

**KNOWLEDGE AND POSITIONING OF TEENAGERS ABOUT ORGAN  
DONATION BEFORE AND AFTER AN EDUCATIONAL ACTION****CONHECIMENTOS E POSICIONAMENTOS DE ADOLESCENTES SOBRE  
DOAÇÃO DE ÓRGÃOS ANTES E APÓS UMA AÇÃO EDUCATIVA****CONOCIMIENTO Y POSICIONES DE ADOLESCENTES SOBRE DONACIÓN DE  
ÓRGANOS ANTES Y DESPUÉS DE ACTIVIDAD EDUCATIVA**

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**ABSTRACT**

**Objective:** To analyze the perception of teenagers about organ donation and transplantation before and after an educational activity. **Method:** descriptive, exploratory research with quantitative and qualitative approach, based on Action Research. The study included 45 high school students from a private school in Belém-Pa. We applied a questionnaire before and after an educational intervention with subsequent comparative analysis of responses. **Results:** ages ranged from 13 to 17 years, the majority 26 (57.8%) were female, Catholic 33 (73.3%). There was a significant increase in appropriate responses, confirming that health education promotes knowledge and enlightenment, awakening interest in the subject and discussion in the social environment. **Conclusion:** health education is a great ally in promoting organ donation. After the action there was an increase in knowledge of the rate on the subject, decrease in doubts and changes in positioning, where most wished to be a donor.

**Keywords:** Tissue and organ procurement; Health education; Teenagers.

**RESUMO**

**Objetivo:** analisar o conhecimento dos adolescentes sobre doação e transplante de órgãos antes e após uma ação educativa. **Método:** pesquisa descritiva, exploratória com abordagem quanti-qualitativa, alicerçada na Pesquisa-Ação. Participaram do estudo 45 adolescentes do ensino médio de uma escola privada de Belém-Pa. Foi aplicado um questionário antes e após uma intervenção educativa, com posterior análise comparativa das respostas. **Resultados:** a idade variou de 13 a 17 anos, a maioria 26 (57,8%) do gênero feminino, católicos 33 (73,3%). Houve aumento significativo das respostas adequadas, confirmando que a educação em saúde promove o conhecimento e esclarecimento, despertando o interesse pelo assunto e discussão no meio social. **Conclusão:** a educação em saúde é uma grande aliada na promoção de doação de órgãos e tecidos. Após a ação, houve o aumento

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nível de conhecimento, diminuição nas dúvidas existentes e mudanças no posicionamento, optando a maioria em ser doador e consentir a doação.

**Descritores:** Obtenção de tecidos e órgãos; Educação em saúde; Adolescentes.

## RESUMEN

Objetivo: analizar la percepción de los adolescentes sobre donación y transplante de órganos antes y después de una acción educativa. Método: estudio descriptivo, exploratorio, cuantitativo y cualitativo, basado en la investigación-acción. El estudio incluyó a 45 estudiantes de la escuela secundaria de una escuela privada en Belém-Pa. Se aplicó un cuestionario antes y después de una intervención educativa con posterior análisis comparativo de las respuestas. Resultados: la edad varió de 13 a 17 años, la mayoría (57,8%) eran mujeres, católica (73,3%). Hubo un aumento significativo en las respuestas adecuadas, lo que confirma que la educación en salud promueve el conocimiento. Conclusión: la educación en salud es un gran aliado en la promoción de donación de órganos y tejidos. Después de la acción, hubo un nivel de aumento de los conocimientos, la disminución de las dudas y los cambios en el posicionamiento, la elección de los más en ser un donante.

