

Knowledge, Attitudes, Practices, and Compliance toward the National Immunization Program

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Abstract— Infants and children still cannot decide on their immunization. Hence, their primary caregivers act as their proxy decision-makers, making their role in children's immunization crucial. In the last thirty years, Philippines' vaccine coverage remained at 70% to 80%, and the program's goal of fully immunizing children by at least 95% has never been met, showing low acceptance and performance coverage. Therefore, this research aimed to assess primary caregivers' knowledge, attitudes, practices, and compliance (KAPC) toward the National Immunization Program (NIP) in selected Barangays of Solana, Cagayan. The researchers utilized descriptive quantitative research design to describe the respondents' profile and have an in-depth analysis of their KAPC toward NIP. The researchers used quota sampling to select 300 respondents, where 50 respondents for each barangay were selected based on the top three barangays with the highest compliance rate: Barangays Lanna, General Balao, and Cadanaan. Sampaguita, Bauan West, and Iraga were also included as they are the barangays with the highest non-compliance rate. The respondents of this study were primary caregivers. The study used a questionnaire based on the study of Quintos et al. (2022), which was categorized into five parts. Overall, the findings revealed that the respondents are knowledgeable, have a positive attitude, and exhibit excellent practice. However, their overall compliance toward the NIP is only partially compliant. Despite this positive result on their KAP, it was found that primary caregivers were non-compliant with MMR 1 and MMR 2 vaccines. Moreover, there is a significant difference between respondents' practice and age, respondents' attitudes, and relationship of the child to the respondent and their religion. Furthermore, there is also a significant relationship between respondents' knowledge and

compliance. Therefore, the researchers recommend that future studies look for other factors that could affect the compliance of primary caregivers toward NIP.

Keywords— *Primary Caregivers, KAP, Compliance, National Immunization Program, Fully Immunized Child*

I. INTRODUCTION

According to the World Health Organization (WHO, 2019), immunization is an approach to administering a vaccine to the body to make a person resistant to an infectious disease. It is a key component of primary health care and advancement in global health development because it saves millions of lives annually. However, since infants and children cannot decide for themselves, their primary caregivers act as proxy decision-makers. They have an essential role in the immunization of children. Hence, their knowledge, attitudes, and practices may influence their children's future health status (Damnjanović, 2018; Aziz et al., 2018). Their compliance, in turn, results in children receiving all recommended vaccinations, preventing childhood vaccine-preventable diseases and impeding any potential vaccination errors. Since primary caregivers are crucial players in the nation's efforts to immunize as many eligible children as possible to protect them against vaccine-preventable diseases, they prompt to take an active role in the health care of their children.

Consequently, through the combined efforts of the World Health Organization and the United Nations Children's Fund, the Philippine Government established the Expanded Program for Immunization (EPI) on July 12, 1976, which is currently recognized as the National Immunization Program (NIP). This program targets to diminish children's morbidity and mortality against the common vaccine-preventable diseases, which are illnesses originating from viruses or bacteria that can be prevented through immunization, such as tuberculosis, measles, poliomyelitis, diphtheria, tetanus, and pertussis. The NIP has attained many significant achievements, particularly in saving the lives of numerous Filipino children. However, in the last thirty years, the vaccine coverage remained at 70% to 80%. The program's goal of fully immunizing children by at least 95% has never been met, showing a low acceptance and performance coverage (Uy & Ulep, 2021). The percentage of national vaccination coverage in 2014 dropped to almost 65%, the lowest since the early 1990s. Compared to most low-income nations, the country currently has a lower vaccination rate. In addition, vaccine hesitancy is one of the threats that may impede the success of increasing immunization coverage. Vaccine Hesitancy, defined by the WHO (2019), is the refusal to vaccinate despite the availability of vaccines. The COVID-19 pandemic may alter public perceptions of vaccine reluctance among children, affecting mothers' intentions to immunize their children (Aldakhil et al., 2021). Moreover, in the study by He et al. (2021), the CDC noted a significant drop in pediatric immunizations one week after the government declared a pandemic emergency. Furthermore, based on the data gathered from the Provincial Health Office (2022) and the Municipal Health Office of Solana, the number of Fully Immunized Children (FIC) in Solana, Cagayan, has dropped from 85.60% in 2019 to 61.75% in 2022, displaying a visible decrease in the percentage of fully immunized children in the last three years. A fully immunized child, according to the Department of Health (DOH, 2021), must have had one (1) dose of BCG, HepB, IPV, three (3) doses of Pentavalent vaccine, OPV, PCV, and two (2) doses of MMR at the age of 12 months old.

Moreover, most previous studies have revealed that factors such as knowledge, attitudes, and practices (KAP) could influence the mothers' compliance, the number of Fully Immunized Children, and NIP coverage with childhood immunization. Hence, it is essential to understand deeper and assess these aforementioned factors to promote immunization compliance among primary caregivers and improve the Philippines' immunization coverage. Furthermore, few studies have examined the relationship between knowledge, attitudes, practices, and compliance as influenced by the demographic profile of primary caregivers in the Philippines, which may be particularly significant given the country's decreased immunization coverage. Thus, this study aimed to assess primary caregivers' knowledge, attitudes, practices, and compliance toward the National Immunization Program in selected Barangays of Solana, Cagayan.

II. METHODS

This study utilized a quantitative descriptive research design to describe the profile of the respondents and their knowledge, attitudes, practices, and compliance toward the National Immunization Program.

The locale of the study was conducted in selected barangays in Solana, Cagayan. They were chosen based on the barangay's non-compliance rate derived from the number of Fully Immunized Child and the total population of 0-12 months infants per barangay. Therefore, the inclusion and exclusion criteria of the locale of the study were:

1. Top three (3) barangays with the highest rate of compliance
2. Top three (3) barangays with the highest rate of non-compliance

The respondents of the study were the primary caregivers from the selected barangays in Solana, Cagayan. A primary caregiver is someone with the primary responsibility for caring of the child. Thus, the study utilized a set of inclusion and exclusion criteria for primary caregivers who are eligible to participate in the study.

The inclusion criteria:

- a. Primary Caregivers ages 18 years old to 65 years old
- b. Primary Caregivers who have a child ages 0-12 months

A quota sampling of 50 respondents per barangay was employed to limit the number of respondents per barangay. Hence, the total number of respondents included in this study is 300.

