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Blood Donation—A Promising Field for Social Marketing

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Abstract

Blood donation is the donation of blood for the purpose of transfusion and consequently the organization that has undertaken the collection, storage and disposal of blood. The idea of

blood donation for the purpose of treatment has existed since the age of medicine. It took many successful and unsuccessful attempts to reach the current state of blood transfusion. Blood tests on the blood donor are a necessary condition, because they ensure the safety of the recipient and, at the same time, can inform the blood donor about the possible possibility of being a carrier of a serious disease. Today, thanks to the development of technology, the separation of whole blood (WB) into derivatives is relatively easy. Transfusion therapy using blood products has significant advantages. Blood donation is different from other altruistic acts, because of the way it is done and because the blood is so personal. In addition, its benefits are not only vital for the recipient, but multiple for the blood donor himself. This paper studies the context of the history of blood donation. The aim of the work is to highlight the special history of blood donation and to determine its progress in the present era.

Keywords: blood donation, volunteering, transfusion

1. Introduction

Blood donation is the administration of blood for the purpose of transfusion and, by extension, the organization that is responsible for the collection, preservation and distribution of blood. Furthermore, the term "Voluntary Blood Donation" defines a process that allows blood to be treated as a living and integral part of the human body and not as a product equivalent to drugs. Furthermore, the term blood donation includes the hospital setting where blood donations take place, the health services involved, the hospital setting and the particular branches of medicine that are responsible for this issue, such as qualified medical scientists and biochemical technicians, nursing staff and government officials (Goldman, Land, Robillard, & Wiersum‐Osselton, 2016).

The initial process that marks the concept of blood donation is blood collection. Blood collection is a painless procedure in which a small amount of blood is drawn and is most often performed from a non-superficial vein in the upper limb. For about an hour after the blood collection, the volunteer donor is advised to avoid smoking and driving. After the procedure is completed, the volunteer blood donor can return to work, with the exception of certain high-risk professions such as pilot and builder, or even hobbies that would be endangered after the blood donation if they felt bad, them or their round. It is remarkable that the whole process is safe and short because (Ferguson & Lawrence, 2016):

a) The loss of blood volume is very small (450 ml) and the fluid part is replenished within 24–36 hours of blood collection, while the total number of red blood cells will return to normal levels within about a month (Prowse, de Korte, Hess, & van der Meer, n.d.).

b) It does not endanger the donor. The donor cannot be infected by AIDS (Seed, Yang, & Lee, 2017) or other communicable diseases (such as syphilis, hepatitis B, hepatitis C, syphilis, HTLV-I&II infection), since the needles used are sterile and disposable (Custer, Stramer, Glynn, Williams, & Anderson, 2016).

2. Literature Review/Methodology

For the purpose of our research, we have reviewed a significant number of published studies. The literature on this topic was studied thoroughly in order to create and compile a scientific study around this major problem. Both from the international and domestic literature, important results could be drawn.

3. Results and Findings

The idea of donating blood for healing has been around as long as medicine. The Ancient Greeks and the Latins knew about transfusion (Turgeon, 2004). At that time, the most obvious entrance of blood into the body was considered to be the oral cavity and not the venous system as Claudius Galen, for example, argued (Ανδριώτης & Κριαράς, 1890). It has taken many successful and unsuccessful attempts to reach the current state of blood transfusion. If a review of the past is carried out, various conclusions can be drawn (Kamel, Tomasulo, Bravo, Wiltbank, Cusick, James, & Custer, 2010).

The first human-to-human blood transfusion appears to belong to Major. Before the

transfusion, he bled the recipient's blood, as at that time it was considered very dangerous to add even a negligible amount of blood to the vascular system because it caused an overload of the circulation. Bleeding before transfusion was performed from an elbow vein. The same vein was used for transfusion, after the peripheral part had been disinfected. Major came up with the innovation, because instead of using direct transfusion, he placed the blood in a cylindrical container, to be used later, and added ammonia salts to it to prevent it from clotting (Nilsson Sojka & Sojka, 2003). British obstetrician James Blundell performs the first human blood transfusion on a patient with postpartum haemorrhage at Guy's and Thomas's Hospital in London. James Blundell used her husband as a blood donor, where he drew 0. 1 liters of blood from him, which he then transfused into his wife with a syringe (James Blundell and Savigny and Company, n.d.).

