

Knowledge and Attitude toward Coronavirus Vaccination: A Survey among Geographically Isolated and Disadvantaged Areas (GIDA) Communities in Samar, Philippines

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Abstract

Currently, the entire world is facing the challenge of not only ensuring the supply of coronavirus vaccines but convincing people to take them, amid concerns over safety (Lema & Morales, 2021). Hence, this descriptive-cross-sectional study aimed to assess the knowledge and attitude toward coronavirus vaccination in geographically isolated and disadvantaged areas utilizing survey questionnaires and interviews as the main instruments. Participants were chosen through stratified random sampling with a 3% margin of error. A total of 115 participants consented to participate in the study. It was found that GIDA communities have a low level of knowledge and have a neutral attitude towards coronavirus vaccination. In terms of its physical factors, GIDA communities from upland and coastal areas have a low level of knowledge compared to that from upland and islands. Furthermore, as their income tends to increase, their level of knowledge tends to increase and their attitude also tends to be positive towards vaccination. While, as their income tends to decrease, their level of knowledge tends to decrease and their attitude tends to be unfavorable towards COVID-19 vaccination. In addition, those with higher educational attainment have also a higher level of expertise and have a positive outlook towards vaccination, and those with lower educational attainment have a lower level of knowledge and have an unfavorable attitude towards vaccination.

Keywords— Coronavirus Vaccination, Knowledge, Attitude, Geographically Isolated and Disadvantaged Areas (GIDA)

I. INTRODUCTION

Everyone knows about the famous line, “health is wealth”. Ensuring one’s health and well-being is one of the top priorities someone else’s does because achievements and successes would be useless if someone has health issues. With the onslaught of a coronavirus-19 pandemic, health has already become a prime concern and priority for the scientific community (Brodeur, et al., 2021; Gallo, 2021). There is a problem in terms of economy, upsetting lives in education, agriculture, and the whole aspects of lives, as well. With these challenges at hand, the government is focusing on the solution of how to combat this pandemic. Good enough because one of the best solutions

the government has formulated and implemented is the vaccination program.

Along this line, one of the mandates of the World Health Organization (WHO) which was responded of the government was to achieve herd immunity to the COVID-19 virus through vaccination. Vaccination is the most effective and feasible way to contain the coronavirus disease 19 (COVID-19) pandemic. The rapid development of an effective COVID-19 vaccine is an extraordinary achievement (Huang, Z., Su, Y., Zhang, T. et al., 2022). In the Philippines, the challenge is not only to ensure enough supply of coronavirus vaccines but to convince people to take them, amid concerns over safety (Lema & Morales, 2021). Even before the covid-19 pandemic, public health authorities all

over the world were facing growing reluctance and hesitation from parents to vaccinate their children, which is caused by concerns about safety and loss of trust in public authorities (Cvijetkovic, 2019).

Hence, this study aimed to assess the knowledge and attitude toward coronavirus vaccination in geographically -isolated -and -disadvantaged areas (GIDA) since GIDA communities wherein a special case among others in the country needs to be established and institutionalized. The GIDA communities are those communities with marginalized populations that are physically and socio-economically separated from the mainstream society and characterized by the following to wit: 1. physical factors which means that a community is isolated due to distance, weather conditions, and transportation difficulties (island, upland, lowland, landlocked, hard to reach and unserved/underserved communities), and 2. socio-economic factors that include high poverty incidence, presence of vulnerable sector, communities in or recovering from the situation of crisis or armed conflict.

Based on a theory, one of the crucial sources of attitude is cognitive information about the target topic (Olson and Maio, 2003). Thus, it is presumed that better knowledge about immunization would predict an acceptable attitude. The results of this study may lead to an intervention to modify knowledge and attitude to ensure the provision of quality health care services to the people in the said communities.

This study aims to determine the knowledge and attitude of the GIDA communities.

Specifically, it seeks to answer the following:

1. What is the socio-demographic profile of the household heads on the following variables?
 - 1.1 age;
 - 1.2 sex;
 - 1.3 civil status;
 - 1.4 highest educational attainment;
 - 1.5 average family monthly income;
 - 1.6 total number of family members, and

1.7 what type of location (upland island, upland, lowland, landlocked, hard to reach, and unserved/underserved communities)?

2. What is the level of knowledge of the participants regarding the COVID-19 vaccine?
3. What is the attitude of the participants towards COVID-19 vaccination?
4. Is there a significant difference between the levels of knowledge and attitude of the GIDA communities on its physical factors?
5. Is there a significant relationship between the GIDA communities' levels of knowledge, attitude, and socio-demographic profile?
6. What implications could be derived based on the findings of the study?

II. REVIEW OF LITERATURE

The literature review is focused on the definition of vaccines, the types of available COVID-19 vaccines, and vaccine hesitancy that shed light on the study.