An adopted modified questionnaire was utilized based on the study of Quintos et al. (2022) and a checklist of immunization schedules for individuals below 12 months of age from DOH. The questionnaire was written in English and was translated into Filipino and Ilocano. Research experts validated it for clarity and variability. The research tool consisted of five (5) parts. The first part of the research tool was the demographic profile of the respondents. The second part was composed of statements that tested the respondents' knowledge of immunization information. The third part sought to know the respondents' attitudes regarding immunization. The fourth part contained statements about the practices that may affect respondents' compliance regarding immunization. Lastly, the fifth part was a checklist of immunization schedules for infants under 12 months of age.

Descriptive and inferential statistics were utilized in this study. Descriptive statistics such as frequency, percentage, and mean was used to describe the respondents' profile, knowledge, attitudes, practices, and compliance. T-test and One-way ANOVA were used to determine the significant

difference between the respondents' demographic profile and their knowledge, attitude, and practices toward the National Immunization Program. Moreover, Pearson R was used to determine the significant relationship between knowledge, attitudes, practices, and compliance with the National Immunization Program.

Table 1. Legend for Interpretation of Result for KAP

Range	Qualitative Description for Knowledge	Qualitative Description for Attitude	Qualitative Description for Practices
3.50 – 4.00	Highly Knowledgeable	Positive	Excellent
2.50 – 3.49	Knowledgeable	Slightly Positive	Good
1.50 – 2.49	Less Knowledgeable	Slightly Negative	Fair
0.50 – 1.49	Not Knowledgeable	Negative	Poor

Table 2. Legend for Interpretation of Result for Compliance

Range	Descriptive Rating	Qualitative Description
2.50 – 3.00	Received on time	Compliant
1.50 – 2.49	Received but delayed	Partially Compliant
0.50 – 1.49	Not yet received	Non-Compliant

To ensure that the study was conducted appropriately and humanely, the researchers took ethical considerations into account. The respondents were informed using layman's terms on the objectives and design of the study as well as the benefits and risks, and that this study is part of an academic requirement to respect their rights as respondents. Second, the researchers gave the informed consent forms to all the respondents before conducting the study. They were informed about how the researchers chose the respondents and how many individuals will participate. The researchers ensured that the respondents made the decision to join or decline to participate in this investigation voluntarily. The researchers also discussed that the respondents' failure to volunteer in the study will not result in any loss of benefits or penalty. They also informed the respondents that whether or not they choose to participate, it will not affect their standing as primary caregivers or residents in Solana, Cagayan. Thus, even after consenting to participate in the study, they have the right to withdraw anytime if they want to or to withhold any particular pieces of information. Also, they informed the respondents that they are free to voice any concerns or information unclear to them. So, they were told whom they could contact if they have further queries, comments, or complaints, as the researchers are keen and willing to answer any questions or

additional information the respondents may have about the nature and purpose of the present study. In addition, the researchers guaranteed the respondents complete anonymity and confidentiality regarding their identification and personal information to protect their privacy. This means the researchers will only disclose the data gathered concerning the study to strangers or people known to respondents, like their family members, if respondents explicitly consent to it. The respondents were given identification numbers to protect their identity and easy access to data. Also, the data gathered was stored and kept in a file encrypted with a password to ensure confidentiality. Fourth, the researchers ensured that respondents did not experience harm by minimizing the risks of discomfort. Thus, to help reduce the risk, the respondents were guaranteed that the researchers will be more interactive and uplift politeness at all times. The researchers devised or rephrased any statements the respondents found challenging to answer so they could understand them more easily. The researchers also upheld the respondent's linguistic and cultural diversity. Fifth, the researchers assured the respondents that any communication to the research will be done with honesty and transparency. The researchers also informed them that they will not get any monetary amounts; however, they can benefit from this study since they provide data that may enhance the health of their community. Similarly, the researcher informed the respondents that this study may benefit others if the information derived and collected will be used to improve childhood immunization rates in Solana, Cagayan. The researchers did not encounter any conflict of interest arising from financial, sponsors, or etiquette considerations. The researchers also informed the respondents that once the study is published, the result of the research will be shared more broadly. Lastly, the researchers destroyed all the identifying information after all the data has been gathered, analyzed, and reviewed by the University Research Development Center of USL.

III. RESULTS

Table 3. Demographic Profile of the Primary Caregivers

Variable	Frequency (n=300)	Percentage
Age		
< 20	26	8.7
20 - 29	91	30.3
30 - 39	80	26.7
40 - 49	45	15.0
≥ 50	58	19.3
Mean age = 36 years		
Sex		
Male	71	23.7
Female	229	76.3
Marital Status		
Single	76	25.3
Married	203	67.7

Widow	15	5.0
Separated	2	0.7
Other	4	1.3
No. of Children		
0 - 1	91	30.3
2 - 3	136	45.3
4 - 5	54	18.0
6 - 7	13	4.3
≥ 8	6	2.0
Ave. number of children = 3		
Relationship of Child to the Respondent		
Mother	128	42.7
Father	45	15.0
Grandmother	61	20.3
Grandfather	20	6.7
Aunt	34	11.3
Uncle	6	2.0
Sister	4	1.3
Brother	2	0.7
Highest Educational Attainment		
Elementary Level	47	15.7
Elementary Graduate	32	10.7
High School Level	74	24.7
High School Graduate	63	21.0
College Level	43	14.3
College Graduate	40	13.3
Others	1	0.3
Employment		
Unemployed	175	58.3
Self-Employed	86	28.7
Government Employee	14	4.7
Private Employee	15	5.0
Others	10	3.3
Religion		
Roman Catholic	259	86.3
Iglesia Ni Cristo	13	4.3
Jehovah's Witnesses	0	0
Protestants	3	1.0
Born Again	12	4
Others	13	4.3
Distance of residence to health facility		
<500m	117	39.1
500m – 1km	136	45.4
>1km	46	15.4

Table 3 presents the demographic profile of the 300 primary caregivers who participated in the study. This shows that most primary caregivers are aged 20 to 29, with a mean age of 36. The majority of the primary caregivers are females, whereas most primary caregivers are married. Among all the

primary caregivers, 136 have 2 to 3 children, showing an average number of children of 3. When grouped according to the child's relationship to the primary caregiver, mothers appeared to have the highest frequency, followed by grandmothers. Additionally, most of the primary caregivers have High School Level as their highest educational attainment, while in terms of their employment, the majority are unemployed. Furthermore, most of their religion is Roman Catholic. When grouped according to the distance of residence to the health facility, most primary caregivers reside 500 meters to 1 kilometer from the health facility in their community.