The most important milestone in the history of blood donation was the discovery of blood groups by K. Landsteiner in 1900. This discovery, which was awarded the Nobel Prize in 1930 (Landsteiner, 1900), provided an explanation for the unpleasant effects that were observed during transfusions. Hemolysis of incompatible donor blood within the recipient's circulation results in serious disorders and can sometimes cause death. After the discovery of the four groups, other groups were identified in human blood.
The storage of blood in special refrigerators has had a decisive influence on the organisation of blood donation, with the result that the blood collected can be stored and used in time of need (Joar et al., n.d.).

In Greece, the first transfusions were carried out at the Polyclinic of Athens in 1916-1919, by Spyros Economou, who used placental blood that had been preserved and organized by the Hippocrates Hospital of Athens. According to research by hematologist Mikhe Paidousis (1906–1974), in Greece after the First World War, blood transfusions were carried out either by the direct method in which the donor was close to the recipient (patient) and the blood was transfused immediately or by the indirect method in which the donor's blood was transfused to the patient with 60 ml syringes, at the First Aid Station of the Hellenic Red Cross, by Mathios Makkas and Mickey Paidousis. Mathios Makkas was involved in blood donation from 1935 until his death. Makkas, with excessive efforts aimed at convincing those responsible, prepared the Service for the case of war, which effectively helped the victims of the Occupation and the wounded of the Greek-Italian war (Hatzistilli, Zissimopoulou, Galanis, Siskou, Prezerakos, Zissimopoulos, & Kaitelidou, 2014).

In Paris in December 1958, Greece signed an agreement on the "exchange of products of human origin", whereby blood and its derivatives are subject to strict state control. Blood is given voluntarily and free of charge to those in need. This policy has been followed by the performance of a huge number of transfusions (with a high safety rate), the training of doctors and all those involved in blood donation, and the cultivation of the idea of voluntary blood donation by strong supporters of the process (Fragoulakis, Stamoulis, Grouzi, & Maniadakis, 2014).

Until then, all blood donors were paid, and blood was sold at a price proportional to the amount of blood in each bottle. So in 1979 the last private banks were closed. It was an

important step for blood donation in our country when the then Minister of Health and Welfare, Mr. S. Doxiadis, decided to stop the paid blood donation. In addition, in 1987 the P. O. S. E. A. (Panhellenic Federation of Voluntary Blood Donor Associations) was founded and since 1995 it has been a member of FIODS (International Federation of Voluntary Blood Donation). The aim of these organisations is to spread the idea of voluntary blood donation and to cover the blood units with voluntary blood donors, something that our country needs.

Testing the donor's blood is a necessary condition because it ensures the safety of the recipient and also informs the donor about the possibility of being a carrier of a serious disease (Ανδρουλιδάκη, 1993). The most common tests are blood identification (ABO and Rh blood group and testing for antibodies) and testing for communicable diseases (testing for hepatitis C antibody, Australian hepatitis B antigen, antibodies to HIV-1 and HIV-2,[20,] syphilis antibody, HTLVI and II) (Ferguson & Lawrence, 2016).

Blood is collected in plastic bags containing anticoagulant. Because these bags are satellite bags, i.e. they are connected by plastic tubes to the original bag and to each other, they allow the categorization of blood into its derivatives, i.e. plasma and platelets (Moog, 2004). Because it is a closed circuit, the procedure is done without fear of blood contamination. When the blood is drawn, the bag is placed in a special device that shakes it and at the same time regulates the amount of blood drawn from the donor. When the amount of blood reaches the set limit, the device stops working. One unit of whole blood (WBC) yields concentrated red cells, concentrated platelets and frozen plasma (Kamel, Tomasulo, Bravo, Wiltbank, Cusick, James, & Custer, 2010).

