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Motivators and Barriers to Blood Donation in African American College Students

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Abstract

Background—An adequate blood supply depends on volunteer non-remunerated blood donors. African Americans have lower blood donation rates than whites. To improve African American blood donation rates, the motivators and barriers to African Americans must be explored. To study the differences in motivators and barriers to blood donation between donor and non-donor African American college students.

Methods—African Americans college students at two Historically Black Colleges and Universities completed a 41-item, self-administered questionnaire, which assessed participant's donation frequency, motivators and barriers toward donation, and knowledge and beliefs towards blood donation.

Results—364 primarily female college students (96% African Americans, 93% female) completed the questionnaire. 49% reported prior blood donation experience (donors) and 51% were non-donors. The primary motivator for donors and non-donors was convenience (89% donor, 82% non-donor). Donors were more likely than non-donors to disagree with statements regarding blood donation as being too painful (82% donor, 44% non-donor), resulting in feeling faint, dizzy, or nauseated (61% donor, 29% non-donor). Donors more often agreed that the blood supply is safe (77% donor, 58% non-donor), less often concerned about receiving a transfusion (61% donor, 73% non-donor), and more often aware of local blood shortages (50% donor, 35% non-donor).

Conclusions—African Americans female college students are willing to donate blood given convenience and support from their university. Educational campaigns to increase knowledge regarding the safety of the blood donation process and the ongoing needs of an adequate blood supply might be effective methods to increase blood donation.

Introduction

Blood collection and transfusion are important to the functioning of a self-sufficient community resource-based healthcare system in the United States (US) and in the world. In the US, approximately 15 million whole blood products are collected each year from voluntary, non-remunerated donors.^{1,2} African Americans^a are underrepresented in this donor population; it is estimated that among white adults, 4.2% donate, versus only 2.4% of African American adults.³ In the Atlanta metropolitan area, whites donate 73% of the donated products collected yet they represent 53% of the population, whereas African Americans contribute 14% of the donated blood and constitute 35% of the population (unpublished data).

As African Americans make up an ever-increasing and now substantial minority in metropolitan Atlanta, it is important to understand the reason for the observed difference(s) in blood donation in order to ensure an adequate blood supply for the entire community. In addition, red blood cell products donated by African American are especially important for the treatment of sickle cell disease patients. Red blood cell transfusions are frequently used to prevent or treat complications of sickle cell disease, such as stroke, multiorgan failure, and acute chest syndrome. Sickle cell disease patients are best transfused with phenotype-matched red blood cell transfusions to prevent the formation of red blood cell alloantibodies, which can result in hemolytic transfusion reactions and difficulty finding appropriate allogeneic red blood cells for future transfusions.⁴ The phenotype-matched red blood cell products are garnered by donors of similar genetic background, i.e. African Americans donors, and therefore there must be an adequate supply of African Americans donated red blood cell products to fulfill this need.⁵

In order to increase blood donation within the African Americans community, the motivators and barriers to blood donation for African American individuals should be determined. Historically, the major motivators to blood donation have been altruism, awareness of the need to donate, a sense of social obligation, personal social pressure, need to replace blood used, and increased self-esteem.⁶ Previous studies have determined that African American donors were more likely to donate in order to receive an item and/or gift, to be tested for an infectious agent, or to receive a health screen than white donors.^{7,8} In a small sample of young African American women, the primary motivator for blood donation was to increase awareness about the need for blood, with an emphasis on the importance of donation in the treatment of children with sickle cell disease but these results were never generalized or allowed to serve as pilot data for a large scale study.⁹

Historically, the principal barriers to blood donation are fear, inconvenience, perceived medical disqualification, being too busy, not being asked, and apathy.⁶ African Americans, more often than whites, cited bad treatment and poor staff skills as reasons not to donate.^{6,10} In the above study of young African American women, the most important reason for not donating was inconvenience, followed by fear of needles and taking too much time.¹⁰ Therefore, differences in motivators and barriers to blood donation among races may exist and affect donor recruitment and retention strategies.

