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Knowledge and attitudes towards the covid-19 vaccine

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KNOWLEDGE AND ATTITUDES TOWARDS THE COVID-19 VACCINE

CONOCIMIENTOS Y ACTITUDES FRENTE A LA VACUNA CONTRA EL COVID-19

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ABSTRACT

Objective: The objective of this research was to determine the relationship between the level of knowledge and attitudes towards the COVID-19 vaccine in the inhabitants of the province of Trujillo in the year 2021. **Materials and methods:** The type of study was applied, non experimental desing, with a quantitative approach, cross-sectional, and correlational level; a questionnaire for knowledge and attitudes was administered to a total of 500 adults in the province of Trujillo. **Results:** The results show that 88% of the population has a good level of knowledge about the vaccine, and 91% of them have an adequate attitude to be vaccinated. **Conclusions:** In this way, it is concluded that there is a significant relationship between the level of knowledge and attitudes towards the vaccine against COVID-19 (p value<0.05). The level of knowledge is a protective factor (OR: 0.43; CI: 0.2318-0.8053) for an adequate attitude to be vaccinated.

Keywords: Knowledge; Attitudes; Vaccine; COVID-19. (Sources: MeSH NLM)

RESUMEN

Objetivo: Determinar la relación entre el nivel de conocimientos y las actitudes frente a la vacuna contra el COVID 19 en los pobladores de la provincia de Trujillo en el año 2021. **Metodología:** El tipo de estudio fue aplicada, diseño no experimental, de enfoque cuantitativo, de corte transversal y nivel correlacional, se aplicó un cuestionario para conocimientos y actitudes a un total de 500 personas mayores de edad distribuidos en la provincia de Trujillo. **Resultados:** Los resultados demuestran que el 88% de la población tiene un buen nivel de conocimientos sobre la vacuna, así mismo el 91% de los mismos tiene una actitud adecuada para ser vacunados. **Conclusiones:** De esa manera se concluye que existe relación significativa entre el nivel de conocimientos y las actitudes frente a la vacuna contra el COVID-19 (p valor<0.05). El nivel de conocimientos constituye un factor de protección (OR: 0.43; IC: 0.2318-0.8053) para una adecuada actitud para ser vacunado.

Palabras clave: Conocimientos; actitudes; Vacuna; COVID-19. (Fuente: DeCS BIREME)

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INTRODUCTION

The World Health Organization (WHO) confirmed COVID-19 as a pandemic on March 11, 2020, which has generated a global economic and social crisis, generating chaos and uncertainty in all aspects of daily social performance, the forced changes that the world had to make show a difference with what we lived before, which had repercussions on the development of the daily activities of the citizens, of the health, economic, political, educational, cultural systems, among others⁽¹⁾.

Situation that has caused high medical costs related to post-infection care or the worsening of other diseases due to the postponement of preventive care and timely diagnosis, productivity losses due to work absenteeism and premature mortality, or the decrease in economic activity⁽²⁾.

During September 14, 2021, globally 225,244,735 people were contaminated with COVID-19, 4,639,280 deaths and 5,719,029,358 doses of vaccines administered. However, the United States presented 41,213,908 confirmed cases, 662,016 deaths and according to reports until August 24, 2021, they had 54% of the population vaccinated. At the level of Latin America, Brazil is after four countries in the world with 21,006,424 cases, 587,066 deaths and 34.49% of the population vaccinated. Peru followed after nine countries with 2,161,358 cases, 198,799 deaths and 27.07% of population vaccinated.

While in La Libertad 87,341 cases are reported, 10,131 deaths and as of September 17 of this year, 32.8% of the vaccinated population. However, it is good to emphasize that the Chilean nation leads the ranking of fully vaccinated population at 73.36%^(3,5).

Despite the results found, it was possible to develop a vaccine that, after several tests on volunteers in several countries, showed high percentages of efficacy, which allowed its application to begin to be authorized worldwide and thus reduce the rates of hospitalizations and deaths related to COVID-19. With these results, it is

expected that the promotion and distribution will be equitable so that economic, labor, social and family activities can gradually return⁽⁶⁾.