Vaccine and Type of Available COVID-19 vaccines

The Department of Health (DOH) defined vaccines as mimicking the virus or bacteria that cause disease and triggers the body's creation of antibodies. These antibodies protect once a person is infected with the actual disease-causing virus or bacteria. It differs in their compositions and how they trigger the immune response to create antibodies. These antibodies protect the body from microorganisms and serve as the protection once a person gets infected with a disease. It can be inactivated, weakened, or killed copies of the whole or part of the virus or bacteria, or a genetic product (like mRNA vaccines) that creates protein copies without causing disease. The possible side effects of a vaccine include pain, redness, itchiness, or swelling at the injection site (which may last a few hours); fever; feeling of weakness or fatigue; headache; dizziness; diarrhea, or nausea.

Nonetheless, *COVID* -19 vaccines according to the Centers for Disease Control and Prevention,

help our bodies develop immunity to the virus that causes COVID-19 without us having to get the illness. Different types of vaccines work in different ways to offer protection. But with all types of vaccines, the body is left with a supply of “memory” T-lymphocytes (another type of defensive white blood cell. It attacks cells in the body that have already been infected) as well as B-lymphocytes (are defensive white blood cells. They produce antibodies that attack the pieces of the virus left behind by the macrophages) that will remember how to fight that virus in the future. It typically takes a few weeks after vaccination for the body to produce T-lymphocytes and B-lymphocytes. Therefore, one can be infected with the virus that causes COVID-19 just before or just after vaccination and then gets sick because the vaccine did not have enough time to provide protection. Sometimes after vaccination, the process of building immunity can cause symptoms, such as fever. These symptoms are normal and are signs that the body is building immunity.

Currently, there are three main types of COVID-19 vaccines that are authorized and recommended, or undergoing large-scale (Phase 3) clinical trials in the United States. Below is a description of how each type of vaccine prompts our bodies to recognize and protect us from the virus that causes COVID-19. None of these vaccines can give you COVID-19.

mRNA vaccines contain material from the virus that causes COVID-19. It gives cells instructions on how to make a harmless protein that is unique to the virus. After the cells make copies of the protein, they destroy the genetic material from the vaccine. Human bodies recognize that the protein should not be there and build T-lymphocytes and B-lymphocytes that will remember how to fight the virus that causes COVID-19 if one is infected in the future. Hence, for mRNA vaccines, the most common adverse reactions include short-term mild-to-moderate pain at the injection site, fatigue, headache, myalgia, arthralgia, and chills. The incidence and severity of **Protein subunit vaccines** include harmless pieces (proteins) of the virus that causes COVID-19 instead of the

entire germ. Once vaccinated, our bodies recognize that the protein should not be there and build T-lymphocytes and antibodies that will remember how to fight the virus that causes COVID-19 if we are infected in the future.

Vector vaccines contain a modified version of a different virus than the one that causes COVID-19. Inside the shell of the modified virus, there is material from the virus that causes COVID-19. This is called a “viral vector.” Once the viral vector is inside our cells, the genetic material gives cells instructions to make a protein that is unique to the virus that causes COVID-19. Using these instructions, our cells make copies of the protein. This prompts our bodies to build T-lymphocytes and B-lymphocytes that will remember how to fight that virus if we are infected in the future.

Further, Some COVID-19 vaccines require more than one one-shot. To be fully vaccinated, you will need two shots of some COVID-19 vaccines: If you get a COVID-19 vaccine that requires two shots, you are considered fully vaccinated two weeks after your second shot. Pfizer-BioNTech and Moderna COVID-19 vaccines require two shots and if you get a COVID-19 vaccine that requires one shot, you are considered fully vaccinated two weeks after your shot. Johnson & Johnson’s Janssen COVID-19 vaccine only requires one shot.

Vaccine Hesitancy

Based on studies and literature reviews, several vaccine controversies have emerged in various countries, bringing worries about severe adverse effects. In the study of Verger, et al (2015) this dimension is at the core of the vaccine hesitancy (VH) observed in the general population. Which is defined as the delay in acceptance of vaccination, or refusal, or even acceptance with doubts about its safety and benefits, with all these behaviors and attitudes varying according to context, vaccine, and personal profile, despite the availability of vaccine services (SAGE Group 2014) (Larson et al., 2014; Dubé et al., 2013). VH presents a challenge to physicians who must address their

patients' concerns about vaccines and ensure satisfactory vaccination coverage.

Further, some of the results of the study by Verger, et al, showed that doubts about the utility of certain vaccines, and lack of self-efficacy, both of which probably reflect general practitioners' enduring beliefs and attitudes, were associated with the global vaccine recommendation score and the subscore. Distrust of health authorities and experts and perception of severe adverse effects of vaccines — both variables related to the existence of past and ongoing controversies — were not associated with uncontroversial vaccines but only with the global score.

III.METHODOLOGY

Design

This study utilized descriptive-cross-sectional to determine the extent of knowledge and attitude among the GIDA communities in Samar. The research questionnaire was the main instrument of the study. It was validated by experts and tried out in the field and the reliability coefficient was determined through Cronbach's alpha (0.87).