The goal of this study was to survey college students to determine specific motivators and barriers to blood donation mainly by African American individuals. The results from this study will aid in the creation of interventions, including African American donor recruitment programs, to improve African American blood donation rates.

^aWe use the term 'African American' to represent people of African descent living within the US, thus encompassing not only those who identify with African American culture but also those who identify with other cultural groups such as English-speaking Caribbean and African immigrants.

Materials and Methods

Sample and Data Collection

Students from two Historically Black Colleges/Universities (one all female institution and one female and male institution) in the southeastern US were surveyed through the internet and personal communication from February to April 2007. Approximately 2,361 students had registered email addresses on the listserv. Registered students were recruited to voluntarily participate in the study through email announcements distributed through the university listserv and contained a link to access the blood donation questionnaire online. In addition, students were also recruited on campus to complete a hard copy version of the questionnaire if they preferred. Students were asked to complete only one questionnaire to avoid multiple questionnaires from a single student. For the purposes of this study, a donor was defined as a student who had donated one or more times throughout their lifespan and a non-donor was defined as a student who had never donated previously. Institutional Review Board approval was obtained from the participating institutions prior to recruitment and data collection.

Survey Instrument and Analysis

For the purposes of this study, an anonymous, on-line survey with 30 questions that were adapted from previous published surveys and related to specific barriers, motivators, knowledge and beliefs toward the blood supply was used (Table 1).^{6,11–18} Responses were assessed and descriptive statistics were calculated with SAS version 9.1 for Windows.

Results

Out of 409 questionnaires submitted, 45 surveys were excluded due to missing data, resulting in a total of 364 analyzable surveys (Table 2). The majority of participants was AA (96%), female (93%), 18–20 years old (57%) and Freshman (32%). Although the study was opened to both male and female student's majority of respondents were females. Only self-identified African American respondents were included in the analysis. Forty-nine percent of participants reported previously donating blood; 54% donated within the past year (71% reported donating once, 25% reported donating twice, and 4% reported donating at least three times). As age and education level increased, the more likely the students were to have donated. Donors (68%) were more likely to know their blood type than non-donors (20%).

Barriers and Motivators for Donors

Donors were more likely than non-donors to strongly or somewhat disagree that donation was too painful (82% donor, 44% non-donor), or would result in feeling faint, dizzy or nauseated (61% donor, 29% non-donor) (Table 3). Motivators toward blood donation were similar for donors and non-donors; the most frequently reported motivators were a convenient place to donate (89% donor, 82% non-donor), university involvement in promoting blood drives (80% donor, 79% non-donor), feeling of self-satisfaction (81% donor, 77% non-donor), personal request to donate (71% donor, 54% non-donor), and increased knowledge regarding the use of blood products in the AA community (61% donor, 63% non-donor). The major reasons non-donors cited for not donating were medical reasons or ineligible to donate (46%; anemia, low body weight, and tattoo or body piercing), fear (14%; needles and pain), too busy or takes too much time (17%), not being asked (9%), and inconvenience (7%). Other responses ($\leq 2\%$ each) did not know it was important, distrust, religious reasons, and did not want too.

Knowledge and beliefs regarding the blood supply

Both donors and non-donors similarly agreed that the need for blood never goes away (92% donor, 91% non-donor), there is a shortage of blood in Georgia (50% donor, 35% non-donor),

hospitals will never run out of blood (7% donor, 8% non-donor), and the demand for blood will grow as new procedures are developed (60% donor, 65% non-donor) (Table 4). Donors were more likely to agree that the blood supply is safe (77% donor, 58% non-donor), that donors are screened more thoroughly now than ever before (81% donor, 75% non-donor), and that donated blood is thoroughly tested for infectious agents (88% donor, 77% non-donor). Donors were less concerned about receiving a transfusion than non-donors (61% donor, 73% non-donor) and less likely to believe donating blood was not safe (3% donor, 11% non-donor). Rarely did donor and non-donor participants fear the discovery of having a positive infectious disease marker (4% donor, 3% non-donor), including HIV (<1% donor, 1% non-donor), or fear of contraction of disease from blood donation (2% donor, 6% non-donor). Seven percent of donors reported donating in order to learn their HIV status.