**Descritores:** Obtención de tejidos y órganos; Educación en salud; Adolescentes.

## INTRODUCTION

Transplantation is the partial or total withdrawal of a body structure or organ and its implant in the same person or another one. It is described as a procedure that provides rehabilitation and increase of life expectancy, currently recognized as an effective therapy in several chronic and disabling conditions.<sup>1</sup>

However, even though it is an extremely efficient procedure for the control of terminal failures of some organs and failure of some tissues, the disproportion of the number of waiting list patients versus the number of transplants is an unquestionable fact.<sup>2</sup>

In Brazil, there are two types of donors of organs and tissues: living donors that refers to the healthy individual and willing to donate one of the peer organs or part of them, and donors corpses or

deceased. To be considered a postmortem donor, the individual should be diagnosed with brain death or have a recent cardiorespiratory arrest from which some organs, especially the kidneys, can be removed or even have a diagnosis of late cardiorespiratory arrest in up to 6 hours, and only tissues can be donated.<sup>2</sup>

Brain death is a state in which interruption of brain function occurs, in which the causal factor is recognized and is considered irreversible. The American Neurology Association (AAN) defined brain death based on three cardinal signs, which are brain absent, including brainstem, coma, and apnea. This situation is an essential condition for the post-mortem extraction of organs and tissues for transplants, and this process is regulated by Brazilian Law No. 9,434 / 97, which provides for the removal of organs, tissues

and parts of the human body for transplantation purposes.<sup>3</sup>

The process of capturing organs and tissues for transplantation takes place in at least eight stages, the first being the identification of the potential donor (PD), secondly the notification to the Central of Notification and Distribution of Organs and Tissues (CNDOT); The third step concerns the evaluation of the potential donor based on his / her clinical history, social and organ viability; In the fourth stage, the CNDOT informs the National Transplant Center of the data of the potential donor; The fifth step is the Ranking of possible recipients, according to their registration and compatibility with the donor; The sixth step is the contact with the transplantation team, informing about the existence of a donor and the possible receiving individual; Seventh stage deals with the extraction of the organs and tissues in the hospital, pick up and implantation in the recipient; And last step refers to the delivery of the body of the donor, to the family.<sup>4</sup>

The family is the one who authorizes the donation of organs and tissues for transplantation. Law No. 10,211, published on March 23th, 2001, defined informed consent as a form of manifestation to the donation, and the withdrawal of organs, tissues and parts of the body of persons deceased for transplantation or other

therapeutic purpose will depend on the donor's authorization. Spouse or relative, of legal age, obeyed the line of succession, straight or collateral, up to the second degree, even signed in a document signed by two witnesses present at the death verification.<sup>5,6</sup>

However, family refusal represents a major obstacle to transplantation, and is also one of the major factors responsible for the scarcity of organs and tissues for transplantation. This fact is closely related to the low level of knowledge of individuals in the family group about the understanding of the concept of brain death, as well as the understanding of the process of organ and tissue donation.<sup>7</sup>

It is true that the mass media are the main archetypes of information dissemination on the issue of donation of organs and tissues, enabling information for the community at large. However, a study carried out in Spain concluded that this information from the media often transfers distorted information, impregnated with prejudices and myths, that does not change the view of individuals.<sup>8</sup>

Health education is understood as an important aspect related to learning, designed to achieve health, aimed at serving society in accordance with reality, provoking reflections on individuals, creating opportunities for them, thinking

and rethinking their culture, and transforming your reality. Among the groups that deserve special attention in health education nowadays are the adolescents, who in the last decades have become the target of studies and began to receive more attention in terms of health due to the physical, psychic and social changes inherent in the Phase, which are configured in a framework of vulnerability to both social and health problems.<sup>9</sup>

Adolescents, being people between 12 and 19 years of age, in an intense process of biopsychological and social reformulation, deserve to be highlighted in the donation of organs, since they may be future donors. They experience adaptations to bodily changes, including changes in the sexuality aspect, which lead to crises of anguish expressed in behaviors, often poorly understood; Can perceive their finitude as non-existent, denying or defying death by exposing themselves to danger.<sup>10</sup>

This study does not aim to exhaust the theme, but to serve as a trigger, fostering reflections on the theme, building a theoretical basis with the potential to subsidize future actions such as clarification campaigns in schools, clinics and hospitals, providing information Clear and concise information about the basic concepts that involve the process of organ and tissue donation and transplantation.