Locale

The study was conducted in the identified GIDA communities of the second district of Samar. Based on the Department of Health Eastern Visayas, the following municipalities were identified as geographically isolated and disadvantaged areas: Talalora, Marabut, Paranas, Basey, Marabut, San Jose De Buan, Motiong, Jiabong, San Sebastian, Villareal, Sta. Rita, Paranas, and Zumarraga (*See attached map showing the GIDA location*).

Participants and Sampling Plan

The participants of the study were those from any one of the household members of GIDA communities whose ages ranged from 18 years old and above. Based on the age classification of Psychology, 18 years old can already make their own sound decision and knows how to weigh things, and are knowledgeable enough in life. The participants were chosen at random to avoid bias. This further means that there are no

particular participants who were chosen such as health workers or barangay officials because they were randomly chosen from the sampling frame which was taken from the list of the population of GIDA communities. The researchers used a 3% margin of error in identifying the size of the sample.

Instrumentation

The main instrument of the study was a researcher-made questionnaire. The questionnaire has three sections: section 1 is the profile of the GIDA respondents, section 2 is consists of the attitude of the GIDA towards coronavirus vaccination, and section 3 is consists of the knowledge of the GIDA towards coronavirus vaccination.

For the attitude scale, the respondents answered a 12-item 5-point Likert attitude scale as follows; 5-strongly agree, 4-agree, 3-undecided, 2- disagree, and 1-strongly disagree. The respondents have the highest possible score of 60 points. A score shows a very positive attitude, 42 - 51 shows a positive attitude, 32 - 41 shows a neutral attitude, 22 – 31 unfavorable attitude, and a very unfavorable attitude.

For the knowledge of coronavirus vaccination, 11 items were being answered by the respondents as to the following: 3-correct, 2-incorrect, and 1-I do not know. The respondents can have the highest possible score of 36 points. A score ranging from 28 - 36 shows high knowledge, 20 - 27 shows average knowledge, and shows little knowledge/no knowledge at all. The instrument was translated to vernacular through back-translation. That is, the questionnaire was translated first from the vernacular to the English language through experts. After the instrument has been translated into vernacular, the questionnaire underwent an expert validation to check whether the items or indicators were relevant to the present study. After which, pilot testing was done to test the reliability of the instrument through Cronbach's alpha.

Data Gathering Procedure

The researchers sought approval from the respective authorities for them to conduct the interview and administer their survey questionnaire and get access to the necessary data that was useful in the study. In the same manner, the researchers also abide by the health protocols in the entire data collection phase such as securing a travel pass, wearing of face shield and face mask, and following basic hygiene.

The survey was administered to 115 respondents who consented to participate.

Statistical Treatment of Data

Descriptive statistics were used to detail the socio-demographic profile and in summarizing the variables. An independent sample t-test was used to examine comparisons. Pearson r , Spearman ρ , and the Chi-square test were employed to determine factors that were associated with the GIDA communities' knowledge and attitude towards vaccination.

Ethical Considerations

1. Potential risks/discomforts

The potential risk of a loss of confidentiality was minimized by the use of survey identification numbers and the removal of personal identifiers at the time of data entry. The researchers also asked for consent from the participants of the study in accomplishing the survey questionnaire and responding to the interview. This study also underwent to the SSU Review and Evaluation Committee.

IV. RESULTS AND DISCUSSION

Socio-Demographic Profile of the GIDA Communities

Tables 1- 6 reflect the socio-demographic profile of the GIDA communities in terms of age, sex category, civil status, educational attainment, number of household members, and average family monthly income.

Age. Table 1 shows the data on the age distributions of the respondents. It was found that approximately 34% of them belong to young adulthood, 45% belong to adulthood, and

21% belong to senior citizens with an average age of 41.46 years old with a standard deviation of 17.23 years old. This implies that participants in the study were all in their legible age who can make their own sound decision and know how to weigh things and were knowledgeable enough in life.

Table 1. Age Distribution of the GIDA communities

Age (in years)	Frequency (F)	Percent (%)
60 and older	24	20.87
53 - 59	7	6.09
46 - 52	14	12.17
39 - 45	14	12.17
32 - 38	17	14.78
24 - 31	16	13.91
18 - 24	23	20.00
Total	115	100.00
Mean	41.46 years old	-
SD	17.23 years old	-

Table 2 contains the sex category of the respondents. The data showed that the study was mostly represented by the female with 65% compared to the male which is only 35%. This only means that females were in their respective households while the males were in their work during the conduct of the study.

Table 2. Sex category of the GIDA communities

Sex Category	Frequency	Percent
Male	40	34.8
Female	75	65.2
Total	115	100.0

Table 3 pertains to the civil status of the respondents. It can be seen that more than 50% of the respondents were married. The data tell us that given that the sampling unit of the study is a household, it means that most of the respondents were the ones who composed the household which is usually the mother and the father.