Comment

Donors and non-donors differed more in their responses to barriers than in responses regarding motivators for blood donation. The most important motivator toward blood donation for both donors and non-donors was a convenient place to donate. Donors were more likely to disagree with statements regarding blood donation as being too painful, resulting in feeling faint, dizzy, nauseated, or in bruising, or losing time from school/work. Non-donors were more concerned than donors with the safety of the blood supply and receiving a transfusion, and the safety of blood donation and contracting a disease from donation. While a number of the comparisons presented suggest a trend for a difference between donors and non-donors none was statistically significant. Thus education campaigns regarding both the need for blood and the safety of blood supply and blood donation aimed at both the African American donor and non-donor should be valuable.

Motivators to blood donation include altruism, incentives to donate, and external pressure.⁶ In this study, convenience was the most important factor for motivation to blood donation, followed by altruism, university involvement and personal request to donate from the blood center. Schreiber et al surveyed donors who had not donated for 2 to 3 years, and reported inconvenience was the major barrier to repeat donation.¹⁰ Oswalt and Napoliello surveyed college students and reported the major motivators for donors were humanitarian reasons, peer pressure and convenience.¹² In a survey by Oswalt and Gordon of minority college students, the majority of donors donated to help others followed by to get out of class, to get free cookies, and peer pressure.¹⁹ When Grossman et al survey young African American women regarding blood donation, they reported methods to increase donation as increase awareness of need followed by convenience.⁹ Therefore, motivators for blood donation in the present survey of African American college students are similar to previously published data, such as convenience, yet differed in the opinion that it is important to have the university involved in promoting blood drives and increased knowledge regarding the use of blood products within the African American community.

Barriers to blood donation include fear and anxiety, unaware of the need, never being asked, and apathy.⁶ In this study, non-donors more often agreed that blood donation was too painful, resulted in feeling faint, dizzy, or nauseated, and was not safe. Non-donors were more likely than donors to be told not to donate and more likely not to donate knowing that blood donation takes about an hour. When Grossman et al surveyed young AA women regarding blood donation, they reported the primary reasons that prevented blood donation was inconvenience, fear of needles, taking too much time, contracting disease, medical conditions, and fear of finding out about having a disease.⁹ Previous studies of college students performed by Oswalt and colleagues demonstrated medical reasons, fear of needles, pain, or infectious disease transmission, inconvenience and apathy as primary reasons not to donate.¹² Results from this study support the need for comprehensive education about blood donation to minimize

potential blood donor's fears about the process, including fear of pain, vasovagal reactions, and contracting disease.

The current risks involved with a blood transfusion, especially of transfusion transmitted disease, is low and the blood supply is the safest it has ever been.^{20,21} In this study, non-donors were more likely to disagree with statements about the safety and screening of the current US blood supply, and over 60% of both donors and non-donor participants had a concern about receiving a blood transfusion. A telephone survey by Press et al demonstrated 66% of participants were concerned about the safety of the blood supply, most commonly secondary to the risk of HIV infection, yet 65% would feel safe receiving a transfusion; the concern was highest in participants who were female, AA, and did not attend college.²² There continues to be a lack of knowledge regarding the safety and screening of the blood supply.

The blood supply in the US is currently adequate with an approximate 8% margin between blood donation and transfusion, which does not reflect seasonal or regional variations in supply or demand, however the demand for blood continues to increase.¹ Both donors and non-donors had similar responses to the blood supply levels by agreeing that the need for blood never goes away and that there is a shortage of blood in the state of Georgia. Previous studies have determined that increase awareness of the importance of blood donation would result in increase blood donation.⁵⁻⁹

Although the present study addressed an important gap within the blood donation literature, some limitations should be considered. First, the sample used in this study was a convenience sample made up of predominantly female African American participants. Therefore, beyond potential gender bias, these findings are unlikely to be generalizable to individuals of other ethnic groups or different ages. Second, not all students used their institution email account as their primary method for communications, and therefore surveys sent through their email account may have not reached all students and lead to a selection bias.

