

## Application of Theory of Planned Behavior on COVID-19 Vaccine Uptake in Palu, Central Sulawesi, Indonesia

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### ABSTRACT

**Background:** According to secondary data from the Central Sulawesi Provincial Health Office, updated information regarding the COVID-19 vaccination in Palu City, Central Sulawesi has only reached 4.82%. As of Monday, March 14 2022. This data can be said to be lagging behind vaccination coverage rates because there are still many people who have not carried out vaccinations, this can be applied through Theory Planned Behavior to the use of COVID-19 vaccination at the Palu City Health Center, Central Sulawesi.

**Subjects and Method:** Qualitative study with key informant interviews. Interviews were conducted in Palu, Central Sulawesi, Indonesia. Interviews were conducted with 7 people who had not received the COVID-19 vaccination at all, 4 people who had received the second dose of COVID-19 vaccination, 4 people who had received the third dose of COVID-19 vaccination, and key informant 1 City health center promotion worker Palu, Head of the surveillance section of the Palu City Health Service and immunization as well as the COVID-19 Task Force, as well as 1 additional informant from the family.

**Results:** It can be seen that the lack of knowledge has a great impact on attitudes towards behavior from the community, in which in addition to believing in negative news about the COVID-19 vaccination, there is also the influence of the subjective norm variable, namely the prohibition from the family in carrying out the COVID-19 vaccination, but in the predictive variable behavioral control had little impact on the use of the COVID-19 vaccination in Palu City.

**Conclusion:** In this study it was concluded that the application of the Theory of Planned Behavior on the use of COVID-19 vaccination in Palu City, Central Sulawesi, had an effect especially in terms of attitude towards behavior variables and subjective norm variables.

**Keywords:** vaccination, COVID-19, theory planned behavior.

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### BACKGROUND

COVID-19 (Corona Virus Disease 2019) is a virus that is endemic in 2020 throughout the world which has caused an emergency situation, where Indonesia is one of the countries affected. Through Presidential Decree number 11 of 2020 concerning the sti-

putation of a public health emergency caused by the Corona Virus Disease 2019 (COVID-19), President Joko Widodo gave a health emergency status stipulation which was later also issued Government Regulation in lieu of Law Number 1 of 2020 regarding "Policies State Finances and Financial

System Stability for Handling the Corona Virus Disease 2019 (COVID-19) Pandemic and/or in order to deal with threats that endanger the national economy and/or Financial System stability and Government Regulation Number 21 of 2020 concerning Large-Scale Social Restrictions in the Framework of Acceleration Management of Corona Virus Disease 2019 (COVID-19) (Farina, 2021)

A survey conducted by the WHO (World Health Organization), the Ministry of Health of the Republic of Indonesia (Kemenkes RI), and the Indonesian Technical Advisory Group on Immunization (ITAGI) resulted in the result that as many as 115,000 Indonesians from 34 provinces rejected and had doubts about the government's plan. in vaccination. This is an obstacle that needs to be handled so that vaccination can be carried out as an effort to reduce and kill the prevalence rate of COVID-19 within the national scope according to the Government's target coverage (Maulana, et al, 2021)

According to secondary data from the Central Sulawesi Provincial Health Office as of July 1 2021, it showed that the first dose of the COVID-19 vaccine was successfully administered to 45.30% of the provincial target, equivalent to 214,165 people. Then in giving the second dose, it was successfully given to 20.23% of the province's target or equal to 95,661 people. For the administration of the third dose, the government has started to provide encouragement to the community starting in January 2022. The updated information regarding the COVID-19 vaccination in Palu City, Central Sulawesi states that the vaccine has been successfully administered to 4.82% of the population as of Monday, March 14 2022. It can be said that the data is lagging behind the vaccination coverage rate is because there are still many people who have not

carried out vaccinations, both the first, second and third doses of vaccine which are still below the coverage standard for COVID-19 vaccination status, and there are several areas in Central Sulawesi, namely 2.8% in Poso Regency, 2.68 % in Toli Toli Regency, and several other districts where vaccine coverage is still relatively low, especially vaccine doses 2 and dose 3.

It can be seen from the achievements of the use of the COVID-19 vaccination in Palu City that it is still quite behind both the use of vaccine doses 1, 2, and 3 which are still very low, and because of this, researchers have the desire to see what factors influence public opinion. Palu City in using the COVID-19 vaccination through the intention of the people who are still reluctant to use the COVID-19 vaccination, this can be related to the application of Theory Planned Behavior on the use of COVID-19 vaccination at the Palu City Health Center, Central Sulawesi.

