



STUDENTS' THEOLOGICAL AND ETHICAL PERCEPTIONS ON VIRAL VECTOR COVID-19 VACCINES

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Abstract:

The study investigated the theological and ethical perception of the students towards viral vector COVID-19 vaccines. The instrument used was a research-made electronic questionnaire to collect data from the participants. The study employed a quantitative approach, descriptive survey research design. It was found out that the students' theological and ethical perception of viral vector COVID-19 vaccines is high. It indicates that the participants are well informed and aware of the controversy of viral vector COVID-19 vaccines, both theologically and ethically. However, incorporating both stands exhibits an intense dilemma between the students in choosing between the absolute good set by the church and the relative good for all humanity. Furthermore, there is a significant difference in the student's ethical perception of viral vector COVID-19 vaccines in terms of the type of learner. Perceptions of such vaccines differ significantly with the type of learner, both academic and character. Hence, it is recommended that students, together with medical professionals, research other factors that can affect their perception of viral vector COVID-19 vaccines, such as their political, cultural, economic, and social perceptions. It could help them further understand the reasons for vaccine hesitancy and determine the viewpoints that can lead to vaccination acceptance among Filipinos.

Keywords: COVID-19, Viral Vector, Vaccines, survey method, Philippines

1. INTRODUCTION

The Coronavirus pandemic is an ongoing pandemic of coronavirus disease 2019 caused by the transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The COVID-19 pandemic has posed a significant problem worldwide. It has caused severe economic and social disruptions and devastations of human life – with tens of millions infected, 2 million dead, and billions of monetary losses (World Health Organization, 2020).

SARS-CoV-2 is transmitted from person to person mainly by respiratory droplets exhaled by an infected person. These droplets range in size from large droplets that fall out of the air within six feet of the infected individual to aerosols that can hang in the air over time and more considerable distances. These aerosols are linked to singing,

yelling, and heavy breathing during exercise, and they can increase viral transmission in confined, poorly ventilated spaces (Powell, 2021).

A vaccination lowers a person's chances of contracting a disease. If a vaccine has a 95 percent effectiveness rate, vaccinated individuals are 20 times less likely to contract COVID-19 than those who have not been vaccinated. Furthermore, vaccinated healthy people reduce the likelihood of people not being vaccinated getting COVID-19 through herd immunity or community immunity. Herd immunity occurs when enough people are immune to disease through vaccination that the disease does not spread effectively in the population. Researchers estimate that herd immunity to COVID-19 will require 75–80% of the population to be vaccinated (Powell, 2021).

The entire world is in a race to find a vaccine for COVID-19. Thousands of laboratories and facilities are rushing to develop a cure or a vaccine for the virus. Today, there are currently more than 60 COVID-19 vaccine candidates in clinical development and over 170 in pre-clinical development. Many of the largest vaccine companies are developing promising vaccine candidates using ethically derived cells. However, many of the leading vaccine candidates for the 2019 novel coronavirus (SARS-CoV2) developed are using viral vectors (using fetal cell lines) originally derived from aborted babies' tissues in the 1970s and 80s. Such an infectious disease pandemic raised significantly novel ethical and scientific challenges to medical organizations and public health practices (Abbamonte, 2020).

Paulinians are taught to put Christ at the center of their life, follow and imitate Christ, and do everything in reference to Him. The use of aborted fetal tissues in COVID-19 vaccine development favorably contrasts the doctrine of creation set by Christ – to safeguard life and conserve human dignity. However, Paulinians are formed to be responsible family members and citizens in the service of the Church and society. In contrast, viral vectors using fetal cell lines are necessary to effectively heal the sick and suffering - one of the Catholic Church's social teachings. Thus, many Paulinians are conflicted about choosing the theological doctrines of Christ or the ethical ideals for the common good of all.

In the previous school years, there were studies conducted on the perception of parents and students on controversial issues such as the Dengvaxia vaccine, influenza vaccine, and breastfeeding. Nevertheless, no study was made to test how Paulinians integrate and use the core values in assessing controversial issues. There was no research done specifically for students' theological and ethical perceptions on the new controversial issue involving viral vector COVID-19 vaccines.

