

Awareness of blood and bone marrow donation: experience of the *Programa Extensionista Amizade Compatível*

Conscientização para doação de sangue e medula óssea: experiência do *Programa Extensionista Amizade Compatível*

Concienciación sobre la donación de sangre y médula ósea: experiencia del *Programa Extensionista Amizade Compatível*

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This is an experience report considering the period between 2014 and 2019, carried out in a city in the interior of Minas Gerais state, Brazil and in a private university. It aims to describe extension activities that look to increase the enrollment of university blood and bone marrow donors. Data were collected from thank you letters sent by a foundation responsible for collecting blood and blood products in Minas Gerais. There was an increase of 29.9% in blood donations and 100% in registrations for bone marrow donation after the awareness actions carried out from the extension program “Amizade Compatível – uma doação para a vida”, compared to isolated actions in years prior to the program. It was observed that awareness was a differential for the academic community to adhere to blood and blood products donation.

Descriptors: Blood; Blood donors; Bone marrow; Community-institutional relations.

Este é um relato de experiência considerando o período de 2014 a 2019, realizado em uma cidade do interior mineiro e em uma universidade particular, com o objetivo de descrever atividades de extensão visando ampliar a captação de universitários doadores de sangue e de medula óssea. Os dados foram coletados a partir das cartas de agradecimento enviadas por uma fundação responsável pela captação de sangue e hemoderivados em Minas Gerais. Houve um aumento de 29,9% nas doações de sangue e 100% nos cadastros para doação de medula óssea após as ações de conscientização realizadas a partir do programa de extensão “Amizade Compatível – uma doação para a vida”, comparadas às ações isoladas em anos anteriores ao programa. Observou-se que a conscientização foi um diferencial para a adesão da comunidade acadêmica às doações de sangue e hemoderivados.

Descritores: Sangue; Doadores de sangue; Medula óssea; Relações comunidade-instituição.

Este es un informe de experiencia que considera el período de 2014 a 2019, realizado en una ciudad del interior de Minas Gerais, Brasil y en una universidad privada, con el objetivo de describir las actividades de extensión destinadas a ampliar la captación de estudiantes universitarios donantes de sangre y médula ósea. Los datos se recogieron de las cartas de agradecimiento enviadas por una fundación responsable de la recogida de sangre y productos sanguíneos en Minas Gerais. Se ha producido un aumento del 29,9% en las donaciones de sangre y del 100% en las inscripciones para la donación de médula ósea tras las acciones de sensibilización llevadas a cabo desde el programa de extensión “Amizade Compatível – uma doação para a vida”, en comparación con acciones aisladas en años anteriores al programa. Se observó que la concienciación fue un factor diferencial para la adhesión de la comunidad académica a las donaciones de sangre y hemoderivados.

Descritores: Sangre; Donantes de sangre; Médula óssea; Relaciones comunidad-institución.

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INTRODUCTION

Blood is an irreplaceable and perishable product and transfusions are becoming increasingly used as a support for the treatment of various diseases such as sickle cell anemia, thalassemia, cancer, in addition to those exposed to situations such as surgery or accidents^{1,2}.

With the growing demand worldwide for adequate and safe blood for transfusion³, there is much interest in generating red blood cells in vitro as an alternative clinical product. Several sources of stem cells have been used, such as adult peripheral blood (APB), umbilical cord blood (UCB) and pluripotent cells (PC)^{2,4}, and the UCB parents have a greater capacity for expansion than the progenitors of APB, but the number of cells generated is still limited and the cells have a fetal, not an adult, phenotype.

There are still obstacles to obtaining viable erythrocytes from PC, despite being a potentially unlimited source of cells. Another strategy has been to generate immortalized adult erythroid progenitor cell lines that are capable of providing an unlimited supply of erythrocytes and that need only a minimal culture to generate the final product². Unfortunately, it is not possible to predict when the technological difficulties for large-scale production will be overcome. Adding to this a presumed inequality of access to this technological asset, it is reasonable to say that blood centers will still need to attract donors.

