



ORIGINAL

Knowledge and attitudes about blood donation in residents of the Chigüilpe commune

Conocimientos y actitudes sobre la donación de sangre en moradores de la comuna Chigüilpe

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ABSTRACT

Introduction: blood transfusion is a procedure performed daily in health institutions to ensure clinical and surgical care. Every year, blood needs are greater than availability, which influences the scarcity of the resource. This research was conducted with the aim of describing knowledge and attitudes about blood donation.

Method: a cross-sectional observational study was conducted on 146 people from the Chigüilpe commune. A 19-question survey was used, divided into two dimensions: the first assesses sociodemographic data and the second information related to knowledge about donations. The instrument was applied in person and through an online form.

Results: males predominated over females (60,3 %), 37,7 % were between 45 and 60 years old, 65,8 % reported having donated blood at some point, 1,4 % reported not knowing the usefulness of donated blood, only 2,7 % considered donating to be harmful to health, and 81,5 % expressed their willingness to donate in the future. The main motivation for donating was that a family member or friend needed the blood (63 %).

Conclusions: the residents of the Chigüilpe commune showed a moderate general knowledge about blood donations, which became lower when dealing with specifics on the subject such as requirements. A positive attitude towards donation and a low percentage of erroneous beliefs were found.

Keywords: Blood Donation; Blood; Blood Banks.

RESUMEN

Introducción: la transfusión de sangre es un procedimiento que se realiza a diario en las instituciones de salud para garantizar cuidados clínicos y quirúrgicos. Cada año las necesidades de sange son superiores a la disponibilidad, esto incluye en la escasez del recurso. Se realizó la presente investigación con el objetivo de describir los conocimientos y actitudes sobre la donación de sangre.

Método: se realizó una investigación observacional de corte transversal en 146 personas de la comuna Chigüilpe. Se utilizó una encuesta de 19 preguntas, dividida en 2 dimensiones, la primera evalúa datos sociodemográficos y la segunda información relacionada a los conocimientos sobre las donaciones. El instrumento fue aplicado de forma presencial y a través de un formulario en línea.

Resultados: predominó el sexo masculino sobre el femenino (60,3 %), el 37,7 % se encontraba entre 45 y 60 años, un 65,8 % indicó haber donado sangre alguna vez, un 14,4 % señaló no conocer la utilidad de la sangre donada, solo un 2,7 % considera donar como una actividad perjudicial para la salud y el 81,5 % se manifestó en voluntad de donar en el futuro. La principal motivación a donar fue que la sangre fuera necesitada por un familiar o amigo (63 %).

Conclusiones: los moradores de la comuna Chigüilpe, demostraron un conocimiento general moderado sobre las donaciones de sangre, que se tornó más bajo al tratarse especificidades sobre el tema como los requisitos. Se encontró una actitud positiva frente a la donación y bajo porcentaje de creencias erróneas.

Palabras clave: Donación de Sangre; Sangre; Bancos de Sangre.

INTRODUCTION

Blood transfusion is one of the fundamental daily procedures in hospital centers to cover the blood deficit for various clinical and surgical conditions.⁽¹⁾

Blood donations are performed by qualified personnel from banks and institutions prepared for this activity. Blood banks are epidemiological surveillance units that, during the medical selection of the donor and the screening of infections through laboratory tests, identify individuals at risk of suffering or carrying a disease, in addition to taking care of other aspects of blood processing and storage.⁽²⁾

Every year, about 234 million complex surgeries requiring blood transfusions are performed worldwide for patients. Globally, an estimated 80 million units of blood were donated in 2021. Of these, 38 % are in developing countries.⁽³⁾

In Japan, blood donations are expected to decrease from 5 million 260 thousand in 2012 to 4 million 770 thousand in 2025 (9,3 %). It is estimated that 5 million 660 thousand donations will be needed in 2025. This represents 15,7 % of donations for that year, and the percentage is expected to double by 2050. The World Health Organization (WHO) specifies a minimum of 10 donations per 1,000 population. The rate per 1000 population is currently 31,5 donations in high-income countries, 15,9 in upper-middle-income countries, 6,8 in lower-middle-income countries, and 5 in low-income countries.⁽³⁾

According to experts, almost less than half of the Latin American population has donated blood for a family member, and very few have donated voluntarily. In Latin America, most people who die from lack of blood are mothers during childbirth because they suffer from hemorrhage.