In view of this, we seek to foster reflections on health education as a tool to sensitize adolescents to the importance of the process of donating organs and tissues for transplantation, so that they can get knowledge of the topic and can also share in their social environment promoting the dissemination And interest in the matter, especially among relatives, which is the decision at the time of authorizing the donation. Thus, the objective of this study was to analyze the adolescents' knowledge about organ donation and transplantation before and after an educational action.

## **METHODS**

A descriptive, exploratory research with a quantitative-qualitative approach, based on Action Research, considering the population of basic education students of a private institution of early childhood education in Belém Pará. All freshman students were invited to participate in the research. As criterion of inclusion was considered the student is in the 1st year of high school (freshman), of both genders, morning and afternoon shifts. Of the 80 students, 56.3% (45) accepted to participate in the research.

A brief meeting was held with the students in the classroom, explaining the methodology and objectives of the research. After clarifying the doubts about the study, the Consent Form was given with the appropriate guidelines to be

analyzed and signed by the parents / legal guardians and the Term of Assent (TA) to be signed by the students.

A structured questionnaire was used with open and closed questions, built by the researchers to reach the objectives of the study and applied in loco before and after the educational action, from February to March 2015. Participated in the collection of data, nursing undergraduates Of the University of the State of Pará (UEPA), previously trained for the application of the research instrument.

After the questionnaire was obtained and after signing the consent form and the term of assent, the participants answered the questions in a handwritten form, in a time of 60 minutes. The questionnaire was self-administered and presented in three parts: Part 1 - Biographical data: age, gender, religion, naturalness, means of information and housing (with whom resided); Part 2 - Specific questions regarding knowledge about the topic: a) What is brain death? B) What is a potential donor of organs and tissues? C) Which organs and tissues can be donated by a deceased donor? And Part 3 - Placement questions: a) Would you authorize your family to donate your organs after your death? Yes or No. Why? B) Would you authorize the donation of organs and tissues of a relative (mother, father, siblings, uncle, others) for transplantation?

Yes or No. Why? C) Has the subject already been talked about in your house? If yes, how was it?

The educational action was carried out by a Teaching Nurse and member of the Organ Procurement Organization (OPO) of a reference center of the State. It was a dialogical explanation, in a language of easy comprehension, highlighting the main doubts and errors of the answers of the first questionnaire, as well as concepts and importance of the theme. At the end of the explanation, which lasted an average of 1 hour and 30 minutes, the students dialogued with each other and with the Nurse, asking questions, exposing questions and socializing experiences. After the educational action, participants were given a new questionnaire, with the same questions as the first one.

After data collection, we followed the comparative analysis of the responses before and after the educational action. Statistical processing was performed using software GrafTable version 2.0 and BioEstat version 5.3. The Chi-square test of adhesion was performed. For the analysis of the qualitative information, the descriptive analysis was used, the lines being represented by alpha numerical codes with the following denominations: "Student 1", "Student 2" ... respectively. The research was carried out in accordance with the presuppositions that regulate

research involving human beings contained in the Resolution nº 466/2012 of the National Health Council.

The study was approved by the Research Ethics Committee of the Nursing Undergraduate Program at the University of the State of Pará (UEPA), CAAE: 39511514.7.0000.5170, opinion number: 923.382, with prior authorization from the institution and subsequent signature of the Consent Form and Term of Assent by the research participants.

## **RESULTS**

### **PART 1: BIOGRAPHICAL DATA**

The age ranged from 13 to 17 years, the majority (51.1%) with a 14-year age

group. Most of the participants 26 (57.8%) were female, 33 were Catholic (73.3%), and all were from the state of Pará 45 (100%). The main means of information used was Internet 24 (53.3%). With regard to housing, the majority of adolescents reported residing with parents / siblings 39 (86.7%) according to Table 1.