However, there are various elements that affect the process of acceptance of vaccination, since the pandemic unfolds in a context of distrust in the safety and efficacy in the absorption of the vaccine, as well as possible adverse effects. This has triggered negative attitudes in people, due to ignorance and "misleading or incorrect information with false messages made on social networks by users and/or groups in order to create a certain state of opinion" or also called an infodemic, hindering the measures to contain the outbreak, promoting fear, generates unnecessary chaos as well as division at a time when it is necessary to be empathetic and help save lives and thus defeat this health crisis⁽⁷⁾.

In this perspective, YouTube is the second most visited platform worldwide, showing anti-vaccine videos that indicate, as a consequence, diseases such as autism, sudden death, or that microchips are placed through vaccines to alter the genetics of people or that one of the first volunteers died from complications caused by the Oxford Vaccines Group vaccine, the same ones that have been rejected by the World Health Organization (WHO), because they are attributed as pseudoscientific knowledge, which needs verification of specialists, a situation that leads to mistrust by part of the population towards vaccination against COVID-19⁽⁸⁾.

Events that have led to the reluctance to be vaccinated by a group of people, which does not yet allow reaching 50% of the vaccinated population, and at the same time the lack of vaccines in some countries, which constitutes a challenge to take care of the planet, put the good of others and equity in all countries first, so that everyone has access to this benefit of saving lives, reducing the severity of the disease, controlling the transmission of the virus and slowing down the spread of the pandemic. In such a way, that vaccines currently constitute one of the most efficient and effective





actions of public health that will contribute to the reduction of morbidity and mortality⁽⁹⁾.

The previous approach leads to the reflection that the domain of the pandemic is not only based on the efficacy of the vaccine against COVID-19, but also on the real and objective information that must reach the population and the vaccination strategies of each country, as well as in the spiritual adoption of each human being, moved by deep respect for creation and not indiscriminate usufruct for the sake of progress, seeking the care and conservation of the planet, which will be reflected in attitudes of a new planetary consciousness, based on reason and not on personal particularities, which will translate into sustaining compliance with security measures in their entirety, as well as promoting and raising awareness of information pertinent to the role and relevance of vaccines against COVID-19⁽¹⁰⁾.

From all the above, the research problem arises: Is there a relationship between knowledge and attitudes about the COVID-19 vaccine, in the inhabitants of the province of Trujillo - Peru?

With the purpose of contributing to changes in attitudes and achieving 85% of the population vaccinated to maintain community or "herd" immunity, depending on the country and the infection rate. Science is expected to succeed, since historically the defeat of other epidemic and pandemic diseases is evident with a view to an ecological paradigm based on a new social ethics, so necessary in this time of excessive industrialization⁽¹¹⁾. It is for all these reasons that this work proposes to determine the relationship between knowledge and attitudes about the COVID-19 vaccine in the inhabitants of the province of Trujillo.

METHODS

Type and design

Study design:

Applied type, non-experimental design, quantitative approach, cross section and correlational level⁽¹²⁾.

Population and sample.

It was made up of all citizens between 19 and 70 years of

age in the province of Trujillo divided into its nine districts, the sample was determined through stratified probabilistic sampling, with a reliability of 95% and a sampling error of 4.3%, obtaining in this way 500 citizens proportionally distributed in each district⁽¹³⁾.

Variables and instruments

The independent variable was knowledge and the dependent variable was attitudes. The survey was the technique used and the questionnaire as an instrument, the validation was carried out by two infectologists, a nurse and a methodologist, obtaining the values of Aiken's V of 98% and 99% respectively. The knowledge questionnaire was comprised of 34 items and reached a value of 0.861 with the calculation of Richardson's Kuder, which indicates that it is highly reliable. Likewise, the attitude questionnaire had 15 items and applying Cronbach's alpha obtained a result of 0.982. which indicates that the questionnaire has a high reliability⁽¹⁴⁾.

Procedure

The information was collected virtually, and after tabulating the data, the descriptive and inferential analysis was applied.

Statistical analysis.

The data was handled with the statistical program SPSS version 26. To measure both the level of knowledge and attitudes, it was done in a general way through frequency tables compared with age and sex. The hypothesis test was determined with the chi-square test and Odds Ratio in order to identify whether knowledge represents risk or protection with attitudes towards the COVID-19 vaccine.

