.	0.59 (0.50)	2.03 (0.14)	0.44 (0.05)	2.21 (0.12)	0.41 (0.75)	1.19 (0.33)	1.49 (0.23)
6.The BCG Vaccine is intended to prevent pulmonary tuberculosis in the future.	1.72 (0.19)	0.16 (0.85)	2.46 (0.09)	0.48 (0.63)	0.65 (0.59)	1.05 (0.41)	0.22 (0.88)
7. There are three (3) doses of BCG which will be given to child/children.	1.89 (0.16)	0.55 (0.58)	0.99 (0.38)	0.14 (0.87)	0.65 (0.59)	0.47 (0.83)	0.41 (0.75)
8. Polio vaccine will also help prevent measles occurrence.	1.07 (0.35)	0.83 (0.44)	4.10* (0.02)	0.21 (0.81)	2.45 (0.07)	0.75 (0.62)	1.39 (0.26)
9. It is normal to have a fever after Hepatitis B immunization.	2.27 (0.11)	0.26 (0.77)	0.06 (0.94)	0.25 (0.78)	2.79 (0.05)	0.51 (0.79)	0.41 (0.75)
10. If a person is immunized and he gets sick, his body generates antibodies to fight diseases but it doesn't help you to get better.	1.01 (0.37)	0.19 (0.83)	0.33 (0.72)	0.12 (0.88)	0.35 (0.79)	1.26 (0.29)	1.14 (0.34)

11. Community immunity only applies to diseases transmitted from person to person such as measles, smallpox, rubella and chickenpox.	0.34 (0.96)	1.37 (0.27)	0.22 (0.80)	0.89 (0.42)	1.63 (0.19)	0.39 (0.88)	0.39 (0.76)
12. Vaccinated children are not only lesser risk of catching vaccine preventable disease but can also help improve community immunity.	3.14* (0.5)	0.52 (0.59)	7.08** (0.00)	2.77 (0.07)	0.12 (0.95)	1.23 (0.31)	1.34 (0.27)
13. Unimmunized persons are protected against some contagious Infection indirectly by being surrounded by immunized persons	1.43 (0.25)	0.67 (0.51)	1.04 (0.36)	0.75 (0.48)	1.09 (0.36)	0.87 (0.53)	0.83 (0.49)
14. Infants and newborn do not need to be vaccinated at an early age.	1.27 (0.29)	0.38 (0.69)	10.83** (0.00)	1.75 (0.19)	0.43 (0.73)	0.35 (0.55)	0.96 (0.42)

*significant **highly significant

Table 7 showed the respondent level of knowledge when group according to their profile

As shown on the table there are four significant, which is first, “it is safe to vaccinate a sick child with minor illness (cough, cold, diarrhea, fever, or malnutrition)” under the age with a p-value of 3.46(0.4). second is the “polio vaccine will also help prevent measles occurrence” under the civil status with a p-value of 4.10 (0.02). third is the “ TB (tuberculosis) is exempted on the EPI diseases” under the occupation with a p-value of 2.79 (0.09) and fourth is the “ community immunity only applies to diseases transmitted from person to person such as measles, smallpox, rubella and chickenpox” under the age with a p-value of 3.14 (0.5), and there are three highly significant, the first is the “ immunization is the process by which vaccines are introduced into the body before infection sets” under the religion with a p-value of 5.04 (0.01), second is the “ community immunity only applies to the diseases transmitted from person to person such as measles ,smallpox, rubella and chickenpox” under the civil status with a p-value of 7.08 (0.00) and last is the “ unimmunized person are protected against some contagious infection indirectly by being surrounded by immunized person” under the civil status with a p-value of 10.83(0.00). on the table showed this indicate that the respondent of the study has a different knowledge or perspective about the immunization.

This is supported by the study of Adefolalu et al (2019) the mother’s age and knowledge had quite a statistically significant relationship. The higher the mother’s degree of understanding on immunization the better. There is also a statistically significant link between the respondent degree of knowledge about childhood immunization and mother’s level of education, occupation, and household structure.