It is necessary to inform the patient to be transfused about the need for transfusion. The cooperation of a clinician and a blood donor is essential. This is followed by the clinic's request to the Blood Donation Unit and the simultaneous sending of the patient's blood sample (CBC with EDTA and serum). In the referral note it is necessary to clearly write all the necessary information about the patient. This is followed by the determination of the recipient group from the sample, in terms of ABO and Rhesus system, and then the donor-recipient blood crossing (van Dongen, Abraham, Ruiter, Schaalma, de Kort, Dijkstra, & Veldhuizen, 2012).

Note that the concept of donor-recipient blood compatibility is relative. For clinicians, compatible blood is blood that does not cause a reaction during transfusion, while for laboratory professionals, compatible blood is blood that has the same antigenic composition as the recipient's blood. However, because the antigenic elements of plasma are numerous, it is impossible to find two bloods with the same antigenic composition. Besides, crossmatching does not ensure the normal survival of donor RBCs in the recipient's circulation nor the prevention of recipient immunization and the detection of all errors in the determination of ABO and Rhesus system, while it does not ensure the detection of all antibodies of the recipient's serum against the donor's RBCs (Kamel, Tomasulo, Bravo, Wiltbank, Cusick, James, & Custer, 2010).

The determination of blood groups is a basic requirement in blood donation and should be done both by testing with an anion, unknown red cells and vice versa, i.e., by testing

unknown serum with known red cells. Two types of antigens (agglutinogens) A and B are found in human red cells, while two corresponding antibodies (agglutinins) α (anti-A) and β (anti-B) are found in serum. In the same person, it is not possible for a to coexist with A, or b to coexist with B, because in this case there would be hemoglobinization of the red cells (Χανιώτης, 1990).

Blood group antigens are molecules found on the surface of blood cells and each of them is recognised by an antibody. A system or blood group is one or more antigens, identified by alleles of a gene locus or by a complex of two closely related loci. There are four main phenotypes of the ABO system: O, A, B, AB, which are determined by the reaction of an individual's red blood cells with specific anti-A and anti-B antibodies. Individuals in the A group carry A antigens in their red blood cells, those in the B group carry the B antigen, those in the AB group have both and finally the O group have no antigens. In terms of the frequency of blood groups, groups A and O are the most common.

The inheritance of the ABO system follows Mendel's simple rules. The expressions A, B or O constitute the phenotype of the individual, while the expressions AA, BB, AO, BO AND OO constitute the genotype of the individual. The genotype/phenotype in the ABO system of the resulting blood group combinations, as well as the resulting combinations themselves, are numerous (World Health Organization, 2010). The use of blood groups in forensic medicine is based on hereditary transmission, by determining the blood identity of the individual from a bloodstain and also by investigating paternity or maternity. With the latter, it is noted which of the child's agglutinogens is not detected in the parents' blood and then with this negative finding, paternity or maternity is rejected. Here, as it is understood, it is a question of excluding maternity or paternity and not a test to find the natural father.

Regarding transfusions, people can accept blood of the group to which they belong. The transfusion in this case is called compatible and also when group O red cells are transfused to people of all groups. In this case, the anti-A or anti-B antibodies that may be present in the recipient's serum (when the recipient is not in the AB group) are not able to recognise any ABO antigen on the foreign erythrocytes, so they are tolerated. Thus, group O was designated as a global donor (Carlos et al., n.d.).

Another factor to consider in blood donation is the one called Rhesus factor, because the original immunisation studies related to it used red blood cells derived from the Rhesus Maccacus monkey. The structure of rhesus antigens has been clarified in recent years. Also, in D-positive individuals, the expression of the D antigen varies greatly and depends on the presence of other antigens in the Rhesus system, resulting in the discovery of at least 44 antigens in this system.