**Table 1:** Biographical Data of n=45 teenagers. Belém/PA, year 2015.

Sample characterization	N	%	p-value
<b>Age</b>			<0.0001*
13 years	1	2.2	
14 years	23	51.1	
15 years	19	42.2	
16 years	1	2.2	
17 years	1	2.2	
<b>Gender</b>			0.3711
Male	19	42.2	
Female	26	57.8	
<b>Religion</b>			<0.0001*
Agnostic	1	2.2	
Atheist	1	2.2	
Buddhist	1	2.2	
Catholic	33	73.3	
Evangelical	7	15.6	
Mormon	1	2.2	
None	1	2.2	
<b>Naturalness</b>			n/a
Paraense	45	100.0	
<b>Means of information</b>			<0.0001*
Internet*	24	53.3	
Newspaper	1	2.2	
Television	6	13.3	
TV and Internet	7	15.6	
TV and Newspaper	1	2.2	
TV, Newspaper and	4	8.9	
Others	2	4.4	
<b>Who you live wityh</b>			<0.0001*
Grandparents	6	13.3	
Father, Mother, siblings	39	86.7	

Source: Field Research, 2015. \*Chi-square.

## PART 2: QUESTIONS ABOUT KNOWLEDGE

Knowledge analysis was performed at three levels, applied before and after the intervention: In question 1 (Q1) there was an increase in adequate responses (from 60% to 82.2%) with p-value <0.0001 \*. In Question 2 (Q2) there was an increase in

the appropriate responses (from 0% to 37.8%) with p-value <0.0001 \*. In question 3 (Q3) there was an increase in adequate responses (from 33.3% to 71.1%) with p-value <0.0001 \* which are statistically significant (Table 2).

**Table 2:** Knowledge Analysis of n=45 teenagers. Belém/PA, year 2015.

Knowledge analysis	Classification of responses			p-value
	Proper	Partial	Inadequate	
<b>Q1- What is brain death?</b>				<b>0.0011*</b>
Before	27 60.0%	7 15.6%	11 24.4%	
After	37 82.2%*	2 4.4%	6 13.3%	
<b>Q2 – What is a potential donor of organs and tissues?</b>				<b>&lt;0.0001*</b>
Before	0 0.0%	6 13.3%	39 86.7%	
After	17 37.8%*	10 22.2%	18 40.0%	
<b>Q3 - What organs and tissues can be donated by a cadaver donor?</b>				<b>&lt;0.0001*</b>
Before	15 33.3%	20 44.4%	10 22.2%	
After	32 71.1%*	9 20.0%	4 8.9%	

Source: Field Research, 2015.

#### \* Qui-square of adhesion

When questioned about the concept of brain death, 60% of adolescents presented adequate answers before health education, and a significant portion (82.2%) after the educational action correctly answered that brain death occurs when the brain no longer functions, but the heart and lungs may still be working.

Regarding the concept of potential donor, no one answered adequately, with the majority 86.7% with inadequate responses before health education. However, after the action there was a 37.8% increase in adequate responses, showing the relevance of investing in health education aimed at clarifying the theme.