In Ecuador, there are 20 blood banks nationwide, both public and private, that cover the needs of the entire national health system. According to Red Cross statistics, in Ecuador, only 1,4 % of the population donates blood. However, this does not mean that more donors are not needed; the idea is that there are permanent people willing to donate, and for this, it is necessary to create a culture of voluntary donation in society.⁽⁴⁾

The WHO states that people who proceed to donate their blood must lead healthy life habits; this ensures the quality of the blood products. Each pint of blood donated saves at least four lives and improves health. Among the main situations where blood transfusions are important are women with obstetric complications, children with severe anemia or malnutrition, people with severe trauma caused by natural or artificial disasters, and many patients undergoing complex surgical and medical interventions.⁽⁵⁾

Given the above, it was decided to carry out this research to describe the knowledge and attitudes about blood donation among the community of Chigüilpe, Santo Domingo residents.

METHOD

A descriptive, observational, cross-sectional, cross-sectional study was conducted during October and November 2021 on people who make up the Chigüilpe commune, located in Santo Domingo de los Tsáchilas, at kilometer 7 of the Vía a Quevedo left margin. The universe consisted of 300 inhabitants in the area, while the sample consisted of 146 participants selected using purposive sampling.

All residents of the community, between 18 and 45 years of age, of both sexes, who agreed to participate and did not present any disability or cognitive limitation, were considered.

Instrument used

A survey was used as an instrument, previously elaborated and validated by Morocho⁽⁶⁾ at the University of Cuenca, which was adapted to the population and objectives of this research.

The survey is oriented to determine the knowledge and attitudes about blood donation; it has 19 questions, which were divided into two dimensions and several sections; the first one collected sociodemographic data, and the second one collected information related to knowledge, motivations, attitudes, demotivation, beliefs, and myths about blood donation. The scoring was done through dichotomous questions (yes or no) and Likert⁽⁷⁾ - type scales with five response options.

After the initial survey was adapted, it was subjected to validation using expert judgment (Annex 1) and was presented to 3 professionals with different academic degrees.

Data collection

We went to the participants' homes, where we informed them of the objective of the research and whether they agreed or not, requesting their consent to participate, which helped us to determine how many members lived in each house and also allowed us to analyze the inclusion and exclusion criteria and then apply the questionnaire.

The households were initially visited to inform the dwellers about the research and its characteristics, requesting informed consent (Annex 2) from those who agreed to participate. This made it possible to identify the participants and their possibilities of conducting the survey in person or using information technology.

A form was prepared in Google Forms, with the content of the instrument, and then the link to access the form was sent via the WhatsApp instant messaging platform to those who had this means of communication;

in the case of the other people, they were surveyed in person at their place of residence. The form only allows to be completed with complete answer boxes. A brief instruction was given to all participants on the characteristics of the survey and the correct way to answer it by the authors.

In the case of the face-to-face surveys, the responses were checked to ensure that they were adequate so as not to invalidate the instruments applied. Then, the data were entered into the form by the authors of this research. In both digital and face-to-face cases, the questionnaire was filled out anonymously, so neither the printed instrument nor the form collected personal data that would allow the participants to be identified.

Statistical analysis and processing.

The results of the form were extracted from the web in the form of a Microsoft Excel spreadsheet for better analysis. The data were grouped using absolute and relative frequency tables, allowing a correct interpretation and contrast.

Regarding the ethical aspects, informed consent was requested, all participants were treated with respect, and the data collected did not allow for the identification of those who completed the surveys.

RESULTS

Table 1 shows how the male sex predominated over the female sex with 60,3 % of the total, as well as the participants who were married (69,9 %). The greatest number of patients were between 40 and 60 years of age, representing 37,7 %.