After ABO, the Rhesus system is the second most important blood group system. Knowledge of it is necessary for safe blood transfusion, and it is the system that is mainly responsible for haemolytic disease in the newborn. The major antigen is D and individuals who have it in their red blood cells are Rh-positive or Rh (+), while those who do not have it are Rh-negative or Rh (-) (Screnci et al., 2012).

The rules surrounding blood donation systems, as they were initially organised, were mainly humanitarian and ethical. Today, with technical and scientific data increasingly expanding the scope of action, blood donation systems are increasingly organised on the basis of ethical and legal rules that are fully binding on those responsible for them. Patients can now be informed and express their opinion before the donation and check the result.

The importance of blood donation for society as a whole (taking, testing and administering blood) has led to this direction, even though these are medical acts that could be covered by the existing legal framework and by the moral and ethical rules that regulate the practice of medicine anyway. Thus, blood donation systems are now governed by rules that provide for the regulation and guidance of medical operations in detail.

A milestone in the control of blood donation, in terms of state intervention, was the well-known impact of HIV (Γεωργούλης, 2001). The unprecedented case of contaminated blood in France was the first serious public health problem with serious political consequences. In the period between the discovery of the virus and the discovery of the method of detecting vectors through antibody testing, the debate around the issue of security intensified, and those calling for tighter security measures for the system seemed to be right. However, even when the method of testing blood for antibodies and thus identifying the carriers was available, the issue was not resolved. This method was new, so that both the equipment and the know-how involved were not available in all countries at the same time.

Thus, large quantities of blood supplies were approved and made available to patients before they were tested for HIV infection. Some of these stocks were blood donated by HIV carriers, unknowingly, and therefore infected. The consequences were suffered almost exclusively by haemophilic patients, since they were the main recipients of plasma or other elements prepared from it. Three officials of the then French government were put on trial accused of involuntary manslaughter.
The defendants' defence argued that they had done all available checks before the blood stocks were disposed of and therefore there was no negligence, let alone criminality (Γεωργούλης, 2001). Moreover, when the new method was available, they did not destroy the stocks, so as not to endanger, even for their lives, the thousands of haemophilic people, because they considered HIV infection to be rare and testing for it mainly of theoretical interest.

Today, a large number of administrative, technical-scientific and legal guidelines and rules have been established for blood donation, both at national and international level, with a threefold objective: firstly, blood donation must be carried out safely and in a controlled manner in order to be socially acceptable. Secondly, the full protection of the volunteer donor to facilitate the donation process itself and thirdly, the elimination of possible adverse effects through blood quality control.

The selection process and the necessary health criteria of the donor are described in detail in the fundamental rules of the Hellenic Haematological Society of the Ministry of Health and Welfare. However, they must also be clearly stated in the procedure's manual of each blood establishment and strictly adhered to. According to the Hellenic Hematology Society, blood

donation can be made by any healthy person over 50 kg, regardless of gender, aged 18 to 65 years (World Health Organization, 2012).

Blood donation is a medical act characterised by specific indications [Although the eligibility requirements for blood donation seem strict, they satisfy the need to safeguard the health of both the recipient and the donor and meet universally defined standards (Ανδρουλιδάκη, 1993). It is a fact that there are conditions and diseases that preclude blood donation, such as hypertension, because it can trigger an ischaemic attack during donation, as well as those taking beta-blockers (Hoogerwerf et al., n.d.), AIDS, malaria, hepatitis, intravenous drug use, malignancies, diabetes mellitus or various serious chronic diseases (Shrivastava, Shah, Navaid, Agarwal, & Sharma, 2016).