Both African American college students with and without a prior blood donation are willing to donate blood based on convenience and support from their university. Non-donors were more prone to fear the negative consequences of blood donation as well as be concerned about the safety of the blood supply. Therefore, educational campaigns aimed at all college students designed to increase the knowledge of both the blood donation process and the blood supply should be an effective method to increase blood donation rates in African American college students.

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Table 1

Adapted Survey Items	
Category	Question
Barriers:	<p>a) I don't like needles.¹³</p> <p>b) The hours are inconvenient.¹¹</p> <p>c) It would be painful.¹⁴</p> <p>d) I would feel faint, dizzy, or nauseated.¹⁴</p> <p>e) I would bruise and my arm would be sore.¹⁴</p>
Motivators:	<p>a) I enjoy helping others.¹¹</p> <p>b) I don't want to disappoint people who ask me to give.¹¹</p> <p>c) I believe that people have a responsibility to help others in their community.¹¹</p> <p>d) It is a moral and personal obligation.¹¹</p> <p>e) I think my own individual contribution matters.¹¹</p> <p>f) Friends who are donors had an influence on me.¹⁵</p> <p>g) People in my family who are donors had an influence on me.¹⁵</p>
Knowledge about blood supply:	<p>a) Potential donors are screened more thoroughly now.¹⁷</p> <p>b) Donated blood is thoroughly tested before it is put into the blood supply.¹⁷</p> <p>c) The need for blood never goes away.¹⁷</p> <p>d) Nobody needs to worry about hospitals having enough blood.¹⁷</p> <p>e) The demand for blood will grow as new surgical procedures are developed.¹⁷</p>
Beliefs about consequences of giving blood:	<p>a) It would give me a feeling of self-satisfaction.¹⁸</p> <p>b) It would ensure an adequate supply for family, my friends, and me.¹⁹</p> <p>c) I would lose time to study or work.¹⁹</p>

Table 2

Demographic characteristics of sample by donor status

	Donor (n=179)	Non-Donor (n=185)	Total (n=364)
Sex			
Males	20	4	24
Females	159	181	340
Age			
18–20 years	83	125	208
21–23 years	43	41	84
24–26 years	9	3	12
>27 years	44	15	59
Race/ethnicity			
Black/African American	169	179	348
White/Caucasian	3	0	3
Other	7	5	12
Education classification			
Freshman	48	68	116
Sophomore	29	39	68
Junior	18	26	44
Senior	34	38	72
Post-graduate/greater than 4 th year	50	14	64
Blood type			
Type A	18	7	25
Type B	27	10	37
Type AB	9	3	12
Type O	68	16	84
Not sure	57	149	206

