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Primary caregiver's acceptance, knowledge, and perception towards COVID-19 vaccination among two to five years old children

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Abstract

Despite the public's skepticism stemming from earlier vaccination-related issues, on the third year of addressing the coronavirus pandemic the government started the program "Resbakuna Kids" targeting children ages five to eleven and towards the end of year 2022, the Department of Health stated that they are ready for the COVID-19 vaccination of young children below five years old. Employing a descriptive-correlational design, this study investigated the levels of acceptance, knowledge, and perception of the primary caregivers of two- to five-year-old children residing in three barangays in Indang, Cavite with the lowest vaccination intake as of October 2022. The researchers used simple random sampling to recruit respondents and a survey questionnaire was used to collect the data. Results show that most of the respondents have Fair acceptance of vaccine practices and a positive attitude towards vaccinating their children with COVID-19 vaccine. This is despite having moderate awareness about COVID-19 vaccines. Findings revealed that the overall mean of practice acceptance and perception towards pediatric COVID 19 vaccination is significantly correlated to each other in a positive direction. The same is also found to be directly associated with the respondents' knowledge on COVID-19 vaccine, having a positive view of pediatric COVID-19 vaccination does not ensure that a person will be adequately informed about the concerned vaccine in terms of drug information, dosage, route of administration, time interval of administration and ultimately decide to undergo vaccination. Nonetheless, individuals should be aware of who qualifies for the vaccine in order for them to be more likely to view immunization positively. Sustaining good vaccination practices and educating the public about COVID-19 vaccines with emphasis on the eligible population for vaccination would enjoin caregivers to submit their six to sixty months old children to COVID-19 vaccination should the government already permit it.

Keywords: COVID-19, vaccination, young children, caregivers

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1. Introduction

Coronavirus disease (COVID-19) is a contagious disease caused by the SARS-CoV-2 virus which results in a mild to moderate respiratory illness. Mainly because the disease has been widespread, the World Health Organization (WHO) officially declared the 2019 Coronavirus Disease (COVID-19) a pandemic as several countries were affected and a large number of people were involved on March 11th, 2020. Currently, the effort to find a treatment that can inhibit the spread of the virus, lessen its symptoms, increase survival rate, and reduce fatality rate is still progressing. According to Dos Santos (2020), based on the collection of clinical knowledge gathered from infected patients, various medication classes, many of which are already in use for other diseases, were being tested. Numerous pharmacological classes, such as antiviral (e.g., Chloroquine, Ivermectin, and Lopinavir), supportive (e.g., Vitamin C and D, Corticosteroids), and including vaccine administered medications are being deliberated and various COVID-19 vaccination brands have been approved for consumption by WHO. Early in December 2020, the first mass vaccination campaign was launched globally.

Vaccines protect individuals initially, rather than treating developed diseases. In order to create immunity, vaccines function in relation to the body's natural resistance, once one or more doses of a vaccination is received. Vaccination programs are already ongoing across nations, but given the current state of populism and misinformation, it appears that vaccine practice acceptance may be more difficult to obtain than the vaccine itself. According to Mendoza et al. (2021), in many countries, including the Philippines, vaccine confidence and acceptance were already dropping even before the surge of COVID-19. The public's acceptance of vaccinations has been affected by the result of the controversy surrounding Dengvaxia, Sanofi's dengue vaccine which erupted in 2017. Insights from the controversies regarding the dengue vaccine in the Philippines has affected the immunization campaigns that are being organized to address the COVID-19 outbreak. Establishing acceptance between the public and government, preserving scientific institutions' integrity, and upholding transparency are all necessary components of an effective vaccination program. This also entails utilizing an interdisciplinary approach to health communication, considering health within the larger context of equity, and placing a strong emphasis on public feedback. Vaccine-safety education is more crucial since the COVID-19 vaccine is being distributed in nations globally (Lasco et. al.,2021).

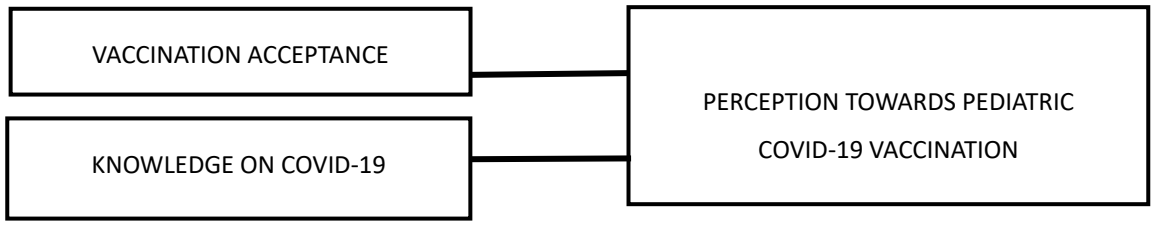
On March 1, 2021, the Philippines began a nationwide coronavirus immunization campaign despite substantial public mistrust and difficulties obtaining vaccinations. In the Department of Health website, priority groups for vaccination included frontline health workers, elderly people, indigents, and uniformed personnel. During November 22, 2020, Cavite led among Philippine provinces in terms of the number of active COVID-19 cases, which is one reason why the Philippine government included the Cavite province on the first phase of vaccination roll out (Aquino, 2020).