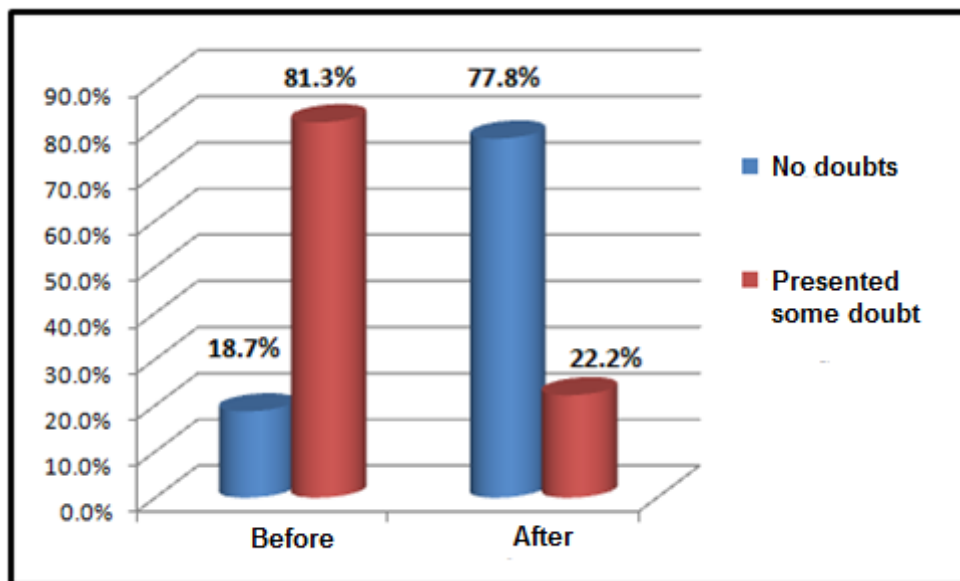
When adolescents were asked which organs could be donated, only 33.3% responded adequately. After education, there was a significant increase to 71.1%. Such an increase is attributed to the education carried out, where it was approached the amount of organs that an individual in brain death can donate.

#### QUESTIONS ABOUTS DOUBTS

Before the intervention, 81.3% of the adolescents had some doubts, among them the most frequent was about the donation process of organs and tissues (24.4%). After the intervention, 77.8% did not present any doubts (Graph 1).



**Graph 1:** Doubts before and after health education. Belém/PA, year 2015.



Source: Field Research, 2015.

### PART 3: QUESTIONS ABOUT POSITIONING

There was an increase from 73.3% to 86.7% when asked if they would donate their organs after their death. And from 68.9% to 75.6% when asked if they would consent to the donation of organs from a relative, showing that most of the participants are in favor of the donation.

Before health education: [...] *I would not give because I feel like something was taken from me, although dead, the idea seems a little frightening to me* (STUDENT 43); After health education: *Donate because organ donation helps those in need and need some organ* (STUDENT 43).

Before health education: *I would not donate my organs, because I would not feel well knowing that I was buried without organs* (STUDENT 44); After health education: *I*

*would donate, because after I died I will not need it so it is better to donate* (STUDENT 44).

When authorizing the donation of organs of a family member, there was also an increase in consent after the educational action. However, what attracted our attention were the responses of those who would not authorize, being justified in most of the answers because they did not know the family member's will, as can be seen in the following statements: [...] *This would be the decision of each one!* (STUDENT 21); *Only if they wanted to!* (STUDENT 27); *Only if it is by their choice!* (STUDENT 31).

When asked if they had talked about the topic of donation and organ transplantation with the family, the result remained unchanged before and after education, where only 24.4% had discussed the matter with family members.

### DISCUSSION

The percentage of Catholics was 73%. These data corroborate statistical data on the profile of the Brazilian population of the Brazilian Institute of Geography and Statistics (IBGE)<sup>11</sup>, which in turn shows that 64.6% of the Brazilian population declared themselves Catholic, the second highest percentage being evangelicals (22%).

In literature there seems to be a tendency that religion is undoubtedly an important factor that interferes with people's opinion about organ and tissue donation for transplants. However, this depends on the doctrine pertaining to each religious belief that differ from one another. It is emphasized that no religion is totally contrary to the donation of organs and tissues for the purpose of transplantation. The religion is Jehovah's Witnesses, who opposes only the blood donation. It is worth noting that although most religions are favorable to the donation process, religiousness is still a determinant factor in decision making, considering the belief of the family member in the occurrence of a miracle with the return to the patient's life<sup>12</sup>

Thus, we observed that although the religion of the PD or the relative of the PD is decisive in influencing decision-making, what we observe, however, is that almost the entire sample is composed of participants who have a religion favorable

to the process of donation and transplantation. We reiterate that however much religion may present itself as an important factor, it does not constitute an obstacle to family consent.<sup>13</sup>

In relation to housing, the majority (86.7%) of adolescents reside with parents, grandparents and siblings. Importantly, we can infer that most of the opinions, beliefs and values expressed by students can also portray the conceptions of family members.

