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# KNOWLEDGE AND ATTITUDES ABOUT ORGAN DONATION IN STUDENTS OF HEALTH SCIENCES FROM A NATIONAL UNIVERSITY OF LAMBAYEQUE - 2019

CONOCIMIENTOS Y ACTITUDES SOBRE DONACIÓN DE ÓRGANOS EN ESTUDIANTES DE CIENCIAS DE SALUD EN UNA UNIVERSIDAD NACIONAL DE LAMBAYEQUE. 2019

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## ABSTRACT

**Objective:** Determine the level of knowledge and attitudes about organ donation and xenotransplantation in students of a National University of Lambayeque. **Methods:** The sampling carried out was probabilistic of a simple random type and the sample was made up of 100 university students. An observational, descriptive and cross-sectional study was conducted to assess levels of knowledge and attitudes about organ donation. A survey of 20 dichotomous key questions was applied. **Results:** 53 women (53.0%) and 47 (47.0%) men were interviewed. It was observed that 76% do not know about the Law on the Promotion of Solidarity Donation of Human Organs and Tissues in Peru. Likewise, 96% know the organs and tissues that can be donated, 61% of the students have talked about the subject of organ donation with their family. 76% would be willing to donate their organs or tissues after life, and 88% would donate their relatives' organs to save the life of another relative's. **Conclusions:** In the Faculty of Biological Sciences of the University it was observed that the knowledge of young people about organ donation was acceptable, although certain aspects need to be clarified.

**Key words:** Knowledge; Attitudes; Organ Donation; Xenografts (source: MeSH NLM).

## RESUMEN

**Objetivo:** Determinar el nivel de conocimientos y actitudes sobre la donación de órganos y xenotrasplante en estudiantes de una Universidad Nacional de Lambayeque. **Métodos:** El muestreo realizado fue probabilístico de tipo aleatorio simple y la muestra estuvo conformada por 100 estudiantes Universitarios. Se realizó un estudio observacional, descriptivo y transversal para evaluar los niveles de conocimiento y actitudes sobre la donación de órganos. Se aplicó una encuesta de 20 preguntas tipo clave dicotómica. **Resultados:** Se entrevistaron a 53 mujeres (53,0%) y 47 (47,0%) hombres. Se observó que el 76% no conocen sobre la Ley de Promoción de Donación Solidaria de Órganos y Tejidos Humanos en el Perú. Así mismo el 96% conocen los órganos y tejidos que se pueden donar, el 61% de los estudiantes han conversado sobre el tema de donación de órganos con su familia. El 76% estaría dispuesto a donar sus órganos o tejidos después de la vida, y el 88% donaría los órganos de sus familiares para salvar la vida de otro familiar. **Conclusiones:** En la Facultad de Ciencias Biológicas de la Universidad se observó que los conocimientos de los jóvenes sobre la donación de órganos fueron aceptables, aunque ciertos aspectos deben ser aclarados.

**Palabras clave:** Conocimientos; Actitudes; Donación de órganos; Xenoinjertos (fuente: DeCS BIREME).

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## INTRODUCTION

World Blood Donor Day is celebrated around the world every June 14th. There are organizations such as the National Organization for Donation and Transplantation that promote donation and transplantation of organ and tissue. Blood donation chains three obligations, donate, receive and return, donors are an example of what it means to live in community<sup>(1,2)</sup>. Only a small group of citizens in Peru participate continuously as blood donors<sup>(3)</sup>. In order for a country to obtain the blood it needs, between 1% and 3% of the population must regularly donate blood, which is why the World Health Organization (WHO) encourages all countries to create systems of regular voluntary donations<sup>(4)</sup>. Moreover, in recent years, the level of blood donation in the world has been decreasing<sup>(5)</sup>.