As the Philippines reached the third year of addressing the coronavirus pandemic, the government started the program "Resbakuna Kids" targeting children ages five to eleven. Children received a Pfizer vaccination with a lower dosage and concentration, than children between the ages of twelve to seventeen (Magsambol, 2022). The US Food and Drug Administration approved two brands of the COVID-19 vaccine for children under the age of five. Once the Centers for Disease Control and Prevention has approved the program, the vaccination for children in the younger age group will commence globally. The COVID-19 vaccines from Pfizer-BioNTech and Moderna Inc.'s are approved by the FDA to be administered for children six months and older (Mishra et. al.,2022). It was mentioned that this group of children under the age of five will receive a dose that is one-tenth (3mcg) of the adults. The first two doses will be administered within a 21-day interval, followed by the third dose which will be administered after two months, following the second dose (Tomacruz, 2022).

As published in COVID-19 Dashboard of Department of Health, from March 1, 2021 to October 27, 2022, Region IV-A has recorded 23,843,531 total vaccines (first dose:10,145,229; complete dose:10,483,849; booster dose: 3,214,453). Referring to the published article of Cavite Provincial Information Office, as of October 30, 2022, it currently shows that the Cavite province has 503 active cases. Despite having a wide vaccine coverage, some cities and municipalities of the province record a low vaccination performance. The researcher will conduct the study in five barangays of Indang, a municipality within the province of Cavite, which has been found to be among the municipalities with low vaccination coverage. They determined their intent of response for the expanded pediatric vaccine, knowing that they had insufficiencies in the previous COVID-19 vaccinations for ages older than 5 years.

Objectives of the Study - This study aimed to evaluate the primary caregiver's acceptance, knowledge, and perception towards covid-19 vaccination among two to five years old children. Specifically, determine the level of acceptance on vaccination practices in terms of confidence, complacency and convenience; evaluate the level of knowledge in pediatric COVID-19 vaccines in terms of drug information, eligible population, dosage, route of administration and time and interval of administration; determine the respondents' perception towards pediatric COVID-19 vaccination in terms of susceptibility, severity, benefits, and barrier; determine the significant relationship between vaccine practice acceptance and perception towards pediatric COVID-19 vaccination; and determine the significant relationship between knowledge on COVID-19 vaccine and perception towards pediatric COVID-19 vaccination.

Conceptual Framework



The independent variable consists of vaccine practices acceptance and knowledge on COVID-19 vaccine. The vaccine practices acceptance is the willingness of the participants to receive the vaccination for their children aged 2-5 years old. The knowledge on COVID-19 vaccine is the understanding of the participants towards COVID-19 vaccine. The dependent variable consists of perception towards COVID-19 pediatric vaccination, it is the perspective of the participants toward pediatric vaccination. The researchers suspect that "perception towards vaccination" depends on "vaccine practices acceptance" and "knowledge on COVID-19 vaccine". Thus, the researcher's hypothesis will be that the more the participants accept the vaccination and the more knowledgeable they are, the better or more positive their perception towards COVID-19 pediatric vaccination will be.

Theoretical Framework - In order to measure the variables under investigation in the study, three theories were utilized to serve as foundations of the study. In determining the respondents' acceptance on vaccination, the 3 C's model for vaccine hesitancy developed by the SAGE working group is used. The three C's stand for confidence, complacency, and convenience. Vaccine confidence is described as trust in 1) the efficacy and safety of vaccines, 2) the system that distributes them, including the dependability and competency of the health services and health professionals, and 3) the goals of the policy-makers who choose the necessary vaccines. On the other hand, vaccine complacency occurs when the perceived risk of diseases that can be prevented by vaccination is minimal and when vaccination is not seen as a required preventive measure. Finally, vaccine convenience is determined by the degree to which a resource is physically available, affordable, geographically accessible, understandable (in terms of language and health literacy), and affecting uptake is the attraction of immunization services. A study by Nyhan et al. (2014) showed that pro immunization messaging has differing

impacts, depending on the level of vaccine hesitancy among those targeted. In this study, this has been the indicator to which vaccination services were provided at a time, place, and in a cultural context that was convenient and comfortable, which also influenced people's decision to be vaccinated or not.

As for the respondents' knowledge on vaccination, the researchers employ the Nursing Rights of Medication Administration. The "five rights" or "five R's" of medication administration also known as a manual for clinical medication administration and maintaining patient safety which is taught to all nursing students. The five R's of medications' goal is to provide information to the patient and ensure that medication is therapeutic enough to those who will be receiving it. The five Rs refer to:

Right Patient. It refers to confirming that the person being treated is the real person for whom the medication was given. When giving vaccination, the practitioner must make sure to verify the person who will be receiving the vaccine through their name and age to rule out if they are eligible for the vaccine.

Right Drug. It means ensuring that the correct form of vaccine is administered to a specific cohort of patients.

Right Route. There are many various ways to provide medications to patients, and each has a different impact on how quickly the chemical is absorbed, how quickly the medication takes effect, and whether there are any potential adverse effects.