Table 1. Distribution of the sample according to age, sex and marital status

Age	Single				Married				Total	
	F		M		F		M		No.	%
	No.	%	No.	%	No.	%	No.	%		
18-29	11	7,5	16	11	8	5,5	5	3,4	40	27,4
29-39	2	1,4	3	2,1	13	8,9	13	8,9	31	21,2
40-60	1	0,7	5	3,4	16	11	33	22,6	55	37,7
Over 61 years of age	2	1,4	4	2,7	5	3,4	9	6,2	20	13,7
Total	16	11	28	19,2	42	28,8	60	41,1	146	100

Table 2 shows that 72,6 % (n=106) of the total number of participants had secondary education as their highest level of schooling. Only 2,7 % had some type of education beyond high school.

Table 2. Distribution of participants according to sex and schooling

Schooling	Female		Male		Total	
	No.	%	No.	%	No.	%
Primary	17	11,6	19	13	36	24,7
Secondary	40	27,4	66	45,2	106	72,6
Third Level	1	0,7	3	2,1	4	2,7
Total	58	39,7	88	60,3	146	100

Of the participants, 65,8 % indicated that they had donated blood at some time, 94,5 % considered donations important, and 14,4 % indicated that they did not know the usefulness of donated blood. More than half of the participants (51,4 %) indicated that they consider donated blood to be marketed. Ninety-four percent said that donated blood is tested before being distributed, and 91,1 % said they knew where to donate blood. On the other hand, only 2,7 % considered donating as an activity harmful to health, and 81,5 % expressed their willingness to donate in the future (table 3).

Table 3. Distribution of the population according to their general knowledge of blood donation

Item explored	Yes		No	
	No.	%	No.	%
Have you ever donated blood?	96	65,8	50	34,2
Do you consider it important to donate blood?	138	94,5	8	5,5
Do you know what donated blood is used for?	125	85,6	21	14,4
Do you believe that donated blood is commercialized?	75	51,4	71	48,6
Is donated blood tested before it is transfused?	132	90,4	14	9,6
Do you know where to go to donate blood?	133	91,1	13	8,9
Do you believe that donating blood is harmful to your health?	4	2,7	142	97,3
Would you donate blood voluntarily in the future?	119	81,5	27	18,5

Table 4 shows that 32,9 % of the population indicated that 18 years was the minimum age to donate, while more than half (54,8 %) expressed that they did not know. 72,6 % did not know the minimum weight required to donate blood, and 74,7 % did not know the period between donations.

Table 4. Distribution of the sample according to their knowledge of age, minimum weight and time between donations

Item explored	Ítem	No.	%
Minimum age to donate	15 years old	1	0,7
	16 years old	2	1,4
	18 years old	48	32,9
	Any age	15	10,3
	Don't know	80	54,8
Minimum weight to donate blood	50 kilos	18	12,3
	60 kilos	14	9,6
	More than 80 kilos	8	5,5
	Don't know	106	72,6
Time between donations	One month	1	0,7
	Three months	4	2,7
	Four months	11	7,5
	One year	21	14,4
	Not known	109	74,7

Of the total number of respondents, 63% considered that donating blood was very important because the blood was needed by a family member or friend, followed by 56,8 % who were motivated by the possible occurrence of a national catastrophe. The 24,7 % remained neutral and referred to having done it previously as a motivation. They considered advertising (22,6 %), having donated before (18,5 %), and having received information on how to proceed (22,3) as factors that were not important at all in motivating them to donate (table 5).

Table 5. Distribution of the 199 participants who expressed their willingness to donate blood according to their motivation

Item explored	Very important		Regularly important		Neutral		Not so important		Not important	
	No.	%	No.	%	No.	%	No.	%	No.	%
National disaster	83	56,8	23	15,8	6	4,1	7	4,8	0	0
Sick family member or friend	92	63	24	16,4	3	2,1	0	0	0	0
Publicity	1	0,7	18	12,3	35	24	32	21,9	33	22,6
Previous donation	11	7,5	14	9,6	36	24,7	31	21,2	27	18,5
Information about the donation	12	8,2	19	13	26	17,8	28	19,2	34	23,3

Table 6 shows that among the 2,7 % of the total number of participants who considered donating to be harmful to health, weight gain (2,7 %), contagion of some disease (2,7 %) and not having enough (2,7 %) stand out as very important causes. As not so important causes, anemia, loss of vision and not having sufficient quantity stand out with 0,7 %.