In most cases, however, the exclusion is temporary (Sauvage, 2017). This is the case, for example, if someone is sleep deprived (has not had 6–8 hours of sleep), has had vaccinations, has influenza, suffers from seasonal allergies, or is taking certain medications. In the case of a volunteer blood donor receiving medication, the pharmacokinetic and pharmacodynamic properties of the drug and its concentration in the plasma of the donor are taken into account (Gupta, 2016). Other cases are during pregnancy and postpartum or during menstruation (Screnci et al., 2012). In G6PD deficient individuals the rationale for rejection is that the red blood cells are very sensitive due to the lack of the enzyme and their sensitivity is increased by preservation and storage in special ascorbic acid containers which in itself is an oxidative stress for the red blood cells (Matthew & Richard, n.d.). Heterozygous carriers of thalassemia (known as stigma) donate blood when the hemoglobin is above 12gr/dl. Also, to minimise the possibility of infection with SARS, AIDS (Custer, Stramer, Glynn, Williams, & Anderson, 2016), malaria or CJD (mad cow disease), people who have recently travelled to certain countries are excluded from blood donation for a certain period of time. In addition, people with multiple sexual partners, homosexuals with an active sex life, or partners of drug users should not donate blood [37, 38]. Finally, people who have had a transfusion or surgery for six months are excluded as blood donors. Apart from these basic principles, and because the details of the indications are constantly being updated, it is essential that the prospective donor consults the donor selection staff of the blood establishment (Fragoulakis, Stamoulis, Grouzi, & Maniadakis, 2014).

The selection of donors is carried out by highly trained and professionally qualified staff, aiming to ensure the safety of both the recipient and the donor. At the entrance of the blood donation there are special forms at the entrance of the donation point that guide the prospective donor to self-exclusion and which all persons who come to donate blood are asked to read. The donation service also provides forms called “Donor Form”, in which certain information related to the donor is recorded each time and is necessary to be filled in for identification and future communication with the donor (Ιωαννίδου, 2009).

Once the donor arrives at the donation site, the first step is to take a brief medical history, which is an important part of the donor selection process. The medical history questions are asked by the blood donation staff in a private room which ensures medical confidentiality. This way the donor feels safe to discuss with the doctor health problems or other reasons that

may endanger his or her safety or that of the recipient.
The donor is also examined for weight, blood pressure, possible skin lesions at the site of the puncture, pulse, hematocrit or haemoglobin, and physical condition. After collecting the necessary information, the blood donation doctor decides whether a prospective donor who comes to the blood donation service can offer blood. The final responsibility for the selection of the donor rests with the donor's physician.

At this point, it is worth noting that the written consent of the donor is required to agree to donate and have his/her blood tested for possible infectious diseases. In case of exclusion, the necessary medical information and explanations related to the reason and duration of the exclusion shall be provided.

According to the Panhellenic Association of Volunteer Blood Donors (2009), Greece is still far from having sufficient blood, despite the improvements that have been organised by various bodies. In particular, it is considered that in order to achieve sufficiency it is necessary for people who donate blood occasionally to become regular blood donors. Emergency blood donation, i.e., in cases where relatives or friends need blood, cannot solve the problem of blood shortage. In theory, if 10% of the country's total population donated blood at least once a year, there could be stocks available all the time. In practice, the need could be met if around 300,000 people out of the total population became regular blood donors, offering blood two to three times a year or being available for emergencies (Nance, n.d.).

In particular, 550,000–700,000 units of blood are needed to meet the needs. Each patient with thalassemia needs about 48 units of blood per year, while leukaemia patients need more than 50 units of blood or platelets. Two out of ten hospital inpatients need a transfusion and more than 10 units are needed in special cases, such as cardiac surgery, severe gastro-bleeding, bleeding in childbirth, ruptured uterus, etc. 10 to 40 units of blood are necessary for the survival of a multi-injured person. It is important to note that road accidents in Greece are much higher than in other European countries.

Statistically, more than half of all people at some point in their lives will need to receive blood, whole or derived, while only 5% of those who could be blood donors do so (Glynn et al., 2002).