Several factors besides the lack of knowledge interfere in the non-concretization of the donation, such as cultural and religious diversity.<sup>14</sup> The family plays a fundamental role in the stage of growth and development of the adolescent, propitiating the balance of the individual, since it is the first link of Interrelationship with their social environment, as well as guiding the values and moral principles that adolescents will follow throughout their lives, even if they can reformulate some inherited family precepts.<sup>10</sup>

In most cases, the shortage of organs for transplantation is attributed to the lack of information of the population and to the failures in the Unified Health System (SUS) in the process of organ harvesting. However, this lack is also due to other factors, among them, cultural problems, the delay in the diagnosis of ME and the

refusal of the family member.<sup>15</sup> Data from the Brazilian Association of Organ Transplants (ABTO)<sup>16</sup> indicate that 44% of donations that do not Are enforced if the family's refusal is due.

The main means of obtaining information was to the internet. What is observed is the growing interest of the media in presenting to society the issue of organ and tissue transplantation. However, most of the time it occurs to the transmission of information in newscasts in an exaggerated and sensational way to the detriment of the lack of explanatory programs on the subject, little helping in the elimination of myths, which contributes negatively to the process.<sup>17</sup>

In this sense, it is observed that although the advertisements existing in the television aim to stimulate the donation, they are insufficient for the explanations of doubts. With regard to the internet, it is an important means of communication, considering the range of information on the subject, but we undoubtedly recognize that the individual approach through educational actions is more receptive to the construction of opinions, considering the possibility of Feedback occurs, that is, feedback to individuals, with the possibility of withdrawing doubts and clarifications.

A study with nursing undergraduate students showed that 41% of the

interviewees did not have access to information about the subject, the others claimed to obtain knowledge through television, which is an important means of mass information transfer.<sup>18</sup> Although television reaches a Large population contingent, studies show that adolescents prefer to receive information in the disciplines of curriculum design, especially in the curricular component of biology, as well as dissemination strategies such as pamphlets or other informative materials.<sup>19</sup>

A study carried out with 108 high school students from the public and private network of Gurupi-TO, showed that the disclosure about organ and tissue donation for transplantation is still insufficient among adolescents.<sup>19</sup>

With regard to knowledge about brain death, potential donor and organs that can be donated, a statistically significant increase in appropriate responses was observed after the educational action, which confirms that health education serves as promotion of knowledge and clarification, Making individuals obtain more information, arousing interest in the subject and discussion in their social environment. Satisfactory result, since, we believe that it is of the utmost importance that society understands what is brain encephalic and is clarified about the process of donation and transplantation, so that the doubt or lack of knowledge about

the subject does not interfere negatively in the moment of consent Or not a donation.

The concept of brain death is one of the most complex and controversial subjects.<sup>10</sup> Thus, it is important to emphasize the importance of society receiving accurate information and passing it on to the younger generations.<sup>9</sup> However, research on educational programs In high school showed that the subject in question is not part of school activities, corroborating the need for information to be transmitted through the insertion of content in curriculum designs.<sup>20</sup>

About the concept of potential donor, none of teenager responded adequately, before health education. However, after the action there was a 37.8% increase in adequate responses, showing the relevance of investing in health education aimed at clarifying the theme.