Thus, the researchers conducted this study to identify better SPUS Grade 12 students' perception towards viral vector COVID-19 vaccines. The researchers would like to know if the students would opt to be vaccinated using viral vector COVID-19 vaccines when given a chance and implore the core values taught to make this perception. Furthermore, the researchers hope to understand how the influences in religion, educational environment, ethical beliefs, and social norms mold students' cognitive abilities to analyze and perceive such a controversial issue.

2. MATERIALS AND METHODS

The study employed a quantitative approach, descriptive design using the survey method. This research design is appropriate because it determined and described the participants' profile and the variables affecting the perception of Grade 12 students in St. Paul University Surigao towards Viral Vector COVID-19 vaccines. The participants of the study are the 242 Grade 12 students of Senior High School in St. Paul University Surigao. Stratified Random Sampling was employed as the sampling technique in gathering data for evaluation. The sample size was calculated using Slovin's formula. The instrument used to gather the data for this study was a research-made electronic questionnaire. The researchers conducted an online survey of the Grade 12 students in St. Paul University Surigao through Google Forms. The researcher-made questionnaire consists of three (3) parts. The first part of the questionnaire includes the participants' data regarding age, sex, socioeconomic status, and academic performance. Part 2 consists of statements showing the Grade 12 students' perception of viral vector COVID-19 vaccines from the theological perspective. Part 3 consists of statements showing the Grade 12 students' perception of viral vector COVID-19 vaccines in the ethical (micro-and macro-ethical) perspective. The questionnaire was subjected to content validation of experts and reliability tests. The Cronbach alpha (α) obtained was 0.802 which means that there is a good internal consistency.

To analyze the data gathered, the researchers used Frequency Count and Percentage Distribution in determining the distribution of the participants according to their profile variables. Mean was used to determine the Grade 12 students' perceptions on viral vector COVID-19 vaccines from the theological and ethical perspective. Analysis of Variance was also used to determine the significant difference in the perception of Senior High School students on viral vector COVID-19 vaccines in terms of the profile variables. The integrity of their research is ensured. Informed consent was also secured from the participants ensuring that they participated in the study voluntarily and no harm is inflicted. The researchers respected the confidentiality and anonymity of the respondents as affirmed in the Data Privacy Act of 2012. The researchers used the gathered data solely for academic and research purposes. Lastly, the researchers have shown that their research is independent and impartial.

3. RESULTS AND DISCUSSIONS

Profile of the Participants

This section presents the profile of the selected Grade 12 participants of St. Paul University Surigao. There were four (4) variables used, and these are sex, strand, type of learner, and socioeconomic status.

Table 1 presents the frequency count and the percentage distribution of the selected Grade 12 participants when grouped according to their profile variables.

Table 1. Profile of the Participants

Profile Variables	f (n=242)	Percentage
Sex		
Male	97	40.08
Female	145	59.92
Strand		
ABM	50	20.66
ADT	12	4.96
GAS	27	11.16
HUMSS	48	19.83
STEM	92	38.02
TVL	13	5.37
Type of Learner		
Academic Awardee	96	39.67
Department Awardee	20	8.26
Both Academic and Department Awardee	17	7.02
Neither Academic nor Department Awardee	109	45.04
Socioeconomic Status		
Class E: ₱10,000 and below	57	23.55
Class D: ₱10,001-22,000	52	21.49
Lower Class C: ₱22,001-43,000	54	22.31
Class C: ₱43,001-76,000	49	20.25
Upper Class C: ₱76,001-131,000	10	4.13
Class B: ₱131,001-220,000	11	4.55
Class A: ₱220,001 & up	9	3.72

The majority of the respondents were females with 145 (59.92%). In terms of the strand, most were from the strand STEM with 92 (38.02%). As to the type of learner, most of the respondents are neither academic nor department awardees with 109 (45.04%). Lastly, as to socioeconomic status which is determined from the average monthly income of the respondent’s family, most were at the bracket of Class E: ₱10,000 and below with 57 (23.55%).