There is a marked disproportion between blood donation rates and the number of patients awaiting transplantation. This requires a study to observe clinical and educational factors<sup>(6)</sup>. The latter factor should improve the level of knowledge and attitude about the concepts of organ donation and brain death. However, it should be taken into account that university students of Health Sciences also require a clear understanding of the subject matter, which depends on the level of training acquired during their professional career. Therefore, it is necessary to evaluate this level and identify whether there is any misinformation that could negatively influence in the support for organ donation campaigns.

Likewise, in the Faculty of Biological Sciences of the National University, there are students with different opinions regarding organ donation. For example, "I am not sure about donating organs because of fear", "if my mother needed a donation of any organ, I would give her mine", "all people who die by accident should donate". In addition, these students of Health Sciences have direct contact with patients who present many pathologies, and this could be related to the willingness of these students to be or not to be donors, or to consent to the donation of a relative in the case of the death of the latter. Thus, it is necessary to update university curricula, train specialist teachers and implement blood bank laboratories for the training of students of Health Sciences.

As mentioned above, there are few people willing to donate their organs in Peru. In view of this problem, the objective was formulated to determine the levels of knowledge and attitudes about organ donation

in students of the Faculty of Biological Sciences of the Universidad Nacional Pedro Ruiz Gallo, in Lambayeque, Peru.

## METHODS

### Design and area of study

The present study is observational, descriptive and cross-sectional, conducted in students of Health Sciences of the Faculty of Biological Sciences, of the Universidad Nacional Pedro Ruiz Gallo (UNPRG), Lambayeque-Peru during the first academic semester of 2019, between November 2018 to May 2019.

### Population and Sample

For the study, all students enrolled during the 2019 academic semester, who have signed the informed consent were considered. The sample size was calculated based on a total population of 215 students. The initial sample size was 138 students, but 38 were excluded, leaving as final sample 100 students, distributed in different academic cycles of the Faculty of Biological Sciences (FCCBB).

### Variables and instruments

The variables measured were the levels of knowledge and attitudes about organ and xenograft donation, the instrument used was a questionnaire consisting of 20 dichotomous key type questions, and that some of these questions were extracted from other sources<sup>(7-9)</sup>, and that was submitted to expert judgment, consisting of 3 specialists: 3 biologists-microbiologists/parasitologists, (1) Teacher with doctoral degree responsible for the Clinical Analysis Area of the UNPRG, (1) Ms (c). Microbiologist responsible for the Microbiology and Immunology Laboratories USMP-FN and (1) Teacher with a master's degree from the Hospital Regional Docente las Mercedes of Chiclayo responsible for the Microbiology Laboratory.

### Procedure

The sample selection was probabilistic of simple random type, this was obtained from records of students enrolled in the academic cycle 2019-I, where students taking the subjects of Biology 2 (second cycle), General Ecology (third cycle), Forensic Biology (seventh cycle), Quality Control (eighth cycle) and Analysis by instruments (ninth cycle), subjects taught by the researcher, were selected. The survey was applied in a face-to-face manner during extracurricular hours, after the end of academic



classes and not during exam time in 2019.

**Statistical analysis**

The data were analyzed in Microsoft Excel 2010 database and presented in tables, in which frequencies and percentages were presented.

**Ethical aspects**

Only the authorization of the dean and head of the Research Unit of the FCCBB - UNPRG was obtained to develop the questionnaire, the confidentiality of the

identity of the participants was guaranteed through the management of individual codes. Likewise, students signed an informed consent form and Belmont's ethical principles were put into practice.

**RESULTS**

A total of 100 university students of Health Sciences were interviewed, 53% of whom were female; 74% of the participants were in the age group from 19 to 21 years old (Table 1).

**Table 1.** Socio-demographic characteristics of the students of Health Sciences from a National University of Lambayeque.