Table 8: Difference in Respondent’s Level of Attitude when grouped according to their Profile

STATEMENTS	Age (p-value)	No. of children (p-value)	Civil Status (p-value)	Area of Delivery (p-value)	Occupation (p-value)	Educational Attainment (p-value)	Monthly Income (p-value)
1. Immunization is more beneficial than harmful.	2.96 (0.06)	0.46 (0.64)	4.53* (0.02)	1.12 (0.33)	1.46 (0.24)	1.25 (0.30)	4.07* (0.01)
2. Child’s	0.25	1.25	0.35	1.14	1.59 (0.21)	1.03 (0.42)	1.92 (0.14)

immunization is not prohibited in religion.	(0.78)	(0.29)	(0.71)	(0.33)			
3. Child cannot be infected after he/she has been vaccinated.	0.41 (0.67)	0.65 (0.53)	1.15 (0.32)	0.31 (0.74)	3.01* (0.04)	1.42 (0.23)	0.19 (0.90)
4. It is very important to comply with immunization schedule.	1.40 (0.26)	0.33 (0.72)	0.14 (0.87)	1.99 (0.15)	0.29 (0.83)	1.34 (0.26)	1.59 (0.20)
5. Immunization keeps your child healthy.	1.61 (0.21)	0.41 (0.67)	0.19 (0.83)	3.32* (0.05)	0.31 (0.82)	1.15 (0.35)	0.23 (0.88)
6. Vaccines for child's immunization are safe.	0.82 (0.45)	0.43 (0.65)	0.23 (0.79)	1.58 (0.21)	0.74 (0.54)	1.18 (0.34)	0.34 (0.80)
7. Child's immunization is very important.	1.04 (0.36)	0.57 (0.57)	0.14 (0.87)	0.79 (0.46)	0.25 (0.86)	1.62 (0.23)	2.21 (0.10)
8. Immunization is important among newborns up to school entrants.	1.22 (0.30)	0.40 (0.67)	14.88** (0.00)	0.30 (0.74)	0.67 (0.57)	2.35* (0.05)	1.97 (0.13)
9. It is important to watch out for the side effects of vaccination.	1.35 (0.27)	0.18 (0.84)	0.34 (0.71)	0.44 (0.65)	1.62 (0.19)	1.13 (0.36)	1.09 (0.36)
10. Immunization makes my child/children better	0.03 (0.97)	1.02 (0.37)	0.25 (0.78)	0.14 (0.87)	0.29 (0.83)	1.02 (0.43)	1.08 (0.37)
11. Vaccination boosts the infant's immune system.	0.11 (0.90)	0.15 (0.86)	0.31 (0.74)	0.47 (0.63)	0.29 (0.83)	2.24* (0.05)	0.32 (0.81)
12. Vaccinations do not experiment on infants.	1.80 (0.18)	0.47 (0.63)	1.91 (0.16)	0.09 (0.91)	1.31 (0.28)	1.37 (0.25)	3.47* (0.02)
13. The Seven Expanded Program on Immunization Vaccine (EPI) is important for children	4.89** (0.01)	0.84 (0.44)	12.09** (0.00)	0.32 (0.73)	0.77 (0.52)	1.50 (0.20)	0.75 (0.53)
14. There is a need to immunize my child even if he looks healthy.	1.98 (0.15)	0.11 (0.89)	0.18 (0.84)	1.73 (0.19)	0.28 (0.84)	0.33 (0.92)	0.55

***significant **highly significant**

Table 8 showed the respondent level of attitude when group according to their profile

As shown on the table there are six significant on the different part of the table which are under the Civil status, Occupation, Educational attainment, and Monthly income, and also there are highly significant in table which are under the Monthly income, Civil status, and Age. There are many barriers on complying the immunization and may decreases the protection against the disease, it includes the trust of the parent on the government and to the care provider and also the anxiety about the effect of the vaccine.

According to the study of (Casino et al, 2020), is linked to a variety of attitudes, including lower compliance rates, which lead to lower vaccination rate. When it comes to vaccination, it should be noted that the parents have trust in the government and the doctors. Nurses and other health care providers play a key role in establishing and maintaining a practice-wide commitment to effectively communicate vaccine and maintain high immunization rates: from providing educational materials to parents who are ready to answer their questions, ensure that the families who can opt for additional visits for vaccines make and keep appointment for vaccines.

Table 9: Difference in Respondent's Level of Practice when grouped according to their Profile