The Students’ Theological Perception on Viral Vector COVID-19 Vaccines

Table 2 presents the result gathered from Part II, Theological Perception on Viral Vector COVID-19 Vaccines, on the electronic survey questionnaire given to the participants. The table shows the means of the participant's responses to the eight questions regarding their theological perception.

As shown in Table 2, under the variable of Theological View, among the eight (8) indicators, the indicator with the highest mean score states that I believe that all humans are created in the image and likeness of GOD (M=3.70), which can be verbally interpreted as Strongly Agree and qualitatively described as Very High. It means that the student participants firmly adhere to the Christian doctrine of creation which postulates that every human being is created in the image and likeness of GOD and therefore, highly values the sanctity of every human life. This further implies that the student-participants integrate the Paulinian core value of Community and acknowledge that whatever is opposed to human life, violates the integrity of the human person, and insults human dignity no matter what degree or stage of the human person is considered infamy.

In support of this statement, BioLogos (2019) stated that God created mankind in his image. In the image of God, he created man, male and female. It reveals a fundamental aspect of image-bearing: all human life is sacred because all people are made in the image of God. We must value every human person as a fellow image-bearer, for all people are created in the image of God. In God's mind, as in ours, all of humanity is valued equally. We must care for every creation as stewards of the Creator.

Table 2. The Students’ Theological Perception on Viral Vector COVID-19 Vaccines

INDICATORS	Mean	VI	QD
Theological View			
1. I let the teachings of my religion guide my reasoning on the controversial issue of viral vector COVID-19 vaccines.	2.51	A	H
2. I believe that all lives are created fair and equal.	3.32	SA	VH
3. I know that it is my responsibility to safeguard the life given by GOD.	3.62	SA	VH
4. I believe that all humans are created in the image and likeness of GOD.	3.70	SA	VH
5. I believe that human life starts from conception in the womb.	3.43	SA	VH
6. I believe that fetuses already have moral status and value.	3.12	A	H
7. I view fetal research as dehumanizing and violating human dignity.	2.88	A	H
8. I believe that sacrificing fetal life for research and vaccine development is theologically wrong.	3.12	A	H
Average:	3.21	A	H

Legend:

Scale	Range	Verbal Interpretation	Qualitative Description
4	3.25-4.00	Strongly Agree (SA)	Very High (VH)
3	2.50-3.24	Agree (A)	High (H)
2	1.75-2.49	Disagree (D)	Low (L)
1	1.00-1.74	Strongly Disagree (SD)	Very Low (VL)

Meanwhile, the indicator with the lowest mean score states that I let the teachings of my religion guide my reasoning on the controversial issue of viral vector COVID-19 vaccines (M = 2.51), which can be verbally interpreted as Agree and qualitatively described as High. It means that the student-participants incorporate the Christian doctrines, principles, and teachings from their religious education when making decisions and perceptions towards controversial issues such as viral vector COVID-19 vaccines. This further implies that the student-participants integrated the Paulinian core value of Christ-centeredness and put the values of the Christian life at the forefront of their decision-making to social issues.

According to Wildes (2021), the development of vaccines leads to further questions about the uptake of COVID-19 vaccination. Catholic social teaching can be highly beneficial because it encourages us to think outside the confines of the typical consumerist lifestyle. Any vaccine's production and use raise a slew of ethical concerns about its need, testing, and safety. Fitzgerald (2016) also cited that Christians consider the moral challenges of times considering those fundamental doctrines and values that undergird the Christian lives. The natural Christian tradition from scholastic theology and religious education emphasizes placing the Christian principles in dialogue with new problems and new challenges occurring in our society.

On average, the student's perception of viral vector COVID-19 vaccines, in terms of Theological View, got the mean of 3.21, which is verbally interpreted as Agree and qualitatively described as High. It means that the Grade 12 students at Saint Paul University Surigao agree with the theological stand towards using and producing fetal cell lines in viral vector COVID-19 vaccines.