Blood sampling is necessary for two out of ten hospital patients. The amount of blood needed for a seriously injured patient is between ten and 40 units. According to a World Health Organization report, in order to have enough blood, the ratio of blood donations per population is 60 per 1000. Clinical needs could be met if 4% of the world's population donated blood 1. 5 times a year (Glynn et al., 2002; Hinrichs, Picker, Schneider, Lefering, Neugebauer, & Gathof, 2008).

According to the Council of Europe, the ratio for the same purpose is 50 blood donations per 1000 inhabitants. Around 15 million Europeans are voluntary blood donors, with 20 million units of blood donated (Hinrichs, Picker, Schneider, Lefering, Neugebauer, & Gathof, 2008).

Recent research shows that only 10% of those able to donate blood are blood donors

(Armitage & Conner, 2001; Gilles, Vingerhoedt, Howes, Griffin, & Howes, 2004), at a time when the demand for blood is increasing and the supply is decreasing.

In Greece, it is estimated that 550,000 to 700,000 units of blood are needed annually, of which 120,000 are stable and concern those suffering from thalassemia. The majority of the remaining blood units are given to patients with haematological diseases, blood cancers, for transplants, cardiovascular surgery and children with leukaemia, for whom bone marrow blood is vital. Road accidents also result in the need for blood donations, which are urgent, i. e. blood must be administered within the first 24 hours. Internationally, at least 1. 2 million deaths and 50,000,000 injuries are caused by road accidents, while in Greece, according to a press release from ELSTAT, in 2019 there were more than 10,000 accidents, resulting in at least 13,000 injuries, while 656 of these accidents were fatal. In the treatment of road traffic injuries, time is the most decisive factor for the lives of the injured, which is why the creation and existence of blood reserves is particularly important.

In Greece, organisational and scientific reforms are necessary in order to have sufficient blood supply. It is considered that these needs should be met by voluntary blood donors. Blood shortage in Greece is exacerbated by the decline in the age of the population suitable for blood donation, the prolonged survival of elderly patients who are the most frequently needing transfusion, and the increasing incidence of neoplasms (primary and secondary after chemotherapy).

The current guidelines on patient identification, compatibility testing and the suitability of the units to be transfused must be applied by all those involved in the transfusion, from the requesting physician to the physician who is going to administer the blood. Important information is written on the blood bag and on the attached compatibility label.

Blood is a good in deficiency, since its only source of origin is man (Marantidou et al., n.d.). However, the risks of transfusion reactions have not been eliminated, which explains why transfusion is the treatment of choice for many people to restore the blood's ability to carry oxygen. Injured patients who have suffered severe shock and active bleeding should be given O-type blood immediately. Injured patients with injuries or bleeding that do not require immediate transfusion can be stabilised by intravenous administration of other fluids until blood of the same type is available.

Some of the complications recorded and observed in the near post-transfusion period are fever, haemolytic and allergic reactions, sepsis, circulatory overload and acute lung injury associated with transfusion. It is also worth noting the manifestations of haemolytic transfusion reactions: facial erythema, burning sensation along the vein used in the transfusion, chills, headache, hives, increased temperature, lumbago and abdominal pain, chest pain, dyspnoea, nausea and vomiting, tachycardia and hypotension (Priscilla, Karen, & Gerene, 2014).

Blood donation is distinguished from other altruistic acts because of the way it is done and because blood is so personal. Moreover, its benefits are not only vital for the recipient, but also multiple for the donor. In particular, the volunteer blood donor benefits both materially

and in terms of his or her own life (Madjdpour, Heindl, & Spahn, 2006).

In addition, blood donation is also used for "desideration", i.e., the elimination from the body of excess amounts of iron that accumulate in large quantities in the blood and which can cause chronic diseases. Thus, the blood donor improves his circulatory system by giving blood, the body is strengthened against heart attacks, strokes, oncogenesis, and even slows down aging. The aforementioned mainly concern the male population and post-menopausal women, since, before the latter, desensitization occurs during menstruation.