According to Brazilian legislation, the act of donating blood and registering as a bone marrow (BM) donor must be voluntary, anonymous and altruistic, and the donor should not, directly or indirectly, receive any remuneration or benefit due to its realization⁵. Blood centers are responsible for collecting, processing and storing blood from the act of donating and maintaining a stock of blood bags to supply the population's demand. Registration for BM donation is carried out at the blood center and the data are sent to the National Registry of Bone Marrow Donors (REDOME)^{5,6}.

Despite the efforts of the blood center network, in many periods of the year, mainly on commemorative dates, there is a reduction of 20 to 25% in donations³, with a consequent decrease in blood stocks. Therefore, it is also necessary for blood centers to retain their donors so that this blood demand can be met continuously⁷.

There are several factors that lead a citizen to be sensitized and donate blood or register to donate BM, in the same way that there are many points that make these citizens reluctant to practice such an act³. Knownly, the more knowledge the greater the chance of a person making a blood donation for the first time, and of becoming a loyal blood donor. In this way, works that include actions of awareness and sensitization as educational actions have a greater perspective of effectiveness in mobilizing society^{8,9}.

In the era of digital information, in addition to traditional means of communication such as radio and TV, e-mails, Short Message Service (SMS) and mobile phone applications that present general information about the donation have been used to search for blood donors, disability criteria, location of blood centers, among other information⁹. This brings young people, who are potential blood donors, closer to the social problem of maintaining blood stores in blood centers at levels adequate to demand. There is social engagement with blood donation resulting from the power of mobilization carried out on social networks¹⁰.

In the scenario of the Universidade de Uberaba (UNIUBE), the promotion of the visit to the mobile blood center has been taking place twice a year since 2014, promoted by the *Programa Institucional de Atividades Complementares* (PIAC).

Despite a good adhesion by the university community resulting from the PIAC's actions, the possibility of increasing the number of donors and fostering a culture of blood and marrow donation in the young adult was envisaged, which generated an Extension Program, adding to the activities of the mobile blood center, other ongoing, coordinated and organized actions to raise awareness on the topic. These extension actions are carried out continuously

since the approval of the program. Thus, this work aims to describe an extension activity aimed at expanding the uptake of university donors of blood and bone marrow.

METHODS

This is an experience report, with documentary analysis, carried out during an extension program. After approval of the “*Amizade Compatível - uma doação para a vida*” program in October 2015 (UNIUBE PROES/PROPEPE 01/2015 notice) and a closer partnership with the Uberaba Blood Center, training meetings were held with extension students in order to train multipliers of the themes: blood donation (BD) and registration for BM donation within the university.

This training was carried out first in the blood center, by the fundraising team, and on a continuous basis during meetings, lectures and seminars promoted by the coordination of the program, in addition to participation in events that address BD and BM themes, in different locations.

As part of the training of extension workers, a partnership was signed with the Group Psychology and the Analysis of the Ego (ARFA), in which students were able to have contact with patients who frequently need blood donations, with the Group Psychology and the Analysis of the Ego (OASIS) that serves patients with onco-hematological diseases, to participate in campaigns, and with *Salve Mais Um*, which is the first social blood donation network in Brazil.

During the years 2016 to 2019, the members distributed themselves in functions aimed at raising awareness, disseminating and promoting events with the academic community and the external community, systematizing the activities always with the primary purpose of reaching the university community in the approach BD themes and BM registration.

During semiannual visits to the Mobile Blood Center at the university, blood registration, screening and collection were carried out exclusively by the employees of the blood center. The data on the number of candidates and the number of effective BDs, as well as the BD donation records presented in this study were collected from the thank you letters sent by the Fundação Hemominas to the university at the end of each collection. The results of the collections carried out in 2014 and 2015, before the creation of the extension program, and from 2016 to 2019, after approval of the program, were evaluated.

