

# Adolescents and blood donation: motivations, hurdles and possible recruitment strategies

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**Background.** For years researchers have been trying to determine what factors influence a person's choice to give blood, with the aim of translating the data collected into ever more concrete operative methods for recruiting new donors and managing and using blood to meet the needs of the donor. Adolescents are a potential source of great interest not only for the blood they could supply, but also because information on the subject of "giving blood" could favour the spread of healthy lifestyles and contribute to the development of a mature, responsible civic culture. The aim of the present study was to investigate the motivations and obstacles to giving blood among adolescents and strategies to recruit donors from this group of subjects.

**Materials and methods.** A self-report questionnaire was given to 3,050 pupils in 11 high schools in the Lombardy Region (Italy) (Age range: 13-21 years, mean 16.5, SD=1.65, males=47.7%, females=52.3%). The questionnaire comprised 14 items that addressed motivations and obstacles to giving blood and recruitment strategies in adolescents, knowledge about the world of blood donation and socio-demographic information. Descriptive analyses (frequencies, means and standard deviations), chi squared test ( $\chi^2$ ) and the *t*-test (*t*) for independent samples were conducted.

**Results and discussion.** The data collected regarding the three abovementioned areas of investigation (motivations, obstacles and recruitment strategies) were analysed with respect to gender. The results yielded some interesting information on which to build hypotheses concerning the pre-established objectives, including the importance of active involvement of adolescents by the organisations charged with promoting blood collection, emphasising the important role of the school and giving the adolescents the chance to meet with an expert on blood donation.

**Keywords:** blood donation, recruitment, adolescence.

## Introduction

This study was planned as exploratory research in a target population that, from an analysis of the national and international literature on the subject, has been little investigated: adolescents.

For years research has been conducted on the factors that can influence choices of notable value such as giving blood, with the aim of converting the data collected into ever more effective methods for recruiting new donors, improving communication, and adapting the processes of collection/management/ use of blood to meet the needs of the donors and, thereby, encourage repeat donations.

Adolescents are a potential source of great interest, not only for the blood they could supply, but also because information on the subject "giving blood" could promote the spread of healthy lifestyles, acquisition of greater awareness about one's own health, and contribute to the development of a mature, responsible civic attitude. For this reason, the research was combined with efforts to increase awareness about blood donation, consisting of *ad hoc* education, managed and organised by experts.

The report presented here is a synthesis of the broader research "Study of the obstacles to and reasons for giving blood among students in

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The large body of scientific literature on blood donation is rich and diversified with regards to theoretical and methodological aspects. There are many demographic studies aimed, for example, at delineating the typical profile of donors<sup>1,2</sup> or associating them with specific motivations<sup>3-5</sup>. Quantitative research has explored the world of donation through essentially three broad areas: the first concerns use and efficacy of motivational incentives<sup>1,3,6,7-14</sup>; the second is focused on the reasons for and deterrents to giving blood<sup>3,15-19</sup>, which can be divided into intrinsic (or personal values and responsibility) and extrinsic (related to social pressure); the third and last area concentrates on the specific experience of the "first donation" and on the aspects that influence the transformation of a first-time donor into a "repeat" blood donor, with the predominant purpose of understanding how to recruit donors and encourage the start of their "career"<sup>8,10,13,19-22</sup>. This theme has been examined particularly thoroughly through the application of models based on the *Theory of Planned Behaviour*<sup>23-32</sup>, derived from the transtheoretical model of stages of change<sup>33-36</sup>, which has been demonstrated to be capable of explaining the pro-social aspects of the decision to give blood.

A small number of studies have been performed using qualitative methods, inspired by *Grounded Theory*, in which focus groups, interviews and conversation analysis are used; these have led to a broadening of the view of the act of "donation" considering professional roles, elements and aspects involved in the process and indeed opening up new avenues of investigation<sup>37-40</sup>.

The almost total absence of adolescents in the studies mentioned above would seem to be justified by the fact that the donor, or candidate donor, is considered such only when he or she has reached 'adult' age and, in fact, the few studies that have investigated young targets started from the age of 18 years<sup>6,11,12,30,41-46</sup>.

The aim of this study was to investigate those members of the population who are minors or have just become adults, who have not yet given blood.

As established by international law, minors cannot give blood and adolescents are not, therefore, directly involved in blood donation; nevertheless, they are the potential new generation of donors. For adolescents, giving blood could be likened to a particular form of voluntary work, an area in which there is an increase in research, such as comparative studies between different cohorts of volunteers, including the young<sup>8</sup>. In the first place, adolescence and early adulthood are crucial periods from the point of view of the development of an individual's attitudes and pro-social skills<sup>47</sup>; in the second place, commitment to voluntary activities in youth is, for all adolescents and for most young adults, the first real possibility of approaching a reality in which they are active "producers" rather than mere "consumers"<sup>48</sup>. Last, but not least, voluntary organisations are environments conducive to maturation and social integration, in which the individual is provided a different set of social rules from those applied in school, in the family or in the traditional work setting<sup>49,50</sup>. The aim of this study was to explore the as yet little investigated field of how the particular features of blood donation fit into voluntary activities of young people.

## Materials and methods

As briefly outlined in the introduction, published reports of research on the reasons for donating blood among adolescents are scarce. A first exploratory investigation was, therefore, performed, in which four focus groups with students and teachers were set up in order to pick up salient points on this subject. On the basis of the comments made, a first version of a questionnaire (pre-test) was designed and administered to 125 students in order to check that the items and instructions for compiling the questionnaire were clear. Some difficulties and inadequacies emerged; the items involved were made more comprehensible and better suited to the reference target. This was also promoted by the combined use of qualitative and quantitative methods, which led to the formation of a language and conceptual categories appropriate for the young.

The final questionnaire comprised a total of 14 items which investigated three specific areas: (i) motivations and obstacles to blood donation among adolescents and strategies for recruiting these individuals, (ii) questions concerning knowledge

about blood donation (for example: "How much have you heard about giving blood?" and "Do you know anybody who gives blood?"), and (iii) a series of structural items (age, gender, place of residence, type of school attended, etc.).

For some questions it was possible to give only one answer on a 5-point scale (1=Not at all, 2=Not much, 3=Fairly, 4=Quite a lot, 5=A lot and 1=Disagree strongly, 2=Disagree somewhat, 3=Neither agree nor disagree, 4=Agree somewhat, 5=Agree strongly) while for others it was possible to select more than one response (multiple choice questions).