Table 4. Primary Caregivers' Level of Knowledge on National Immunization Program

Items	Mean	Qualitative Interpretation
K1. Vaccines can be given at any time.	2.58	Knowledgeable
K2. Multi-doses of the same vaccines should be given at appropriate intervals.	3.40	Knowledgeable
K3. Bacille Calmette-Guérin (BCG) vaccine is given to prevent tuberculosis.	3.71	Highly Knowledgeable
K4. Hepatitis B Vaccine is given to prevent hepatitis B.	3.77	Highly Knowledgeable
K5. Primary Pneumococcal Conjugate Vaccine (PCV) vaccination is given to prevent pneumonia and meningitis.	3.73	Highly Knowledgeable
K6. Pentavalent Vaccine is given to prevent diphtheria, tetanus, hepatitis B, Pertussis, and Haemophilus influenzae type b (Hib) diseases.	3.77	Highly Knowledgeable
K7. Oral Polio Vaccine (OPV) and Inactivated Polio Vaccine (IPV) are given to prevent polio.	3.78	Highly Knowledgeable
K8. Measles-Mumps-Rubella (MMR) Vaccine is given to prevent measles, mumps, and rubella diseases.	3.75	Highly Knowledgeable
K9. A Fully Immunized Child (FIC) must have the following vaccines before the child's first birthday: one dose of BCG, Hepatitis B, and IPV; two doses of MMR; and three doses of Pentavalent, OPV, and PCV.	3.63	Highly Knowledgeable
K10. Children immunization prevents disease, its complications, and hospitalization.	3.54	Highly Knowledgeable
K11. The child's body develops protection against viruses or bacteria through immunization.	3.79	Highly Knowledgeable

K12. Vaccination lowers the risk of a child's death or disease.	3.53	Highly Knowledgeable
K13. Do not vaccinate a child when a severe allergic reaction occurs (e.g., anaphylaxis) after a previous dose of a vaccine component.	3.26	Knowledgeable
K14. Diarrhea is not a contraindication for vaccination.	2.89	Knowledgeable
K15. Do not give any vaccine to your child when he/she is severely sick.	3.00	Knowledgeable
K16. Children with delayed vaccination will be unprotected from vaccine-preventable diseases, which increases the risk of failing to achieve full immunization.	3.11	Knowledgeable
K17. Delays may contribute to the indirect protection the unimmunized population receives when a large proportion is immunized.	3.25	Knowledgeable
K18. Vaccines are available in the Barangay Health Unit.	3.86	Highly Knowledgeable
Overall Mean	3.46	Knowledgeable

Table 4 displays the primary caregivers' level of knowledge regarding the National Immunization Program. The primary caregivers are highly knowledgeable regarding the availability of vaccines in their Barangay Health Unit. The children will develop protection against viruses or bacteria through immunization and giving Oral Polio Vaccine (OPV) and Inactivated Polio Vaccine (IPV) can help prevent polio. However, the primary caregivers exemplified to be least knowledgeable that vaccines should not be given to their children when they are severely sick, that diarrhea is not a contraindication in receiving vaccines, and that vaccines can be given anytime. Overall, the result revealed that primary caregivers' level of knowledge is 'knowledgeable'.

Table 5. Primary Caregivers' Attitudes toward National Immunization Program

Items	Mean	Qualitative Interpretation
A1. I believe children's immunization is essential and more beneficial than harmful.	3.91	Positive
A2. I consider that it is essential to comply with the recommended immunization schedule.	3.87	Positive
A3. Even if my child seems healthy, I feel he must be immunized.	3.89	Positive

A4. I believe that vaccines are helpful rather than harmful	3.74	Positive
A5. Our religion does not restrict me from vaccinating my child.	3.85	Positive
A6. I am satisfied with the friendly environment in our vaccination facility.	3.82	Positive
A7. I believe that immunization will help protect children from certain diseases	3.84	Positive
A8. I do not like to miss the schedule of my children's immunization.	3.78	Positive
A9. I feel that immunization does not go against our beliefs.	3.70	Positive
A10. I am not afraid to bring my child for vaccination.	3.79	Positive
Overall Mean	3.82	Positive

Table 5 presents the primary caregivers' attitude toward the National Immunization Program, wherein it shows that all of the primary caregivers in selected barangays of Solana, Cagayan have a positive attitude. Among all the included attitudes regarding children immunization, the primary caregivers' exhibited that their top three most positive attitudes include having a belief that immunization of the children is essential and more beneficial than harmful, that even if their child seems to be healthy, they feel that he must be immunized and that they consider immunizations are essential to comply with the recommended immunization schedule. Even though the primary caregivers exemplified an overall positive attitude, it is shown that their top three lowest positive attitudes include feeling that immunization does not go against their beliefs; they believe that vaccines are helpful rather than harmful, and they do not like to miss the schedule of their children's immunization.

Table 6. Primary Caregivers' Practices on National Immunization Program

Items	Mean	Qualitative Interpretation
P1. I make sure that my child receives adequate care and rest after immunization.	3.90	Excellent
P2. I use the immunization card or booklet to keep track of my child's immunization schedules to ensure completeness.	3.91	Excellent

P3. I practiced going to the health center during my child's immunization schedule.	3.92	Excellent
P4. I do ask the health care worker personnel for the following immunization schedule.	3.88	Excellent
P5. I follow the instructions of nurses/healthcare professionals when it comes to my child's immunization.	3.91	Excellent
P6. I ensure that my child is fully immunized by following the timeline or schedule of the immunization.	3.91	Excellent
P7. Even though I missed the scheduled immunization date, I continued to visit the health center.	3.81	Excellent
P8. I watch out for the side effects of vaccination and raise my concerns to the health worker when it worsens.	3.83	Excellent
P9. I encourage other primary caregivers in our community to comply and complete all the recommended vaccines for our children.	3.85	Excellent
P10. I openly raise my concerns about vaccination with a healthcare provider.	3.86	Excellent
Overall Mean	3.88	Excellent

Table 6 represents the primary caregivers' practices toward the National Immunization Program, in which all of the primary caregivers per barangay have shown exemplary practices. The primary caregivers' exhibited that their most excellent practices include: ensuring that they follow the scheduled dates; using their immunization cards to keep track of the immunization schedule of their children; diligently following the instructions of nurses or healthcare professionals when it comes to immunization of their children; following the timeline or schedule of the immunization to ensure that their child is immunized; and, making sure that their child receives adequate care and rest after immunization. Even though the respondents exhibited an overall excellent practice, it is shown that their least excellent practices include encouraging other parents in their community to comply and complete all the recommended vaccines for their children; they watch out for the side effects of vaccination and raise my concerns to the health worker when it worsens; and, they continue to visit the health center when they missed the scheduled immunization date.