Barriers and motivators for blood donation according to donor status

Table 3

	Donor n(%)	Non- Donor n(%)	Donor n(%)	Non- Donor n(%)	Donor n(%)	Non- Donor n(%)	Donor n(%)	Non- Donor n(%)
Barriers against blood donation								
Too painful	72 (41%)	35 (19%)	70 (41%)	46 (25%)	8 (4%)	49 (27%)	19(11%)	32 (18%)
Will feel faint, dizzy, or nauseated	54 (31%)	19 (10%)	51 (30%)	35 (19%)	13 (8%)	41 (23%)	42 (24%)	61 (34%)
Will lose valuable time from school/work	91 (53%)	78 (44%)	55 (32%)	55 (30%)	13 (7%)	39 (22%)	8 (5%)	6 (3%)
Would bruise and my arm would be sore	59 (34%)	44 (24%)	48 (28%)	50 (28%)	25 (15%)	44 (25%)	32 (19%)	36 (20%)
Likelihood of donating, knowing that it takes about an hour	14 (8%)	30 (17%)	50 (29%)	71 (40%)	12 (7%)	31 (18%)	95 (56%)	43 (25%)
Told not to donate blood	135 (80%)	No	34 (20%)	60 (34%)				
Motivators toward blood donation								
Blood drive sponsored by campus organization	30 (18%)	No	134 (82%)	97 (56%)				
Friends who are donors influenced my decision	42 (24%)	Not at all Important	47 (26%)	33 (18%)	38 (21%)	50 (27%)	40 (23%)	45 (25%)
People in my family influenced my decision	46 (26%)		36 (21%)	33 (18%)	46 (26%)	47 (25%)	36 (21%)	43 (24%)
Incentive for donating	43 (25%)		44 (25%)	32 (18%)	40 (23%)	55 (30%)	21 (12%)	43 (23%)
Personal request to donate from blood center	13 (8%)		12 (7%)	19 (10%)	27 (16%)	37 (20%)	69 (40%)	62 (34%)
Convenient place to donate	4 (2%)		3 (2%)	6 (3%)	12 (7%)	19 (11%)	68 (39%)	74 (41%)
University involvement in promoting blood drives	4 (2%)		9 (5%)	6 (3%)	22 (13%)	25 (14%)	61 (35%)	74 (41%)
Feeling of self-satisfaction	7 (4%)	Strongly Disagree	5 (3%)	6 (3%)	22 (13%)	28 (16%)	60 (35%)	83 (46%)
Community request from celebrity to donate	32 (18%)		25 (15%)	29 (16%)	67 (39%)	71 (39%)	34 (20%)	36 (20%)
Knowledge regarding use of blood products in the African-American community	20 (12%)		16 (9%)	17 (10%)	30 (18%)	39 (22%)	61 (36%)	67 (37%)

Table 4

Knowledge and understanding of the blood supply

	Strongly Disagree		Somewhat Disagree		No Opinion		Somewhat Agree		Strongly Agree	
	Donor n (%)	Non- Donor n (%)	Donor n (%)	Non- Donor n (%)	Donor n (%)	Non- Donor n (%)	Donor n (%)	Non- Donor n (%)	Donor n (%)	Non- Donor n (%)
The supply of blood in the United States is safe to use.	3 (2%)	6 (3%)	13 (7%)	27 (15%)	33 (18%)	45 (25%)	90 (50%)	73 (40%)	39 (22%)	32 (18%)
Potential donors are screened more thoroughly now than ever before.	1 (1%)	3 (2%)	13 (7%)	11 (6%)	21 (11%)	32 (17%)	67 (38%)	65 (36%)	76 (43%)	72 (39%)
Donated blood is thoroughly tested for infectious agents.	0 (0%)	2 (1%)	4 (2%)	7 (4%)	18 (10%)	33 (18%)	73 (41%)	61 (33%)	83 (47%)	80 (44%)
I would be concerned about receiving a transfusion. ³	19 (11%)	11 (6%)	29 (16%)	26 (14%)	22 (12%)	12 (7%)	69 (39%)	68 (37%)	38 (22%)	66 (36%)
Currently, there is a shortage of blood in Georgia. ³	1 (1%)	1 (1%)	2 (1%)	1 (1%)	84 (48%)	115 (63%)	46 (26%)	38 (20%)	42 (24%)	28 (15%)
The need for blood donation never goes away. ³	3 (2%)	3 (2%)	3 (2%)	1 (1%)	7 (4%)	11 (6%)	25 (14%)	27 (15%)	136 (78%)	138 (76%)
Hospitals will never run out of blood. ³	79 (45%)	74 (40%)	64 (36%)	66 (37%)	21 (12%)	28 (15%)	8 (5%)	8 (4%)	4 (2%)	7 (4%)
The demand for blood will grow as new surgical procedures are developed.	0 (0%)	6 (3%)	21 (12%)	16 (9%)	49 (28%)	41 (23%)	58 (32%)	57 (31%)	49 (28%)	62 (34%)