Sociodemographic variables	N	%
<b>Gender</b>		
Male	47	47
Female	53	53
<b>Age group</b>		
From 19 to 21	74	74
From 22 to 24	26	26
<b>Total</b>	100	100

After analyzing the surveys, the following results were obtained: It was observed that 21% of the 100 students surveyed from the School of Biological Sciences know about the Law for the Promotion of Solidarity Donation of Human Organs and Tissues in Peru. Likewise, 96% are aware of the organs and tissues that can be donated; 28% have known relatives and friends who have needed or received an organ or tissue transplant. It was also observed that 50% of the parents have an opinion about organ

donation; 61% of the students have talked about organ donation with their family. Also 94% know about brain death; 67% know that organs and tissues from different ethnic groups or opposite sexes can be donated; 21% know about the definition of xenograft. However, it was also found that 8% of parents know about xenografting; and that 11% of society is prepared to face these new advances in medicine. (Table 2).

**Table 2.** Knowledge about organ donation and xenografts in students of Health Sciences from a National University of Lambayeque.

Knowledge about Organ and Xenograft Donation	Yes %	No %	Doubt %
Have you heard about the Project for the Promotion of Solidarity Donation of Human Organs and Tissues in Peru?	21	76	3
Did you know that organs (liver, heart, kidney, lung, intestines) and tissues (bone marrow, bones, eye tissue, heart valves) can be donated?	96	4	0
Have you known among your family or friends someone who has needed or received an organ or tissue transplant?	28	62	10
Do you know your parents' opinion about organ donation?	50	33	7
Have you discussed organ donation with your family?	61	38	1
Have you ever heard of brain death?	94	6	0
Did you know that organs and tissues from different ethnic groups or opposite sexes can be donated?	67	28	5

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Did you know that a Xenotransplantation is the transplantation of animal organs (Pig, Goat, Monkey) to human recipients?	21	73	6
Do you know your parents' opinion about xenotransplantation?	8	91	1
Do you think that today's society is prepared to face these new advances in medicine (Xenotransplantation) in a normal way?	11	68	21

On the other hand, with regard to the attitudes of the students, the following results were obtained: 76% of the 100 students surveyed from the Faculty of Biological Sciences would be willing to donate their organs or tissues after their lifetime; 88% would donate the organs of their relatives to save the life of another relative; 94% would donate a kidney to their parents or siblings; 76% would receive an organ from relatives or friends. It was also observed

that 59% would agree that their identity document should specify which organ to donate; 78% would accept a treatment with cells of animal origin for the treatment of their diabetes. Forty-two percent would provisionally accept an animal organ despite the risks involved; 44% would undergo a second intervention to remove the animal organ and replace it with a human one. However, it was also found that 57% would accept porcine heart valves (Table 3).

**Table 3.** Attitudes about organ and xenograft donation in students of Health Sciences from a National University of Lambayeque.

Knowledge about Organ and Xenograft Donation	Yes	No	Doubt
	%	%	%
Would you be willing to donate your organs or tissues after life?	76	4	20
If you had to decide, would you donate the organs or tissues of a relative (parents or siblings) after life to save the life of another relative (parents or siblings)?	88	2	10
If your parents or siblings needed a kidney transplant; would you donate to them?	94	1	5
Would you accept the organ (kidney) you need from one of your relatives (parents or siblings) or friends during your lifetime?	76	9	15
Would you agree to specify on the National Identity Card which organ to donate?	59	34	7
If your parents had Diabetes and this could be cured with cells of animal origin, would you accept such treatment?	78	2	20
If you were seriously ill and needed an organ for transplant and it did not appear, would you provisionally accept an animal organ until a human organ appeared, even though it represents greater risks?	42	23	35
If you were given an animal organ, while waiting for a human organ to appear; and this animal organ works well in your organism, would you submit to a second intervention to remove the animal organ and replace it for the human one?	44	19	37
Pig heart valves have long been used to replace diseased human valves. If you or a family member had a heart valve, would you accept a porcine heart valve?	57	9	34