Table 6. Distribution of the 4 participants who indicated that donating blood is harmful according to their reasons

Item explored	Very important		Regularly important		Neutral		Not so important		Not important	
	No.	%	No.	%	No.	%	No.	%	No.	%
Weight gain	4	2,7	0	0	0	0	0	0	0	0
Weight loss	0	0	0	0	2	1,4	2	1,4	0	0
Anemia	0	0	1	0,7	2	1,4	1	0,7	0	0
Loss of vision	0	0	0	0	2	1,4	1	0,7	1	0,7
Contagion of any disease	3	2,1	1	0,7	0	0	0	0	0	0
Not having enough	3	2,1	0	0	0	0	1	0,7	0	0

DISCUSSION

Having safe blood means minimizing the risk of disease transmission to patients. With the advance of technology, the risks have diminished notably due to the analysis tests to which the donated blood is subjected.⁽⁸⁾

According to Castelo, Morales, Mena, Parcon & Cueva⁽⁹⁾ in their research carried out in the city of Santo Domingo de los Tsáchilas, they found that 23 % of 384 people surveyed had donated blood at some stage in their lives, which is very low, given the scarcity of this vital liquid in blood banks and hospitals.

Ochoa Ortega et al. stratified the levels of knowledge about donation, finding a regular level in terms of topics related to voluntary donation (48,7 %); in addition, the level of general knowledge on the subject was classified as regular with 40,3 %.² Something similar to that published by Santisteban and Osada; in their research, they show an average of correct answers of 8,9 out of 21 questions, for a low level of knowledge.⁽¹⁰⁾

Attempts to identify knowledge on the subject in students such as that of Fernandez Mamani,⁽¹¹⁾ in Bolivia, the study obtained a percentage of (45,7 %) of failures, which are students who failed to answer correctly (50 %) of the basic questions, determining a low level of knowledge in certain topics related to blood donation.

On the other hand, Almeyda Alcántara et al.,⁽⁸⁾ found correct answers on blood donation in general in more than 50 % of the respondents, similar to Bravo Mendoza and Briones Bermeo,⁽¹²⁾ who found a high level of knowledge.

The association between the level of knowledge about blood donation and the number of donors determines that these low levels reported in the literature indicate a low culture and willingness to donate. This demonstrates the need for educational interventions to reverse the lack of knowledge on the subject and encourage donation through health promotion.

In their study, Pandey P and collaborators⁽¹³⁾ stated that the main reason identified for people not donating blood was that it was not easy for them to do so. Ochoa Ortega et al.,⁽²⁾ in their study on the knowledge of suitable people who were not incorporated as donors, found that the main cause was fear of puncture (61,4 %), followed by lack of knowledge of the donation procedure (27,6 %). Other frequent causes in the population available in the literature are the possibility of catching a disease and believing that donation causes weight gain.⁽¹⁴⁾ These results are similar to those found in the present study.

These problems are repeated in the available research; for example, Espinoza,⁽¹⁵⁾ found medical problems to be the main cause among those surveyed. Others cite very important reasons: poor health, lack of confidence in the sterility of the material, and lack of knowledge about how to donate.⁽¹²⁾

Lack of knowledge generally constitutes the main cause of fears and irrational beliefs on certain issues. Although blood donation indeed involves risks, these are minimal, representing a significantly low percentage; furthermore, the characteristics of the procedure itself and the requirements for its performance facilitate an adequate response to possible events that may occur.

In Almeyda Alcántara's research, 90 % said they would donate blood in the future, and 57,8 % indicated that receiving information about the procedure would motivate them to donate blood.

In a study carried out at the Central University of Ecuador published by Jiménez et al.⁽¹⁶⁾, the attitude of the population surveyed corresponds to 92,1 % expressing a positive attitude towards blood donation in the future. This data differs from those reported by Vasquez⁽¹⁷⁾, who mentions that 63 % did not have a good attitude, and only 37 % were positive.