## SUBJECTS AND METHOD

### 1. Study Design

This study used a qualitative study design with a case study approach and in this study data collection was carried out using the snowball technique, which is a technique that can be used in qualitative research to dig up information from the first informant to the next informant on the basis of the recommendations of the previous informants. Through this approach, a number of respondents who are considered to have the potential to provide a lot of information are contacted and asked about the characteristics of a person as intended to complete the research.

The first respondent can provide recommendations for researchers to obtain other respondents. In order to achieve the research objectives, observation and interview techniques are used as a support for

this technique (Nurdiani, 2014). This research was conducted in Palu City, Central Sulawesi, Indonesia

## **2. Study Informants**

Determination of Informants In this study using the snowball technique with the following inclusion criteria:

- 1) People in Palu City who have not received the COVID-19 vaccine
- 2) The people of Palu City who have received 2 doses of the COVID-19 vaccine
- 3) People in Palu City who have received 3 doses of the COVID-19 vaccine
- 4) Domiciled in Palu City, Central Sulawesi
- 5) Received COVID-19 Vaccine at the Palu City Health Center, Central Sulawesi
- 6) Willing to become research informants

## **3. Inclusion Criteria**

The data in this study were collected through in-depth interviews with all informants. The interviews were conducted based on the outline of the existing problems and some probing that needed to be questioned.

This interview was carried out with the informant until the information the researcher wanted was collected (Masturoh, 2018) In qualitative research, the researcher holds the role of a human instrument which has the function of focusing research, finding and selecting respondents who are data sources, providing an assessment of data quality, analyzing and make interpretations, and draw conclusions. In this research, the writer himself will be the main instrument. As well as complementary instruments namely; interview guides, stationery, tape recorders, and cameras.

# **RESULTS**

## **Sociodemographic characteristics of participants**

The informants in this study totaled 18 people, where the usual informants consisted

of the people of Palu City who had not received the COVID-19 vaccine totaling 7 people, the people of Palu City who had received two doses of the COVID-19 vaccine 4 people, the people of Palu City who had received the COVID vaccine -19 doses of three 4 people. As for the key informants, there were 2 people consisting of 1 health promotion officer at the Palu City Health Center, and the Head of the Surveillance and Immunization Section of the Palu City Health Service who also served as the SATGAS TEAM handling the Palu City COVID-19, and there is 1 additional informant, namely the informant's family who has not received the COVID-19 vaccine.

## **Attitude to Behavior Variable**

Based on statements from informants in Known that the variable attitude towards behavior influences the intention of the people of Palu City to accept the use of the COVID-19 vaccine, almost all respondents do not know what is meant by the correct definition of the COVID-19 vaccine, but besides that the respondents almost everyone knows the purpose of using the COVID-19 vaccine, and in a number of other questions that are asked along with the probing that is asked in this variable such as the source of information about the COVID-19 vaccine that they get, most of them, get it through several media online, namely personal social media, television, radio, so that some people get information about their environment such as schools, workplaces, and people around them (word of mouth information).

Questions about how important the COVID-19 vaccine is for them, how many doses of the vaccine have they received, whether they feel healthier after or when they have not used the COVID-19 vaccine, to the impact of using the COVID-19 vaccine in their lives, most of them justify the importance of using it the COVID-19

vaccine, but there are still many respondents who still think the COVID-19 vaccine is not important, starting from fear of bad news about the impact of the vaccine, to thinking that using a vaccine is just an injection and thinking that they are still not

using the COVID-19 vaccine. healthy, and there were some respondents who were reluctant to continue using the next dose of the COVID-19 vaccine because they felt sick after the previous dose of vaccine.

**Table 1. Socio demographic characteristics of participants**

<b>Informants</b>	<b>Age (Year)</b>	<b>Job Status</b>	<b>Education</b>
MR	29	Civil Servant	Bachelor
NW	41	Civil Servant	Master
DF	22	Freshgraduate	Bachelor
AI	23	Police	SHS
BA	24	Police	SHS
AS	23	Honorary	Bachelor
D	22	Entrepreneur	Bachelor
L	27	Student	SHS
R	42	URT	PS
MG	17	Student	SHS
BP	16	Student	SHS
MA	16	Student	SHS
F	17	Student	SHS
AA	17	Student	SHS
AR	15	Student	SHS
H	21	Merchant	SHS
FT	19	Serabutan	SHS
R	35	Housewife	JHS

Some of the respondents said there was no impact from their activities on the use of the COVID-19 vaccine, and there were some who said it had an impact because there were several requirements from the government requiring a COVID-19 vaccine certificate in several administrative arrangements for the community. And most of these respondents have not received any COVID-19 vaccinations at all.