The moral satisfaction felt by the volunteer blood donor is also important. This "gift" offered to a fellow human being causes pride in the donor and the expectation that other people will do this altruistic act when they need it (Ferguson, Farrell, & Lawrence, 2008).

Finally, blood donation is not only beneficial for the recipient, their loved ones (who struggle to find blood of a particular type) and the donor, but also for the health system. The creation of blood reserves is considered very important for hospitals in periods when there is a greater need for blood, such as during the summer, but also to avoid the need to "import" blood from other countries due to shortages in Greece.

Studies have shown that altruism is a key motivating factor in attracting blood donors, with a direction from the ego to the larger whole. There must surely be a sense of duty, approval and interest, and an awareness of the need for blood as a gift. Altruistic attitudes and social responsibility develop with age and life experiences. The motivational factors associated with the first donation are different from those associated with donor retention. Motivation related to personal values, increasing self-esteem and knowledge: 'Through donating I am gaining new knowledge and experimenting with skills I didn't know I had' can lead to the first donation. Each donor stage requires a different recruitment strategy.

Volunteer motivation is the main reason why people decide to devote time and energy to the process of blood donation, in order to offer help to some of their fellow human beings, usually unknown to them.

According to the European Commission, the most frequently used incentives for volunteers are: refreshments, small gifts, extra time off and travel reimbursement. Other external motivating factors are social pressure from friends or relatives, which lose their value as the donor continues to donate and develops an identity as a donor, which is seen after the third or fourth donation. Other notable driving forces behind blood donation are the awareness of the need for blood, the need to replace blood that has been used by relatives or friends and finally the feeling of self-esteem and recognition after such a selfless act.

Unfortunately, in Greece there are not enough blood donors to cover all blood needs, so blood is imported from abroad almost every year. In addition, frequent volunteer blood donors are associated with safer blood supplies in relation to transfusion-transmitted diseases. There are therefore important reasons why the incentives for voluntary blood donation need to be increased.

A survey was carried out to investigate the motivations for voluntary blood donation as well

as the adversities and barriers associated with it, as perceived by the donors themselves. Examining a sample of 600 regular volunteer blood donors, they came to the following conclusions: initially, there was no statistically significant difference between men and women in terms of their motivations and reasons for volunteering. In addition, it was found that the most frequently cited reasons for donating blood for the first time were "motivation from friends" and "appeal for help from the media". It was also found that among the more general reasons and motivations, with a higher ranking of how important they were, "influence from friends", "altruism" and "social responsibility" were most frequently mentioned (Nilsson Sojka & Sojka, 2003).

In another survey, based on a sample of 1020 Greek Voluntary Blood Donors from blood centres and blood donation stations in Thessaloniki, it was observed that blood donors are indeed characterized by high levels of commitment to voluntary blood donation and strong feelings of altruism. Their help is based on selfless giving and the effort and need to save lives through this act. They have a well-developed value of volunteerism, and their motivation comes mainly from their willingness to offer their fellow human beings, rather than from gaining some benefit themselves, although it is known that by obtaining a donor card, donors also acquire some privileges, such as some free medical examinations and tests and the possibility of providing blood directly to themselves or a relative in case of need (Γεωργούλης, 2001). Finally, the same survey found that donors believe that through proper education in schools the number of volunteer donors could be increased. They also consider an important factor to be the proper information of citizens on issues related to blood donation and the needs for blood in Greece today.

4. Conclusion and Recommendations

In conclusion, donation of blood and the ways this can be disseminated to the general public is a major topic for study. This is because through the right information and the right incentives it is possible to attract a large number of people with the direct result of having blood units available for anyone who needs them. However, this is not possible without the right incentives, some of which have been mentioned above. This study can be further analysed in the context of a more in-depth research which will be of particular interest as various marketing policies can be investigated in conjunction with the creation of a strong voluntary blood donor movement and large quantities of blood supply that can be used in emergency situations.

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