

Factors Affecting Blood Donation Among Six Hundred Respondents from Selected Sites in Manila

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Abstract

This study was undertaken to determine the demographic profile, the perceived risks associated with blood donation, and the factors that encourage or discourage prospective blood donors among selected sites in Manila. Six hundred randomly chosen respondents from the six barangays of the first six districts of Manila, were asked about their views about donating or not donating blood. Most of them donated blood to help friends and relatives. But others avoided donating blood because of medical reasons (25.2%; 151 out of 600) and the absence of opportunities (21.5%; 129 out of 600).

Keywords: Blood Donation, Experienced Blood Donors, Prospective Blood Donors

Introduction

Nowadays blood transfusion is critical in the management of patients with medical conditions, such as accidental injuries, surgical conditions, malignancies, pregnancy complications, anemia, leukemia, and dengue, among others. The World Health Organization (WHO, 2012) estimates that at least 1% of the population needs to donate blood to meet the minimum requirement of the country. In the world however, about 70 countries have blood donation less than the required 10/1000 population and about 108 million blood units are collected. Half of these come from high income countries which constitute about 18% of the world's population.

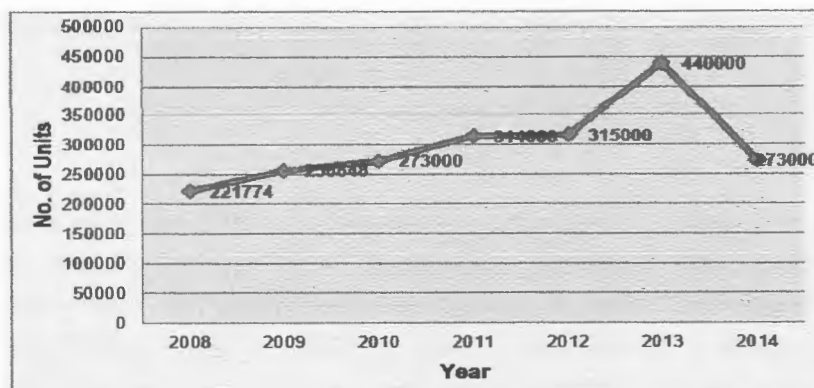
In the Philippines, the maintenance of safe and secure blood supply is dependent on its volunteers. Republic Act 7719, also known as the National Blood Services Act of 1994 (NBSA) pertains to the voluntary donation of blood that can help provide sufficient supply to the patients in need. It aims to create public consciousness about the importance of blood donations in saving millions of Filipinos. The Philippine National Red Cross, the, Department of Health, the Philippine Blood Coordinating

Council, together with other government agencies and non-government organizations are responsible for implementing the NBSA nationwide.

The Philippine National Red Cross (PNRC), the premier humanitarian organization in the country is the one committed to provide quality life-saving services that protect Filipinos in vulnerable situations. This organization provides 25-30% of the total blood supply in the country. However, the annual blood collection of the Philippine National Red Cross (PNRC) falls short of what is needed. The average blood collection of the PNRC is 2500 to 3000 units daily. But an estimated 2000 blood units every day are transfused to patients nationwide (DOH, 2010) and the adequacy of blood and blood products depend entirely on the rate of blood donation.

A sudden decline in the rate of blood collection was observed in 2014, with the donation consisting of 273,000 units, as compared to the previous year's 440,000 (as shown in Figure 1). This decrease is quite alarming because the situation might lead to a shortage of blood in hospitals.

Figure 1. Blood Collection of PNRC in 2008-2014



The biggest challenge to blood donation is how to attract and recruit possible blood donors. According to Schreiber *et al.* (2006) people disregard donating blood due to their fear of needles, their cringing at the sight of blood, and their anxiety about their body reaction to donating blood. These subjective attitudes adversely affect people's views about blood donation. These are the realities that prompted the researcher to conduct the study with the goal of assessing the views and attitudes of the general public towards blood donation, and to identify the factors associated with voluntary blood donation.