Table 7. Primary Caregivers' Extent of Compliance with National Immunization Program

Items	Mean	Qualitative Interpretation
CV1. Bacille Calmette-Guérin Vaccine (BCG) (Birth/ 1st encounter at Barangay Health Unit)	2.91	Compliant
CV2. Hepatitis B Vaccine (Birth)	2.92	Compliant
CV3A. Pentavalent Vaccine 1(DPT-Hep B-HiB 1) (6 weeks of age)	2.36	Partially Compliant
CV3B. Pentavalent Vaccine 2 (DPT-Hep B-HiB 2) (10 weeks of age)	2.15	Partially Compliant
CV3C. Pentavalent Vaccine 3 (DPT-Hep B-HiB 3) (14 weeks of age)	2.01	Partially Compliant
CV4A. Oral Polio Vaccine 1 (OPV 1) (6 weeks of age)	2.35	Partially Compliant
CV4B. Oral Polio Vaccine 2 (OPV 2) (10 weeks of age)	2.13	Partially Compliant
CV4C. Oral Polio Vaccine 3 (OPV 3) (14 weeks of age)	1.99	Partially Compliant
CV5. Inactivated Polio Vaccine (IPV) (14 weeks of age)	1.98	Partially Compliant
CV6A. Pneumococcal Conjugate Vaccine (PCV 1) (6 weeks of age)	2.34	Partially Compliant
CV6B. Pneumococcal Conjugate Vaccine (PCV 2) (10 weeks of age)	2.13	Partially Compliant
CV6C. Pneumococcal Conjugate Vaccine (PCV 3) (14 weeks of age)	1.96	Partially Compliant
CV7A. Measles, Mumps, Rubella Vaccine 1 (MMR 1) (9 months of age)	1.15	Non-Compliant
CV7B. Measles, Mumps, Rubella Vaccine 2 (MMR 2) (12 de months of age)	0.87	Non-Compliant
Overall Mean	2.45	Partially Compliant

Table 7 represents the primary caregivers' compliance with the National Immunization Program. From all the vaccines included in the aforementioned program of DOH, all the primary caregivers in the selected barangays in Solana, Cagayan are shown to be compliant with Hepatitis B vaccines, followed by the Bacille-Calmette Guerin (BCG). At the same time, the respondents exhibited to be partially

compliant with the Pentavalent Vaccine 1 and Pneumococcal Conjugate Vaccine 3 (PCV 3). Whereas, primary caregivers were shown to be non-compliant with Measles, Mumps, Rubella Vaccine 2 (MMR 2), followed by Measles, Mumps, Rubella Vaccine 1 (MMR 1). Overall, the primary caregivers are shown to be partially compliant with all the vaccines included in the National Immunization Program.

Table 8.1. Test of Significant Difference in Primary Caregivers' Knowledge, Attitude, Practices, and Compliance to National Immunization Program When Grouped According to Profile

Variable	Knowledge	Attitude	Practices	Compliance
	p value	p value	p value	p value
Age	.437	.146	.049*	.313
Sex	.715	.853	.110	.163
Marital Status	.189	.557	.620	.785
No. of Children	.379	.069	.612	.348
Relationship of child to the respondent	.602	.046*	.073	.959
Highest Educational Attainment	.734	.726	.711	.738
Employment	.409	.616	.396	.628
Religion	.112	.048*	.070	.372
Distance of residence to health facility	.052	.693	.366	.640

*p<.05 is Significant

Table 8.1 presents the test of significant differences in Primary Caregivers' Knowledge, Attitude, Practices, and Compliance with the National Immunization Program when grouped according to their profile. It is shown that there is a significant difference between the respondents' age and their practice. There is also a significant difference between the attitude and relationship of the child to the primary caregiver. Moreover, there is also a significant difference between the primary caregivers' attitude and religion.

Table 8.2. Post Hoc Multiple Comparisons Test between the Primary Caregivers' Age and their Practices toward the National Immunization Program

(I) NAge	(J) NAge	Mean Difference (I-J)	P-value	Interpretation
<20	20-29	-.09505	.103	Do not reject HO
	30-39	-.07817	.187	Do not reject HO
	40-40	-.14915*	.021*	Reject HO
	≥ 50	-.16658*	.007*	Reject HO

20-29	<20	.09505	.103	Do not reject HO
	30-39	.01688	.674	Do not reject HO
	40-49	-.05409	.257	Do not reject HO
	≥ 50	-.07152	.105	Do not reject HO
30-39	<20	.07817	.187	Do not reject HO
	20-29	-.01688	.674	Do not reject HO
	40-49	-.07097	.146	Do not reject HO
	≥ 50	-.08841	.051	Do not reject HO
40-49	<20	.14915*	.021*	Reject HO
	20-29	.05409	.257	Do not reject HO
	30-39	.07097	.146	Do not reject HO
	≥ 50	-.01743	.738	Do not reject HO
≥ 50	<20	.16658*	.007*	Reject HO
	20-29	.07152	.105	Do not reject HO
	30-39	.08841	.051	Do not reject HO
	40-49	.01743	.738	Do not reject HO

*. The mean difference is significant at 0.05 level.

Table 8.2 presents the Post Hoc Multiple Comparisons Test between the Primary Caregivers' Age and their Practices toward the National Immunization Program. This shows that those primary caregivers aged 40 to 49 years and 50 years and above portrayed a more excellent practice compared to those primary caregivers who are below 20 years old.