Right Time. It refers to delivering medication at the time the prescriber has planned. In order to sustain a therapeutic effect or level, various medications frequently have predetermined intervals or window periods during which another dose should be administered.

Right Dose. The most common types of pharmaceutical administration errors are wrong dosage, unit conversion, and chemical concentration. In order for medications to be therapeutic, the healthcare provider should ensure that correct dosage of it is properly administered.

As for the third problem statement, the researchers employed the Health Belief Model (HBM). Social scientists in the United States established the Health Belief Model (HBM) in the early 1950s. Later, HBM was utilized to track how patients responded to their treatments and their symptom responses. The HBM states that a person's propensity to form a habit can be anticipated by their perception of their own risk of getting a sickness or illness and the efficacy of the advised health behavior or activity. In the end, a person's course of action frequently depends on how they see the advantages of and obstacles to engaging in healthy activity (LaMorte, 2022). The HBM consists of six structures which predict health behavior (Becker, 1974). The first four constructions served as the HBM's founding principles. The final two were included as knowledge of the HBM increased. Perceived susceptibility refers to a person's subjective perception of the risk of acquiring an illness or disease. There is wide variation in a person's feelings of personal vulnerability to an illness or disease.

This study assessed the respondents' perception of risks of acquiring diseases, and they had to believe that they were at risk before taking action. The perceived severity refers to a person's feelings on the seriousness of contracting an illness or disease (or leaving the illness or disease untreated). There is wide variation in a person's feelings of severity, and often a person considers the medical consequences (e.g., death, disability) and social consequences (e.g., social relationships) when evaluating the severity. This study aims to assess the person's perception on how severe or serious acquiring an illness is considering that each individual has a wide variety and different levels of emotion. Perceived benefits refer to a person's perception of the effectiveness of various actions available to cure or reduce the threat of illness or disease. The course of action a person takes in preventing (or curing) illness or disease relies on consideration and evaluation of both perceived susceptibility and perceived benefit, such that the person would accept the recommended health action if it was perceived as beneficial. This study aims to assess an individual's belief that a specific outcome will result from a specific behavior. Perceived barriers refer to a person's feelings on the obstacles to performing a recommended health

action. There is wide variation in a person's feelings of barriers, or impediments, which lead to a cost/benefit analysis. The person weighs the effectiveness of the actions against the perceptions that it may be expensive, dangerous (e.g., side effects), unpleasant (e.g., painful), time-consuming, or inconvenient. Cue to action means that stimulus is needed to trigger the decision-making process to accept a recommended health action. These cues can be internal (e.g., chest pains, wheezing, etc.) or external (e.g., advice from others, illness of family members, newspaper articles, etc.). In this study, the perceived barriers aim to assess the respondents' feelings when performing a recommended health action considering internal and external factors.Self-efficacy refers to the level of a person's confidence in his or her ability to successfully perform a behavior. This construct was added to the model most recently in mid-1980. Self-efficacy is a construct in many behavioral theories as it directly relates to whether a person performs the desired behavior.

2. Method

Research Design - In order to attain the objectives of the study, the researcher utilized the Explanatory sequential design, a type of mixed method research in which the collected quantitative survey is statistically analyzed first then follows the result up with qualitative interviews to explain the quantitative results in more depth. For the quantitative phase, a descriptive method was done to investigate the participant's level of vaccine practice acceptance, knowledge on COVID-19 vaccines, and perception towards COVID-19 pediatric vaccination. Correlational method was also used to determine the relationship that exists between the participant's acceptance and perception and the participant's knowledge and perception. The data for each variable were gathered from the identified respondents through the use of a prepared set of data sheets and questionnaires that measure the parameters of each variable included in the study. For the qualitative phase, data was obtained through open-ended and conversational communication. It allows for an in-depth and further probing and questioning of the respondents based on their responses, where the researcher also tries to understand their motivation and feelings.

Participants of the Study - The respondents of this study for the quantitative part are the primary caregivers of children aged two to five years old currently living in Indang, Cavite. Obtaining the number of respondents depends on the report coming from Barangay Health Workers through "Target Client List (TCL)". Identified Primary Caregivers must be 18 years old and above who mainly decide on the care and raising of their child or children. For the qualitative part, 20 participants were purposely selected based on information saturation. All Conversation and forms will be given once we have them consented so that we can obtain their signature and name on the consent. Survey questions will be written in English and Tagalog depending on their preference. And because we are in the era of multi-media literacy online Google forms will be shared on social media by the author as well for those participants who will be involved in the sampling for easy access and completion of the questionnaire. Furthermore, for protection and less exposure from each other.

Data Gathering Procedure - Permission from the dean of School of Nursing and the head of the barangay shall be requested before the study begins. As soon as permission was granted, the researcher identified the respondents from Barangay Health Station's target client list. Informed consent will be provided to the target respondents. Before any participant gives his or her informed consent, it must be sure that they have clear and explicit information on all the aspects of the study including the process to be followed and the reasons for it. As soon as the respondents gave their consent to participate in the study, the prepared questionnaires were provided for them to accomplish. Each participant was given utmost thirty minutes to answer it as the questionnaire was composed of Likert scale and dichotomous questions. Upon answering, the respondents' responses will be encoded and tallied in a prepared data sheet for data analysis. All the self-made questionnaires will be validated firstly and piloted from 25 informants in other selected locations.