Table 3. Civil Status of the GIDA Communities

Civil Status	Frequency	Percent
Single	24	20.90
Married	86	74.80
Separated	1	0.90
Widow/er	4	3.50
Total	115	100.00

Table 4 presents the educational attainment of the GIDA communities. It was found out that few of them earned a Baccalaureate Degree (4%) and 6% of them have no schooling. The majority of them were not able to graduate from elementary education. Based on the focused-group discussions with the participants, one of the reasons for their low educational attainment is their location, they are very far from schools, and they have lower chances to pursue education.

Table 4. Educational Attainment of the GIDA Communities

Highest Educational Attainment	Frequency	Percent
No Schooling	7	6.09
Elem Level	31	26.96
Elem Graduate	22	19.13
High School Level	17	14.78
High School Graduate	24	20.87
College Level	9	7.83
College Graduate	5	4.35
Total	115	100.00

Table 5, shows the number of household members. The data revealed that the majority of the GIDA communities have 4-6 members in the family with an average of 5 members with a standard deviation of 2 members.

Table 5. Number of Household Members of the GIDA Communities

No. Household Members	Frequency	Percent
1 - 3	39	33.91
4 - 6	55	47.83

7 - 9	17	14.78
10 - 12	4	3.48
Total	115	100.00
Mean	5 members	-
SD	2 members	-

Knowledge toward Corona Virus Vaccination of the GIDA Communities

Table 6 reflects the knowledge of the respondents about coronavirus vaccination. Based on the indicators revealed in the table, the knowledge of coronavirus vaccination is sub-categorized into two: The *effectiveness of the vaccine* and the *different types of COVID - 19 vaccines*.

Along with its effectiveness, 21% of the GIDA communities know that “COVID -19 vaccines are 100% percent effective” compared to 63% of them do not know at all; 20% of them knows that vaccines can harm the immune system, while the other 57% do not know at all; 54% of the GIDA communities viewed that it is correct that “It is possible that a person could be infected with the virus that causes COVID-19 just before or just after vaccination and then get sick because the vaccine did not have enough time to provide protection (*Possible nga an tawo magkasakit la gihapon hin covid-19 bisan antes or katapos han pagpabakuna. Kay an bakuna deri gud nakakaprotectar ha panlawas*) while 37% of them do not know at all; 47% of them viewed that it is correct compared to 37% of them do not know at all that “COVID-19 vaccines help our bodies develop immunity to the virus that causes COVID-19 without us having to get the illness (*An COVID-19 nga bakuna nakakabulig ha aton nga maprotektahan an aton lawas kontra CoVID 19 nga kun diin deri kita makakakuha hin sakit*), and 29% of them says that it is correct compared to 56% of them do not at all that “If it has been less than two weeks since your shot, or if you still need to get your second shot, you are NOT fully protected (*Kun duha ka semana tikang han imo pagpaturok, or kinahanglan pa hin ikaduha nga turok karuyag sidngon deri ka pa protektado*).

Indicator numbers 6, 7, 8, 9, and 10 refer to the different types of vaccines and their doses. Along with this, more than 50% of the GIDA

communities, do not know at all. This only means that most of them are not even aware of the available coronavirus vaccine.

Table 6. Level of Knowledge of the Participants towards Corona Virus Vaccination

Indicators	Scale			Total
	3 Correct	2 Incorrect	1 Don't Know	
1 Vaccines are 100% effective. <i>An bakuna in 100% epektibo.</i>	24 21%	19 17	72 63%	115
2 Vaccines can harm the immune system <i>An bakuna pwede makadaut han aton bug-os nga kalawasan</i>	23 20%	27 24%	65 57%	115
3 COVID-19 vaccines help our bodies develop immunity to the virus that causes COVID-19 without us having to get the illness. <i>An COVID-19 nga bakuna nakakabulig ha aton nga maprotektahan an aton lawas kontra CoVID 19 nga kun diin deri kita makakakuha hin sakit.</i>	54 47%	19 17%	42 37%	115
4 It is possible that a person could be infected with the virus that causes COVID-19 just before or just after vaccination and then get sick because the vaccine did not have enough time to provide protection. <i>Possible nga an tawo magkasakit la gihapon hin covid-19 bisan antes or katapos han pagpabakuna. Kay an bakuna deri gud nakakaprotectar ha panlawas.</i>	62 54%	16 14%	37 32%	115
Indicators	Scale			Total
	3 Correct	2 Incorrect	1 Don't Know	
5 mRNA vaccines is a type of corona virus vaccine that contain material from the virus that causes COVID-19 that gives our cells instructions for how to make a harmless protein that is unique to the virus. <i>mRNA nga bakuna in usa nga klase nga corona virus bakuna nga may-ada material nga tikang jha virus nga gintitikangan han covid 19 nga sakit nga nagsusugo kun paano mahimo an deri nakakadaut protina nga kun diin may-ada an virus.</i>	8 7%	8 7%	99 86%	115
6. Protein subunit vaccines is another type of vaccine that include harmless pieces (proteins) of the virus that causes COVID-19 instead of the entire germ.	14 12%	17 15%	84 73%	115

