

# Teenagers' knowledge about blood donation

Conhecimento de adolescentes sobre a doação de sangue

Conocimientos de los adolescentes sobre la donación de sangre

## RESUMO

Objetivou-se conhecer e avaliar o perfil de adolescentes do ensino médio sobre a doação de sangue. Trata-se de um estudo transversal, com abordagem quantitativa, realizado em uma instituição de educação pública localizada em município no interior de Mato Grosso, na Amazônia Brasileira. Participaram da pesquisa 114 adolescentes com idade entre 15 e 19 anos. A coleta aconteceu em 2023 por meio de um questionário. A análise estatística foi feita no programa EpiInfo. A maioria dos adolescentes era do sexo feminino (57,9%); a prevalência de idade foi de 17 anos; sendo que somente 8 desses já fizeram a doação de sangue. O principal motivo citado para a falta de interesse pela doação foi a escassez de incentivo (69%), medo de passar mal durante a doação, além dos mitos e tabus perpetrado culturalmente. Em relação ao conhecimento, de forma geral, os resultados mostraram lacunas entre os adolescentes sob vários aspectos relacionados ao processo de doação de sangue, sendo a falta de apoio dos responsáveis legais, estilo de vida estressante, correria do dia a dia, divergência de interesse entre os pais e os adolescentes. Percebe-se a necessidade de trazer a abordagem dessa temática para as instituições de ensino, a fim de instigar a solidariedade sobre o assunto.

**DESCRIPTORIOS:** Doadores de Sangue; Conhecimento; Adolescentes.

## ABSTRACT

The objective was to understand and evaluate the profile of high school adolescents regarding blood donation. This is a cross-sectional study, with a quantitative approach, carried out in a public education institution located in a municipality in the interior of Mato Grosso, in the Brazilian Amazon. 114 teenagers aged between 15 and 19 participated in the research. Collection took place in 2023 through a questionnaire. Statistical analysis was performed using the EpiInfo program. The majority of adolescents were female (57.9%); the age prevalence was 17 years; only 8 of these have already donated blood. The main reason cited for the lack of interest in donating was the lack of incentive (69%), fear of getting sick during the donation, in addition to culturally perpetrated myths and taboos. Regarding knowledge, in general, the results showed gaps among adolescents in several aspects related to the blood donation process, such as lack of support from legal guardians, stressful lifestyle, day-to-day rush, divergence of interest between parents and teenagers. There is a perceived need to bring this topic to educational institutions, in order to instigate solidarity on the subject.

**DESCRIPTORS:** Blood Donors; Knowledge; Teenagers.

## RESUMEN

El objetivo fue comprender y evaluar el perfil de los adolescentes de secundaria respecto a la donación de sangre. Se trata de un estudio transversal, con enfoque cuantitativo, realizado en una institución de educación pública ubicada en un municipio del interior de Mato Grosso, en la Amazonía brasileña. En la investigación participaron 114 adolescentes de entre 15 y 19 años. La recogida se realizó en 2023 mediante un cuestionario. El análisis estadístico se realizó mediante el programa EpiInfo. La mayoría de los adolescentes eran mujeres (57,9%); la prevalencia de edad fue de 17 años; sólo 8 de ellos ya han donado sangre. La principal razón citada para la falta de interés en donar fue la falta de incentivo (69%), el miedo a enfermarse durante la donación, además de mitos y tabúes perpetrados culturalmente. En cuanto al conocimiento, en general, los resultados mostraron lagunas entre los adolescentes en varios aspectos relacionados al proceso de donación de sangre, como falta de apoyo de los tutores legales, estilo de vida estresante, prisas del día a día, divergencia de intereses entre padres y adolescentes. Se percibe la necesidad de llevar este tema a las instituciones educativas para instigar la solidaridad al respecto.