As the approval of the program took place in October, and in this period extension students were still being selected, there was no participation of extension workers in the campaign for the second semester of 2015. From the second semester of 2016, awareness actions directed to the visit of the mobile blood center to the university were carried out more emphatically in the previous weeks and at the pre-registration moment for donation.

In the second half of 2015, the blood center chose not to make the registration available for bone marrow donation because it had reached the annual goal of registrations made available by REDOME for external campaigns, as well as in the years following the second half of 2018. In the second half of 2017, there was a one-off campaign aimed at registering BM donors at the University at the request of the Uberaba Regional Blood Center.

RESULTS

Blood donations and registrations for bone marrow donation from 2014 to 2019 carried out in a university environment are presented in two moments, before and after the start of the actions of the extension program, according to Tables 1 and 2,

In all visits of the Mobile Blood Center to the University, the number of candidates for donors stipulated by the blood center reached, with the exception of the second semester of 2014.

I. Before extensionist actions

The results of blood donations and registrations for bone marrow donations in 2014 and 2015 are shown in Table 1 organized by year/semester.

Table 1. Blood donations and registrations for bone marrow donation before the implementation of the extension program. Uberaba, MG, 2014 to 2015.

Year/semester	Candidates	Blood donations made and percentage made	REDOME Register
2014/1	60	33 (55%)	20
2014/2	41	25 (61%)	23
2015/1	73	54 (74%)	21
2015/2	70	37 (53%)	* --
Total	244	149 (61.1%)	64

* At the time, there was no registration for bone marrow donors.

It is observed that the total number of blood bags collected during visits to the University's Mobile Blood Center before the actions of the Program was 149 (average of 37.25/semester) with an average percentage of effective donation in relation to the present candidates of 61,1%. There were 64 registrations for BM donation (average 21.3/semester).

II. After extensionist actions

The results of the blood donations made, their percentage in relation to the number of candidates who came for donation, and the registrations for bone marrow donation made in the years 2016 to 2019 are shown in table 2 organized by year/semesters.

Table 2. Blood donations and registrations for bone marrow donation after the implementation of the extension program. Uberaba, MG, 2016 to 2019

Year/semester	Number of Candidates who came to donate blood	Blood donations made and percentage made	REDOME Register
2016/1	65	39 (60%)	59
2016/2	75	60 (80%)	67
2017/1	69	54 (78.3%)	30
2017/2	61	46 (75.4%)	26
2018/1	65	52 (80%)	31
2018/2	60	48 (80%)	*---
2019/1	58	41 (70.7%)	*---
2019/2	60	47 (78.3%)	*---
Total	513	387 (75.4%)	213

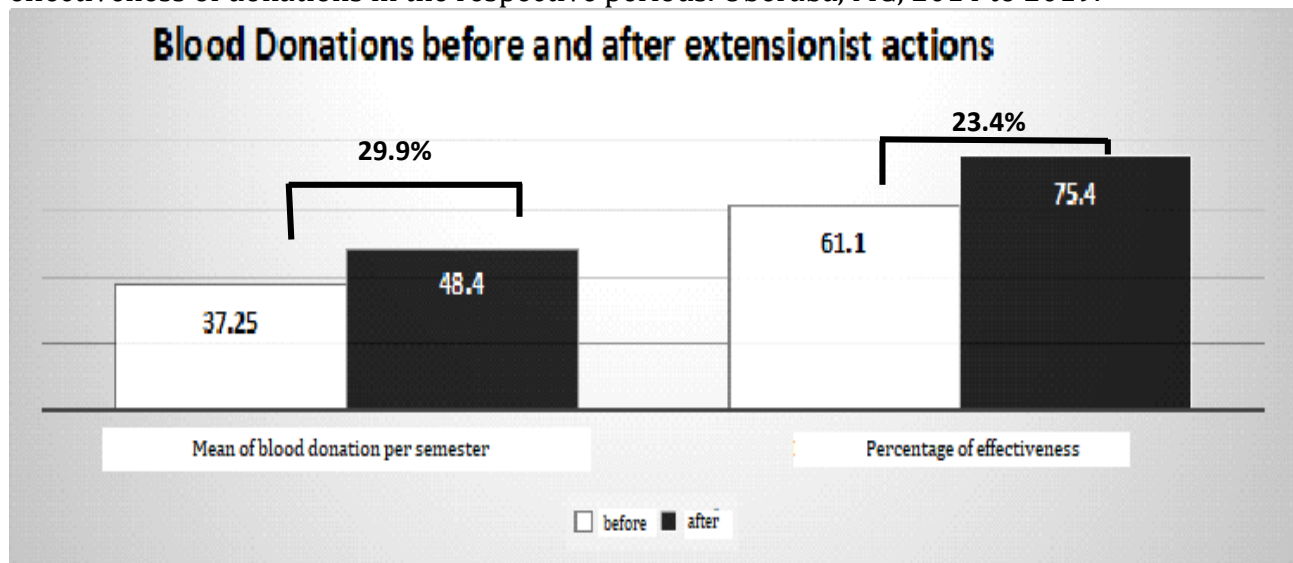
* At the time, there was no registration for bone marrow donors.