**Recruitment of participants**

The project, which consisted of the research phase described here and awareness-raising not presented here, was proposed to numerous high schools in Lombardy.

The definitive version of the questionnaire was administered to 3,050 pupils in 11 high schools, comprising academic high schools (n=6) and technical-professional institutes (n=5). Some schools allowed administration of the questionnaire to all classes from the first to the fifth (n=6), while others allowed administration to only some classes (n=5).

The participants were aged between 13 and 21 years (mean=16.5, SD=1.65). The gender distribution was equal, with males accounting for 47.7% of the participants and females for the other 52.3%. As far as concerns nationality, 89.4% reported being Italian and 8.2% not Italian; 73 subjects (2.4%) did not respond to the question on nationality.

It was possible to divide the participants according to class: approximately the same number of participants came from classes I, II and III (15.8%, 15.9% and 13.7%, respectively), while pupils from classes IV and V accounted for 30.7% and 23.8% of the participants, respectively.

**Statistical analyses**

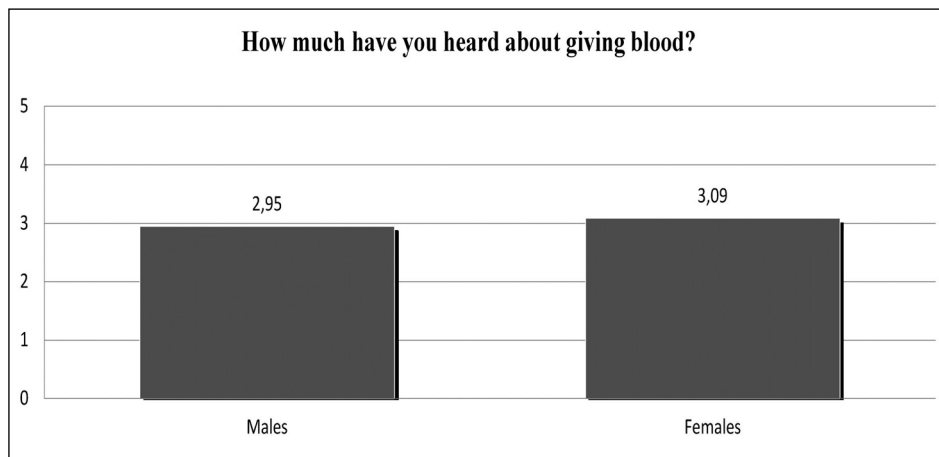
Descriptive statistics (frequencies, means and standard deviations) were used to analyse the responses given by the participants. In order to compare the replies given by males and females, a chi-square test ( $\chi^2$ ) was used for categorical responses and the *t*-test (*t*) for independent samples for continuous variables. The analyses were conducted using SPSS software, version 15.0.

**Results**

After analysing the first two questions at the start of the research, the data collected are presented separately for males and females for the three areas of research (motivation, obstacles and recruitment strategies).

One of the preliminary aspects that was investigated was how much the participants had heard about giving blood. The mean of the response to this question on the 5-point scale was 3.02 (SD=0.813, range 1-5). There was, however, a statistically significant difference between the sexes, in that females had heard more about the subject than males of the same age ( $t=-472, p<0.000$ ) (Figure 1).

A second aspect that we felt it was worth investigating was whether the participants knew



**Figure 1 -** Comparison of the average responses given by males and females about how much they knew about "Giving blood". Total number of people who answered the question: 3,050 (males=1,455; females=1,595).

someone who gives blood. Again, there were statistically significant differences between the two sexes: compared to the males, females seemed to have more friends who were donors ( $\chi^2=4.404$ ,  $p<0.036$ ), and, likewise, more acquaintances who were donors ( $\chi^2=11.059$ ,  $p<0.001$ ). Males, on the other hand, statistically significantly more frequently replied that they did not know anyone who was a blood donor ( $\chi^2=10.711$ ,  $p<0.001$ ), although this was the response chosen most frequently by both groups (males=38.10%, females=32.40%).

No statistically significant differences emerged with regards to knowing donors among parents, relatives and school-friends (Figure 2).

### Motivations

This section grouped together the questions concerning reasons which, according to the adolescents, would convince them to give blood.

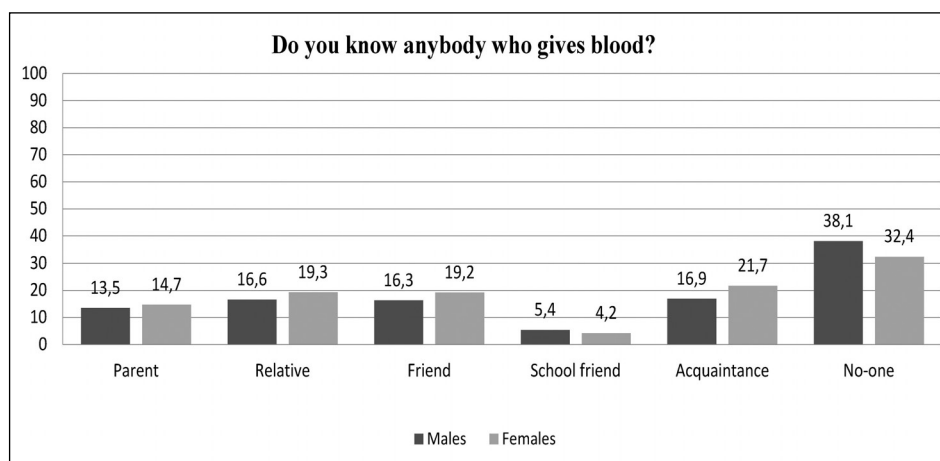
With regards to the question "What could make you decide to give blood?", the answers given most frequently by both the males and females were *An emergency situation for someone I care a lot about* (males=53.60%, females=62.50%) and *The story of someone saved by a blood transfusion*. There was not a statistically significant difference between the genders with regards to the answer *Being able to do it with friends or school friends*, whereas males more frequently gave the responses *Knowing that I will obtain concrete advantages* [educational credits, blood tests, free meal] and *Nothing* ( $\chi^2=77.163$ ,

$p<0.000$  and  $\chi^2=18.856$ ,  $p<0.000$ , respectively). In contrast, females statistically significantly more frequently responded *An emergency situation for someone I care a lot about* ( $\chi^2=23.307$ ,  $p<0.000$ ), *The story of someone saved by a blood transfusion* ( $\chi^2=96.579$ ,  $p<0.000$ ) and *Knowing how it works* ( $\chi^2=8.127$ ,  $p<0.004$ ) (Figure 3).