Regarding the organs and tissues that can be donated and the maximum time of extracorporeal preservation respectively are: corneas up to 7 days, heart and lungs from 4 to 6 hours, kidneys up to 48 hours, liver and pancreas from 12 to 24 hours, and bones up to 5 years.<sup>2</sup>

When asked if they would donate their organs after their death, and would consent to the donation of organs of a relative. The reasons they are favorable are variable, the main ones being to help

others and save lives. The main reason for not giving was not having thought about it.

Given this, we understand that education transforms people and their attitudes, because it brings knowledge, new visions, able to modify behaviors. It is evident that after the action the adolescents acquired critical and reflexive thinking, denoting the capacity to make decisions, exercising their autonomy.

With regard to authorizing the donation of organs from a family member, there was also an increase in consent after the educational action. However what attracted our attention were the answers of those who would not authorize, being justified in most of the answers because they did not know the will of the family member. For this reason it is of crucial importance to the previous discussion about the subject in the family context, so that the individual expresses in life his desire or not to be a donor, since the will is his, but the decision is of the family.

Regarding the previous discussion of the matter with the relatives, when asked if they had already talked about the topic of donation and organ transplantation with the family, the result continued the same before and after the educational action. This fact deserves to be highlighted, given that, even if the majority of adolescents are in favor of donating their organs, they do not express this desire for their families,

which reduces the probability of giving consent.

About the impact of educational interventions on the positioning of adolescents in organ and tissue donation, it is explicit that health education can prove to be an effective instrument in this context, allowing the exchange between scientific and popular knowledge, not only encouraging the search by knowledge, but also arousing interest in the topic and discussion in the social and family environment.

We think that the result was satisfactory, emphasizing that health education is the main means of disseminating information and enlightening doubts. It is believed that through the dissemination of knowledge and a greater degree of enlightenment, it becomes possible to change the reality of the numbers of donations in Brazil.<sup>14</sup>

## CONCLUSION

The results contemplated the positive hypothesis suggested during the construction of the research project, confirming that health education is a great ally in the promotion of organ and tissue donation. After the health action, there was an increase in the level of knowledge about the subject, a decrease in the existing doubts and changes in the positioning, opting the majority to be a donor and to consent to the donation.

Some conceptions have emerged, such as the altruistic desire to save lives through the donation of organs and tissues. However, doubts and insecurities have revealed themselves as feelings that may interfere with the decision-making process. We hope that the fears and taboos will minimize, allowing the desire to exercise solidarity, so emphasized by the respondents, to be realized in practice, reducing the waiting time and suffering of those who depend on the donation.

The information conveyed by the mass media has not been sufficient or efficient to modify behavior, but instead reinforces the popular imaginary full of myths, beliefs and disinformation about the activity related to the processes that involve the donation of organs and tissues. In the meantime, educational intervention is an opportunity for the exchange of experiences between subjects, allowing them access to information and exchanges of personal experiences, often fraught with conflicts and difficulties that interfere in the choice of donating or not the organs of a loved one.

Considering the data found in this study, the need to establish planned and delineated programs within a continuous educational process, aimed at all

segments of society, including within the context of basic education, is visualized.

The family discussion about the topic is deficient, and it is necessary to encourage people willing to donate, to share this decision with their relatives. Society needs to understand that the donation depends solely on family authorization, favoring the growth of the number of transplants and, consequently, increasing the survival of patients waiting in the transplant queues.

In spite of the relevance of this theme, it is worth noting that the present study was developed in only one basic education institution in the city of Belém, State of Pará, which may represent the limitation for inferences from these perspectives in other levels of health care. However, this research may contribute relevant information to the knowledge and analysis of educational practices as a great ally in promoting organ and tissue donation for transplantation.

Due to the social importance of donating organs and tissues, we believe that strategies for both professionals and society in general can contribute to the survival of thousands of patients waiting in line for a transplant. We recommend that the theme be included in the curricular designs of the undergraduate courses, to train professionals trained and

prepared to deal with the social demands, and with the questions and doubts of the community in which they are inserted, opening space for discussion and elaboration of new studies.

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