Data Analysis - Descriptive statistics such as frequency, percentage, mean and standard deviation was used to describe the distribution of the respondents according to their responses. Furthermore, suitable kinds of tables and figures will be used to ensure clarity and intelligibility in the presentation of the findings. Frequency

distribution and percentage was used to audit the demographic profile. Vaccine practice acceptance will be determined according to the respondents' level of agreement to the given statements. The findings were obtained by computing for the mean score in reference to their answers on the ten statements. The results were further categorized into 'Strongly agree' if the mean range is 3.50-4.00; 'Agree' if the mean range is 2.50-3.49; 'Disagree' if the mean range is 1.50-2.49; and 'Strongly Disagree if the mean range is 1.00-1.49. The respondents' knowledge on pediatric COVID-19 vaccines will be determined by asking them to answer ten questions about their level of knowledge on COVID-19 vaccine in terms of the right dosage, right route of administration, right drug information, right patient or the eligible population, and the right time and interval of administration. The findings were obtained by getting the mean percentage score of the respondents who answered each question correctly. The Frequency percentage scores obtained were further evaluated as to what questions obtained the Highest and discussed its outcome on the study.

Perception was analyzed according to the respondents' level of perception in terms of their perceived susceptibility, severity, benefits, and barriers. The findings were obtained by computing for the mean score in reference to their answers on the twelve statements. The results were further categorized into 'Strongly agree' if the mean range is 3.50-4.00; 'Agree' if the mean range is 2.50-3.49; 'Disagree' if the mean range is 1.50-2.49; and 'Strongly Disagree if the mean range is 1.00-1.49. In determining the significant relationship between vaccine practice acceptance and perception towards pediatric COVID-19 vaccination and the significant relationship between knowledge on COVID-19 vaccine and perception towards pediatric COVID-19 vaccination, Pearson Correlation will be used because the variables to be correlated are ordinal data. For the follow up Qualitative in- depth interview, data was analyzed manually using thematic analysis. Expanded Notes, audio transcripts and other materials are carefully handled to identify commonalities and differences to produce an analogy of data. The result and excerpts from the original transcripts were further refined and applied to the rest of the data set. Conducted Interpretive work and sense checking as necessary. The Analysis of the findings are manually executed without the use of any software package thus it is wholly inductive and were not structured to any existing theoretical framework.

Ethical Considerations - Before the conduction of this research, a letter will be submitted to the Dean of the Nursing Post-Graduate Program to obtain ethics approval. A letter to the respondents will be formulated as well as a consent form. The respondents shall be fully informed on the objectives of this study and implementation of the data gathering procedure, and the consent form will be signed by each of them before being asked to answer the questionnaires. In order to ensure their safety in consideration to the standard health protocols in place, the researcher shall make sure to hand over the questionnaires and explain the instructions in the shortest time possible to minimize exposure to one another. Wearing a face mask and proper hygienic practices will be observed. The data collected will be treated with utmost confidentiality and anonymity of the respondents shall be maintained. No respondent shall be forced to answer the questionnaire or participate in this study without a signed informed consent form. Any respondent may also withdraw their participation at any time they wish to.

3. Results and discussion

Demographic Data of the Respondents - In this section, the researcher identified the Primary Caregivers by determining their Age, Sex, Marital Status, Educational Level, Employment Status and their Monthly income. Table 1 Shows the total number of respondents participated (n= 211), providing valuable insights into the study Primary Caregivers Acceptance, Knowledge and Perception towards Covid-19 Vaccine among 2-5 years old children. The age distribution of respondents spans across a wide range, with the majority falling between 31 and 35 years old with 26.5%, they assumed to have greater influence on the result of the study. Notably, caregivers in the 60 and above age group constitute a significant portion, comprising 2.8% of the total sample.

The study predominantly comprises female respondents, representing 95.3% of the sample proving they can contribute to better health in children, as women often take on the role of the primary caregivers in the family and are more willing to spend on their children compared to men, (Varkey et. al., 2010; Pierre, 2016; Lu, et al.,

2021) with corresponding 4.7% response. More than half of the respondents are married (59.2%), while single caregivers account for 35.5%. The study also includes separated individuals (3.8%) and widows/widowers (1.4%). A diverse educational background is observed, with a significant portion having completed college education (42.2%), followed by those who finished high school education (34.1%). A significant proportion also hold Vocational level (12.3%), Graduate school/Masteral (8.5%), and Elementary (2.8%) qualifications. Nearly half of the respondent's report being unemployed (46.9%), while those working less than 40 hours per week and more than 40 hours per week constitute 24.6% and 28.4%, respectively. A substantial portion of caregivers prefer not to disclose their monthly income (50.2%). Among those who provided information, the majority fall into the income bracket of less than Php10,000 (22.3%).