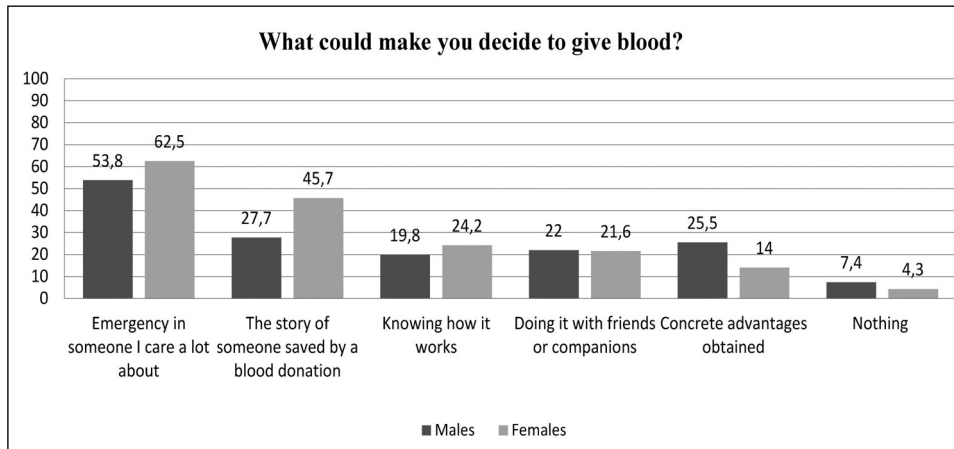
With regards to the question "How do you imagine a blood donor feels emotionally?", which was aimed at encouraging the adolescents to identify with the potential act of giving blood, only the answer *Feels appreciated by society, relatives and friends* was not statistically significantly different between the genders. The females statistically significantly more frequently than males chose the responses *Feels useful because it is life-saving* ( $\chi^2=9.133$ ,  $p=0.010$ ), *Feels good and satisfied because it is a good deed* ( $\chi^2=25.205$ ,  $p<0.000$ ), although these were also the responses preferred by the males. The males significantly more frequently chose the responses *Feels special, different from other people* ( $\chi^2=11.946$ ,  $p<0.001$ ), and *I don't know* ( $\chi^2=11.79$ ,  $p<0.005$ ) (Figure 4).

In response to the question "Who could influence your choice to give blood?" the person nominated most frequently by both genders was *A donor* (males=30.70%, females=42.30%).

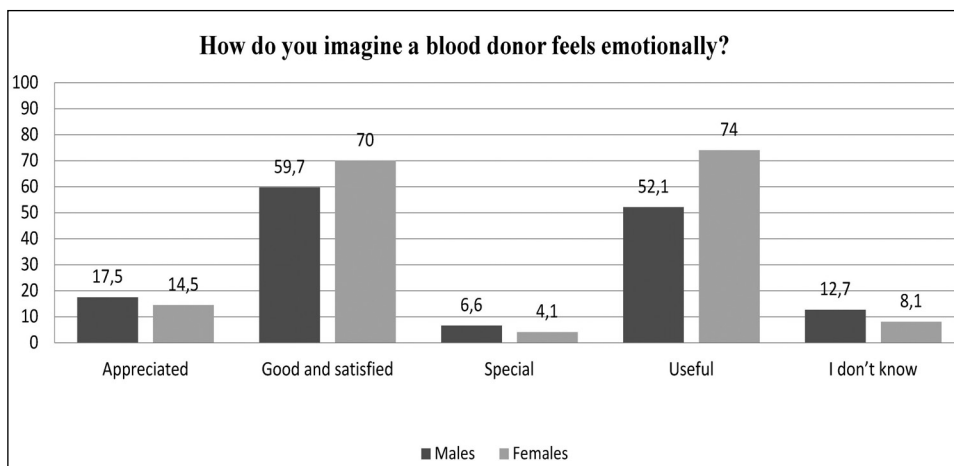
There were no statistically significant differences between the genders with regards to the responses *My parents* and *Friends/classmates*, whereas the males statistically significantly more frequently gave the response *My teachers* ( $\chi^2=16.358$ ,  $p<0.000$ ).



**Figure 2** - Comparison of the responses between males and females with regards to their knowing blood donors. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).



**Figure 3 -** Comparison of the responses given by males and females concerning the reasons for becoming a blood donor. The most frequent reason, indicated by more than 50% of the respondents, did not differ according to gender. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).



**Figure 4 -** Comparison of the frequency of responses given by males and females with regards to how the respondents thought a blood donor would feel emotionally about giving blood. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).

In contrast, the females statistically significantly more frequently responded *An expert* (doctor, nurse, etc.) ( $\chi^2=11.946, p<0.001$ ) and *Someone who has already given blood* ( $\chi^2=54.955, p<0.000$ ) (Figure 5).

### Obstacles

The second area that we were interested in analysing was the potential hurdles to giving blood, as perceived by the adolescents.

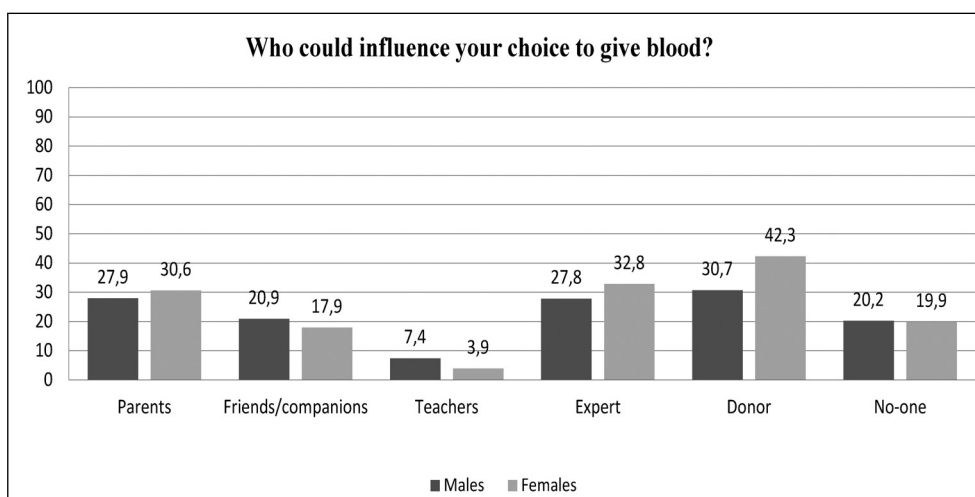
For both sexes, the most frequent responses to the question "Why would you personally not give blood?" were: *I'm afraid of feeling unwell/fainting*