According to Fitzgerald (2016), most Christians, when making decisions, judge human reality according to a set of adopted and adapted moral criteria based on Christian faith. It implies that the student participants understand the importance of human life and acknowledge that the fetus (embryo) is already human. At any point and under every circumstance, human life deserves complete dignity and security. Any material benefit cannot outweigh the inherent wrong of destroying innocent human life. Acceptance of a strictly utilitarian rationale for mistreating human life will jeopardize everyone and everyone in our society, who are very young, very old, very disabled, or otherwise very oppressed. Therefore, in the theological perspective, they do not support viral vector COVID-19 vaccines.

The Students’ Ethical Perception on Viral Vector COVID-19 Vaccines

Table 3 presents the result gathered from Part III, Ethical Perception on Viral Vector COVID-19 Vaccines, on the electronic survey questionnaire given to the participants. The table shows the means of the participant's responses to the eight questions regarding their ethical perception.

As presented in Table 3, under the variable of Ethical View, among the eight (8) indicators, the indicator with the highest mean score states that I adhere to the equitable distribution of health care in the Philippines brought about by the vaccines from fetal cells (M = 3.25), which can be verbally interpreted as Strongly Agree and qualitatively described as Very High. Meaning to say, the student-participants take into serious consideration the mean of having an equitable distribution of healthcare, where every single Filipino can be vaccinated, brought by viral vector COVID-19 vaccines. This further implies that the student participants reflect the Paulinian core value of Charity by considering the welfare of the common good for all and their moral responsibility to heal and cure the sick and poor into account in making their ethical perception

Table 3. The Students’ Ethical Perception on Viral Vector COVID-19 Vaccines

INDICATORS	Mean	VI	QD
Ethical View			
1. I let my personal ethical codes guide my reasoning on the controversial issue of viral vector COVID-19 vaccines.	2.99	A	H
2. I let the social-ethical norms guide my reasoning on the controversial issue of viral vector COVID-19 vaccines.	2.66	A	H
3. I believe that vaccines developed from fetal cells are for the common good of all but come with a necessary sacrifice.	2.82	A	H
4. I understand that using fetal cells in vaccine development is cost-efficient for mass manufacturing.	2.74	A	H
5. I understand that using viral vectors derived from fetal cells provides affordable vaccines for the poor and developing countries.	2.77	A	H
6. I believe that viral vectors vaccines provide an opportunity for the poor to be vaccinated and not just the wealthy.	2.97	A	H
7. I adhere to the equitable distribution of health care in the Philippines brought about by the vaccines from fetal cells.	3.25	SA	VH
8. I believe that it is my social responsibility to find any means of cure to heal the sick and suffering.	3.14	A	H
Average:	2.92	A	H

Legend:

Scale	Range	Verbal Interpretation	Qualitative Description
4	3.25-4.00	Strongly Agree (SA)	Very High (VH)
3	2.50-3.24	Agree (A)	High (H)
2	1.75-2.49	Disagree (D)	Low (L)
1	1.00-1.74	Strongly Disagree (SD)	Very Low (VL)

In support of this statement, Walter (2006) stated that Christians have an innate drive of adhering to social inclusion and equitable health care for every member of society during a health crisis. They are also concerned with social justice and the duty to prevent fatal illnesses from taking the lives of millions around the world. Ethically speaking, it is the social responsibility of those who can find any means of curing the sick and healing those who are suffering.

Wildes (2021) cited that since a vaccine protects not just the person but also the people around them, it is important to recognize that a vaccine program is about the community's wellbeing, which should be of paramount importance to every Christian. In the case of COVID-19, it must be recognized that one's health is just one component of "our" health. As a result, one of the most important moral aspects of vaccinations is that they are beneficial not only to an individual but also to the community, which is the case with COVID-19.