**Subjective Norm Variable**

Based on statements from informants at Know that the variable subjective norm influences the intention of the people of Palu City to accept the use of the COVID-19 vaccine, almost half of the respondents said the actions they are currently taking are appropriate both those who have received the

COVID-19 vaccine, those who do not want to continue using the next dose of the COVID-19 vaccine, even informants who have not received the COVID-19 vaccine and almost half of the respondents said that seeing the current pandemic situation the COVID-19 vaccine was no longer needed on the grounds that they knew the COVID-19 virus had ended, in terms of subjective norms in this variable they were also asked what encouraged, prohibited, and forced them to use it. the COVID-19 vaccine, most of the answers they got were doing and had not done the vaccine on the basis of their own volition, but there were some who answered on the basis of encouragement from teachers at school, demands of the institution where they work, up to the basis

of getting a COVID-19 vaccine certificate to get social assistance from the government, and there are also those who receive a ban from the family in using the COVID-19 vaccine.

As well as questions regarding the influence of the role of the government and local health workers on them, and some of them said that the role of both local and central government was good, but this did not make them all want to use the COVID-19 vaccine, and some even said the role of health workers local residents in asking for the COVID-19 vaccine are only limited if they want to visit a new health service to get the COVID-19 vaccine and have never received health promotion regarding the COVID-19 vaccine, especially invitations to use the COVID-19 vaccine in their area of residence from health workers.

#### **Behavioral Control/ Control Perspective**

Based on statements from informants, it is known that the variable perception of behavioral control influences the intention of the people of Palu City to accept the use of the COVID-19 vaccine, almost half of the informants said that a COVID-19 vaccine service was opened around them, but there were also those who said that the distance between their homes they are far from where the COVID-19 vaccine service is located, and some respondents said that if the vaccine service is close to where they live, they are still reluctant to visit it, especially far from where they live.

Some of the respondents are reluctant to queue and wait for vaccine doses to be available COVID-19 which is needed because there is often a shortage of COVID-19 vaccine stocks both at the puskesmas and several other COVID-19 vaccine service places.

#### **Key Informant**

Based on statements from key informants, it is known that the role of the Palu City Health Office as well as the Task Force for handling COVID-19 and the role of Health Promotion officers at the Palu City Health Center in the use of the COVID-19 vaccine in the community in Palu City is, starting in terms of vaccine distribution, it is quite good in comparison with other districts in Central Sulawesi, but there are several types of vaccines such as moderna which have not been evenly distributed until now in several Puskesmas in Palu City.

From the point of view of health workers to the service according to informants it has been quite good due to the efforts of both The Palu City Health Office and the Palu City Health Center have opened COVID-19 vaccine services in the midst of the community, starting from picking up balls to cross-sector empowerment of schools, village heads, to community leaders who are influential in society, but the challenge is that there are still people who are still have not been vaccinated at all because of the stigma a in the community regarding hoaxes about the COVID-19 vaccine, and this is the toughest challenge that is felt by both the Health Service and the COVID-19 Task Force, to Health Workers at the Puskesmas in using vaccines in the people of Palu City.

#### **Additional Informants**

Based on statements from additional informants, it is known that the role of the informant's family who had not received the use of the COVID-19 vaccine at all was to see the results of in-depth interviews conducted by the family's own knowledge regarding the definition of the COVID-19 vaccine which was still not appropriate, and still high. the stigma that exists on the part of the family about the Hoax news regarding the COVID-19 vaccine itself, and there are results that the family actually forbids



their child to be vaccinated due to a lack of understanding about the COVID-19 vaccine, and trusts and is more influenced by hoax news or stigma not good at using the COVID-19 vaccine.

Therefore, the role of the family actually does not encourage efforts to use the COVID-19 vaccine due to deviations in understanding of the benefits or lack of good education regarding the COVID-19 vaccination.