**PALABRAS CLAVE:** Donantes de Sangre; Conocimiento; Adolescentes.

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# Artigo Quantitativo EN

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## INTRODUCTION

Science has advanced exorbitantly in recent times and made several discoveries in the area of health, but when a person needs a blood transfusion, they can only count on the solidarity of other people. <sup>1</sup> It is essential to raise awareness among the population, however, fear due to myths has been rooted for a long time and will only be overcome through education, not, and only, education carried out by health professionals in school environments, but mainly, education, carried out by education professionals, who in their professional practice, promote the culture of blood donation.

In Brazil, there is no data available on how many people die or suffer some type of damage to their health due to the lack of blood donation. It is estimated that, for every thousand inhabitants, 16 are blood donors in the country. The percentage corresponds to 1.6% of the Brazilian population, and is within the parameters recommended by the World Health Organization (WHO), which recommends that 1 to 3% of the population be donors. <sup>3</sup> However, it is estimated that Brazil needs

more than 5,000 bags of blood daily and, to meet this demand, it needs a much larger number of donors. <sup>4</sup>

Since 2011, the Ministry of Health in Brazil has reduced the minimum age required to apply for blood donation, now including teenagers aged 16 and 17, provided that they have formal consent from their legal guardian for each donation. <sup>5</sup> Health and education professionals must take into account the biological changes that occur during adolescence and encourage attitudes that could contribute to the loyalty of blood donors even at this stage.

The school is a space intended for socio-educational training capable of contributing significantly to the training of subjects, in a full, integral and healthy way. <sup>6</sup> In this sense, it can be said that raising awareness of blood donor loyalty during adolescence may have greater importance in the future, as it is at this stage that behavior and maturity as an individual is undergoing social development. It is noteworthy that education and knowledge have a great contribution to the profile of blood donors, and to attract new blood donors, it is necessary to provide information in a strategic way that promotes awareness among the adolescent population.

Ordinance No. 1,353 of the Ministry of Health adopts some definitions to clarify the differences between the types of donors and donations. <sup>5</sup> The donation can be: Autologous donation/self-donation: donation by the patient for their exclusive use, especially in the case of previously scheduled surgery; Replacement donation: when the donation comes from the individual who donates to meet a patient's need, made by people motivated by the service itself, family or friends of the blood recipients to replenish the hemotherapy service's stock; Spontaneous donation: when it is made by motivated people resulting from an act of altruism. <sup>7</sup>

Given this contextualization, as a nursing student, I felt encouraged to unveil the universe of solidarity in blood donation, as well as the myths and taboos that distance people from the blood center. The initiative to pioneer blood donation among teenagers was ongoing day and night thinking about strategies for attracting donors, given the constant low in stock at the blood center and the intense campaigns carried out by local media. In this scenario, the objective was to understand and evaluate the profile of high school students, as well as the possible obstacles that hinder blood

donation among teenagers.

## METHOD

This is a cross-sectional, exploratory, descriptive study with a quantitative approach, among students attending high school at a school in the central sector, located in a city in the interior of Mato Grosso, in the central-western region of Brazil. All students were duly enrolled and provided their parents or guardian with an informed consent form to authorize participation in the research.

The methodological basis of action research was sought, as it is aimed at raising awareness among students through health education, which facilitates the development of students, making them agents of their own transformation through the solidarity expressed through donation of blood. Action research facilitates the researcher's involvement in participatory practice with those being researched, through participant observation and interaction established between the population involved.<sup>8</sup>

Data collection was duly authorized by the school management and was coordinated by a Professor from the Federal University of Mato Grosso and responsible for the extension project "Doe Sangue, doe vida (Donate blood, donate life)!" and assisted by nursing students, as well as a Biology teacher who worked at the school. After meeting the researched population, the DOE SANGUE DOE VIDA project team met with all high school students to experience the moment of interaction and raise awareness, so that they can become voluntary blood donors through transformative education.

As a criterion, adolescents of both genders, aged between 15 and 18 years old, were included in the study. A descriptive questionnaire was applied with the aim of evaluating students' knowledge about blood donation. Data collection was carried out in the classroom, with 114 students in the second semester of 2023, through the application of a semi-structured questionnaire containing objective questions,

which addressed blood donation.