	<i>An protein subunit vaccine in usa nga klase nga bakuna nga may-ad deri nakakadaut nga protina han virus labot han hugaw.</i>				
7.	Vector vaccines is another type of vaccine that contain a modified version of a different virus than the one that causes COVID-19. <i>Vector vaccines in usa nga kalse nga bakuna nga mayda kinbag-uhan nga klase han virus nga gintitikangan han covid-19.</i>	10 9%	17 15%	88 77%	115
8	Some COVID-19 vaccines require more than one shot. <i>Mayd iba nga COVID 19 hag bakuna nga nanginginahalan hin sobra usa nga turok.</i>	34 30%	19 17%	62 54%	115
9.	Pfizer-BioNTech and Moderna COVID-19 vaccines require two shots and you are considered fully vaccinated two weeks after your second shot. <i>Nanginginahanglan hin ikaduha nga turok sano ka masiring nga nakakompleto nah an bakuna duh aka semana katapos han imo ikdauha nga turok.</i>	4 3%	19 17%	55 48%	115
10	Johnson & Johnson's Janssen COVID-19 vaccine only requires one shot and you are considered fully vaccinated two weeks after your shot. <i>Bakuna amo in nanginginahalan hin usa la nga turok nagn masisiring ka na nga kompleto nah an bakuna duh aka semana katapos han imo turok.</i>	39 34	21 18%	55 48	115
12	If it has been less than two weeks since your shot, or if you still need to get your second shot, you are NOT fully protected. <i>Kun duha ka semana tikang han imo pagpaturok, or kinahanglan pa hin ikaduha nga turok karuyag sidngon deri ka pa protektado</i>	33 29%	18 16%	64 56%	115

Based on the summary of the level of knowledge about coronavirus vaccination in the GIDA communities reflected in Table 8, it is notable that the majority of the respondents do not know at all about the coronavirus vaccination as supported by the focused-group discussion results, it was found out that they do not know at all about the coronavirus vaccination because they do not have television as stated by some of the participants “*Waray ako nahibabaruan parte hit nga vaccination kay*

waray kami TV”, “*Waray gud kami masyado nga nahibabaruan hiunong heto nga vaccine*”, and” *Deri maaram hiunong han virus kay waray TV tas deri kami apektado han covid*”. Some of the respondents revealed that what they know about corona virus vaccination is that it has no use for them because they believed that they are not affected with the corona virus. For them, corona virus is not real as stated by some of the participants “*Deri kami natuod heni nga covid-19*”, “*Deri apektado it*

amon lugar hit COVID -19, waray gamit ha amon an vaccine”, “Diri gud hiya safe ha mga tawo kay may namamatay la gihap bisan tapos na magpabakuna.

The results implied that the GIDA communities have no means of information, limited means of communication, and are not easily accessible with transportation which leads them to have little and correct information and knowledge about the Covid-19 virus and the vaccine.

Table 8. Summary of the level of Knowledge Towards Corona Virus Vaccination of the GIDA Communities

Level	Frequency	Percent
Low	55	47.83
Average	55	47.83
High	5	4.35
Total	115	100.00

Attitude towards Corona Virus Vaccination of the GIDA Community

Tables 9 & 10 contain the attitude toward coronavirus vaccination. The attitude of the GIDA community towards coronavirus vaccination is sub-categorized into three: Cognition, Action, and Behavior based on the Theory of Planned Behavior by Azjen (1985).

Indicators 3, 4, 6, 9, and 10 refer to the attitudinal cognition of the GIDA community towards vaccination. The following were the data: It was found out that more than 50% percent of them shows agreement to the statement, “Educating parents about vaccines is an important way to connect vaccination coverage of the population (An pag-edukar han mga kag-anak han pagpabakuna in importante nga pamaagi para han kabu-osan nga pagpabukana han molopyo)” and “The doctor has an important role in, educating parents about the importance of vaccination (An doctor mayda importante nga ginagampanan nga trabaho para maedukar an mga kag-anak mahiunong han importansya han pagpabakuna)” while approximately 10 to 12% shows disagreement; 42% of them are in agreement on the statement, *Vaccines contain substances that have been proven harmful especially to children and senior citizens* (An bakuna may-ada

kemikal nga napatunayan nga nakakaraut ha panlawas labi na ha mga kabataan ngan mga kalagsan) 24% of them shows disagreement; 49% of them are in agreement on the statement, “There is not enough evidence that immunization prevents the occurrence of infectious disease (An gobyerno waray karapatan nga mag-obligar pagpabakuna, dapat an kada tagsa an dapat magdecision kun magpabakuna or deri)” while, 19% shows disagreement, and 43% of them are in agreement on the statement, “There is no enough evidence that immunization prevents the occurrence of infectious disease (An mga Kompanya nga naghihimo hin mga bulong promote hin mga bakuna para makakwarta bsan kun maaram hira nga an bakuna nga nakakaraut ha lawas)” and 22% disagree.