## DISCUSSION

### 1. Attitude to Behavior Variable.

Based on the interviews conducted by the researcher, the informant's statement provided an explanation that their knowledge of the COVID-19 vaccination was still not correct in terms of its biological definition, so there were still many informants who considered the COVID-19 vaccination so unimportant to apply. This happened because of the source of information they received. get there are still many whose references are not clear and precise, because education about the COVID-19 vaccine has not been very evenly distributed both in information and delivery to the public, especially those who still do not want to carry out the COVID-19 vaccination, the lack of knowledge results in their response being not good enough to use it the COVID-19 vaccine, as a result, attitudes towards behavior for the use of vaccines become influential due to a failure of understanding from the public, as well as more trust in the inaccurate news.

It can be seen that this lack of knowledge has a great impact on attitudes towards behavior from the community, where apart from trusting more negative news about the COVID-19 vaccination, the community also carries out vaccinations because they want to get a COVID-19 vaccine certificate, many people simply abandon

their responsibilities and only administer Only doses one and two vaccines without continuing to use the next dose, besides giving up responsibility just wanting to get a COVID-19 vaccine certificate from the government in order to get social assistance and for other needs, as well as other reasons for those who don't want to continue using the vaccine for the next dose because of feeling sick after being given the previous dose of vaccine, this was a problem at the beginning due to the lack of proper education and information that was obtained by the community, the attitude towards behavior decisions from the community itself was affected due to lack of knowledge public awareness regarding the COVID-19 vaccination.

This research is in line with, In El-hadi's Research (2021), Respondents had insufficient knowledge about COVID-19. The waning of public trust in vaccines due to rumors and conspiracy theories is a major challenge for public health experts and policy makers around the world. Indecision, spreading rumors, and fake news can influence public mentality and vaccine decisions.

The 2003-2004 Nigerian boycott of the polio vaccine is a known example of causing a surge in the disease. Because of this, social support and efforts to counter doubts regarding COVID-19 vaccination are critical, especially in resource-limited settings. This will help promote vaccination and build trust between the general public and health authorities and policy makers, leading to better control of the pandemic and reduced lives lost. Therefore, ensuring vaccine acceptability and hesitancy among the general population and healthcare workers is critical to devising policy plans and assessing available resources to meet COVID-19 and the overall health challenge to reduce the burden of the acute pande-

mic. This study determines knowledge, attitude, and practice related to the COVID-19 pandemic. This study also examines knowledge, attitude, and acceptance of the COVID-19 vaccine among the general population and healthcare providers (Elhadi et al., 2021)

However, this study is not in line with Sherman's research (2021), feeling a greater risk of COVID-19 for people in the UK, more positive general COVID-19 vaccination beliefs and attitudes, weaker belief that vaccination will cause side effects or not safety, greater perceived adequacy of information to make an informed decision about COVID-19 vaccination, and less support for the idea that only people at risk of serious illness should be vaccinated for COVID-19, indicating that attitudes based on British knowledge are much more good about vaccines (Sherman et al., 2021)

## **2. Subject Norm Variables.**

Based on interviews conducted by researchers with informant statements explaining that using the COVID-19 vaccine in the current pandemic situation is not a necessity for them, even the reasons for some people not implementing vaccines on their own accord are not a few who say the influence of health workers inviting vaccines which they ignore and some of them want to hear the vaccine obligation from the government just want to get a vaccine card for their needs and to receive social assistance from the government, and there are also those who actually receive a ban from family and relatives not to carry out the use of the COVID-19 vaccine.

It can be seen that the role of people around, especially the family, is actually more influential than the role and influence of health workers and the government, this is a problem that is also related to the previous variable, namely attitudes towards behavior about a belief in something related

to belief in someone who still do not know or lack of knowledge as discussed in the previous variable, where this belief is more directed and influences negative news about the COVID-19 vaccine which changes a person's intention not to use the COVID-19 vaccine, as well as bad influences from people around him which adds to the normative belief of the public not to carry out the COVID-19 vaccination.

This research is in line with Cordina (2021), questions to determine attitudes towards COVID-19, about vaccines, vaccine hesitancy, and factors that can influence this attitude are loosely based on Theory of Planned Behavior. This includes whether participants engage in preventive behavior, whether they believe that the COVID-19 vaccine will help protect the health of those who get it, whether the opinions of family and friends are important in their decision to take the vaccine or not (Cordina, Lauri and Lauri, 2021)

However, research is not in line with Dzinamarira's research (2021), the public needs to be aware of all issues related to the COVID-19 vaccine so that they have confidence that the vaccine is safe. The COVID-19 vaccine launch program must be carried out in a way that encourages discussion and involvement of all stakeholders to address and ensure that the public gets the right information to make the right decisions (Dzinamarira et al., 2021).