STATEMENTS	Age F (p-value)	No. Of children F (p-value)	Civil status F (p-value)	Area of delivery F (p-value)	Occupation F (p-value)	Educational attainment F (p-value)	Monthly Income F (p-value)
1. I ensure that my child receives adequate care and rest after immunization.	0.12 (0.59)	5.82 ** (0.01)	0.09 (0.91)	0.83 (0.44)	0.20 (0.89)	0.49 (0.82)	0.50 (0.68)
I make use of the immunization card to keep track of my child's immunization schedules to ensure completeness.	0.68 (0.51)	0.34 (0.71)	0.19 (0.82)	0.71 (0.19)	0.54(0.79)	3.78** (0.00)	0.31 (0.82)
3. I do practice going to the health center during my child's immunization schedule.	0.72 (0.49)	0.23 (0.79)	0.17 (0.84)	0.29 (0.74)	0.54 (0.79)	1.08 (0.34)	1.65 (0.19)
4. I listen to the instructions of nurses/ healthcare personnel on immunization.	1.06 (0.35)	2.84 (0.07)	0.09 (0.91)	0.71 (0.49)	0.51 (0.68)	0.98 (0.45)	1.12 (0.35)
5. I do practice referring to my child's age when to undergo immunization.	0.47 (0.63)	2.74 (0.08)	0.19 (0.83)	0.84 (0.44)	0.46 (0.72)	0.37 (0.89)	0.93 (0.43)
I do ask the Health Center Personnel for the next immunization schedule.	0.66 (0.52)	1.75 (0.19)	0.07 (0.93)	0.54 (0.59)	0.22 (0.89)	0.59 (0.73)	0.86 (0.47)
8. I do practice going to the health center during my child's immunization schedule.	0.72 (0.49)	0.23 (0.79)	0.17 (0.84)	0.29 (0.74)	0.54 (0.79)	1.08 (0.34)	1.65 (0.19)
I make an effort for my child to receive complete immunization.	0.16 (0.85)	0.71 (0.49)	0.042 (0.96)	0.06 (0.94)	0.28 (0.84)	0.73 (0.63)	0.24 (0.87)
8. I do confirm BCG vaccination by looking for the	2.76 (0.07)	3.66* (0.03)	0.61 (0.55)	2.75 (0.07)	0.56 (0.71)	0.87 (0.53)	0.44 (0.72)

presence of the BCG scar.								
9. I prefer healthcare professionals to confirm my child's/children's BCG vaccination.	0.91 (0.41)	0.57 (0.57)	0.14 (0.87)	0.55 (0.58)	0.25 (0.86)	1.11 (0.37)	0.52 (0.67)	
10. I still go to the health center even after missing the scheduled date of immunization.	2.41 (0.10)	0.29 (0.75)	0.32 (0.73)	0.70 (0.50)	1.57 (0.21)	0.85 (0.54)	0.72 (0.54)	

*significant **highly significant

Table 9 showed respondent level of practices when group according to their profile.

There were 10 items and two out of ten shown two highly significant which were the "I ensure that my children receive adequate care and rest after Immunization" with a p-value of 5.82(0.01) under the number of children. While the other one is "I make use of the immunization card to keep track of my child's immunization schedule to ensure completeness" with the p-value of 3.78(0.00) under the educational attainment. The table showed also one significant out of the remaining items which is the "I do confirm BCG vaccination by looking for the presence of BCG scars" with the p-value of 3.66(0.03) under the number of children.

This finding was supported by the study of Giubilini (2020) vaccination can be mandatory or, less controversially, considered as a moral obligation, either to protect the immunized individual or to protect others or both. Another is the study of Macdonald et al (2018) and Matta (2020) also added that parents understanding is a critical driver of their action, their knowledge greatly affects and impact toward the attitude that is why striving to give enough information to parents should.

IV. CONCLUSION

In conclusion, the study examined the knowledge, attitudes, and practices of 50 respondents, primarily married mothers aged 21-30, who had given birth in hospitals and had 0-2 children. The majority of the respondents had a high school education and were either unemployed or housewives, with a family income of Php 5000 or less. The results indicated that, on average, the respondents possessed a high level of knowledge regarding childhood vaccination, as reflected by a mean score of 1.75. Moreover, the respondents demonstrated a positive attitude towards childhood immunization, with the majority acknowledging its positive effects and benefits. Additionally, the respondents consistently practiced good habits in relation to childhood immunization. The study revealed a significant association between the respondents' knowledge about immunization and their perspectives on its importance. The findings suggested that the respondents' level of knowledge about childhood immunization was influenced by their educational background and socioeconomic status, indicating a statistical connection. Furthermore, the study identified significant variations in respondent attitudes based on different profile groups. Factors such as civil status, occupation, religion, educational attainment, and monthly income were found to be associated with varying attitudes towards childhood immunization. Notably, monthly income, civil status, and age had a particularly strong impact on respondent attitudes. In contrast, the analysis of respondents' practices related to childhood immunization yielded two highly significant results, compared to the four significant outcomes observed in the previous factor analysis. The summary of values indicated that the level of practice among respondents produced one significant result, while their attitude towards childhood immunization yielded one highly significant result. In summary, the study provides valuable insights into the knowledge, attitudes, and practices of respondents regarding childhood immunization. The findings highlight the importance of educational background and socioeconomic status in shaping knowledge levels and attitudes towards immunization. These results contribute to the understanding of factors influencing childhood immunization practices and can inform future interventions and policies aimed at promoting immunization coverage.