(males=45.00%, females=55.40%) and *I'm afraid of needles* (males=30.90%, females=33.10%). There were statistically significant differences with respect to the replies *I'm afraid of discovering something wrong with me*, *I'm afraid of catching a disease*, *I'm afraid of the unknown*. As far as concerns the responses *I'm afraid of needles*, *I'm afraid of blood*, and *I'm afraid of feeling unwell/fainting* the females gave positive responses statistically significantly more frequently than the males ( $\chi^2=75.539, p<0.000$ ;  $\chi^2=44.999, p<0.000$ ; and  $\chi^2=63.030, p<0.000$ , respectively) (Figure 6).

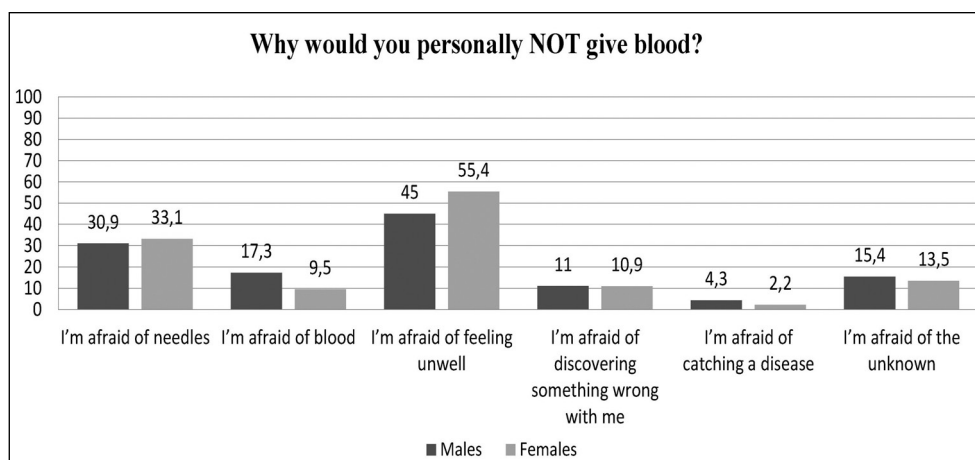
With regards to the question "These are reasons why young people do not give blood. How much do you think they affect people's decision not to give blood?" (range, 1-5), there were statistically significant differences between the sexes for all the reasons. *Laziness* was the main reason stated by males for not giving blood and the difference between the frequency of this reason in males and females was statistically significant ( $t=-3.244$ ,  $p<0.001$ ; males=2.93, females=2.71), as was that for *Indifference* ( $t=6.163$ ,  $p<0.000$ ; males=3.49, females=3.25).

In contrast, *Poor information* was stated to be a reason for not giving blood more frequently by females than by males ( $t=-5.264$ ,  $p<0.000$ ; males=3.14, females=3.35); the same was true for *Fear* ( $t=-7.011$ ,  $p<0.000$ ; males=2.80, females=3.10) and *Incompatible lifestyle* ( $t=-3.075$ ,  $p<0.002$ ; males=2.66, females=2.73) (Figure 7).

The most frequent responses by both males and females to the question "Imagine that you want to give blood: what practical problems would you have?" were *I'm not old enough* (males=45%, females=55.40%) and *I don't know how it works* (males=30.90%,



**Figure 5** - Comparison of the frequencies of responses of males and females with regard to reference figures who could influence their choice to give blood; the order of preference for the respondents considered as a whole was a donor, an expert and parents. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).



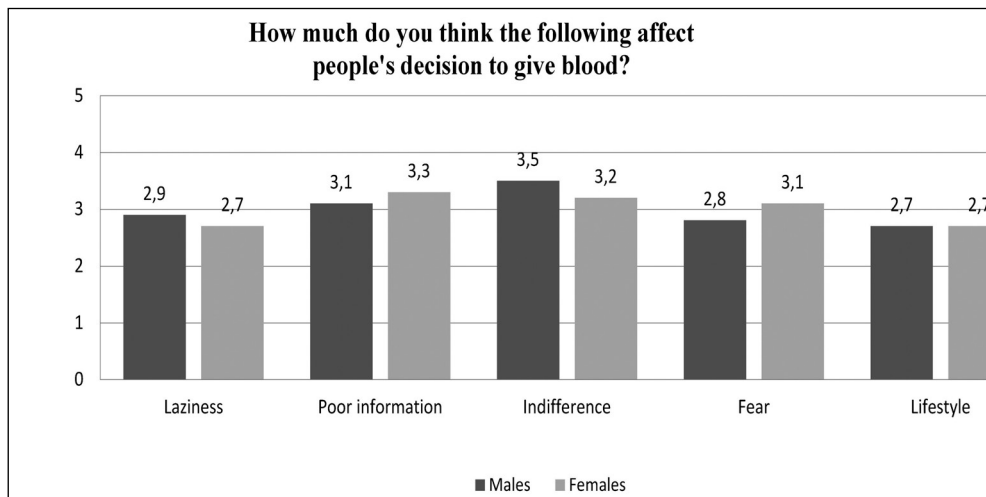
**Figure 6** - Comparison of the frequency of responses regarding reasons for not giving blood. Half of the respondents stated that they afraid of not feeling well, while more than 30% responded that they were afraid of needles. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).

females=33.10%). With regards to gender, there were statistically significant differences in replies only for *I don't have time* and *I'm not suitable because of my lifestyle/characteristics*: in fact, females declared that a hurdle to giving blood would be precisely *Having one more thing to organise* ( $\chi^2=48.355$   $p<0.000$ ) while males more frequently responded *I'm not suitable because of my lifestyle/characteristics* ( $\chi^2=15.844$   $p<0.000$ ) (Figure 8).