## **3. Perspective Variable/ Behavior Control.**

Based on the interviews conducted by the researchers, the informant's statement explained that there was no problem with the distance between the vaccine service and their place of residence, however, in fact most of them did not want to queue for vaccine services, and basically it was because of their belief that they had discouraged their intention to accept the use of the

COVID vaccination. 19, due to the two previous factors that have been described, as well as the constraints on the availability of vaccines that are lacking or not fulfilling which often occur at places where the COVID-19 vaccination service is an additional factor, but not so much a problem for the community.

In this variable the problems obtained are not so significant and not so influential, because in terms of access, comfort in the COVID-19 vaccine service is quite good, but indeed the people do not want to visit the vaccine service because as explained in the attitude towards behavior variable and subjective norm variables where people's intention to behave in this case the use of vaccines has been affected by negative news due to lack of knowledge and low education about the COVID-19 vaccine, coupled with the influence of the prohibition on the use of the COVID-19 vaccine from the family and those around them, which makes the intention to behave from them affected.

This research is in line with research, Husain (2021) this refers to a person's perception of the ease or difficulty involved in carrying out the target behavior and any limitations that may hinder the behavior. In other words, this refers to the extent to which the person expects or feels control over the intended behavior, but this does not become a major predictor of a person changing his usual intentions so that the individual feels more influenced by the two tpb factors, attitudes toward behavior and subjective norms that influence it. (Husain et al., 2021)

However, this research is not in line with Borah's research (2022), showing that low PBC Perceived Behavioral Control can interfere with the strength of attitudes and positive intentions to be vaccinated. But our findings, 28,75, however, show a promising effect of narrative in motivating individuals

with low PBC to seek change and overcome obstacles. As well as for those with a positive attitude but little or no resources or confidence, in addition to providing easily accessible clinical resources and health information, campaigns with narrative-based messages may also be very important (Borah, et al, 2022).

#### **4. Key Informants and Additional Informants**

Based on the interview conducted by the researcher, the informant's statement provided an explanation that there were no obstacles regarding the distribution of the COVID-19 vaccine in Palu City, and in terms of health workers, it was also quite adequate, and health promotion was carried out quite intensively, starting from providing COVID-19 vaccination services. in the midst of the community, as well as trying to provide vaccinations in schools, but apart from this there are obstacles found in the field where people actually believe the existing stigma about the lack of good news about the COVID-19 vaccine, this has also been exacerbated with the unfavorable influence of their families where there is still a ban from the family for giving COVID-19 vaccinations in Palu City.

This shows that the role of health workers is actually quite good, but the trust and confidence from the community regarding the COVID-19 vaccine which is not good actually responds to people's behavioral intentions in this case accepting the use of the COVID-19 vaccination so it is affected by this bad news, which we can relate failure to understand and lack of knowledge about vaccines has become a problem in the community, and this has also become their reference in influencing those closest to them, especially their families.

This research is in line with Husain (2021), there is no denying the fact that a



positive attitude is an important predictor of intention to get a vaccine, but attitudes must also be strengthened by debunking misperceptions and misinformation, or by important social agents, such as health professionals, family, and religious leaders can be used to increase people's positive perceptions of vaccines and in turn their willingness to be vaccinated, but this is not at all a benchmark for the success of behavior change (Husain et al., 2021)

However, this research is not in line with Wilkinson Research (2021), given the political nature of the COVID-19 pandemic, including vaccine development and the approval process, there is a high level of distrust of the COVID-19 vaccine. New vaccines may face more vaccine hesitancy, misinformation, and rejection than other vaccines. Primary care doctors are often seen as a trusted source of medical information (Wilkinson et al., 2021).

#### **AUTHOR CONTRIBUTION**

Gadis Nur Anggreani is the main researcher who selects the topic, searches for and collects study data. Hanung Prasetya and Bhisma Murti played a role in analyzing data reviewing study documents.

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This study is self-funded.

#### **CONFLICT OF INTEREST**

There is no conflict of interest in this study.

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