## DISCUSSION

In this investigation, it was observed that the population in subject from the Faculty of Biology showed a positive attitude towards organ or tissue donation after life, which is similar to the results obtained in another investigation where 86% of

the total number of health personnel surveyed showed favorable attitudes towards organ donation. However, there were also negative attitudes, where 14% did not support organ donation for fear of not receiving medical attention, for belonging to different religions, for the inappropriate use of



extracted organs or for organ trafficking. This shows that well-trained health sciences personnel and students show interest in the subject treated, which can have a greater positive impact on the attitude of the population towards donation, as well as organ procurement in medical institutions<sup>(10)</sup>. According to several studies, some religions present contrary attitudes towards organ donation, although no religion opposes this act of generosity that can save the lives of their neighbors and their own family members<sup>(11-14)</sup>.

In this study, it was also observed that health sciences students presented favorable attitudes about accepting an organ donation during the lifetime, which is similar to the results obtained in another study in which 26 transplant professionals participated and mentioned that making transplantation during the lifetime offers benefits for the donor and recipient. However, several factors have a negative impact on the transplantation area, such as the lack of resources for the purchase of equipment, reagents, and for the hiring of new trained personnel, as well as conflicts with other health professionals<sup>(15)</sup>. Therefore, it is necessary to increase economic resources in hospitals and universities in order to incorporate specialists in the management of organ donation, and also to insert new curricula in the university sector.

The research carried out showed a negative level of knowledge about the Law for the Promotion of Solidarity Donation of Human Organs and Tissues in Peru (Table 2), which was in agreement with another similar study that reported 113 health professionals, where only 21.7% were aware of Law 7409 on "Authorization to transplant human organs and anatomical materials". This possibly reflects the fact that health personnel and university students have little knowledge on the subject. This could even cause a deficiency in potential organ donors in students. Favorable attitudes about organ or tissue donation after death were also observed in this study, which is similar to the same study where 94.6% of the population in subject was found to be willing to donate their organs at the time of death<sup>(16)</sup>.

In this study, it was observed that the students decided in favor of donation at the moment of issuing their National Identity Card (Table 3); this differs from the population of Lima, which asks if they wish to participate in organ donation, and the

answer is usually negative on their National Identity Card<sup>(17)</sup>. There are positive attitudes towards organ donation, but sometimes there is no document that confirms this willingness or a negative response is observed in the identity document. This problem is attributed to a lack of adherence to the procedure on the part of the official from the Registro Nacional de Identificación y Estado Civil (RENIEC)<sup>(18)</sup>. Therefore, we recommend the inclusion of programs on organ donation, which could improve the level of knowledge of the personnel and of the people who come to process their National Identity Card for the first time, who are mostly young people.

Based on our results, we can say that it was shown a favorable level of knowledge about brain death to students from the School of Biology (Table 2), which is similar to the results obtained from the School of Medicine where they obtained favorable results about brain death<sup>(19)</sup>. But both investigations differ from the research of other authors where 326 surveys were applied to schools of medicine, nursing, pharmacy, psychology and where it was observed that 26.3% have a wrong knowledge about brain death and 44.8% of the student population does not distinguish between brain death and neurovegetative state<sup>(20,21)</sup>. However, there are worrying misconceptions about brain death. Therefore, there is an urgent need to carry out local evaluations and to incorporate appropriate educational programs in schools and universities.

The study has limitations in the first place, the instrument has not been completely validated, so there could be an information bias. Secondly, a selection bias was observed, due to the presence of students who did not respond because they belonged to different religions, leaving out of the study those people who could be of greater interest to evaluate.

## CONCLUSIONS

It was found that knowledge about organ donation in young people is good. For this reason, if values such as altruism or solidarity are encouraged and knowledge on the subject is increased, donor attitudes could increase in the future and could ensure the supply of organ donation in the population in need. Finally, it is urgent that the media spread adequate information on the subject and renew policies against the buying and selling of organs.

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