After data collection, the questionnaires were organized, numbered and tabulated in the Epi Info software, version 3.5.1. The analysis was descriptive and the results are presented in tables. Approved by the Human Research Ethics Committee of the Federal University of Mato Grosso, under number CAAE: 65604317.2.0000.5587

and protocol nº 2.062.048, respecting Resolution nº466/12 of the National Health Council (CNS).

## RESULTS

At this stage, the main results of the study carried out with adolescents will be presented.

Table 1 - Distribution of the sociodemographic profile of adolescents who participated in the research, Mato Grosso, Brazil (n=114) 2024.

SOCIODEMOGRAPHIC ASPECTS	N	%
<b>Gender</b>		
Male	48	42,1
Female	66	57,9
<b>Age</b>		
15	16	14,0
16	32	28,1
17	50	43,9
18	11	9,6
19	2	4,4
<b>Ano escolar</b>		
First	32	28,1
Second	47	41,2
Third	35	30,7

Source: Nogueira G D, 2024

The research took place with a sample of 114 high school students, with the prevalence of age being 17 years old (43.9%) and (57.9%) belonging to the female gender, 87% are single, and only eight (8) of these have already donated blood. A study carried out in 2015 on potential blood donors in an awareness and fundraising campaign in Sergipe showed that 65.2% were female.<sup>9</sup>

In this context, another study with 331 high school students on Intention to donate blood in schools in Uberaba/MG, aged 15 to 18 years old, with 72.21% being be-

tween 16 and 17 years old, a phase of adolescence that allows blood donation. However, when asked if they had already donated, they demonstrated that only 3.6% of those surveyed donated blood, however, at the end of the extension actions, it was possible to identify that 84.6% showed interest in becoming donors. Due to myths and taboos, there is a gap between the intention to be a donor and the practice of solidarity in saving lives through blood donation.

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Table 2 - Factors that determine blood donation, midwest region, Mato Grosso, Brazil, (n=114) 2024.

VARIABLES	N	%
<b>Does the information resolve doubts?</b>		
Yes	30	26,3%
No	84	73,7%
<b>Can people between 16 and 17 years old donate blood?</b>		
Yes	63	55,3%
No	18	15,8%
Do not know	33	28,9%
<b>Have you been encouraged to donate blood?</b>		
Yes	35	31%
No	79	69%
<b>Do you have relatives who donate blood?</b>		
Yes	44	38,6%
No	70	61,4%
<b>Do you know where the blood bank is?</b>		
Yes	31	27,2%
No	83	72,8%
<b>Menstruating women can donate blood?</b>		
Yes	36	31,6%
No	18	15,8%
Do not know	60	52,6%
<b>Is there a bill on exemption from the ENEM registration fee?</b>		
Yes	5	4,4%
No	109	95,6%

Source: IRHC (2023).

Of the population surveyed, 28.9% responded that they did not know whether teenagers aged 16 and 17 could be blood donors and 73.7% responded that the information transmitted to the population does not resolve doubts about donating blood.

In order to attract new donors or future donors to be possible, hemotherapy services must seek to diversify strategies to increase adherence, including programs in schools, as such an environment is the ideal context for knowledge-promoting practices to be developed. 11

These barriers will only be overcome

through education, not, and only, education carried out by health professionals in school environments, but mainly, education carried out by education professionals, who in their professional practice, promote blood donation. 2

Of the sample, 72.8% responded that they did not know where the blood bank is, in view of this, 69% said that they were never encouraged to be blood donors, it is noteworthy that 61.4% claimed that they do not have relatives who donate blood. Regarding the promotion of voluntary donation in the art of attracting blood donors in the Brazilian reality, it is not easy, or even

simple. The purpose of capturing this is to make this habit of voluntary donation part of the customs, of the life agenda of Brazilians and transmitted from generation to generation, as occurs in first world countries. 12

Until the 90s, the main incentive for donating blood was through receiving cash, however, as time passed in Brazil, this thought was modified, thus changing the motivation in cash for solidarity and humanization without involving any remuneration in the process. 13