Table 8.3. Post Hoc Multiple Comparisons Test between the Primary Caregivers' Relationship to the Child and their Attitudes toward the National Immunization Program

(I) Relationship	(J) Relationship	Mean Difference (I-J)	P-value	Interpretation
Mother	Father	-.02479	.625	Do not reject HO
	Grandmother	-.01583	.728	Do not reject HO
	Grandfather	-.05813	.409	Do not reject HO
	Aunt	.04246	.452	Do not reject HO
	Uncle	-.01146	.925	Do not reject HO
	Sister	.42187*	.005*	Reject HO
	Brother	.42187*	.044*	Reject HO
Father	Mother	.02479	.625	Do not reject HO
	Grandmother	.00896	.876	Do not reject HO
	Grandfather	-.03333	.671	Do not reject HO
	Aunt	.06725	.312	Do not reject HO
	Uncle	.01333	.916	Do not reject HO
	Sister	.44667*	.004*	Reject HO
	Brother	.44667*	.035*	Reject HO
Grandmother	Mother	.01583	.728	Do not reject HO
	Father	-.00896	.876	Do not reject HO
	Grandfather	-.04230	.575	Do not reject HO
	Aunt	.05829	.352	Do not reject HO
	Uncle	.00437	.972	Do not reject HO
	Sister	.43770*	.004*	Reject HO
	Brother	.43770*	.038*	Reject HO
Grandfather	Mother	.05813	.409	Do not reject HO
	Father	.03333	.671	Do not reject HO
	Grandmother	.04230	.575	Do not reject HO
	Aunt	.10059	.223	Do not reject HO
	Uncle	.04667	.732	Do not reject HO
	Sister	.48000*	.003*	Reject HO
	Brother	.48000*	.027*	Reject HO
Aunt	Mother	-.04246	.452	Do not reject HO
	Father	-.06725	.312	Do not reject HO
	Grandmother	-.05829	.352	Do not reject HO
	Grandfather	-.10059	.223	Do not reject HO
	Uncle	-.05392	.677	Do not reject HO
	Sister	.37941*	.015*	Reject HO
	Brother	.37941	.075	Do not reject HO

Uncle	Mother	.01146	.925	Do not reject HO
	Father	-.01333	.916	Do not reject HO
	Grandmother	-.00437	.972	Do not reject HO
	Grandfather	-.04667	.732	Do not reject HO
	Aunt	.05392	.677	Do not reject HO
	Sister	.43333*	.022*	Reject HO
	Brother	.43333	.070	Do not reject HO
Sister	Mother	-.42187*	.005*	Reject HO
	Father	-.44667*	.004*	Reject HO
	Grandmother	-.43770*	.004*	Reject HO
	Grandfather	-.48000*	.003*	Reject HO
	Aunt	-.37941*	.015*	Reject HO
	Uncle	-.43333*	.022*	Reject HO
	Brother	.00000	1.000	Do not reject HO
Brother	Mother	-.42187*	.044*	Reject HO
	Father	-.44667*	.035*	Reject HO
	Grandmother	-.43770*	.038*	Reject HO
	Grandfather	-.48000*	.027*	Reject HO
	Aunt	-.37941	.075	Do not reject HO
	Uncle	-.43333	.070	Do not reject HO
	Sister	.00000	1.000	Do not reject HO

*. The mean difference is significant at 0.05 level.

Table 8.3 presents the Post Hoc Multiple Comparisons Test between the Primary Caregivers' Relationship to the child and their Attitudes toward the National Immunization Program. This shows that those primary caregivers who are sisters exhibited a more positive attitude compared to primary caregivers who are mothers, fathers, grandmothers, grandfathers, aunts, and uncles. In addition, it is shown that those primary caregivers who are brothers exhibited a more positive attitude compared to respondents who are mothers, fathers, grandmothers, and grandfathers.

Table 8.4. Post Hoc Multiple Comparisons Test between the Primary Caregivers' Religion and their Attitudes toward the National Immunization Program

(I) Religion	(J) Religion	Mean Difference (I-J)	P-value	Interpretation
Roman Catholic	Iglesia Ni Cristo	.17318*	.038	Reject HO
	Protestants	-.17297	.310	Do not reject HO
	Born Again	-.10631	.220	Do not reject HO
	Others	.13472	.107	Do not reject HO
Iglesia Ni Cristo	Roman Catholic	-.17318*	.038	Reject HO
	Protestants	-.34615	.066	Do not reject HO
	Born Again	-.27949*	.018	Reject HO
	Others	-.03846	.738	Do not reject HO
Protestants	Roman Catholic	.17297	.310	Do not reject HO
	Iglesia Ni Cristo	.34615	.066	Do not reject HO
	Born Again	.06667	.725	Do not reject HO
	Others	.30769	.102	Do not reject HO
Born Again	Roman Catholic	.10631	.220	Do not reject HO
	Iglesia Ni Cristo	.27949*	.018	Reject HO
	Protestants	-.06667	.725	Do not reject HO
	Others	.24103*	.041	Reject HO
Others	Roman Catholic	-.13472	.107	Do not reject HO
	Iglesia Ni Cristo	.03846	.738	Do not reject HO
	Protestants	-.30769	.102	Do not reject HO
	Born Again	-.24103*	.041	Reject HO

*. The mean difference is significant at 0.05 level.

Table 8.4 presents the Post Hoc Multiple Comparisons Test between the Primary Caregivers' Religion and their Attitudes toward the National Immunization Program. This shows that those primary caregivers who are Roman Catholic and Born Again exhibited a more positive attitude compared to those primary care providers who are Iglesia Ni Cristo. Additionally, those primary caregivers who are Born Again displayed a more positive attitude compared to those who have other religions, such as Muslims and Church of Christ.

Table 9. Test of Significant Relationship between Primary Caregivers' Knowledge, Attitude, and Practices, and Compliance toward the National Immunization Program

Variable	Compliance		
	r-value	p-value	Description
Knowledge	.171**	.003	Significant
Attitude	.100	.085	Not Significant
Practices	.074	.201	Not Significant

p<.05 is Significant

Table 9 presents the Test of the Significant Relationship between Primary Caregivers' Knowledge, Attitude, and Practices, and Compliance with the National Immunization Program. It is shown that there is a significantly weak relationship between the respondents' knowledge and their compliance. Hence, the relationship between the primary caregivers' knowledge and compliance toward the National Immunization Program is minimal. This indicates that even though the primary caregivers are highly knowledgeable, it slightly affects their compliance with NIP. Moreover, there is no significant relationship between attitude and compliance and practices and compliance.

IV. DISCUSSION

Demographic Profile of the Primary Caregivers

The result of the study participated by a total of 300 primary caregivers showed that majority of them are aged 20 to 29 years old. Similar findings were seen in the study of Paek, Shin & Park (2015), which found that most parents who participated in their research are in their early adulthood or ranging from 20 to 35 years. While in the study of Al-lela et al. (2014), mothers aged 20 to 29 had excellent practices and were more highly knowledgeable than other age groups. In addition, the majority of primary caregivers are females, whereas most primary caregivers are married. In the study of Pardo et al. (2018), they concluded that children with married primary caregivers living with them are more likely to receive complete immunization than those living with single primary caregivers. It was also found in the same study that if both partners work together and have a supportive role in their partners, they can find and utilize effective strategies to improve their child's health, such as complying with childhood immunizations.