Table 1
Frequency Distribution table of the demographics of Primary Caregiver of 2-5 years old Children

Item	f	%
Age		
60 and above		
56 – 60	6	2.8
51 – 55	5	2.4
46 – 50	4	1.9
41 – 45	19	9.0
36 – 40	49	23.2
31 – 35	56	26.5
26 – 30	46	21.8
21 – 25	21	10.0
16 - 20	5	2.4
Sex		
Female	201	95.3
Male	10	4.7
Marital Status		
Single	75	35.5
Married	125	59.2
Separated	8	3.8
Widow/Widower	3	1.4
Educational Level		
Graduate School/Masteral	18	8.5
College	89	42.2
Vocational	26	12.3
Highschool	72	34.1
Elementary	6	2.8
Employment Status		
Working more than 40 hrs/week	60	28.4
Working less than 40 hrs/week	52	24.6
Unemployed	99	46.9
Monthly Income		
<10,000	47	22.3
10000 – 20000	40	19.0
20100 – 30000	9	4.3
>30100	9	4.3
Preferred not to answer	106	50.2

Respondents' Level of Acceptance on Vaccination Practices - In this section, the researchers described the primary caregiver's level of acceptance towards vaccination practices in terms of confidence, complacency, and convenience. This part of the manuscript answers the question: What is the respondent's level of acceptance on vaccination practices in terms of: a) Confidence, b) Complacency, and c) Convenience? Level of vaccine acceptance of the respondents is shown on table 2 with an overall composite mean of 3.07 verbally interpreted as Fair Acceptance.

Confidence got the highest mean of 3.35. This implies that they have a high level of confidence in terms of vaccine safety and effectiveness. Most of the participants said that unlike before when they were still young vaccines are not that sensational, they do not care if they have received such vaccine or not. " Malaking kaibahan na ang noon at ngayon, ngayon mas takot ang tao na walang bakuna", " Mas kampante kalang pag may bakuna

ka talaga" another care giver said. This is because most of them agreed that the policies and procedures being implemented by the government regarding vaccine roll-out for children are efficient and reliable and trust the healthcare workers that will administer the vaccine. Confidence level was gauge through what and when to understand as this participants discusses " Yes, bakit hindi pinagaralan naman iyan bago itusok sa tao", "dito sa atin Nurse ng DOH naman ang laging nasa center para sa bakuna" in addition to the respondents opinions. In line with this, similar studies by Qiao et al. (2020) have reported a high participant trust in healthcare workers in relation to COVID-19 vaccination services and information. As per MacDonald et al. (2015), trust in medical professionals, healthcare delivery systems, and in the policymakers such as the government all have an influence on vaccination confidence which is further proved by the present study's findings.

Table 2.
Respondents Vaccine Acceptance

Parameter	MPS	Std. Deviation	Interpretation
Confidence	3.35	0.54	High acceptance
Complacency	3.00	0.47	Fair acceptance
Convenience	2.87	0.48	Fair acceptance
Overall Mean_AV	3.07	0.42	Fair acceptance

Scale: "high acceptance" (3.25-4.00; "fair acceptance" (2.50-3.24); "slight acceptance" (1.75-2.49); "low acceptance" (1.00-1.74)

In terms of complacency, the respondents have fair acceptance with the current vaccine practices (Mean = 3.00). This is because as reported in Table 7 in appendix F, most of them collectively think that their children are at high risk for acquiring diseases and that vaccination can help in preventing illnesses by agreeing to the statements. " Oo naniniwala ako kase maliit pa sila, di gaya ng matatanda, eh kung ako lamang ba" as stated mostly by the child's caregiver. This is aligned with the findings of Xu et al. (2021), which report that respondents who are accepting towards vaccination agree that vaccines can help in illness prevention to their high-risk child. " Kahit ano paman my dagdag naman talaga na protection iyan, gawa't kaya pinagaralan". The respondents of the present study also believe that practicing safety precautions such as handwashing and wearing a mask are very effective against contracting the virus which deems vaccines as not that necessary "Pede na, pede na ang maghugas lang ng kamay nakukuha din naman sa pagiging malinis palagi","hindi na kailangan pa ang bakuna sa Covid ang mga bata" most of the participants stated, which is aligned to study reports by Lau et al. (2020) wherein respondents recognized hand washing as an important preventive measure against infection, but other key measures such as vaccination were lacking. Furthermore, the respondents in the present study also agree that there are more important health issues than prioritizing vaccination and immunization right now.

Lastly, convenience with a mean of 2.87 is interpreted as Fair acceptance and scored the lowest because the respondents are predominantly not willing to pay for their child's vaccination and some of them do not always have a person at home who is available to take their child to the health center for vaccination. Mainly stated by the Primary caregivers "Mahal ang mga bakuna kung hindi lamang sa health center hindi naming sila kayang pabakunahan" another argument by the respondents "sabihin ng kailangan pero mas kailangan ang pagkain para sa mga bata" . This is in line with a study by, (Tung, et al., 2022) where parents are unwilling to shoulder the expenses of their child's vaccination, especially against COVID-19. On the other hand, families who experience lack of manpower to get the child vaccinated are similar to the study of Zhang et al. (2020), wherein parents prefer to not take their children to vaccination sites because they do not have available members to do so. As collected declarations of the respondents. "Hindi nasakto sa araw at oras ang pagbabakuna sa center at wala din akong mautusan na magdala sa mga bata para sa bakuna".