The low willingness to donate and, therefore, the low availability of blood units constitutes an international problem where the daily management of serious patients demands this therapy. However, many institutions need a resource supply, limiting adequate emergency management responses.

The research by Cárdenas,⁽¹⁸⁾ details that almost 80 % of the participants would help by donating their blood for a sick relative or friend. This data coincides with that found by Bravo Mendoza and Briones Bermeo and with the present study, where 94 % expressed that they would donate out of necessity for a family member or friend.⁽¹²⁾

Among the main limitations of the present study is that no association was analyzed between factors present in the population and the willingness to donate; it is an observational study. However, a post-research intervention could have been carried out to improve the level of knowledge of the population on the subject.

CONCLUSIONS

The inhabitants of the Chigüilpe commune showed a moderate general knowledge about blood donations, which became lower when dealing with specifics such as the requirements. There was a positive attitude towards donation and a low percentage of mistaken beliefs.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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ANNEXES

Annex 1

ADVENTIST TECHNOLOGICAL INSTITUTE OF ECUADOR

QUESTIONNAIRE TO ASSESS THE KNOWLEDGE AND ATTITUDES OF THE RESIDENTS OF THE CHIGUILPE COMMUNITY ABOUT BLOOD DONATION, SANTO DOMINGO 2021.

Instructions: The following questionnaire is totally ANONYMOUS and CONFIDENTIAL; remember that, for a better result, it is necessary that your answer is with total SINCERITY. Consider that there are no right or wrong answers but answer based on what you know. Mark with an X the answer you think is correct. There is only one answer to each question.

Sex:

- Male
- Female.

Age:

- 18 -28 years old
- 29 - 39 years old
- 40 - 60 years old
- 61 years or older

Religion:

- Catholic.
- Evangelical.
- Jehovah's Witness.
- Other. Specify which. _____.

Level of education:

- Primary.
- Secondary.
- Third level.
- Fourth level.

Marital Status:

- Single.
- Married.

Have you ever donated blood??

- Yes.
- No.

Do you consider it important to donate blood?

- Yes.
- No.

Do you know what donated blood is used for?

- Yes.
- No.

What is the minimum age to donate?

- 15 years old.
- 18 years old.
- Any age.
- Do not know.

What is the minimum weight to donate?

- 50 kg.
- 60 kg.
- over 80 kg.

Do not know.

How much time should elapse between one blood donation and the next?

One month.

Three months.

One year.

Do not know.

Do you believe that donated blood is being marketed?

Yes.

No.

Is the blood tested before transfusion?

Yes.

No.

Do you know where to go to donate?

Yes.

No.

Would you donate blood voluntarily in the future?

Yes.

No.

Only if your answer above is "Yes", please rate the following reasons for which you would donate Blood:

Motivations	Very important	Regularly important	Neutral	Not so important	It is not at all
A national catastrophe					
For a sick family member or friend.					
By advertising on TV, radio or newspaper.					
For having donated before					
If you receive information about the donation					
If I could donate at the nearest health center					

Do you believe that donating is harmful to your health?

Yes.

No.

Only if your answer above is "Yes", please rate the following reasons for which you would donate Blood:

Motivations	Very important	Regularly important	Neutral	Not so important	It is not at all
Weight gain					
Weight loss					
Anemia					
Loss of vision					
Contagion of a disease					
Not having sufficient sufficient amount of blood					

Annex 2. Informed Consent

**ADVENTIST TECHNOLOGICAL INSTITUTE OF ECUADOR
QUESTIONNAIRE TO ASSESS THE KNOWLEDGE AND ATTITUDES OF THE RESIDENTS OF THE CHIGUILPE
COMMUNITY ABOUT BLOOD DONATION, SANTO DOMINGO 2021.**

After receiving information about the motives and objectives of this research, do you agree to participate by filling out an anonymous survey, which will take you no more than 15 minutes to complete?

If you agree, please sign your signature to express your agreement:

Name and surname: _____.

Firm: _____.