Materials and Methods

Design and Sampling Procedures

The researcher utilized descriptive cross-sectional study and systematic random sampling to select the specific barangay in the six districts of Manila to conduct the study. Every 15th barangay was chosen from the lists of the various districts. Then "convenience sampling" was used to select the respondents from each of the selected barangays based on convenience to the researcher. Among all the areas in Manila, the places around Districts 1-6 were used for gathering information about the study.

To maintain the reliability and effectiveness of this survey research, the researcher conducted data from at least 100 respondents from each district, based on the computed sample size, using Slovine's formula. Respondents are Manila residents, between 18 to 65 years old, and in good health.

Ethical Consideration

Upon receiving the approval from the ethics committee of the university, the study was immediately conducted. Full informed consent was secured from the respondents and the purpose of the study was explained to them. Participation in the research is entirely voluntary and in case they find some personal or confidential information that will cause them any discomforts, they may not answer the questions at all. In addition, the identity of the respondents was kept confidential and no incentives were given to them.

Data Collection

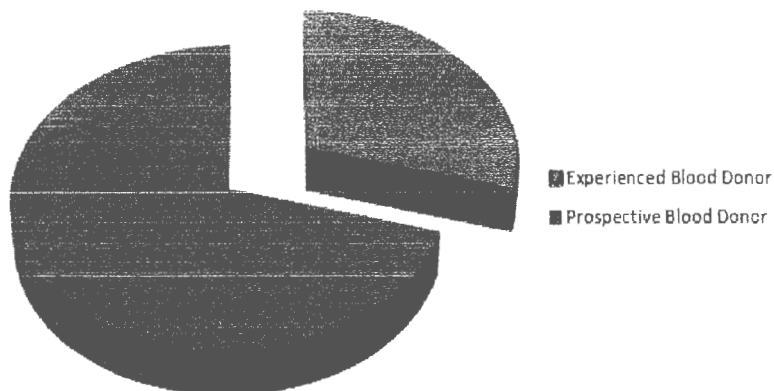
Prior to the collection of data, a letter of approval to conduct the study was obtained from each captain of different barangays where the study was conducted. Respondents were requested to give their consent prior to the administration of questionnaire which lasted for 10 to 15 minutes and was supervised by the researcher. They were then grouped into two groups - those who have experienced blood donation, and the prospective blood donors.

Results

Experienced and Prospective Blood Donors

From the study conducted in selected sites of Manila, out of 600 respondents, 177 (29.50%) were experienced blood donors; 423 (70.50%) were prospective blood donors.

Figure 2 Distribution of respondents according to their experience or lack of it in blood donation



Demographic profile of the respondents

The respondents were asked basic questions about themselves in order to determine their possible reason for donating and not donating blood.

Sex and age distribution of the respondents

There was a higher proportion of male respondents (52.3%, 314) compared to females (47.7%, 286) as shown in Table 1. Majority of the respondents were aged 29-38 years old (24.5%, 147) while a small proportion were aged 59-65 years old (8.8%, 53).

	Experienced blood donors		Prospective blood donors		Total	
	N=177	%	N=423	%	N=600	%
SEX						
Male	131	74	183	43.3	314	52.3
Female	46	26	240	56.7	286	47.7
AGE						
18-28	28	15.8	106	25.1	134	22.3
29-38	44	24.5	103	24.3	147	24.5
39-48	50	28.2	95	22.5	145	24.2
49-58	36	20.3	85	20.1	121	20.2
59-65	19	10.7	34	8.0	53	8.8

Table 1. Distribution of respondents according to sex and age

Educational level and occupation of the respondents

Majority of the respondents finished only their secondary education (47.5%, 285), followed by those who had completed the tertiary level (34%, 204). A small portion of the respondents had no formal education (2.2%, 13) as shown in Table 2. Also, majority of the respondents were found to be self-employed (29.5%, 177).