Moreover, most of the primary caregivers' number of children is 2 to 3. This suggests that primary caregivers learn from their first experience with child immunizations, thereby enhancing their knowledge, attitude, practices, and compliance regarding childhood vaccinations for their next child. The study of Negussie et al. (2015) supports this finding since it was found that the number of children significantly affects the completion and compliance of primary caregivers toward childhood vaccination. It reveals that the higher the number of children who already completed their

immunizations, the more likely that the youngest child will also follow. When grouped according to the child's relationship with the primary caregiver, the highest number of primary caregivers are mothers, followed by grandmothers. In the study of Skitarelić & Vidaić (2022), parents and grandparents of the child have different motivations for childhood immunizations, wherein parents typically vaccinate their children for the good of the community. In contrast, grandparents commonly vaccinate their grandchildren for the sake of their health. Under highest educational attainment, most of the primary caregivers were seen to finish their education at the High School Level. In the study by Castro et al. (2020), the primary caregiver's compliance with the immunization schedule and awareness depend significantly on their educational attainment. Another study by Quintos et al. (2022) showed that caregivers or mothers who attended secondary or above levels of education were two times more likely to complete their children's immunization than those with no formal education.

Regarding employment of the primary caregivers, majority of them are unemployed, and most are housewives. The study by Quero et al. (2019) implies that unemployed mothers are more likely to vaccinate their children than working mothers since they have more time for their child's immunization than employed mothers. Also, the majority of the respondents' religion is Roman Catholic. Moreover, when grouped according to the distance of residence to the health facility, most primary caregivers reside 500 meters to 1 kilometer away from the health facility, followed by less than 500 meters. This signifies that the primary caregivers residing farther from healthcare facilities will have decreased compliance toward vaccinating their children due to the distance. This finding is supported by the study of Addun et al. (2021), wherein mothers' preference for health centers could be attributed to the accessibility of the place and free vaccination.

Primary Caregivers' Knowledge regarding the National Immunization Program

The present study was also undertaken to assess the primary caregivers' knowledge regarding the National Immunization Program. Thus, the researchers found that the primary caregivers of selected barangays in Solana, Cagayan are knowledgeable. This finding is similar to the result of the study of Zaldivar and Prado (2019), which revealed that the mothers are knowledgeable about child immunization. In addition, the result of the present study implies that the primary caregivers have acquired enough information about childhood vaccinations and their relevant impact on child's health. Thus, this is supported by the study of Hatim (2018), which states that parents have sufficient information about immunizations allowing their children to receive recommended vaccines.

Additionally, the primary caregivers are found to be highly knowledgeable about their children developing protection against viruses or bacteria through immunization, implying that the primary caregivers are aware that vaccines offer childhood protection against pathogens, such as viruses or bacteria. This result is supported by the study of Verulava et al. (2019), which states that childhood immunization helps children's immune systems develop protection from diseases caused by pathogens. In addition, the researchers also found that the primary caregivers are highly knowledgeable about the availability of vaccines in their Barangay Health Unit. Hence, this finding implies that primary caregivers know that public health centers and facilities, such as their barangay and rural health units, provide free access to child immunizations, increasing their utilization of these services. Similar findings were also found in the study of Mohammad et al. (2020), which showed that parents are highly aware that routine vaccination for children is free across their country. It was also revealed in the study of Macato (2013) that mothers were very much aware of the free child health services available at their Barangay Health Station, such as immunization services.

Likewise, the primary caregivers were found to be highly knowledgeable about preventing polio by administering Oral Polio Vaccine (OPV) and Inactivated Polio Vaccine (IPV). The finding implies that primary caregivers are aware and familiar with the polio vaccine, thus securing their children from receiving OPV and IPV, which may prevent polio disease in their community. Thus, this result is supported by the study conducted by Sia et al. (2021), which showed that out of 385 respondents, 83.6% were familiar that polio vaccines would help prevent children from getting infected with the disease.

Primary Caregivers' Attitudes toward the National Immunization Program

The study's result showed that all primary caregivers have a positive attitude toward the National Immunization Program. Thus, this implies that all of the primary caregivers have demonstrated a positive mindset, feelings, beliefs, and dispositions about the immunization of their child, which led them to be more motivated in completing or finishing the child's immunization; thereby, it will eventually help them make their child be Fully Immunized. The results of the studies by Addun et al. (2019) and Al-lela et al. (2019) support this study by stating that the majority of their respondents had a positive mindset and expressed their positive attitude regarding immunization, which allows them to increase their motivations for their children to complete or finish their vaccinations.

In addition, the primary caregivers in this study exemplified a positive attitude, believing that immunization of their children is essential and more beneficial than harmful and vital to comply with the recommended immunization schedule. Hence, the findings indicate that primary caregivers

strongly believe that complying with childhood immunization for their children is essential in protecting them, and following the immunization schedule can help their children prevent vaccine-preventable diseases. This finding is backed up by the study of Quintos et al. (2022), wherein most mothers have agreed that vaccinating their children is essential and that they should be vaccinated correctly and regularly according to the schedule. In connection, in the study of Almutairi et al. (2021), they found that children should receive all the recommended childhood immunizations within the correct intervals and appropriate ages since this is beneficial for them in gaining the most significant protection against vaccine-preventable diseases, decreasing the high cost of treatment and decline disease rates, and enhances the quality of life of the child.

In addition, majority of the primary caregivers (268) responded that their children must still be immunized even if they seem healthy. This may imply that healthy children still need to be vaccinated since immunization is essential and beneficial to their overall health, as this would help them build protection and immunity against vaccine-preventable diseases. According to UNICEF (2022), it is recommended that children get vaccinations even if they are healthy since the immune systems of infants and toddlers are still weak and growing, and vaccines protect children from various vaccine-preventable diseases.

Primary Caregivers' Practices toward the National Immunization Program

The researchers of the present study also aimed to determine the primary caregivers' practices in selected barangays in Solana, Cagayan toward the National Immunization Program. The result implies that their practices are excellent. This shows that primary caregivers ensure that they observe their actions as exemplary towards their child's immunizations. Likewise, in the study of Mohammad et al. (2020), it was found that most parents in Saudi Arabia have exhibited excellent practices regarding childhood vaccination. It is seen in this study that the majority of the primary caregivers practiced going to the health facility at the time of their child's immunization, exemplifying an excellent practice. The primary caregivers do this by following the scheduled dates and using immunization cards or booklets to keep track of the timeline, ensuring completeness of the vaccines to their child, and allowing their child not to miss the recommended immunization schedule. Additionally, the result of the present study is backed up by the study of Bbaale (2013), which states that having an immunization card is essential to achieve complete immunization since they found that parents who have immunization cards have shown to increase their likelihood of fully immunizing their child and receiving BCG, Pentavalent vaccine, polio vaccine, and measles vaccine by 67%.