Meanwhile, the indicator with the lowest mean score states that I let the social-ethical norms guide my reasoning on the controversial issue of viral vector COVID-19 vaccines (M = 2.66), which can be verbally interpreted as Agree and qualitatively described as High. It means that the student participants integrate the influences in society, such as those in culture, tradition, upbringing, and social class, when making decisions and perceptions towards controversial issues such as viral vector COVID-19 vaccines. This further implies that the student-participants conform to the social influences and adopt the social norms as the forefront of their decision-making to social issues.

According to Fitzgerald (2016), no one stands outside a social and cultural world when making ethical decisions. Each of us evaluates human reality using a collection of moral standards that we have adopted and adapted based on factors such as ethnicity, schooling, social status, professional occupation, social normative, culture, and traditions. Social influences may affect many aspects of a person's life (Rider, 2020). They may alter a person's thinking or behaviors due to a desire to fit in with the dominant social group or distinguish themselves from it. Since social factors can affect a person's thoughts and values, they can also influence the behaviors or patterns of behavior they follow.

Recent research published in the journal Psychological, Cognitive, and Affective Neuroscience shed light on how social expectations influence our decision-making (Steckl, 2013). Humans, as social beings, appeal to the demands and possible consequences of an action to society. Aside from social influences affecting our behavior, such as social norms which are expectations that inform us how we are supposed to behave in certain situations, they also consider the common welfare.

On average, the student's perception of viral vector COVID-19 vaccines, in terms of Ethical View, got the mean of 2.92, which is verbally interpreted as Agree and qualitatively described as High. It means that the Grade 12 students in Saint Paul University Surigao agree with the ethical stand towards using and producing fetal cell lines in viral vector COVID-19 vaccines.

According to Fitzgerald (2016), ethics is based on the human habit of reflection, which recognizes our interests and beliefs as well as those of others when making decisions and acting. Ethics is more art than science

because it requires perceptive thinking, logical and intuitive reasoning, and prudential judgment. It is the art of making fair and wise decisions for the good of oneself and others.

In a world characterized by rapid progress, ethical decisions help us sort through the facts, identify our principles, and determine the best course of action. The elucidation of moral norms and, finally, compromises are the product of careful weighing of the realistic consequences of people's choices. It implies that the participants acknowledge the grave necessity of such vaccines. In the absence of any alternative, it is a necessary sacrifice for the common good of all. Therefore, from an ethical perspective, they support viral vector COVID-19 vaccines.

Significant Difference on the Perceptions of Grade 12 Students when grouped according to the Profile Variables

This section presents the significant difference in the perception of Grade 12 students on viral vector COVID-19 vaccines when grouped according to four (4) profile variables.

Table 4 shows the significant difference in the perception of Grade 12 students in Saint Paul University Surigao when grouped according to their profile variables, namely: sex, strand, type of learner, and socioeconomic status.

Table 4. Significant Difference in the Perception of Grade 12 students when grouped according to the profile variables

Profile Variables	Dependent Variables	SS Effect	df	MS Effect	F-value	p-value	Decision
Sex	Theological View	0.61	1	0.61	2.53	0.1131	Do not reject H ₀
	Ethical View	0.37	1	0.37	2.06	0.1522	Do not reject H ₀
Strand	Theological View	2.36	5	0.47	1.98	0.0827	Do not reject H ₀
	Ethical View	0.90	5	0.18	0.99	0.4263	Do not reject H ₀
Type of Learner	Theological View	1.12	3	0.37	1.54	0.2052	Do not reject H ₀
	Ethical View	1.94	3	0.65	3.67	0.0129	Reject H ₀
Average Household Income	Theological View	1.08	6	0.18	0.73	0.6223	Do not reject H ₀
	Ethical View	1.04	6	0.17	0.95	0.4590	Do not reject H ₀

As presented in Table 4, as to sex and Theological View and Ethical View, the findings revealed that there is no significant difference between the variables (p-value = 0.1131 and 0.1522, respectively) thus, the null hypothesis is not rejected. It means that the sex of the respondents does not affect their perception of viral vector COVID-19 vaccines. On the contrary, it refutes the statement of Halpen (2000) on males' and females' cognitive and behavioral differences, such as females being portrayed as passive and emotional in analyzing issues. In contrast, males are portrayed as aggressive critical thinkers and more analytic. Hence, the behavioral and cognitive disparities between sexes do not directly affect a student's perception of gender-sensitive social issues such as viral vector COVID-19 vaccines and its use of fetal cell lines from aborted human fetuses.