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REFERENCES

- [1]. Adefolalu, O. A., et al. (2019). Maternal knowledge, attitude and compliance regarding immunization of under five children in Primary Health Care centres in Ikorodu Local Government Area, Lagos State. 10.4103/jcls.jcls_55_18
- [2]. Alchmer. (2021). Purposive Sampling 101. <https://www.alchmer.com/resources/blog/purposive-sampling-101/>
- [3]. Alshammari, T.M., et al. (2018) Assessment of Knowledge, Attitude and Practice of Parents about Immunization in Hail City, 2018. https://journals.ekb.eg/article_14358_2a2d009bca2237f09bfe87facde41a64.pdf
- [4]. Amor, M.H., et al. (2021). Parent's Knowledge, Attitude, and Practices towards Polio Vaccination in Quezon City, Philippines. International Journal of Progressive Research in Science and Engineering. <https://journals.grdpublications.com/index.php/ijprse/article/view/412>
- [5]. Aregawi H. G., et al. (2017). Determinants of defaulting from completion of child immunization in Laelay Adiabo District, Tigray Region, Northern Ethiopia: A case-control study. <https://doi.org/10.1371/journal.pone.0185533>
- [6]. Balogun, S., et al. (2017). Maternal Education and child Immunization. The mediating roles of maternal literacy and socioeconomic status. Pan African Medical Journal 26. 10.11604/pamj.2017.26.217.11856.

- [7]. Beiersmann, C., et al. (2018). Community perception regarding childhood vaccinations and its implications for effectiveness: a qualitative study in rural Burkina Faso. *BMC public health*. <https://doi.org/10.1186/s12889-018-5244-9>
- [8]. Carpiano, R.M., et al. (2019). Socioeconomic status differences in parental immunization attitudes and child immunization in Canada: Findings from the 2013 Childhood National Immunization Coverage Survey (CNICS). <https://doi.org/10.1016/j.yjmed.2019.03.033>
- [9]. Casiño, J.J. & Walag, A.M. (2020). Design and Development of a Science Literacy Material on Vaccination as an Intervention Campaign for Parents of High School Students in the Philippines. *American Journal of Educational Research*. 10.12691/education-8-10-4
- [10]. Center for Disease Control and Prevention. (2020). Vaccines and Immunizations. <https://www.cdc.gov/vaccines/terms/glossary.html> <https://www.cdc.gov/vaccines/vac-gen/imz-basics.htm>
- [11]. Eva, F. (2019). How measles causes the body to 'forget' past infections. 10.1126/science.366.6465.560
- [12]. Forshaw, J., et al. (2017). The global effect of maternal education on complete childhood vaccination: a systematic review and meta-analysis. *BMC Infect Dis*. 10.1186/s12879-017-2890-y.
- [13]. Glass, G. V & Hopkins, K.D. (1984). *Statistical Methods in Education and Psychology*, 2nd Edition. Englewood Cliffs, NJ: Prentice-Hall. 10.12691/education-6-6-11
- [14]. Giubilini, A., Douglas, T., & Savulescu, J. (2018). The moral obligation to be vaccinated: utilitarianism, contractualism, and collective easy rescue. *Medicine, health care, and philosophy*. <https://doi.org/10.1007/s11019-018-9829-y>
- [15]. Gouglas, D., et al. (2018). Estimating the cost of vaccine development against epidemic infectious diseases: a cost minimisation study. *Lancet Glob Health*. 10.1016/S2214-109X(18)30346-2
- [16]. Guevarra, J.L., et al. (2021). Scared, powerless, insulted and embarrassed: hesitancy towards vaccines among caregivers in Cavite Province, the Philippines. *BMJ Specialist Journal*. <https://gh.bmj.com/content/6/9/e006529>
- [17]. Gundogdu, Z. (2020). Parental Attitudes and Perceptions Towards Vaccines. *Cureus*. <https://doi.org/10.7759/cureus.7657>
- [18]. Handy, L. K., et al. (2017). The impact of access to immunization information on vaccine acceptance in three countries. <https://doi.org/10.1371/journal.pone.0180759>
- [19]. Holipah. et al. (2018) Determinants of immunization status among 12- to 23- month-old children in Indonesia (2008-2013): a multilevel analysis. *BMC Public Health*. 10.1186/s12889-018-5193-3
- [20]. Hooda, SK. (2017). Out-of-pocket Payments for Healthcare in India: Who Have Affected the Most and Why? *Journal of Health Management*. 10.1177/0972063416682535
- [21]. *International Journal of Transformations in Business Management (IJTBM)*. 2012 <http://www.ijtbm.com/>
- [22]. Kagoné, M., et al. (2018). Community perception regarding childhood vaccinations and its implications for effectiveness: a qualitative study in rural Burkina Faso. *BMC Public Health*. <https://doi.org/10.1186/s12889-018-5244-9>
- [23]. Kibreab, F., Lewycka, S., Tewelde, A. (2020). Impact of mother's education on full immunization of children aged 12-23 months in Eritrea: population and health survey 2010 data analysis. *BMC Public Health*. 10.1186/s12889-020-8281-0
- [24]. Kuihua, Lv, Zhao J., Zhang P. (2021). The effect of community comprehensive nursing using scenario-based health education on the infant and young child immunization rates. *American journal of translational research*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8430158/>
- [25]. Kulintang, Mohammed Bien. (2019). Knowledge, Attitude, And Practices Of Maguindanaon Mothers On Child's Immunization In Selected Barangays In Pikit, North Cotabato.
- [26]. MacDonald, N. E., Harmon, S., Dube, E., Steenbeek, A., Crowcroft, N., Opel, D. J., ... Butler, R. (2018). Mandatory infant & childhood immunization: Rationales, issues and knowledge gaps. <https://pubmed.ncbi.nlm.nih.gov/30143274/>