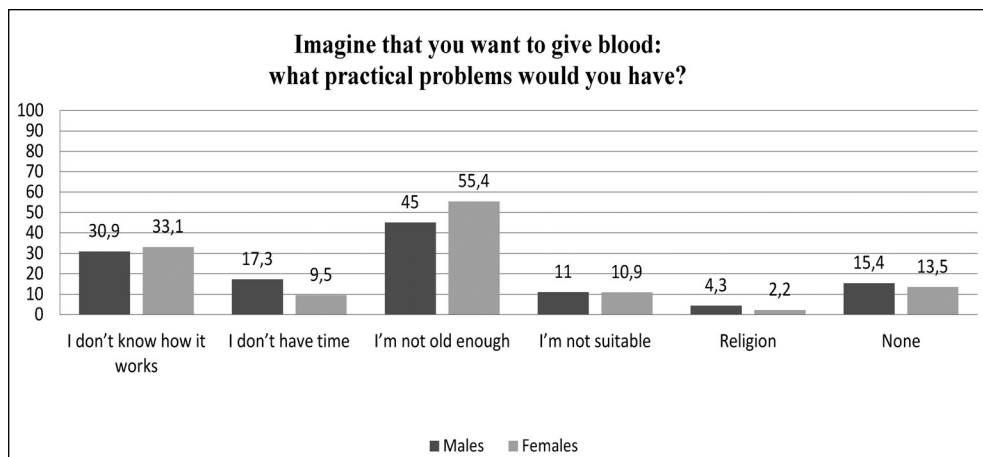
**Recruitment strategies**

The last area that we had planned to investigate concerned possible ways of encouraging adolescents to donate.

For both sexes, the most frequent responses to the question *"What features should an advertising campaign for blood donors have?"* were a *Message that makes you think* (males=44.10%, females=59.20%) and a *Simple, clear message* (males=35.30%, females=51.50%); there were no statistically significant differences between the frequency of responses by males and females for the items *Photos of blood donors*, *A congenial slogan*, *A famous person who is a donor*, *Pleasant pictures (landscapes, parties, etc.)* and *Cartoon characters*. In contrast, males more frequently responded *Famous footballer or singer* ( $\chi^2=62.008$ ,  $p<0.000$ ) than did females; the same pattern was found for *Photograph*



**Figure 7 -** Comparison of the mean responses given by males and females concerning the reasons why young people do not give blood. Total number of people who answered the question: 2,880 (males=1,361; females=1,519).



**Figure 8 -** Comparison of the frequency of responses by males and females regarding the practical obstacles limiting a potential donor from giving blood. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).

of a very attractive person ( $\chi^2=73.631$   $p<0.000$ ). Females on the other hand preferred the responses *A message which makes you think* ( $\chi^2=63.980$   $p<0.000$ ), *Strong colours* ( $\chi^2=10.376$ ,  $p<0.000$ ), and a *Simple, clear message* ( $\chi^2=62.491$ ,  $p<0.000$ ). These differences were statistically significant (Figure 9).

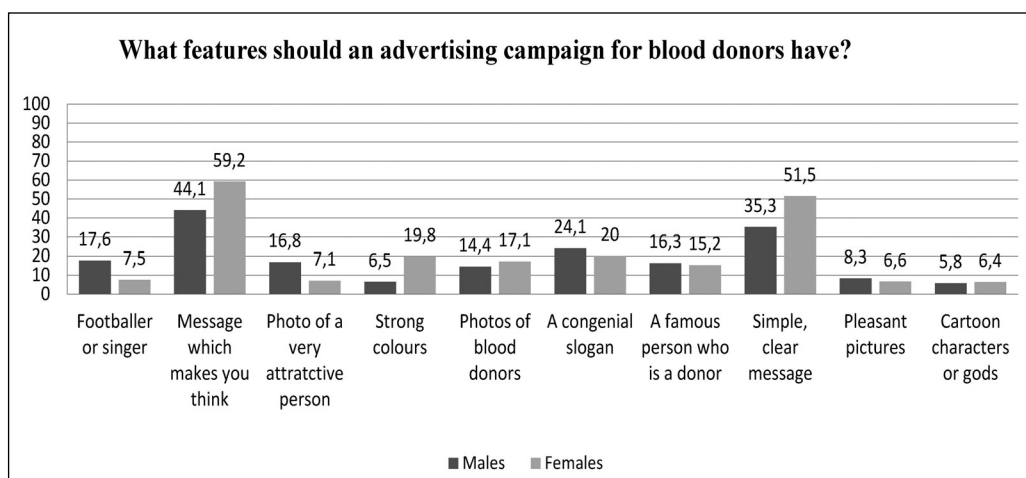
In response to the question "How effective are the following methods for informing people about giving blood?" (range, 1-5), there were statistically significant differences in the frequencies of replies between the genders. Generally speaking, all the means of communication suggested were considered more effective by females than by males (*Meetings/lessons with an expert at school*  $t=-3.244$ ,  $p<0.001$ ; males=3.02, females=3.13, *Information stands in the street*  $t=-2.95$ ,  $p<0.003$ ; males=2.11, females=2.17, *Television/radio programmes*  $t=-3.55$ ,  $p<0.001$ ; males=2.71, females=2.84, *Posters/leaflets/newspapers*  $t=-4.604$ ,  $p<0.000$ ; males=2.47, females=2.59, *Internet*  $t=-2.805$ ,  $p<0.005$ ; males=2.76, females=2.80, *Talking with someone who has already given blood*  $t=-8.59$ ,  $p<0.000$ ; males=3.33, females=3.63) (Figure 10).