	Experienced blood donors		Prospective blood donors		Total	
	N=177	%	N=423	%	N=600	%
EDUCATIONAL LEVEL						
No formal education	2	1.1	11	2.6	13	2.2
Primary level	17	9.6	44	10.4	61	10.2
Secondary level	82	46.3	203	48	285	47.5
Tertiary level	79	44.6	125	29.6	204	34
Vocational	13	7.3	24	5.7	37	6.2
OCCUPATION						
White collar job	25	14.1	42	9.9	67	11.2
Blue collar job	49	27.1	87	20.6	136	22.7
Unemployed	41	23.2	103	24.3	144	24
Students	18	10.2	58	13.7	76	12.7
Others	69	39	108	25.5	177	29.5

Table 2. Distribution of respondents according to educational level and occupation

Respondents According to Income and religion Affiliation

Assessment of the monthly income of the respondents showed that higher proportion of respondents were earning P16,000-30,000 (49.5%, 297), followed by those receiving P15,000 or less (36.8%, 221). Most of the respondents were found to be Catholics (72%, 432) followed by Christians (18.7%, 112) as shown in Table 3.

	Experienced Donors		Prospective donors		Total	
	N=177	%	N=423	%	N=600	%
INCOME						
0-15,000	137	7.7	84	19.9	221	36.8
16,000-30,000	24	13.6	273	64.5	297	49.5
31,000-45,000	6	3.4	32	7.6	38	6.3
46,000-60,000	2	1.1	18	4.3	20	3.3
61,000-75,000	4	2.3	14	3.3	18	3
76,000-90,000			1	0.24	1	0.2
91,000-120,000	1	0.56			1	0.2
121,000-150,000	3	1.7			3	0.5
>151,000			1	0.24	1	0.2
RELIGION						
Christian	33	18.6	79	18.7	112	18.7
Islam	1	0.6	8	1.9	9	1.5
Protestant	3	1.7	3	0.7	6	1
Iglesia ni Cristo	16	9.0	14	3.3	30	5
Catholic	119	67.2	313	74	432	72
Others	5	2.8	6	1.4	11	1.8

Table 3 .Distribution of respondents based on income and religious affiliation

Donors' Reasons for Donating Blood

The respondents revealed that most of them donated blood because of the influence of their families or friends (67.8%, 120). The least popular reason was the offer of food and drink incentives, like biscuits and soda (1.7%, 3).

REASONS	Experienced blood Donors	
	N=177	%
Friends/Family	120	67.8
Encouragement by others	18	10.2
To get biscuits and soda	3	1.7
Right thing to do	39	22
Heard from news and radios	19	10.7
Others	18	10.2

Table 4. Distribution of respondents based on their reason for donating blood

Number of Times the Respondents Donated Blood

Most of the respondents had not undergone blood donation in the last twelve months (50.8%, 90); some had donated only once (34.5%, 61); others had donated blood two to three times (14.7%, 26); only 34 (5.7%) of the respondents had donated more than three times. A total of 418 (69.7%) had never experienced donating blood.

	N=177	%
In the last 12 months		
None	90	50.8
Once	61	34.5
Two-three	26	14.8
In the lifetime		
None	418	239
Once	64	12.2
Two-three times	75	12.5
Others	34	5.7

Table 5. Frequency of the respondents' donation of blood

Respondents' motivation for blood donation

What motivates donors to donate blood? What can be done to promote blood donation? Table 6. Shows that a great percentage of respondents have been influenced by relatives or friends (63.2%, 379). Others included health benefits (30.8%, 185), media campaigns (9.5%, 57), accessible blood donation

centers (5.5%,33), and monetary compensation (2.2%, 13) as factors that drove them to donate blood.