Indicators 2, 5, 7, 8, and 11 pertain to the attitudinal action of the GIDA communities towards coronavirus vaccination. The following data revealed that: 70% of them viewed that It is important to keep vaccination coverage of the population in order to avoid the emergence of new COVID cases (*Importante nga mahiapi pagpabakuna an molopyo para maka-iwas hin pagdamo han mga bag-o nga kaso han covid*) while only 11% of shows disagreement; 35% of them are in agreement to the statement, “It is not necessary to vaccinate people because Coronavirus will be gone naturally (*Deri kinahanglanon nga mabukanahan an molopyo tunod kay an corona virus natural la nga nawawara*); 69% of them are in agreement that “The government has no right to impose the obligation of vaccination, but everybody should be the ones who bring the decision (An gobyerno waray karapatan nga mag-obligar pagpabakuna, dapat an kada tagsa an dapat magdecision kun magpabakuna or deri.), and 56% supports the vaccination program of the government and the other 16% do not agree on the vaccination program.

Indicators 1, 7, and 12 contain the behavioral attitude of the GIDA communities towards corona virus vaccination. The following data showed that: 50% of them were in doubt about vaccination as safe method (*Danay katapos*

pagpabakuna, nagkakamay-ada hin sintomas parehas han hiranat, nga nakakamay-ada ako hin pagdududa nga kun an bakuna safe nga pama-agi para makaiwas han corona virus); 58% of them are in agreement that “It is safer than idle the corona disease to be vaccinated against it (Mas ligtas nga magpabakuna kaysa

pabay-an la an corona virus nga sakit), and 43% of them shows an agreement to the statement, “If corona virus vaccine is available, I would definitely be vaccinated (Kun mayda na bakuna han corona virus, sigurado gud ako nga magpabakuna).

Table 9. Attitude of the Respondents towards Corona Virus Vaccination

Indicators	Scale					Total
	5	4	3	2	1	
	SA	A	N	D	SD	
1. Sometimes after vaccination, the process of building immunity can cause symptoms, such as fever, have led me to doubt about vaccination as safe method. <i>Danay katapos pagpabakuna, nagkakamay-ada hin sintomas parehas han hiranat, nga nakakamay-ada ako hin pagdududa nga kun an bakuna safe nga pama-agi para makaiwas han corona virus.</i>	22 19%	45 39%	26 23%	18 16%	4 4%	115
2. It is important to keep vaccination coverage of the population in order to avoid the emergence of new covid cases. <i>Importante nga mahiapi pagpabakuna an molopyo para maka-iwas hin pagdamo han mga bag-o nga kaso han covid.</i>	23 20%	58 50%	21 18%	6 5%	7 6%	115
3. Educating parents about vaccines is an important way to connect vaccination coverage of the population. <i>An pag-edukar han mga kag-anak han pagpabakuna in importante nga pamaagi para han kabu-osan nga pagpabukana han molopyo.</i>	29 25%	53 46%	19 17%	6 5%	8 7%	115
4. The doctor has an important role in, educating parents about the importance of vaccination. <i>An doctor mayda importante nga ginagampanan nga trabaho para maedukar an mga kag-anak mahiunong han importansya han pagpabakuna.</i>	30 26%	48 42%	25 22%	7 6%	5 4%	115
5. It is not necessary to vaccinate people because Corona virus will be gone naturally. <i>Deri kinahanglanon nga mabukanahan an molopyo tunod kay an corona virus natural la nga nawawara.</i>	12 10%	29 25%	36 31%	23 20%	15 13%	115
6. Vaccines contain substances that have been proven harmful especially to children and senior citizens. <i>An bakuna may-ada kemikal nga napatunayan nga nakakaraut ha panlawas labi na ha mga kabataan ngan mga kalagsan.</i>	9 8%	40 35%	38 33%	16 14%	12 10%	115