The participants were asked to assess five items as part of the question "Giving blood has advantages. Which of these interest you?". As for other questions, there were statistically significant differences between the genders. While females gave a statistically significant higher mean score for *Being a volunteer without sacrificing much time* ( $t=6.260$ ,  $p<0.000$ ; males=2.86, females=3.13), for all the other issues,

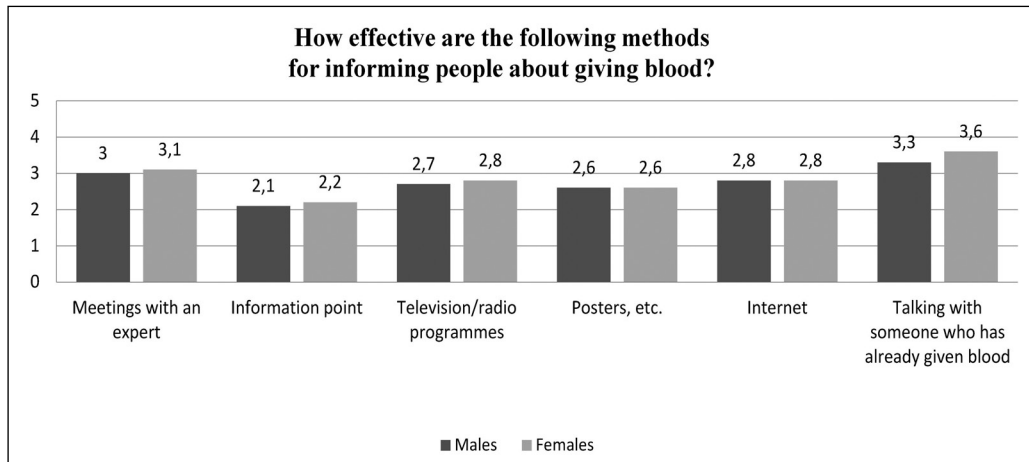
the means of the males were significantly higher (*Free refreshment after the donation*  $t=13.920$ ,  $p<0.000$ , *Free blood tests at every donation*  $t=3.424$ ,  $p<0.001$ , *Educational credits*  $t=-5.652$ ,  $p<0.000$ ; males=3.16 females=2.99, *Justified absence from school*  $t=12.030$ ,  $p<0.000$ ; males=3.24, females=2.64) (Figure 11).

With regards to the question "What type of information would you find most important concerning giving blood?", both sexes most frequently responded *Practical* (males 40.40% females=46.50%), *Physical* (males=30.90%, females=39.40%) and *Technical* (males=29.90%, females=41.70%). All the frequencies of responses were statistically significantly different between the two genders. Only to the choices *Concrete advantages: gifts* ( $\chi^2=83.441$ ,  $p<0.000$ ), and *None: I'm not interested in the subject* ( $\chi^2=10.151$ ,  $p<0.001$ ) did the males give positive responses significantly more frequently, while for the remaining responses it was the females who were statistically significantly more in favour (*Practical: where, how and how often*  $\chi^2=11.148$ ,  $p<0.001$ , *Experiences: emotions, descriptions by other donors*  $\chi^2=15.727$ ,  $p<0.000$ , *Physical: what you feel, how you are*  $\chi^2=32.774$ ,  $p<0.000$ , *Technical: how much blood is taken, the tests, storage*  $\chi^2=39.363$ ,  $p<0.000$ ) (Figure 12).

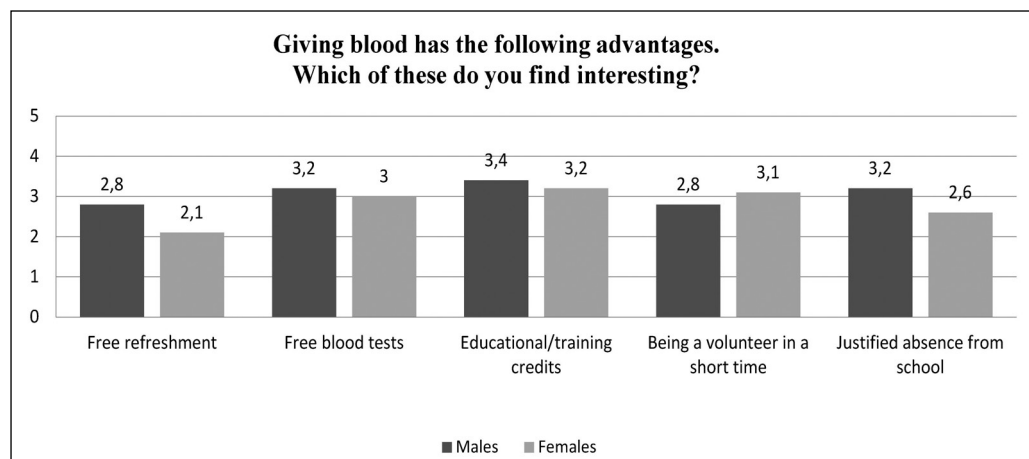
In both sexes the most frequent responses to the question "What could help you most to decide to give blood?" were *Having information* (males=48.40%, females=55.90%) and *Being accompanied* (males=32.79%, females=44.10%); no



**Figure 9** - Comparison of the frequency of responses by males and females regarding effective advertising to encourage blood donation. Total number of people who answered the question: 3,050 (males=1,455; females=1,595).



**Figure 10** - Comparison of the mean responses given by males and females with regards to methods of informing people about giving blood. Total number of people who answered the question: 2,875 (males=1,359; females=1,516).



**Figure 11** - Comparison of the mean responses by males and females with regards to personal advantages from giving blood. Total number of people who answered the question: 2,902 (males=1,369; females=1,533).

statistically significant differences emerged between the sexes with regards to the items *Going to see the place and then deciding* and *Nothing, because there are other reasons why I do not give blood*.

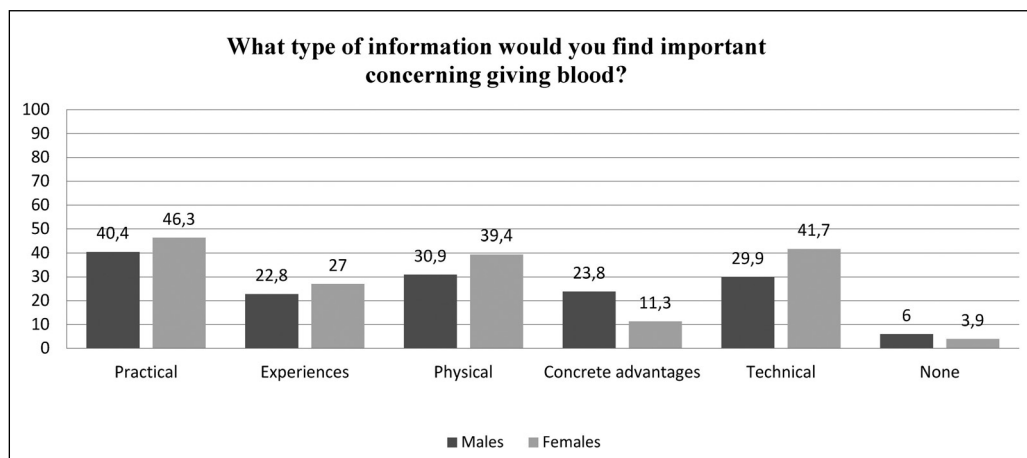
However, females statistically significantly more frequently responded *Having all the information clearly presented* ( $\chi^2=31.827$ ,  $p<0.000$ ), *Having a convenient donor site* ( $\chi^2=4.554$ ,  $p<0.33$ ), *Being able to make an appointment to give blood* ( $\chi^2=4.43$ ,  $p<0.35$ ) and *Being accompanied and donating with another person* ( $\chi^2=46.907$ ,  $p<0.000$ ) (Figure 13).