The first Federal Law that provides an incentive for blood donation was Law No. 1,075, (1950), in which voluntary blood donation is encouraged, benefiting public, civil, government or military workers, the right to be released from work on the day of donation. 14 In this sense, the decision process to be a potential blood donor may be associated with cultural issues, being an individual process, and may be encouraged by parents, friends and teachers. 15

From the questionnaire, 52.6% responded that they did not know whether women during menstruation could donate blood. Research carried out with 82 nursing students from the Araguaia University Campus, found a similar result that 61% do not know if menstruating women can donate blood. 16

It is emphasized that menstruating women can donate blood normally during their menstrual period, except if they have symptoms of premenstrual tension, hematocrit below the value recommended by the Ministry of Health, as well as that after donating blood the bleeding flow will not decrease. According to RDC n° 153 of 2004, menstruation does not contraindicate blood donation, however, if the woman presents diseases related to menstruation, she must be evaluated by the blood center doctor and, if necessary, he can refer her to a hematologist. 16

This study showed that 95.6% said they were unaware of the bill that fights for exemption from the ENEM registration fee, proposed as an incentive for teenagers attending public schools. Brazil brings initiatives for young blood donors, highligh-

ting that some states have laws that provide exemptions from 100 to 50% of benefits upon entry into some environments, and in

Maranhão, regular blood donors have the right to half-price. in cultural, sporting and leisure events, held in public places 17, in

accordance with Law 9,496.

Table 3 - Myths and taboos about blood donation, midwest region, Mato Grosso, Brazil, (n=114) 2024.

MITOS E TABUS	SIM		NÃO	
	N	%	N	%
Myths and taboos about blood donation, midwest region, Mato Grosso, Brazil, (n=114) 2024.	27	23,7%	87	76,3%
Fear of getting sick	22	19,3%	92	80,7%
Fear of thinning the blood	10	8,7%	104	91,3%
Contract diseases	7	6,1%	107	93,9%

Source: Nogueira G D, 2024

Of those interviewed, 23.7% said they were afraid of needles, which is a problem since the only way to do this is to remove the blood from the donor. Regarding the fear of feeling pain during the procedure, 31.7% completely agree and 48.5% partially agree. 18 Therefore, there is a need to eliminate the myths surrounding blood donation and many people choose not to do so because they believe in them. 19

This research also showed that 19.3% responded that they were afraid of getting sick. In this context, research in the State of Pará, with 52,932 donors, 20 254 reactions were identified, representing a total of 0.4%, including: Lipothymia, skin pallor, fainting, convulsion, nausea, vomiting, hypotension and hematoma. It is noteworthy that among nursing care intrinsically related to the low incidence of adverse reactions is the young donor and/or first-time donor remaining in the donation chair for 15 minutes after completion of the collection.

Complementing this subject, a study published in 2011 highlighted that 30.7% of 232 of its sample studied in the municipality of Quixadá in the state of Ceará, cited fear as a reason for not donating, confirming the taboos that exist in the blood donation process. , even in the case of students in the health field.21

Contributing to this scenario, it is highlighted that the human body is capable of naturally recovering the volume of donated blood, providing a new donation within the protocol time interval. 5 The volume of blood collected is based on the donor's weight and height, averaging 8mL/kg, with approximately 450 ml being collected, compatible with the amount of anticoagulant in the bag. Furthermore, the body replaces the entire liquid volume of donated blood in the first 24 hours after donation and on average of 72 hours the other elements (salts, proteins, vitamins) especially when the donor is well hydrated and fed, which can reach 4 weeks for iron replacement. 22

Of those interviewed, 8.7% believe that donating blood can thin the blood and 34.2% mentioned that there are changes in the body after donation. A factor that is combined with the population's lack of knowledge, awareness and awareness are the myths surrounding donation. One of them suggests that the donor's blood will "get thinner" after donation, indicating the emergence of a possible health problem. 23 The replacement of donated blood is supplied by the bone marrow, so if the body is healthy, it will release enough blood cells to replace

what was donated.23.