7	It is safer than idle the corona disease to be vaccinated against it. <i>Mas ligtas nga magpabakuna kaysa pabay-an la an corona virus nga sakit.</i>	15 13%	51 45%	27 24%	10 9%	11 10%	114
8	The government has no right to impose the obligation of vaccination, but everybody should be the ones who bring the decision. <i>An gobyerno waray karapatan nga mag-obligar pagpabakuna, dapat an kada tagsa an dapat magdecision kun magpapabakuna or deri.</i>	35 30%	45 39%	20 17%	9 8%	6 5%	115
9	There is not enough evidence that immunization prevents the occurrence of infectious disease. <i>Waray sadang nga mga ebedensya nga an pagpabakuna nakakaprotektar para deri magkamay-ada hin makatarapon nga sakit.</i>	14 12%	42 37%	37 32%	15 13%	7 6%	115
10	Pharmaceutical companies promote vaccination for profit, although they are aware that it is harmful. <i>An mga Kompanya nga naghihimo hin mga bulong promote hinmga bakuna para makakwarta bsan kun maaram hira nga an bakuna nga nakakaraut ha lawas.</i>	9 11%	18 32%	39 34%	36 16%	12 8%	114
11	I support the vaccination program of the government. <i>Nasuporta ako han gobyerno heni nag ira program hin nga pagpabakuna.</i>	22 19%	43 37%	31 27%	13 11%	6 5%	115
12	If corona virus vaccine is available, I would definitely be vaccinated. <i>Kun mayda na bakuna han corona virus, sigurado gud ako nga magpapabakuna.</i>	11 10%	38 33%	38 33%	14 12%	14 12%	115

Based on the Attitude Score, a majority (76%) of the GIDA communities showed a neutral attitude towards the coronavirus vaccination. This only shows that they do not give enough importance to the current situations. They do not feel the need to be vaccinated. Subsequently, it was found out that only 17% of them showed a positive to a very positive attitude. This means that for them corona virus vaccination is a new opportunity for them that through vaccination they can hurdle the covid-19 virus and can move forward in life as mentioned by some of the participants of the focused-group-discussions: *An Coronavirus vaccination Usa nga program han gobeyerno para mabawasan ngan maprotektahan an imo lawas ha Corona virus, Dako nga bulig para deri ka magkasakit or matapnan, maupay ngan*

safe tim lawas, Importante para mas maprotektahan ngan deri matapnan hin COVID, Solusyon hine nga visrus nga nakalat, Para mapoytoy na ine nga virus para bumalik na han dati an panahon.

On the other hand, there are 11% of them showed unfavorable to very unfavorable attitudes. This meant further that the GIDA communities could not adapt to the new changes easily. They believed that corona virus vaccination is not the solution to the covid-19 virus because for them they were not affected with the virus as stated by the participants in the interview: *Deri ako tipabakuna kay mayda ko gin-aabat, Deri ako tipakita hit doktor kay bangin pa magin Covid tak inaabat baman waray man covid denhi ha amon lugar, Para ha akon parang diri hiya effective na bakuna kay*

nagkakamay-ada hiya gin aabat, Diri la gihap epektibo bisan gin bakunahan kana ika duwa igin tatablan kala gihap sakit, Diri gud hiya safe ha mga tawo kay may namamatay la gihap bisan tapos na magpabakuna.

Table 10. Attitude Score towards Corona Virus Vaccination of the GIDA Communities

Attitude Category	Frequency (F)	Percent (%)
Very Unfavorable		
Attitude	1	0.9
Unfavorable Attitude	10	8.7
Neutral Attitude	87	75.7
Positive Attitude	15	13
Very Positive Attitude	2	1.7
Total	115	100.00

Comparison Between the Level of Knowledge and Attitude towards Coronavirus Vaccination of the GIDA Communities Along with Its Physical Factors

Table 11 relates to the results of the test of the difference between the level of knowledge and

attitude towards coronavirus vaccination of the GIDA communities along with physical factors. Based on Levene's test () shows that the variances of the distributions are equal for both the attitude score and level of knowledge, therefore, the t-test for independent samples was utilized.

In terms of the level of knowledge about Covid-19 vaccination, it was found that there is a significant difference between the level of knowledge of the GIDA community from Upland, island and Upland, lowland (). This meant further GIDA communities from the upland, island (*Bukid, Isla*) were much more knowledgeable about coronavirus vaccination than those from the upland, lowland (*Bukid, coastal*). This implies that those in the upland, lowland community have little information or no means of information and have limited access to firsthand information that those from the upland, an island may because of accessibility of transportation and communication.

Table 11. Comparison Between the Levels of Knowledge and Attitude towards Coronavirus Vaccination of the GIDA Communities Along Its Physical Type

Group Statistics

GIDA Type		N	Mean	Std. Deviation
Attitude Score	Upland island (Bukid, isla)	37	38.51	5.94
	Upland, lowland (Bukid, coastal)	78	36.69	5.42
Knowledge Score	Upland island (Bukid, isla)	37	21.73	3.88
	Upland, lowland (Bukid, coastal)	78	18.79	4.67

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			Evaluation
	F	Sig.	t	df	p-value	
Attitude Score	1.111	.294	1.632	113	.105	Not Significant
Knowledge Score	1.269	.262	3.317	113	.001	Significant

In terms of the attitude of the GIDA communities toward coronavirus vaccination, it was found there is no significant difference between the attitude of those from the upland, island, and upland, lowland (). This meant further that the attitude to the GIDA community was the same regardless of its physical factors.