The last question was "How do you prefer to communicate with your friends?" Both males and females declared that they preferred *Talking personally* (50.70% and 63%, respectively).

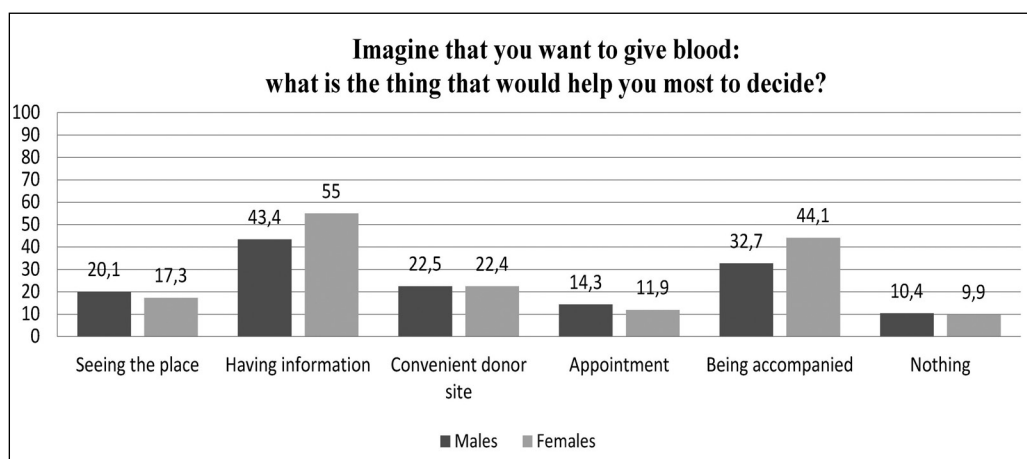
As far as concerns frequencies of responses between genders, there were no statistically significant differences in the preferences for Facebook and social networks, E-mail/messenger services/chats, while *Talking in meeting places/school* ( $\chi^2=62.491$ ,  $p<0.000$ ) and *SMS/telephone* ( $\chi^2=56.805$ ,  $p<0.000$ ) were preferred by females more than by males (Figure 14).

### Discussion

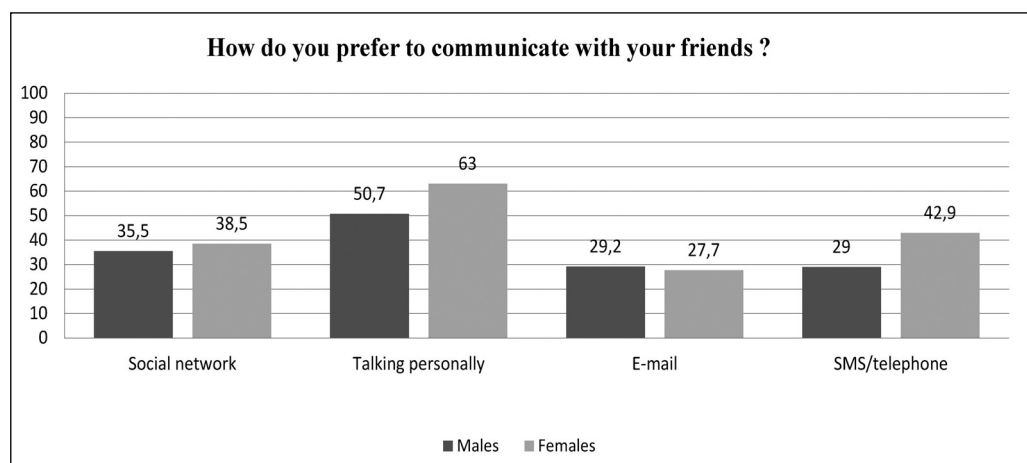
The data analysed provide some guide to factors that could encourage or discourage adolescents from donating blood, as well as some important indicators regarding recruitment strategies that could be exploited by agencies responsible for



**Figure 12** - Comparison of the frequencies of responses by males and females with regards to the type of information about giving blood that young people would like to have. Total number of people who answered the question: 3,050 (Males=1,455; Females=1,595).



**Figure 13** - Comparison of the frequencies of responses by males and females concerning the factors that would most facilitate blood donation. About 50% of the respondents agreed on the importance of information for facilitating the donation. Total number of people who answered the question: 3,050 (Males=1,455; Females=1,595).



**Figure 14** - Comparison of the frequencies of responses by males and females with regards to the preferential mode of communication typically used by adolescents. Total number of people who answered the question: 3,050 (Males=1,455; Females=1,595).

encouraging blood donation. First, however, some considerations should be made on gender differences. Indeed, although there were statistically significant differences between males and females for most of the variables considered, these did not seem to unite reasons or obstacles implying different processes. Furthermore, considering the potential applications of the current research, the data did not provide empirical proof that it would be useful to identify gender-diversified recruitment strategies.

Last, but not least, the sensitivity of both the t-test and the  $\chi^2$  test depends on the size of the sample investigated: the more numerous the sample, the more these indices tend to be statistically significant. For these reasons we decided to analyse the data globally in order to provide an overall picture regardless of sex and specify only those issues for which a gender difference was particularly significant.