Primary caregivers generally exhibit fair acceptance of the vaccine. Confidence is the highest among the three parameters, suggesting a strong belief in the effectiveness and safety of the vaccine. Complacency and convenience scores are lower, indicating that some caregivers may have reservations or find it less convenient to get vaccinated. The overall mean score suggests a relatively consistent, fair level of acceptance across the three parameters.

Respondents' Level of Knowledge on Pediatric COVID-19 Vaccines - The primary caregiver's level of

knowledge about pediatric COVID-19 vaccination was determined in this section. This part of the manuscript answers the question: What is the participant's level of knowledge in pediatric COVID-19 vaccines in terms of: a) Drug information, b) Eligible population, c) Dosage, e) Route of administration, and f) Time and interval of administration?

Table 3.
Respondent's Knowledge on COVID 19 Vaccines

Parameter	MPS	Std. Deviation	Interpretation
Route of Admin	62%	0.38	Moderate awareness
Drug Information	80%	0.29	High awareness
Eligible Population	31%	0.40	Low awareness
Dosage	77%	0.29	High awareness
Time and Interval	59%	0.37	Moderate awareness
Overall mean KV	62%	0.20	Moderate awareness

Scale: "low awareness" (≤ 50%); "moderate awareness" (51-75%); "high awareness" (≥ 76 %).

Results on Table 3 show that the respondents' have moderate awareness about the COVID-19 vaccines used for pediatric clients (MPS = 62%). Furthermore, it was found out that they are least aware of the Eligible Population of COVID-19 vaccine administration among children since it scored the lowest (MPS = 31%) " Siguro balak nadin nila magbigay sa 4 years old", "Hindi ko alam ang tamang edad sa bata" as for the interval of the vaccine most of then answered incorrectly "14 days pwede na ulit bigyan or isang buwan tulad sa akin noon" as proved by the statement of the respondents. They are more aware of the Drug information as it scored the highest (MPS = 80%) "pinagaralan muna bago iturok sa bata, alam naman na natin iyan" , however they are all interpreted as Moderate level of awareness.

A similar investigation made by Roldan-Gan et al. (2022), wherein results indicate that there is moderate awareness among their respondents on facts regarding COVID-19, vaccine etiology, and vaccine complications. In a study by Di Giuseppe et al. (2022) it was reported that a significant proportion of the parents in the study had good knowledge on COVID vaccination and were willing to vaccinate their children. Parents who participated in a related study conducted by Sinuraya et al. (2022) also scored high on knowledge regarding childhood vaccines. This is because the respondents of the present study are full-time caregivers that belong to the poor marginalized sector with some being informal settlers living in the local compound (Cavite Ecological Profile, 2021) as opposed to the respondents of related studies who are mostly blue- and white-collar workers with a higher socioeconomic status. This further proves the findings of existing related studies by Van et al. (2013), Alberti et al. (2017), Ma et al. (2021), and Yi-Ming et al. (2017), where the researchers found that people with lower socioeconomic status are more likely to have low health literacy than those who have a higher socioeconomic status.

Nevertheless, the results of the study showed that people should be knowledgeable on who is eligible to receive the vaccine so that they are more likely to have positive attitudes on vaccines and eventually, receive vaccination. In a related study about pneumococcal vaccination by Trent et al. (2022), self-reports of receiving pneumococcal vaccination among the respondents was associated with an awareness that they are eligible for it. Through dissemination of information about the eligible population, individuals can be empowered to make informed decisions and cooperate with the distribution plans. By educating the public about who is eligible for the vaccine, governments and health authorities can address concerns, clarify misconceptions, and alleviate fears. Knowledge empowers individuals to make informed decisions and promotes trust in the vaccination process, ultimately increasing vaccination uptake. Similar to the results of the present study, respondents in a study by Kumari et al. (2021) also had limited knowledge about the eligible candidates for the vaccine which is one of the factors that influenced their attitudes towards vaccination.

These important findings suggest that in addition to engaging in health education programs related to pediatric COVID-19 vaccination, primary caregivers must also continue to seek correct pediatric COVID-19 vaccine information from reliable authorities such as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), and the Department of Health (DOH) of the Philippines.

Respondent's Perception Towards Pediatric COVID-19 Vaccination - The primary caregiver's level of perception towards the pediatric COVID -19 vaccination regarding vaccine's susceptibility, severity, benefits and barriers were determined. This part of the manuscript answers the question: What is the respondents' perception towards pediatric COVID-19 vaccination in terms of: a) Susceptibility, b) Severity, c) Benefits, and d) Barrier.