Among those interviewed, 6.1% believe that there are dangers in contracting diseases through blood donation. According to CBR No. 34, of June 11, 2014, which provides for good practices in the blood cycle, it requires that all materials and supplies that come into direct contact with the donor are sterile, non-pyrogenic and disposable.24 It should be added that to help promote acceptance of blood donations, firstly when the candidate enters the collection room they must wash the brachial fossa thoroughly, to avoid any type of contamination.

It is known that blood donation faces many barriers, with the population's lack of knowledge being one of the main ones. Furthermore, there are myths that influence the decision to donate or not, such as: thickening or thinning the blood, gaining weight or losing weight, and mainly the biggest factor is fear: fear of pain, of the needle prick, feeling ill, being forced to always donate, or even contracting an infection. 25

The understanding of feeling unwell during or after donation may be directly related to insufficient information or even due to the understanding and behavior of the basic recommendations for donating blood. Among the most common discomforts reported and found in the literature



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at the time of donation are: dizziness, fainting, dry mouth, nausea, vomiting, blurred vision, feeling of weakness, paleness and arterial hypotension; After donation, some of these symptoms may remain or there may be bruising or pain at the site of the venipuncture.

Brazilian culture has been adverse to

voluntary, habitual and spontaneous blood donation as a result of myths, prejudices and socially ingrained taboos, a sociocultural context resulting from numerous and interconnected factors that permeate the evolution of blood policy and its implementation in the country. 1

Therefore, it is necessary to dissemi-

nate knowledge to the population so that they become aware of the reality regarding blood donation, so that this false information, which ends up being disseminated among the population, stops interfering with the desire and initiative to donate blood. 13

Tabela 4 - Conhecimento de adolescentes sobre doação de sangue. Região centro-oeste, Mato Grosso, Brasil, (n=114) 2024.

GENERAL KNOWLEDGE	SIM		NÃO	
	N	%	N	%
Nunca me interessei pelo assunto	26	22,8%	88	77,2%
Salvar vidas	106	93%	8	7%

Source: Nogueira G D, 2024

In this survey of teenagers, it was identified that 72.2% mentioned never having been interested in the subject, but 93% said they recognized the importance of donating blood in saving lives. Therefore, it is necessary to plan and develop pedagogical activities that encourage the population to reflect, acquire knowledge and information that minimize fears, doubts and insecurities about donating blood, and strengthen the conscious desire to participate actively. 12

It can be said that the lack of interest in donating blood is relevant, but the population studied recognized that donating blood saves lives. More than the desire for humanistic help, people are expressing an awareness of civic duty, a sense of co-responsibility for collective health. We can therefore consider that the preponderant knowledge about the importance of habitual blood donation lies in the guarantee of "saving lives". 1

## CONSIDERAÇÃO FINAL

It is concluded that there is a low percentage of donors in the sample of adolescents studied. Even though the law allowing

teenagers between 16 and 17 years old to donate blood was implemented more than 10 years ago, the data shows low initiative from them, as well as elements that distance them from the blood center.

It is considered that the lack of effective information, fear, myths and taboos were the main findings in the research that interfere with adolescents' adherence to blood donation. Given this context, the results awaken the need for strategies to bring transformative knowledge, therefore sensitizing adolescents to contribute to the supply of blood bank stocks.

Also noteworthy, as an obstacle to the adhesion of people between 16 and 17 years old, is the lack of interest, encouragement and support from legal guardians. However, for people under 18 years of age, donating blood must have a consent form signed by their father, mother or legal guardian, and also their presence. Faced with a stressful lifestyle, day-to-day rush, divergence of interests and lack of affection, many families are unable to be a good example of citizenship for their children, as they do not have time to express love to others through blood donation.

In view of the evidence, health and education professionals need to establish permanent practices regarding the culture of blood donation to create loyal blood donors in the future. It is necessary to provide content that raises awareness and implants concepts in society that involve the solidarity of blood donation, and thus create knowledge in order to dispel myths and taboos that make it impossible to attract donors.