Ethical aspects

The identity of all the people who have participated in this study has been kept, as well as the veracity of the results, prioritizing the concepts of good responsible conduct in research.





RESULTS

In Table 1, it can be seen that the majority (88%) of the inhabitants of the province of Trujillo have a good level of knowledge about the COVID-19 vaccine, specifically in the effectiveness and benefits it generates when it comes to its application, in the face of comments and rumors that exist in different media, they took the

initiative to be able to obtain adequate information from reliable sources, thus achieving the understanding that this vaccine is the best alternative to be able to combat the disease, with the population between 30 and 59 years old being the who have the best knowledge, and in Table 2, it is observed that it is women who have acquired the greatest knowledge about the vaccine.

Table 1. Level of knowledge about the COVID-19 vaccine in inhabitants by age in the province of Trujillo-La Libertad, 2021

Level	Age						General Result	
	From 18 to 29 years old		From 30 to 59 years old		From 60 to beyond		n°	%
	n°	%	n°	%	n°	%		
Bad	0	0%	0	0%	0	0%	0	0%
Regular	14	3%	38	8%	6	1%	58	12%
Good	127	25%	198	40%	17	3%	442	88%
Total	142	28%	338	68%	20	4%	500	100%

Source: Data obtained from the sample

Table 2. Level of knowledge about the COVID-19 vaccine in inhabitants by sex in the province of Trujillo-La Libertad, 2021

Level	Sex				General result	
	Male		Female		n°	%
	n°	%	n°	%		
Bad	0	0%	0	0%	0	0%
Regular	14	3%	43	9%	58	12%
Good	182	36%	260	52%	442	88%
Total	197	39%	303	61%	500	100%

Source: Data obtained from the sample





Below in Table 3, it can be seen that the majority (91%) of the inhabitants of the province of Trujillo have an adequate attitude towards the vaccine against COVID-19, this means that the people of Trujillo are willing to apply themselves. the vaccine after being adequately informed about its effectiveness,

which has generated security and responsibility in the fight against the pandemic, it is also observed that people between 30 and 59 years of age are the ones who are most willing to be vaccinated, and Table 4 shows that it is women who show a better attitude towards the vaccine.

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Table 3. Level of attitudes towards the COVID-19 vaccine in inhabitants by age in the province of Trujillo-La Libertad, 2021

Attitudes	Edad						General result	
	From 18 to 29 years old		From 30 to 59 years old		From 60 to beyond			
	n°	%	n°	%	n°	%	n°	%
Unsuitable	9	2%	32	6%	3	1%	43	9%
Suitable	133	27%	306	61%	7	1%	457	91%
Total	142	28%	338	68%	20	4%	500	100%

Source: Data obtained from the sample

Table 4. Level of attitudes towards the COVID-19 vaccine in inhabitants by sex of the province of Trujillo-La Libertad, 2021

Attitudes	Sex				General Result	
	Male		Female			
	n°	%	n°	%	n°	%
Unsuitable	6	1%	38	8%	43	9%
Suitable	190	38%	266	53%	457	91%
Total	196	39%	304	61%	500	100%

Source: Data obtained from the sample





Finally, in Table 5, it is shown that there is a significant relationship between the level of knowledge and attitudes towards the COVID-19 vaccine in the province of Trujillo ($p<0.05$), in addition, the good level of knowledge constitutes a factor of protection or advantage

(OR: 0.4303; CI: 0.2315-0.8053) for the appropriate attitude towards the vaccine, this means that as long as a person is dedicated to researching and learning about the vaccine, this generates a disposition to be able to accept being vaccinated.