Considering the sample overall, with regards to people who could influence adolescents to give blood, there was a clear preference for someone who has already done so (a donor) or at any rate an expert. However, there was also an evident need for the students to affirm their autonomy: in fact, 20.3% of the adolescents responded that no-one could influence their decision to give blood. Thus, on the one hand the youngsters seemed to seek reassurance from competent people, but on the other hand they asserted their own responsibility to decide by themselves. This is a characteristic behaviour of adolescents in whom an important task seems to be separation-individualisation, as confirmed by the literature on the subject<sup>50</sup>.

With regards to an event triggering a decision to give blood, most of the adolescents indicated an emergency involving someone they cared about and the testimony of a person who had been saved by a transfusion. These statements seem to indicate on the one hand the recognition of the necessity and, therefore, the reality of facts and, on the other hand, an awareness that potential donors need to be involved personally and emotionally in order to make their decision. It is also interesting to note that the motivation for giving blood was not associated with concrete benefits or recreational issues.

The major reasons the adolescents gave for not donating blood included indifference, poor information, fear and laziness. Poor information was

recognised as one of the main obstacles to giving blood; in particular, the adolescents stated that they wanted to receive *practical* information (where and when), *technical* information (the amount of blood taken, the way it is analysed and stored) and *physical* information about the experience itself. This aspect is interesting in the light of the responses to the question "*How much have you heard about giving blood?*", to which most participants responded quite a lot or a lot; this suggests that blood donation is talked about, but that the information given on these aspects is not detailed enough. The sources of information indicated by youngsters included the media, although of limited relevance in the case of television and radio, and lessons and meetings at school; word of mouth between friends, parents and acquaintances seemed to be a much more effective source of information.

Although the adolescents declared that they did not have specific information, they did provide a detailed representation of the emotional characteristics of blood donors: according to the adolescents, donors are satisfied because they are doing a good deed and are useful because they save other people's lives. The adolescents' representations highlighted altruistic aspects at the expense of egoistic ones and self-affirmation, but seemed to be drawn more from the imagination than from a real knowledge of donors since as many as 34.8% of the students declared that they did not know any donors and 19.2% said that the donor they did know was only an acquaintance and not, therefore, particularly close to their circle of friends or relatives.

Questioned about their fears as deterrents to giving blood, the students reported being afraid of needles or being unwell or fainting after the blood donation process. These data are consistent with those published in the literature, although one interesting finding was the 20.5% of respondents who replied '*other*', indicating that the sample considered had not otherwise specified fears which would merit investigation through further surveys. The clear majority of the subjects questioned on real obstacles that limited their giving blood indicated the objective problem of their being underage; considering that about 70% of the sample population were under 18 years old and that 48.2% of these indicated their age as a deterrent to donation, it may be suspected that age is a good alibi in some cases or, in the best of

hypotheses, that once the subjects reach adulthood, one of the main obstacles will no longer be present. Other obstacles indicated were related to not knowing how the donation process functions, given that many subjects stated they wanted more detailed and more practical information. Only 16% of the students declared that they did not perceive any practical obstacle to giving blood.

The data concerning factors facilitating donation confirm the idea that the students need to have simple, concrete information, perhaps obtained by going to see how a Transfusion Centre works, before deciding; a fairly clear encouragement seemed to be the possibility of giving blood with someone who has already done so (39.1%). The concrete advantages that donation can have were perceived by the adolescents: the advantage that interested them most seemed to be educational credits, followed by free blood tests. It is interesting to note that all the advantages were perceived as more attractive by males than by females.

From the responses to questions on the efficacy of methods of communication, the students considered direct contact with someone who has already given blood as the most effective and, only slightly less important, educational meetings with an expert, confirming the importance of this figure as a reference for obtaining information. In general, it can be stated that any method of communication was considered effective, with the cause of the reported *poor information* being the quality of the contents rather than the channel of communication. The idea of encouraging adolescents to give blood through means of communication more typically used during adolescence, such as *social networks* and *SMS*, is less important than might have been thought given the finding that more than 50% of the students questioned preferred talking with their friends in their usual meeting places, privileging direct interaction to the use of new technologies.

When the students were asked explicitly to indicate the characteristics of a good promotional campaign, the suggestions were in favour of two key elements: a thought-provoking message that is simple and clear; all the other visual elements play a secondary role.

## Conclusion

This study, while highlighting some crucial

aspects of the target population investigated, has raised new research issues that will be considered in more detail in the future. Nevertheless, beyond its mere research interest, this study has provided readily applicable working indications, some of which open up new possibilities for use while others have already been introduced.

With regards to the practice of recruiting new donors from among youngsters who have just become adults, our results suggest that the involvement should be direct, exploiting an individual's peer group or expert reference figures in the school setting. In the light of these findings, the awareness-raising meetings at schools, which the Friends of the Polyclinic and the Mangiagalli Association of Blood Donors had previously proposed, were reconsidered and adapted to the specific target. Attempts have been made to involve the high school directly, recruiting teachers individually, some of whom are donors; the people chosen to present the meetings are young staff-donors who speak a simple, concrete, and not purely healthcare-related, language. Again in line with the data collected, more emphasis is given to technical information and clear descriptions of the routine procedures and experiences, also using the technique of role-playing, leaving plenty of opportunity for questions and expression of doubts through more interactive methods than the canonical frontal lessons. Particular attention is dedicated to examining fears and negative feelings about donation and considering the possible solutions, sometimes proposing behavioural strategies; the contents are always presented in factual, non-moralistic terms in order to emphasise the freedom and responsibility of personal choices.

The data collected also show how adolescents want to be protagonists of their own choices and to receive clear messages that make them reflect about donation; these two aspects found a common outlet in the proposal made to some of the older classes of the schools to create publicity campaigns and messages for their peers, which will soon be divulged.

Personal, direct involvement is the fundamental basis on which to develop new recruitment strategies for this target population. The hypotheses include: information through the testimony of a donor of the same age who recounts his or her own experience; encouraging the youngster at the time he or she becomes 18 years old, by sending an SMS, letter or

e-mail; and activating a network project involving young "group-leaders" who promote the donation of blood among their peers.

The large body of data clearly shows that the target investigated has its own characteristics differentiating it from the adult population. The implication is that if Transfusion Centres and Associations that deal with recruitment want to target young people, they should first rethink and adapt their organisation and logistics to the particularities of the target population. It should become a habit for both the staff and the donation centre to interact with schools, receiving groups of students or classes, providing support and information for individuals and the group throughout the process, and making the youngsters an active part of the process.

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