It should be noted that lack of knowledge, lack of encouragement and consistent dissemination about blood donation is a transgenerational phenomenon that needs to be interrupted. The need to (re)think about opening hours at the blood center stands out, as well as establishing a calendar to carry out external collections in partnership with colleges, companies, churches, the army and other institutions that have a large number of adolescents.

But first of all, it is necessary for the blood center teams to instigate and sensitize adolescents and young people, taking into account aspects of local culture, in order to devise strategies for adhering to

blood donation. Detail in detail the benefits and advantages of becoming a loyal blood donor during adolescence, pointing out the difference between donation out of solidarity and emotions experienced when a friend needs blood as a result of an accident or emergency surgery.

Blood center professionals can work by training directors, coordinators and teachers on the basic requirements for donation. It is important to highlight that the

content is passed on in a fun way, using scavenger hunts, educational games and dynamics to deconstruct obstacles that prevent or distance the population from blood banks.

It is believed that the action research methodology used provided adolescents with a reflective dialogue. Initially, he surveyed the main factors that prevent blood donation and subsequently brought the participation of subjects through transfor-

mative praxis. It was associated with the needs to keep the blood bank's stock supplied, as well as dispel myths and taboos from the social imagination and encourage the loyalty of future blood donors.

## REFERÊNCIAS

- 1 - Moura AS, Moreira CT, Machado CA, Vasconcelos NJA, Machado MF. Doador de sangue habitual e fidelizado: fatores motivacionais de adesão ao programa - doi:10.5020/18061230.2006. p61. Rev Bras Promoc Saúde [Internet]. 4 de janeiro de 2012 [citado 2024 Jan 10];19(2):61-7. Disponível em: <https://ojs.unifor.br/RBPS/article/view/963>
- 2 - Paiva PHR. Elaboração e validação de material audiovisual para conscientização de doadores de sangue [dissertation]. Ribeirão Preto: University of São Paulo, Faculdade de Medicina de Ribeirão Preto; 2016 [citado 10 de fev de 2024]. doi:10.11606/D.17.2017.tde-07062017-120732. Disponível em: <https://www.teses.usp.br/teses/disponiveis/17/17155/tde-07062017-120732/en.php>
- 3 - VENTURA C. Dezesesseis a cada mil brasileiros doam sangue. Ministério da Saúde do Brasil – Agência Saúde, [Internet] 14 de jun de 2019. [Citado 2024 jan 11] Disponível em: <https://www.gov.br/saude/pt-br/assuntos/noticias/dezesesseis-a-cada-mil-brasileiros-fazem-doacao-de-sangue>.
- 4 - Ministério da Saúde Brasil. Manual de orientações para promoção da doação voluntária de sangue [Atenção a saúde]. [Citado 2024 fev 7]: Secretaria de Atenção à Saúde; 2015. 151 p. Disponível em: [https://bvsm.sau.gov.br/bvs/publicacoes/manual\\_orientacoes\\_promocao\\_doacao\\_voluntaria\\_sangue.pdf](https://bvsm.sau.gov.br/bvs/publicacoes/manual_orientacoes_promocao_doacao_voluntaria_sangue.pdf)
- 5 - Ministério da Saúde Brasil. Portaria nº 1.353, de 13 de junho de 2011. Aprova o Regulamento técnico de procedimentos hemoterápicos. Diário Oficial da União [da] República Federativa do Brasil. [Internet] 2011 jun 14; [Citado 2024 Jan 15]; 148(113 Seção 1):27.