Table 5. Relationship between the level of knowledge and attitudes towards the COVID-19 vaccine in inhabitants of the province of Trujillo-La Libertad, 2021

Level	Attitudes		Total	%	X2	Sig.	Odds ratio	I.C.
	Unsuitable	Suitable						
Regular	12	47	58	12%				
Good	31	411	442	88%	4,20	0,1	0,43	0,23- 0.81
Total	43	457	500	100%				

Source: Data obtained from the sample

DISCUSSION

The first results of this research show us that 88% of the Trujillo population have a good level of knowledge about the COVID-19 vaccine, this means that the information that exists about the different vaccines and their degree of effectiveness in generating antibodies against the disease, it was enough to generate the appropriate knowledge, only 12% of the population has regular knowledge, they have only been informed about one to two brands of vaccines (Pfizer and Sinopharm), not knowing the effectiveness and benefits of the others that have been distributed worldwide.

From these results it was also obtained that the population between 30 to 59 years and women are mostly those who have obtained greater knowledge about the vaccine. In this way, similarity is found with what was presented by Portero-Alonso et al⁽¹⁵⁾ where from a total of 212 adolescents (134 men and 78 women), 79.85% of the women stated that they have a high knowledge that the human papillomavirus vaccine serves to prevent cervical cancer, despite having false beliefs about the effectiveness of the vaccine. Likewise, in the study presented by Fecyt innovation⁽¹⁶⁾, it was

shown that in mid-2020 only a third of the Spanish population (32%) was willing to be vaccinated, this increased to 83% until January 2021, initially due to little knowledge they had about the effectiveness of the vaccine, gave weight to the belief that vaccines are not safe as well as a conspiratorial thought about them, as infections and information increased, this generated greater knowledge and therefore a better willingness to be vaccinated.

Regarding the second result, it has been found that 91% of the inhabitants of the city of Trujillo have an adequate attitude towards the COVID-19 vaccine, which means that the majority of Trujillo residents are willing to be vaccinated and thus being able to curb the mortality rate that has occurred throughout Peru, being the sixth in the world with the most deaths from this pathology. Like the first results, people between 30 and 59 years old and women are the ones who have shown the greatest willingness to be vaccinated. A study conducted by Ward, Alleaume and Peretti-Watel⁽¹⁷⁾, revealed that a quarter (7.9%) of French people refuse to be vaccinated against COVID 19, the main reason being distrust of the vaccination process by the French government, and





rushed vaccine development; while 16.1% of the population considers it probable to be vaccinated, compared to this, it is guaranteed that the majority (76%) of the French population is willing to be vaccinated, in the same way Fisher et al⁽¹⁸⁾. In a study carried out in the USA, it shows that 57.6% of American adults are willing to be vaccinated, 31.6% were not sure about being vaccinated, and 10.8% definitely would not be vaccinated. The most influential factors for not being willing to be vaccinated were educational level, race, young people under 25 years of age and those who did not receive the influenza vaccine the previous year, also stated that more information about the vaccine is necessary.

Finally, it has been determined that there is a relationship between the level of knowledge and attitudes towards the COVID-19 vaccine (p value < 0.05). Likewise, the level of knowledge represents a protection factor (OR: 0.43; CI: 0.2318-0.8053) for an adequate attitude towards the vaccine, which means that people who have a good level of knowledge about the vaccine have more likely to agree to be vaccinated than those who have a low level of knowledge about the vaccine. Similarly, Roozenbeek et al⁽¹⁹⁾. in their study carried out in five countries (USA, Spain, Ireland, Mexico

and the United Kingdom) maintain that the statement that the virus was made in a Wuhan laboratory is associated with a lower probability of accepting the vaccine (OR: 0.77; CI: 0.72-0.83) and recommending it to a family member and friend (OR: 0.72; CI: 0.67-0.78); In these countries, there was a great propensity to believe false news about the vaccine, which was associated with an inadequate attitude to get vaccinated.

These results are also similar to those of Ruiz et al. (20) where it was shown that there was a statistical dependence (p value < 0.05) between the perception of knowledge and types of attitudes towards COVID-19 by the inhabitants of the city of Huánuco.

In conclusion, the level of knowledge is significantly related to the attitudes towards the COVID-19 vaccine in the inhabitants of the province of Trujillo, which means that as long as they maintain a high level of knowledge, this will generate a greater willingness to get vaccinated, likewise having a good level of knowledge generates a protection factor to ensure that the population will decide to get vaccinated, this has been evidenced since the province of Trujillo is one of those that has been leading the vaccination day in Peru.

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