Table 4
Respondents Perception towards Pediatric Vaccination

Parameter	Mean	Std. Deviation	Interpretation
Susceptibility	3.02	0.66	Positive
Severity	3.07	0.67	Positive
Barrier	2.82	0.66	Positive
Benefits	2.85	0.67	Positive
Overall mean_PV	2.92	0.62	Positive

Scale: "very positive" (3.25-4.00), "positive" (2.50-3.24), "slightly positive" (1.75-2.49), "not positive" (1.00-1.74)

As shown in Table 4, the respondents generally have a positive attitude towards pediatric COVID-19 vaccination with the Overall mean score of 2.92. The primary caregivers perceived COVID-19 as a serious health problem and have a generally positive attitude towards pediatric vaccination. As seen in Table 9 in Appendix E, the respondents agreed that their children must be vaccinated to make them healthier, to protect them from getting sick, and to prevent financial burden to parents due to illness while some remain suspicious due to concerns about the side effects. Respondents generally stated "Tama lang na bakunahan, dahil para sa proteksyon naman nila iyon, lalo kung available naman at walang bayad, bakit hindi"

Similarly, in the study of Ng et al. (2022). The positive attitude of a parent towards COVID-19 vaccination was boosted by the perceived effectiveness and protection of the vaccines. However, the suspicions about the vaccination's safety stemmed from their own or other people's side effects after the COVID-19 vaccination. According to another related study by Rajeh et al. (2022), due to their beliefs of the severity of the disease and the vaccine's capacity to protect their children, some parents indicated great support for childhood immunization, while others expressed concern that the hurried, new vaccine would not be safe or effective.

Although the parameter "Barriers" reflected as lowest as seen in table the respondents predominantly believe that their child must receive vaccination even if they get fever as one of the side effects, even if some people oppose it, and most importantly, even if the primary caregivers themselves have experienced side effects when they received their respective doses. Collective response given by the Primary caregivers apparently gives realization that the Covid-19 Vaccine despite the stigma are Perceived in Positive means "Pababakunahan ko padin sila, dahil pinagaralan naman nila iyan, natural lang ang na may epekto.","Ang lagnat ay natural lng, isang araw wala na", "Gaya din ng Pneumonia Vaccince monthly ng mga bata noon". As reported in a study by Migriño et al. (2020), the majority of respondents believed vaccines were protective, however some of them expressed vaccine hesitation caused by concerns regarding vaccination safety, learning about possible side effects and having a bad experience during their own previous vaccinations, among others. More similar studies by Temsah et al. (2021), and Landicho-Guevarra et al. (2021) also displayed concerns about the side effects being one of the important factors that causes vaccine hesitancy and non-compliance to vaccination. However, People nowadays will still perceive the risk of vaccine side effects but generally the benefit of having the vaccine outweighs.

Relationship Between Vaccination Practice Acceptance and Perception Towards Pediatric COVID-19 Vaccination - This part of the study determined the relationship between vaccine practice acceptance in terms of confidence, complacency, and convenience and perception towards pediatric COVID-19 vaccination. This part of the manuscript answers the question: Is there a significant relationship between vaccine practice acceptance and perception towards pediatric COVID-19 vaccination?

Table 5
Relationship of Vaccine Practice Acceptance and Perception towards pediatric COVID 19 vaccinations

	Susceptibility		Severity		Barrier		Benefits		Overall perception	
Parameter	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Confidence	0.073	0.290	0.031	0.658	0.112	0.104	-0.012	0.86	0.048	0.487
Complacency	.267**	<.001	.292**	<.001	.330**	<.001	.374**	<.001	.347**	<.001
Convenience	.236**	<.001	.255**	<.001	0.167	0.004	0.35	<.001	.284**	<.001
Overall Acceptance	.340**	<.001	.373**	<.001	.359**	<.001	.425**	<.001	.409**	<.001

*Legend: **. Correlation is significant at the 0.01 level (2-tailed)*

The relationship between practice acceptance and perception towards pediatric COVID 19 vaccination is presented on Table 5. Findings revealed that the overall mean of practice acceptance and perception towards pediatric COVID 19 vaccination is significantly correlated to each other in a positive direction. This indicates that as the acceptance increases, their perception towards COVID 19 vaccine also increases. The respondents who generally have Fair acceptance towards vaccination practices also have a generally positive perception towards vaccinating their children against COVID-19. A study by Zhang et al. (2020), reported that parents' willingness and positive attitudes towards the COVID-19 vaccine are factors that increase acceptance of the COVID-19 vaccine for their children. Findings of the present study further proves existing related studies by Oche et al. (2022) which reported that a significant proportion of the respondents with a positive perception of the COVID-19 vaccine also expressed their willingness to accept vaccination for their children or themselves thus, showing a significant relationship between the two variables. Nowadays, the likelihood of Covid 19 vaccine uptake for children are eminent. As observed in the study of (Kharaba, et al., 2022) the result of extensive efforts in raising the awareness among the population and the strict regulations enforced by the government will have positively affected the parents' beliefs.

Relationship of the Respondents' Knowledge on COVID-19 Vaccines and Perception on Pediatric COVID-19 Vaccination - This section of the manuscript discusses the relationship between the participant's knowledge on COVID-19 vaccines and perception towards pediatric COVID-19 vaccination in terms of drug information, eligible population, dosage, route of administration, and time and interval of administration. This part of the manuscript answers the question: Is there a significant relationship between knowledge on COVID-19 vaccine and perception towards pediatric COVID-19 vaccination? As shown in Table 6, there is no significant relationship between the two. However, there is a moderate positive correlation between the level of "Drug Information" and the "Over all Perception" towards the pediatric COVID-19 vaccine. Meanwhile, the correlations to other Parameter such us "Route of Administration," "Eligible Population," "Dosage," "Time and Interval," and "Overall Knowledge" did not reach statistical significance or showed very weak correlations.