- [27]. Matta, P., et al. (2020). Parents' knowledge, attitude and practice towards children's vaccination in Lebanon: role of the parent-physician communication. BMC Public Health. <https://doi.org/10.1186/s12889-020-09526-3>
- [28]. McCombes, S., 2021. Sampling Methods | Types and Techniques Explained. Scribbr. <<https://www.scribbr.com/methodology/sampling-methods/>>
- [29]. Meleko, A., Geremew, M., Birhanu, F. (2017). Assessment of Child Immunization Coverage and Associated Factors with Full Vaccination among Children Aged 12–23 Months at Mizan Aman Town, Bench Maji Zone, Southwest Ethiopia. J Pediatr. 10.1155/2017/7976587.
- [30]. Merriam – Webster. (2022). “knowledge.” <https://www.merriam-webster.com/dictionary/knowledge>
- [31]. Merriam – Webster. (2022). “Attitude.” <https://www.merriam-webster.com/dictionary/attitude>
- [32]. Merriam – Webster. (2022). “Practices.” <https://www.merriam-webster.com/dictionary/practices>
- [33]. Miolo, G. (2020). Contemporary polio eradication in outbreak countries: the case in the Philippines
- [34]. National Nutrition Council. (2018). Garantisadong Pambata to fight for child health and survival. <https://www.nnc.gov.ph/regional-offices/visayas/region-vii-central-visayas/2498-garantisadong-pambata-to-fight-for-child-health-and-survival>
- [35]. National Research Council (US); Institute of Medicine (US), et al. (2004). Children's Health: A New Conceptual Framework. <https://www.ncbi.nlm.nih.gov/books/NBK92198/>
- [36]. Nguyen, N.T., et al. (2017). Digital immunization registry; evidence for the impact of health on enhancing the immunization system and improving immunization coverage for children under one year old in Vietnam. 10.21037/mhealth.2017.06.03.
- [37]. Raguindin, P.F., et al. (2021). Timeliness of childhood vaccinations in the Philippines. J Public Health Pol. <https://doi.org/10.1057/s41271-020-00255-w>
- [38]. Ridad, G. S. (2019). Barriers to Adherence to Expanded Program on Immunization among Parents in Lanao Del Norte, Philippines. Belitung Nursing Journal. <https://doi.org/10.33546/bnj.695>
- [39]. Riumallo-Herl C., et.al. (2018). Estimation of distribution of childhood diarrhoea, measles, and pneumonia morbidity and mortality by socio-economic group in low-income and middle-income countries. [https://doi.org/10.1016/S2214-109X\(17\)30122-5](https://doi.org/10.1016/S2214-109X(17)30122-5)
- [40]. Ulep, V.G., & Uy, J. (2021) An Assessment of the Expanded Program on Immunization (EPI) in the Philippines: Challenges and Ways Forward. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps2104.pdf>
- [41]. Unicef. (2021). Vaccination and Immunization Statistics. <https://data.unicef.org/topic/child-health/immunization/>
- [42]. Valido, E.M., Laksanawati, I.S. & Utarini, A. (2018). Acceptability of the dengue vaccination among parents in urban poor communities of Quezon City, Philippines before and after vaccine suspension. BMC Res Notes. <https://doi.org/10.1186/s13104-018-3766-y>