Moreover, most caregivers make sure that their child receives adequate care and rest after they are immunized because they may encounter and experience some temporary and mild effects of the vaccine given. In connection, it was seen in the study of Almutairi et al. (2021) that majority of their respondents practiced applying a cold compress to reduce the swelling of their child's vaccination site. Furthermore, in the study of Rayatdoost et al. (2022), it was seen that their respondents provided adequate sleep, which could help increase the immune response after vaccination. Also, according to UNICEF (2021), it is recommended that recently vaccinated people need enough sleep when they get vaccinated because the body rebuilds its defense mechanisms when sleeping. Thus, the primary caregivers ensure that their child gets adequate rest and care to improve their child's condition.

Furthermore, the present study found that primary caregivers have shown excellent practice of watching out for the side effects of vaccination and raising concerns to the health worker when it worsens. The reasons vary widely, including safety concerns of their child, such as possible short-term adverse reactions and personal beliefs that most of them see vaccine-preventable diseases as serious or life-threatening. Thus, these primary caregivers communicate and share their worries or questions with the healthcare workers. This finding was supported by Facciola et al. (2019), whose study found that parents watch out for possible pain at the vaccination site and low-grade fever after vaccination since they fear the side effects of childhood immunizations.

Primary Caregivers' Compliance with the National Immunization Program

The study's findings revealed that the primary caregivers' extent of compliance with the National Immunization Program has indicated that the primary caregivers are only partially compliant. This implies that the primary caregivers do not always follow the correct scheduled time of their child's vaccinations due to some identified factors, particularly the practice of their barangay health centers and rural health centers of not opening vaccine vials, unless enough infants or children are needed to be immunized. Also, the researchers found that some vaccines were only received on time during the first doses, but the subsequent doses were no longer accepted on the appropriate immunization schedule. Hence, the primary caregivers are merely partially compliant.

Based on the result of the study, the majority of the primary caregivers complied with the Hepatitis B vaccine of their children. This is due to the fact that it is one of the vaccines given to newborns immediately after birth and is readily available in hospitals and health centers. The same finding was seen in the study of Abidin, Juni, & Ibrahim (2017), wherein majority of their respondents were compliant with the Hepatitis B vaccine of their child. This is because,

according to CDC (2020), infants should receive their first shot of the Hepatitis B vaccine within 24 hours of birth since mothers can unknowingly pass the Hepatitis B virus to their newborn at birth. Also, vaccinating newborns with the Hepatitis B vaccine would reduce the probability of HBV transmission from mother to child by 70 to 95%, preventing 77% to 84% of hepatitis-related deaths (Chocontá-Piraquive, De La Hoz-Restrepo & Sarmiento-Limas, 2016).

In addition, the results of the study show that majority of the primary caregivers also comply with the BCG vaccine. This can be attributed to its availability in the hospital setting and because it should also be given to newborns after birth to reduce the incidence of acquiring Mycobacterium tuberculosis (TB) and meningeal tuberculosis. The same finding was also seen in the research study of Abidin, Juni & Ibrahim (2017), wherein majority of their respondents complied with the BCG vaccine of their children. BCG vaccines are given to infants at the earliest possible age, right after birth, or during their first encounter at a health facility. This is because Balfour's study (2021) found that the BCG vaccine could protect newborns against various common infections, such as upper respiratory tract infections and diarrhea. Also, according to CDC (2016), the BCG vaccine is given to prevent tuberculous meningitis and miliary disease. Overall, the result of the study revealed that primary caregivers are compliant with the Hepatitis B vaccine and BCG. Thus, the same results have been seen in the study of Abidin, Juni & Ibrahim (2017), wherein mothers highly adhered to the same vaccines since the Hepatitis B vaccine and BCG are routinely given in hospitals during delivery.

Moreover, the study shows that primary caregivers are non-compliant with MMR 1 and MMR 2 vaccines, respectively. This implies that primary caregivers failed to bring their child to the vaccination facility and often missed the recommended schedule for the MMR vaccination because the duration of the gap between the previous vaccine received by the child and the MMR vaccine takes about 5 to 6 months. Hence, primary caregivers often forget to follow up on their child's MMR vaccines at nine months and before 12 months old. The study's results are supported by the research of Hobani and Alhalal (2022), wherein their findings revealed that MMR was one of the most common delayed vaccines. According to Hobani and Alhalal (2022), the primary reason for delayed immunizations is due to forgetting the child's scheduled appointment. Due to this delay, infectious diseases have recurred and herd immunity is lost, putting communities and children at risk (Ventola, 2016), and the susceptibility window for diseases that vaccines can prevent widens with delayed immunization (Choudhary et al., 2019). This was evident in 2014 when the country experienced measles outbreak, with 8,848 cases, 20,827 cases in 2018, and 48,525 cases in 2019 (Ulep & Uy, 2021). It was also reported that from January 1 to March 9, 2019, the country recorded 18,553 measles cases, including 286 deaths. Additionally, according to the Philippines Department of Health Epidemiology Bureau

(2023), 308 cases of measles were reported recently in the country from January 1 to April 1, 2023. This represents an increase of 328% over the 72 instances reported during the same period in 2022. Moreover, it was found in the study of Zhong et al. (2021) that MMR vaccine uptake rates have dropped from 73.55% to 25.64% during COVID-19.

Significant Difference in Primary Caregivers' Knowledge, Attitude, Practices, and Compliance toward National Immunization Program When Grouped According to Profile

In the test of significant differences in Primary Caregivers' Knowledge, Attitude, Practices, and Compliance with the National Immunization Program when grouped according to their profile, it is shown that there is a significant difference between the respondents' age and their practice, showing that when analyzed using the post-hoc test, those caregivers aged 40 to 49 and 50 and above portrayed a more positive attitude than those who are below 20 years old. Hence, this may indicate that the age range of <20 may not have enough experience regarding childhood immunizations compared to those who are between 40 to 49 years old and above 50 years old. This is supported by the study of Bbaale (2013) that found that when the primary caregivers' age increases, the likelihood of childhood immunization also increases because it may be attributed to the experiences gained over time regarding the importance of childhood immunization on the health of their child and the child mortality brought on by incomplete vaccinations. Also, as primary caregivers' age increases, their experiences and awareness regarding immunization increase since they become more experienced in raising children and making health decisions for their children (Kusnanto, Arifin & Kurniawati, 2020).