Table 6
Relationship of Knowledge and Perception towards pediatric COVID 19 vaccinations

Parameter	Susceptibility		Severity		Barrier		Benefits		Overall perception	
	r	p-value	r	p-value	r	p-value	r	p-value	r	p-value
Route	0.026	0.709	0.022	0.749	0.011	0.871	-0.022	0.749	0.009	0.893
Drug Information	0.156	0.023	.185**	0.007	.148*	0.031	0.128	0.063	.164*	0.017
Eligible Population	-0.053	0.444	-0.079	0.252	0.05	0.47	-0.08	0.26	-0.04	0.53
Dosage	0.087	0.206	0.048	0.491	0.061	0.377	0.131	0.057	0.098	0.156
Time and Interval	-0.016	-0.038	-0.038	0.581	0.022	0.749	0.052	0.451	0.014	0.091
Overall Knowledge	0.052	0.452	0.029	0.672	0.091	0.188	0.054	0.439	0.066	0.342

Legend: Relationship is significant at 0.05 alpha level

The findings suggest that as individuals have more information about the drug (vaccine), their perception towards it tends to be more positive. A Supplemental study where people who have sufficient knowledge about a particular vaccine can better understand its potential benefits and importance, which would further shape positive beliefs about the vaccine and strengthen trust in vaccination (Zheng et. al.,2022) eventually, they would not perceive vaccination as a risky behavior, (MacDonald et. al., 2022).

On the other hand, another excerpt paragraph from (Zheng et. al., 2022) found that knowledge indirectly increases vaccination intention via reducing perceived susceptibility. This mediating effect implies that people who have more COVID-19 vaccine knowledge would not treat the vaccine as a threat, thereby showing more willingness to upvote vaccines. In comparison, those with a minimal level of knowledge would view themselves as susceptible to some undesirable vaccine-related side effects and thus prefer not to get vaccinated against COVID-19 at all. This observation emphasizes the importance of providing comprehensive and accurate information about the pediatric COVID-19 vaccine to enhance overall positive perception among these caregivers.

4. Conclusions and recommendations

In view of the findings gathered in the study, the following conclusions were formulated: The respondents generally have Fair Acceptance to vaccination practices and indicated trust in the government and healthcare workers. Some remain reluctant due to beliefs that hygiene practices are enough to protect from the virus; there are more important health issues right now and concerns about side effects. The respondents have moderate awareness about pediatric COVID-19 vaccines. Perception on COVID-19 vaccine is generally positive. Nevertheless, respondents are reluctant to immunize their kids due to concerns about side effects. Findings suggest that a greater vaccination practice acceptance results in a more positive perception towards pediatric COVID-19 vaccination. Findings suggest that having a positive attitude towards pediatric COVID-19 vaccines does not guarantee having adequate awareness about its medication information, dose, administration method, timing, and interval. Nevertheless, to have a favorable attitude of vaccination, being informed on who is eligible for the vaccine is necessary.

In accordance with the preceding summary of findings, limitations, and conclusions, the recommendations below are hereby provided by the researchers: As part of the **nursing profession**, nurses who specialize in research on epidemiology and vaccinology may conduct similar studies with a larger scope that focus on the factors that may affect vaccine uptake and vaccine hesitancy and use this study as a related literature. Public health **nurses in practice** may use this study as a guide in formulating sustainable health education programs for their target community. They may conduct health education programs that focus on teaching about the drug information of the vaccine, its proper dosing and administration method, and the timing and interval of getting injections. **Nursing educators** may use this study as a reliable source of information when teaching student-nurses about topics such as vaccine hesitancy, the importance of public health education, and battling against medical misinformation. In relation to the study conducted, findings show that **residents of Indang, Cavite** agreed that they have an easy access on their rural health facilities thus they may engage and coordinate with their block leaders about the plans and activities by the rural health unit which focus on healthcare teaching about vaccines and vaccination services to help accumulate awareness which can increase their vaccination uptake and cooperation with the rural health unit. To continue on the Positive feedback made by this feasibility study, the **primary caregivers** should continuously seek reliable information in relation to their children's welfare to expand individual's knowledge from reliable sources (i.e. watching news and reading articles from trusted sources such as CDC and WHO, etc.) apart from the health teachings from the rural health unit which could help them decide in healthcare procedures that is suitable and beneficial for their child. In addition, **health policy makers** and COVID-19 vaccination implementers such as the Local Government Units and health departments may conduct additional health teaching strategies regarding health promotion, they may be more aggressive about the implementation of health education programs to the masses and also provide additional plans of actions (i.e conference for healthcare providers) in order to effectively deliver the purpose of the programs they implement within their areas which is correcting health misinformation. Lastly, **future researchers** may conduct studies to determine factors that may affect the vaccination rates and vaccine hesitancy. Moreover, they can conduct similar studies that also considers demographic factors, the relationship of vaccine knowledge and its uptake, and studies with a larger sample size to ensure a more accurate representation. They may also include the relationship of the dimensions used to create a more sustainable program for immunization.

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