As to strand and Theological View and Ethical View, the findings revealed that there is no significant difference between the variables (p-value = 0.0827 and 0.4263, respectively) thus, the null hypothesis is not rejected. It means that the strand of the respondents does not affect their perception towards viral vector COVID-19 vaccines. It further implies that the statement of Alipio (2020) on comparative differences in students' knowledge because of varying educational environments, such as STEM students are more knowledgeable on vaccine development and health science than students from other SHS strands, is in contradiction with the findings. Hence, the varying educational environment and comparative knowledge difference between strands do not directly affect students' perception of health-related and medical topics such as viral vector COVID-19 vaccines.

As to the type of learner and Ethical View, the findings revealed that there is a significant difference between the variables (p-value = 0.0129) thus, the null hypothesis is rejected. It means that the type of learner affects a student's ability to identify right and wrong based on personal (micro) and social (macro) ethics, especially to controversial issues such as viral vector COVID-19 vaccines. It implies that the statement of Reid (2013) on student achievers being more critical and extensive in analyzing social issues and can indicate what is right, what is wrong, and what is compromisable better than student non-achievers is true based on the findings. Hence, the classification of students based on achievement can directly affect a student's perception of controversial issues with significant ethical challenges, such as the issue of viral vector COVID-19 vaccines. The result is supporting the study of Ahmed et al. (2018), which states that student achievers' analysis and perceptions of socio-ethical issues are significantly better than those of non-achievers. Students with higher academic achievements had more comprehensive perceptions regarding issues and controversies within their society.

As to the type of learner and Theological View, findings revealed that there is no significant difference between the variables (p-value = 0.2052) thus, the null hypothesis is not rejected. It means that the type of learner does not affect a student's theological perspective, incorporating the doctrines, principles, and teachings of a person's religion and spirituality to viral vector COVID-19 vaccines. The result contradicts the idea of Miller (2017), which

states that higher levels of educational attainment are inversely linked with religiosity. The more educated a person, the less they rely on their religious beliefs, for they support more concrete facts rather than theological beliefs.

As to socioeconomic status and Theological View and Ethical View, the findings revealed that there is no significant difference between the variables (p -value = 0.6223 and 0.4590, respectively) thus, the null hypothesis is not rejected. It means that the respondents' socioeconomic status does not affect their perception of viral vector COVID-19 vaccines. It contrasts the statement of Dohmen et al. (2018) on differences of levels in cognitive ability and risk assessment due to varying financial stability, such as individuals with low financial stability have low cognitive ability and risk assessment in analyzing social issues as compared to individuals with high financial status and stability having the high cognitive ability and risk assessment. Hence, the cognitive ability of critical analysis and behavioral differences between socioeconomic classes do not directly affect a student's perception of viral vector COVID-19 vaccines due to financial issues.

4. CONCLUSIONS

Based on the findings, it is, therefore, concluded that the Grade 12 students at St. Paul University Surigao have high theological and ethical perceptions on the controversial issue of viral vectors COVID-19 vaccines. It indicates that the participants are informed, aware, and have comprehensive perceptions on the controversy of viral vector COVID-19 vaccines. The ethical perception of students depends on what type of learner they are, whether they are academic awardees, department awardees, both, or neither. This is due to the varying levels of cognitive analysis and perceived moral responsibilities derived from academic and character development among students.

It is suggested that medical professionals, especially those working in vaccine research and development, may consider making their research to further understand the reasons for vaccine hesitancy and determine the viewpoints that can lead to vaccine acceptance. The students may consider doing more research to help gain further reflection on Paulinians' development on the five core values of integrating and using these values in their everyday words, thoughts, deeds, and choices. It is also suggested that the Administrators may consider designing more activities and implementing more programs that will help boost the students' integration on the Paulinian core values.

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