In addition, there is also a significant difference between the primary caregivers' attitude and relationship of the child to the primary caregiver, indicating that when analyzed using the post-hoc test, those primary caregivers who are sisters exhibited a more positive attitude compared to primary caregivers who are mothers, fathers, grandmothers, grandfathers, aunts, and uncles. In addition, it is also shown that those primary caregivers who are brothers also exhibited a more positive attitude compared to primary caregivers who are mothers, fathers, grandmothers, and grandfathers. This is because both sisters and brothers have a more extensive knowledge regarding the vaccines that will be given to their younger siblings since they are currently studying and have acquired more information that influences their attitudes. However, the researchers found that previous studies could not delve further on this part, making this study the first to have shown that sisters and brothers appeared to have a more positive attitude toward childhood immunization than other primary caregivers. This is because both sisters and brothers are present during the scheduled immunization of their siblings and the ones who accompany their siblings to the

health facility since they are the ones who are available at home to bring the child to the health facility.

Moreover, there is also a significant difference between the primary caregivers' attitude and religion, indicating that when post-hoc analysis is used, primary caregivers who are Roman Catholic and Born Again portrayed a more positive attitude than those who are Iglesia Ni Cristo. This is because the Roman Catholic and Born Again have no theological objections to vaccination; thus, they demonstrate a positive attitude to support the vaccination to protect the most vulnerable members of their religion, particularly infants and children. Similar statements were also shown in the published article of the Catholic Bishops' Conference of England and Wales (2020), wherein Roman Catholics and Born Again do not oppose childhood vaccinations since they encourage their members to commit to protecting the most susceptible individuals in their society by complying with immunization. It also revealed that primary caregivers who are Born Again have a more positive attitude compared to primary caregivers who have other religions, such as Muslims and Church of Christ. This implies that respondents from Born Again have no religious problems when it comes to vaccination; thus, they openly advocate this health action in order to protect the most vulnerable members within their religious group, especially newborns and infants. Also, primary caregivers who have other religions, such as Muslims, have general concerns, considerations, and limitations regarding vaccination, which then influence their attitude. Such findings can be seen in the study of Alsuwaidi et al. (2023), which revealed that religious beliefs and affiliations have been cited as major drivers in influencing the attitude of Muslims toward vaccine compliance and adherence, wherein misinterpretations were observed by some religious community leaders which caused an influence toward Muslims' attitudes with regard to childhood immunization.

Relationship of Primary Caregivers' Knowledge, Attitude, and Practices with their Compliance

The test of the significant relationship between the primary caregiver's knowledge, attitude, practices, and compliance shows a significant weak relationship between the primary caregivers' knowledge and compliance towards the National Immunization Program. Hence, the relationship between the primary caregivers' knowledge and compliance toward the National Immunization Program is minimal. This indicates that even though the primary caregivers are highly knowledgeable, it only slightly affects their compliance with NIP. It was seen in the study conducted by Aziz et al. (2018) that a direct relationship was found between respondents' knowledge and compliance, resulting in increased vaccination rates in children. In addition, the present study's findings also imply that the primary caregivers' awareness and familiarity with the general information of the National Immunization Program greatly influence their compliance. Primary caregivers who are knowledgeable have high compliance

because they can decide on their own whether to comply or not since they are aware of vaccinations, benefits/advantages, and side effects. Thus, the finding of the present study is supported by Quero et al. (2019), wherein they found that knowledgeable respondents regarding childhood immunization are compliant, making knowledge the best indicator of compliance with the National Immunization Program. Therefore, improving immunization knowledge will lead to higher childhood immunization rates (Quero et al., 2019).

The limitation of this study was the locale since it was chosen based on municipalities with low percentages of Fully Immunized Child (FIC) and on the researchers' location instead of choosing the municipality with the lowest number of FIC. Also, the study only focused on the top 3 highest compliant barangays and the top 3 highest non-compliant barangays in Solana instead of considering all the barangays in the municipality of Solana.

Implication to Nursing

The results of this study can be significant to the nursing practice, particularly in the area of Community Health Nursing. Community Health Nurses and Barangay Health Workers are pivotal members in improving the coverage and quality of childhood immunization. The findings of this study will help community health nurses identify and utilize different resources that can be used to increase the compliance of primary caregivers and improve childhood immunization rates, thereby preventing and reducing the occurrences of vaccine-preventable diseases. Moreover, the findings may help the community health nurses to provide vaccine-related interventions before, during, and after child vaccination, such as health education before vaccine administration and actions in reducing pain during vaccine administration, which may contribute to reducing stress on the body of children and anxiety toward the primary caregivers, especially with multiple vaccine doses, so that the primary caregivers may not feel like their child is in distress. Overall, these actions may contribute to increasing their compliance with the National Immunization Program.

Furthermore, accurate and adequate information must be disseminated to primary caregivers about post-adverse events of vaccines since this may help increase vaccination rates and manage post-adverse events to maintain the credibility of immunization programs. These actions must be integrated into the daily practice of administering vaccination of community health nurses to increase the compliance of primary caregivers.

V. CONCLUSION AND RECOMMENDATIONS

This research study concludes that the primary caregivers are knowledgeable, have a positive attitude, and exhibit excellent practice. However, their overall compliance toward the National Immunization Program is only partially compliant. Despite this positive result on their KAP, it was also found that the primary caregivers were non-compliant with some vaccines, particularly MMR 1 and MMR 2 vaccines. Additionally, the researchers found a significant difference between the primary caregivers' practice and age, wherein those primary caregivers who are between the ages 40 to 49 and 50 and above portrayed a more positive attitude than those who are below the age of 20 years old. It was also found that there is a significant difference between the primary caregivers' attitude and relationship of the child to the respondent, wherein those primary caregivers' who are sisters exhibited a more positive attitude compared to respondents who are mothers, fathers, grandmothers, grandfathers, aunts, and uncles. In addition, it is also shown that those primary caregivers' who are brothers also exhibited a more positive attitude compared to respondents who are mothers, fathers, grandmothers, and grandfathers. Moreover, the study had shown a significant difference between the primary caregivers' attitude and their religion, indicating that primary caregivers who are Roman Catholic and Born Again portrayed a more positive attitude than those who are Iglesia Ni Cristo and primary caregivers' who are Born Again have a more positive attitude compared to primary caregivers who have other religions, such as Muslims and Church of Christ. Furthermore, this research study found a significantly weak relationship between the primary caregivers' knowledge and compliance.

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