- 6 - Santos SMR, Jesus MCP, Peyroton LS, Linhares FS. Avaliação e classificação do risco familiar em uma escola de educação infantil. Rev. Pesqui. (Univ. Fed. Estado Rio J., Online) [Internet]. 2014 Jan 01 [citado 2024 Mar 12];1(6):232-240. DOI 10.9789/2175-5361.2014v6n1p232. Disponível em: [https://pesquisa.bvsalud.org/portal/resource/pt/lil-706426#main\\_container](https://pesquisa.bvsalud.org/portal/resource/pt/lil-706426#main_container)
- 7 - Gomes FSL. Estratégias de captação de doadores de sangue no Brasil: cartilha educativa para o profissional professor: Mestrado Profissional em Saúde e Tecnologia no Espaço Hospitalar [Dissertação on the Internet]. Rio de Janeiro: Universidade Federal do Estado do Rio de Janeiro; 2016 [citado 2024 Feb 20]. Disponível em: <https://pesquisa.bvsalud.org/portal/resource/fr/biblio-1026394?lang=pt>
- 8 - Melo ASE, Maia ONF, Chaves HV. Lewin e a pesquisa-ação: gênese, aplicação e finalidade. Fractal: Revista de Psicologia [Internet]. 2016 Jan 28 [citado 2024 Jan 9];28(1):153-9. DOI <https://doi.org/10.1590/1984-0292/1162>. Disponível em: <https://www.scielo.br/j/fractal/a/MM3jfxNVLZG9JP3bcmXp8H/#>
- 9 - Dias MS, Prado TO, Santos AHS, Silva FJCP, Santos VS, Lemos LMD. Potenciais doadores de sangue em campanha de sensibilização e captação. Rev. enferm. UFPE online [Internet]. 01 de fevereiro 2024 [citado 2024 Jan 10];9(2):533-539. DOI 10.520. Disponível em: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/10369/11104>
- 10 - Borges GZ, Ferro ACP, Senne NV, Giacometo FO, Moreira LF, Tirone NR, Abreu MTCL. Intenção da doação de sangue e de medula óssea pelo aluno do ensino médio das escolas de Uberaba/MG. Brazilian Journal of Development [Internet]. 2021 Fev 03 [citado 2024 Fev 18];7(2):01-13. DOI 10.34117. Disponível em: [file:///C:/Users/gabri/Downloads/admin,+ART+026+BJD%20\(2\).pdf](file:///C:/Users/gabri/Downloads/admin,+ART+026+BJD%20(2).pdf)
- 11 - Bossolan RP, Perosa GB, Padovani CR. A doação de sangue sob a ótica de escolares: concepções e valores. Psicol Reflex Crit [Internet]. 2011; [citado 2024 jan 13]; 24(3):495-503. Disponível em: <https://doi.org/10.1590/S0102-79722011000300010>
- 12 - Ministério da Saúde Brasil. Secretaria de Atenção à Saúde, Departamento de Atenção Especializada e Temática. Manual de Orientações para Promoção da Doação Voluntária de Sangue [Internet] 1 ed. Brasília: Ministério da Saúde, 2015. [citado 2023 Nov 14]. 152 p. Disponível em: [http://bvsm.sau.gov.br/bvs/publicacoes/manual\\_orientacoes\\_promocao\\_doacao\\_voluntaria\\_sangue.pdf](http://bvsm.sau.gov.br/bvs/publicacoes/manual_orientacoes_promocao_doacao_voluntaria_sangue.pdf)
- 13 - Brasil ML, Vargas E, Vaz CHG, Silva IR, Oliveira JF. Doação de sangue: fatores motivacionais de doadores em um centro de coleta. RSD [Internet]. 28 de junho de 2020 [citado 2024 jan 13];9(8):e157985589. Disponível em: <https://rsdjournal.org/index.php/rsd/article/view/5589>
- 14 - Ministério da Saúde Brasil. Coordenação de Sangue e Hemoderivados. Informativo COSAH, (1): 4-6, 1998.
- 15 - Pereira JR, et al. Doar ou não doar, eis a questão: uma análise dos fatores críticos da doação de sangue. Ciência & Saúde Coletiva [online]. 2016, v. 21, n. 8 [Citado 13 jan 2024], pp. 2475-2484. Disponível em: <https://doi.org/10.1590/1413-81232015218.24062015>. ISSN 1678-4561. Disponível em: <https://doi.org/10.1590/1413-81232015218.24062015>.
- 16 - Ferreira EGG, Santos GF, Rodrigues AA, Lemes AG, Rocha EM. Conhecimento de calouros de enfermagem sobre doação de sangue. Mostra de extensão UFMT/CUA; 2022; Campus universitário do Araguaia. Barra do Garças, MT. 09/11/2022. 001 p. 10.
- 17 - Silva, FEO. Letter to: Camera dos Deputados. Projeto de lei, 2021.