It is observed that the total of blood bags collected by the mobile blood center after the actions of the extension program was 387 (average 48.4/semester) with an average percentage of effective donation in relation to the candidates present of 75.4%. There were 213 BM registrations (average of 42.6/semester).

III. Comparison of results of blood donations and registration for bone marrow donation before and after extension activities

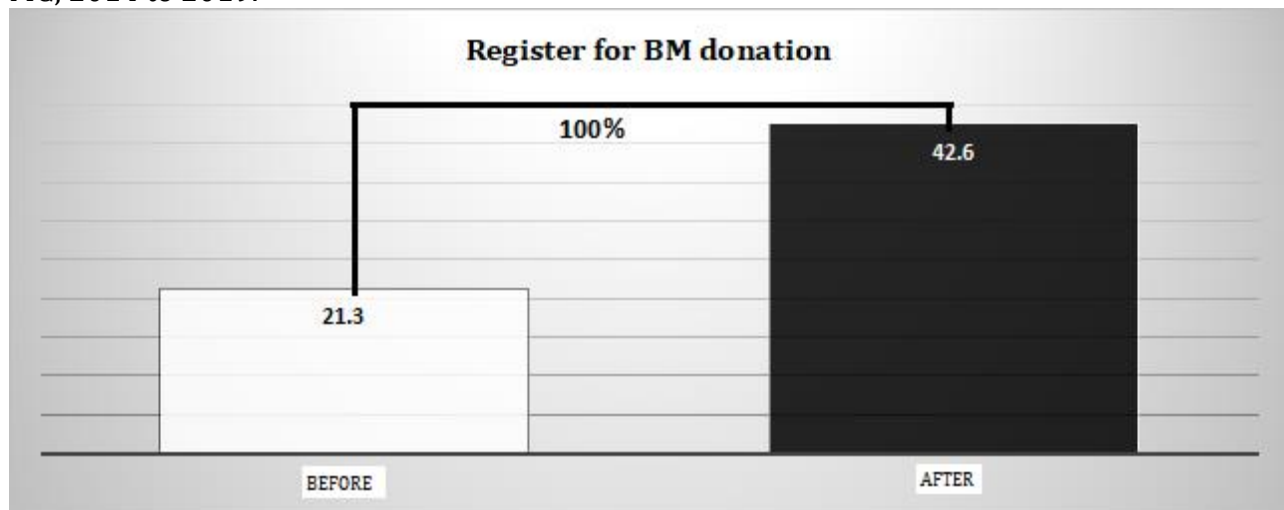
When comparing the average results of effective donations before and after the start of extension actions, an increase of 29.9% in the number of blood donations made per semester and 23.4% of effectiveness in donations is observed (Figure 1).

Figure 1. Average blood donations before and after extension actions and the percentage of effectiveness of donations in the respective periods. Uberaba, MG, 2014 to 2019.