This implies that whatever physical factor of the GIDA community, they have a common understanding, action, and behavior towards the coronavirus vaccination.

Relationship between the GIDA communities' levels of knowledge, attitude, and their socio-demographic profile

Tables 12-13 pertain to the tests of relationships between the level of knowledge towards covid-19 vaccination and their socio-economic demographic profile.

Table 12 relates the results of the relationship between the level of knowledge about coronavirus vaccination in the GIDA community and their age, average family monthly income, and the number of household members. It was found that the level of knowledge of the GIDA community is not significantly correlated with their age and the number of household members. While, their level of knowledge is significantly correlated with their average family monthly income, and educational attainment. This meant that the level of knowledge of the GIDA community depends on their level of income. Further, it could be implied that as their income tends to increase, their level of knowledge tends to increase as well. On the other hand, as their income tends to decrease, their level of knowledge about COVID-19 vaccination tends to decrease also. This is due to the following random factors such as occupation, nature of work, etc., that may affect their level of knowledge.

Table 12. Level of Knowledge Towards Corona Virus Vaccination of the GIDA communities and their Socio-economic Profile

Profile	r-value	p-value	Evaluation
Age	-.141	.133	Not Significant
Income	.327**	.000	Significant
HHmember	.015	.875	Not Significant
Education	0.421**	.000	Significant

Subsequently, educational attainment has something to do with the level of knowledge about covid-19 vaccination in the GIDA community. It implies further that those with higher educational attainment have also a higher level of knowledge towards about vaccination, and those with lower educational

attainment have a lower level of knowledge about vaccination.

Table 13, shows the chi-square results of the test of the relationship between the level of knowledge of the GIDA communities towards coronavirus vaccination and their sex category and civil status.

The results showed that their level of knowledge about COVID -19 vaccination and sex category (and civil status (of the GIDA communities were not significantly correlated. This meant that the sex category and civil status has nothing to do with their level of knowledge about COVID -19 vaccination.

Table 13. Chi-Square Results of the Relationships Between Respondents' Knowledge towards Coronavirus Vaccination and their Socio-Demographic Profile

Profile	Chi-Square	df	p-value	Evaluation
Sex	1.51	2	0.47	
Civil Status	11.69	6	0.099	

Tables 14-15 present the tests of relationships between the attitude towards COVID -19 vaccination and their socio-economic demographic profile. Table 14 reflects the results of the relationship between the attitude towards coronavirus vaccination of the GIDA communities and their age, average family monthly income, and the number of household members. It was found that the level of knowledge of the GIDA communities is not significantly correlated with their age and the number of household members. While their attitude is significantly correlated with their average family monthly income and educational attainment. This meant that the attitude of the GIDA community depends on their level of income. Further, it could be implied that as their income tends to increase, their attitude tends to be positive. On the other hand, as their income tends to decrease, they are toward covid-19 vaccination tends to be unfavorable. Maybe because some random factors such as occupation, nature of work, etc., may affect their attitude.

Table 14. Attitude Towards Corona Virus Vaccination of the GIDA community

Profile	r-value	Sig. (2-tailed)	Evaluation
Age	-.169	.072	Significant
Ave. Family Monthly Income	.214*	.022	Not Significant
No. of HH members	.025	.792	Significant
Educational Attainment	0.247**	.008	

Consequently, educational attainment has something to do with the attitude towards *COVID* -19 vaccination in the GIDA communities. This could imply further that those with higher educational attainment have a positive outlook towards vaccination, and those with lower educational attainment have a

disparaging attitude towards *COVID* -19 vaccination.

Table 15, shows the chi-square result of the test of the relationship between the attitude of the GIDA communities toward coronavirus vaccination and their sex category and civil status.

Table 15. Chi-Square Results of the Relationships Between Respondents' Attitude towards Coronavirus Vaccination and their Sex Category and Civil Status

Profile	Chi-Square	df	p-value	Evaluation
Sex	6.79	4	0.147	
Civil Status	6.3	12	0.900	

The results showed that their attitude towards *COVID* -19 vaccination and sex category (and civil status (of the GIDA communities were not significantly correlated. This meant that the sex category and civil status has nothing to do with their attitude towards covid-19 vaccination.

V. SUMMARY AND CONCLUSION

Based on the results of the study, the following conclusions were derived: the GIDA communities have a low level of knowledge and have a neutral attitude towards coronavirus vaccination. In terms of its physical factors, the GIDA communities from upland and coastal areas have a low level of knowledge than that from upland and islands. Further, as their income tends to increase, their level of knowledge tends to increase and their attitude tends to be positive towards vaccination. While, as their income tends to decrease, their level of knowledge tends to decrease and their attitude tends to be unfavorable towards *COVID* -vaccination. In addition, those with higher educational attainment have also a higher level of knowledge and have a positive outlook towards vaccination, and those with lower educational attainment have a lower level of

knowledge and have an unfavorable attitude towards vaccination.

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