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Knowledge and Attitude Toward Hematopoietic Stem Cell Transplantation among Al-Quds University Students

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Background: Hematopoietic stem cell transplantation (HSCT) is a life-saving procedure for individuals suffering from sickle cell anemia, hematologic malignancies, and immunological disorders. However, the probability of finding a well-matched donor within the family ranges between 25% and 30%. The best donor is a fully matched human leukocyte antigen (HLA) sibling. For other patients who do not have a matched family member, transplantation from an unrelated volunteer donor may be an option.

Objectives: to evaluate the general level of HSCT acceptability and awareness among Al-Quds University students. The target group was chosen for several reasons, primarily for spreading awareness among students, which helps to spread more effectively; looking at the fact that communities tend to have more trust in the information that comes from educated individuals, also, most university students are aged between 18–23 years old, and the donor's age has a significant effect on the success of the transplantation procedure.

Methods: This cross-sectional study was performed at Al-Quds University between October 2022 and December 2022.
A questionnaire utilized in a prior study conducted at Mayo Medical School in Minnesota, USA, was used to collect data. The questionnaire underwent several modifications. To better suit the needs of the students at Al-Quds University, these modifications have been reviewed and approved by our instructor.

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A hard copy of the questionnaire in Arabic language was distributed among al-Quds University students at different levels, colleges, and majors. The questionnaire was distributed hand-to-hand to ensure a high response rate and to reduce the number of questionnaires returned with any missing values.

Four sections made up the questionnaire. The first section contained sociodemographic information, such as gender, age, academic year, household income, and place of residence; the second section contained questions about the donation experience, including any previous donation of stem cells or blood cells; the third section assessed the students' knowledge of HSCT with “yes” “no” and “I don’t know” questions such as where did they got their information from, whether or not they knew about the process, and how long does it take; and finally, the fourth section is related to their attitudes toward HSCT and their concerns, which were elevated by a Likert scale ranging from strongly agree to strongly disagree.

Statistical analysis: right before the data entry, the questionnaires were manually checked and validated for any errors. The data were analyzed using the Statistical Package for Social Sciences, version 23 (IBM Corp., Armonk, NY, USA). We used several statistical tests to analyze our data such as independent T-test, one-way ANOVA and chi square test.

Results: Out of 250 questionnaires, 245 were completed; the majority were females with 146 participants (59.6%), and 99 males participated (40.4%). Fourth-year students dominated, with approximately 102 participants (41.8%). The health professions had the highest rate of response, with 63 participants (26%).

There is a significant difference between females and males in regard to their awareness of the importance of HSCT; with a P value of 0.03, the females were most likely to be aware of the importance of HSCT (11%).

The academic year did not have a significant relationship with the awareness of the importance of HSCT or the place of residence, with p values of 0.256 and 0.16, respectively.

Regards, registration, no significant difference was found between a registered student and a non-registered student considering the awareness of the importance of HSCT, with a P value of 0.44.

There was a significant difference between participant’s faculty and their awareness of the importance of HSCT, with a P value of 0.04, medicine faculty came first in regard to awareness of the importance of HSCT (25%).

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Unexpectedly, there was no significant difference between those who knew about the process of the HSCT and those who did not know how the process is done, and they both got the related detailed question about the process wrong with a P value of 0.85.
There was a significant difference between the procedure knowledge and the time needed for the procedure to be done with a P value of 0.007 concerning the bone marrow transplantation procedure, and a p value of 0.009 for the peripheral blood transplantation procedure, but surprisingly, those who answered that they did not know how the procedure was done were the ones who got the time needed right, and vice versa, leading us to Crombach's alpha value, which was 0.592.
There is a significant difference between those who knew about the stem cell donation regardless of the source of information and those who did not know anything about it; those who knew about the HSCT are most likely to be aware of the importance of HSCT with a P value of 0.00.
No significant difference was found in the willingness to donate between females and males, with a P value of 0.97.

Conclusion: Most students, whether registered or not, lack realistic information about HSCT. Based on our study, we recommend implementing this kind of information in the educational system and performing awareness campaigns among our community, so awareness and knowledge can be spread correctly and the lives of those needing HSCT can be saved.

Keywords: Hematopoietic stem cells; bone marrow; peripheral blood; awareness; donation; Knowledge.

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