When comparing the average results of registrations for BM donation before and after the start of extension actions, an increase of 100% in the number of registrations per semester is observed (Figure 2). The result of the one-time registration campaign for BM donation was 257 entries (data not included in the graph). Thus, the total number of registrations for BM donation was 470.

Figure 2. Average registrations for OM donation before and after extension actions. Uberaba, MG, 2014 to 2019.



DISCUSSION

The university extension aims to develop new approaches in the teaching-learning processes, promoting rapprochement, exchange of knowledge and experiences between professors, students and the community, establishing a commitment to citizenship¹¹. From the moment that the university student experiences the problems faced by the community and comes into contact with the benefited society, learning becomes more effective and rewarding. In the case of extension students from the *Amizade Compatível* Program, the training period allowed the strengthening of learning and the security of becoming an extension multiplier of knowledge prepared to reach their peers.

The profile of the Brazilian university population comprises adults between 18 and 23 years old, on average, and represents one third of the population of blood donors in the country¹². The informative actions, in addition to stimulating the capture of new donors and their loyalty, also clarified to the population what are the conditions that temporarily or permanently prevent donation, avoiding spending time with individuals who would be excluded during the screening^{3,8,13}.

The relevance of the intensification of educational practices that aim at self-awareness for blood donation is notorious; this promotes the individual's bond with society and contributes to saving lives¹⁴.

Educational practices contribute to a greater effectiveness in the functioning of the Blood Center and REDOME, since the lack of information and time are critical factors for non-donation^{7,15}. This information reinforces the idea that academic awareness of the importance of blood donation and registration for bone marrow donation can, in addition to increasing the number of blood donors in this age group, make you loyal from an early age.

The average number of blood donations after awareness raising by extension workers increased by approximately 30% at the university. The percentage of effectiveness of blood donations increased after the start of the extension program, averaging 75.4%, showing on the one hand the positive impact of the actions of the extension program and on the other hand, that a quarter of the university students who apply for the donation still do not carry it out because they are excluded during the screening.

Raising awareness about the BM collection procedure brought security to the possible donor who, based on this clarification, registered with REDOME, thus an increase of 100% of university students who registered to donate BM was observed.

The punctual campaign for registration of BM requested by the blood center to the university successfully served its purpose. This result can be related to the ongoing actions of the extension program.

There was a positive impact when the extension actions were implemented in an organized and coordinated manner with the *Amizade Compatível* Extension Program. Thus, the extension becomes effective as an instrument of the social commitment of universities from the moment that it generates benefits to the student's learning and promotes improvement in the society involved. And, as such, it needs to be understood and assumed in its complexity, planned and implemented seriously to optimize the results and be, in fact, a positive experience.

CONCLUSION

The implementation of the *Amizade Compatível* Program trained extension students with great potential for disseminating the knowledge acquired with the university/community and promoted an increase in the number of blood donations and in the registration for bone marrow donation during the visits of the Mobile Blood Center to the University. This awareness proved to be a differential for the academic community's adherence to donations, and coordinated and organized actions in an extension program, potentiated the result.

The study has the limitations of showing the experience of only one institution (which, among other areas, provides health training) and the non-possibility of generalizing data because it did not apply evaluations for broader interpretations, which brings suggestions for research actions. educational and training programs for expanding blood and blood product uptake.

In turn, the experience brings elements that can, among other things, stimulate other similar institutions, public or private, to undertake actions of permanent education and training in a university environment, aiming to expand the collection of blood and blood products.

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CONTRIBUTIONS

Aldo Matos and **Isabel Cristina Rezende Lopes** participated in data collection and analysis and review. **Beatriz dos Santos Godoy** worked in the design, collection and analysis of data and writing. **Carla Gabriela Rodrigues** and **Gustavo Barreto Antunes Elias** contributed to the collection and analysis of data and writing. **Maria Theresa Cerávolo Laguna-Abreu** participated in the conception, collection and analysis of data, writing and review.

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