# Artigo Quantitativo EN

Gabriel D. Nogueira, Aline A. Rodrigues, Cássio S. Ribeiro, Daniel F. de Oliveira, Ellen G. G. Ferreira, Elias M. da Rocha  
Teenagers' knowledge about blood donation

18 - Prado CVS, Silva R, Melo AG. O estudo do sangue aliado à questão social da doação. *MoEduCiTec* [Internet]. 10 fevereiro 2017 [cited 2024 Jan 15]; 8(17): 1773-1778. Disponível em: <https://rfs.emnuvens.com.br/rfs/article/view/215>

19 - Carrazzone CFV, Brito AM, Gomes YM. Importância da avaliação sorológica pré-transfusional em receptores de sangue. *Rev Bras Hematol Hemoter* [Internet]. 2004; [cited 2024 Jan 13]; 26(2):93-8. Disponível em: <https://doi.org/10.1590/S1516-84842004000200005>

20 - Silva LLM, Ferreira EPM, Pereira CRD, Ferreira VSM. Principais reações adversas à doação de sangue total em um hemocentro público do Estado do Pará. *Hematology, Transfusion and Cell Therapy*, [Internet]. 2023 Jan 01 [cited 2024 Jan 9]; 45(4):675. DOI <https://doi.org/10.1016/j.htct.2023.09.1229>. Disponível em: <https://www.sciencedirect.com/science/article/pii/S2531137923014050>

21 - Freire ACS, Vasconcelos HCA. Doação de sangue: conhecimento, prática e atitude de acadêmicos de enfermagem de uma instituição do interior do Ceará. *REME Rev Min Enferm*. [Internet]. 1 de junho de 2013 [cited 8 de março de 2024]; 17(2). Disponível em:

<https://periodicos.ufmg.br/index.php/reme/article/view/50238>

22 - Niero-Melo L, Ruiz e Resende LS, Hokama NK, Gaiolla RD, Oliveira CT. Hematopoiese e fatores de crescimento. In: Braga JAP, Tone LG, Loggetto SR, editores. *Hematologia e Hemoterapia Pediátrica Sociedade de Pediatria de São Paulo -SPSP*. São Paulo: Editora Atheneu; 2014. p. 511.

23 - Koch S. O estudo do sangue aliado à questão social da doação. *MoEduCiTec* [Internet]. 2016 Jan 28 [citado 2023 Dez 15]; 1(28):02-05. Disponível em: [file:///C:/Users/gabri/Downloads/8468-Texto%20do%20artigo-36354-1-10-20171219%20\(6\).pdf](file:///C:/Users/gabri/Downloads/8468-Texto%20do%20artigo-36354-1-10-20171219%20(6).pdf)

24 - Agência Nacional de Vigilância Sanitária. Resolução – RDC nº 34, de 11 de junho de 2014. Dispõe sobre as boas práticas no ciclo do sangue [Internet]. Brasília: Anvisa; 2014 [cited 2024 Jan 15]. Disponível: <https://bit.ly/37LWd2M>»<https://bit.ly/37LWd2M>

25 - Bonjorno AFOD, Lopes B, Souza EMS, Soares FP, Pinheiro IVS. J., Santos Y. K. F. Fatores que influenciaram na doação de sangue. *Repositório Institucional do Conhecimento - RIC-CPS* [Internet]. 2023 Jul 01 [cited 2024 Jan 15]:01-33. Disponível em: <https://ric.cps.sp.gov.br/handle/123456789/14420>