	Experienced blood Donors		Prospective blood Donors		Total	
RESPONDENTS OPINIONS	N=177	%	N=423	%	N=600	%
Media/ Campaigns	16	9.0	41	9.7	57	9.5
Monetary Compensation	6	3.4	7	1.7	13	2.2
Accessible donation centers	14	7.9	19	4.5	33	5.5
Health benefits	67	37.9	118	27.9	185	30.8
Relatives/ Friends	108	61.0	271	64.1	379	63.2
Others	9	5.1	27	6.4	366	61

Table 6. Motivations for blood donation

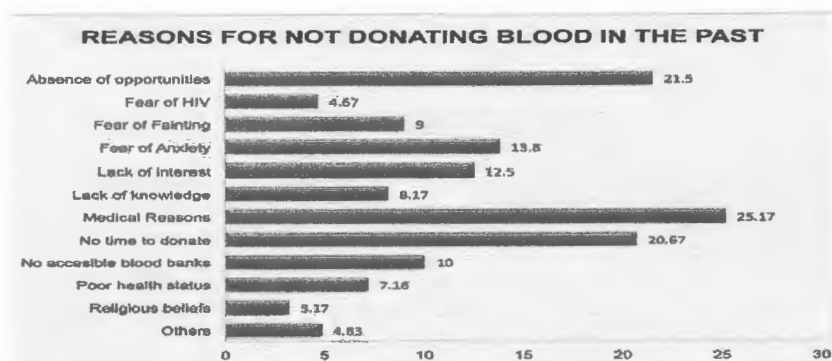
Reasons for not donating blood in the past

An analysis of the respondents' reasons for not donating blood in the past revealed the need for educating the public regarding this laudable event. The most common reasons were health and medical concerns, such as having anemia and hepatitis (25.17%, 154). The other two most frequent reasons cited were the absence of opportunities (because of job commitments (21.5%, 129) and the lack of time to go and donate blood (20.67%, 124). Religious beliefs presented a small portion (3.17%, 19). Other baseless reasons were fear of HIV, of fainting, lack of interest, ignorance of the process, lack of accessible blood banks, and poor health status.

Risks from blood donation as perceived by the respondents

A significant number of respondents believed that bloodletting entailed a "small risk" only. A large number of respondents considered pain from the needle (73.3%,440) as a small risk followed by fainting (61.5%, 369), feeling weak (57.5%, 345), anemia (58.7%, 352) and getting a disease when donating blood (46.7%, 280). A small proportion of respondents rated fainting (26.7%, 16) as extreme risk followed by getting disease when donating blood (21.8%, 131), anemia (5%,30), pain due to needle (4%, 24), and feeling weak (1.7%, 10).

Figure 3. Distribution of the respondents' reasons for not donating blood in the past



	Experienced Blood Donors (177)		Prospective Blood Donors (423)		Total	
	N	%	N	%	N	%
Fainting						
1	149	84.2	220	52	369	61.5
2	38	21.5	155	36.6	193	32.2
3	5	2.8	17	4	22	3.3
4			16	3.8	16	26.7
Feeling weak						
1	130	73.4	215	20.8	345	57.5
2	57	32.2	161	38.1	218	36.3
3	3	1.7	23	5.7	27	4.5
4	1	0.56	9	2.1	10	1.7
Pain due to needle						
1	157	88.7	283	66.9	440	73.3
2	32	18.1	82	19.4	114	19
3	6	3.4	16	3.8	22	3.7
4	1	0.56	23	5.4	24	4
Anemia						
1	137	77.4	215	50.8	352	58.7
2	29	16.4	137	32.4	166	27.7
3	8	4.5	44	10.4	52	8.7
4	3	1.7	27	6.4	30	5
Getting a disease when donating blood						
1	143	80.9	137	32.4	280	46.7
2	30	16.9	105	24.1	135	22.5
3	11	6.2	43	10.2	54	9
4	28	15.8	103	24.3	131	21.8

*1 Small risk, 2 moderate risk, 3 risk, 4 extreme risk

Table 7. Risks from blood donation, as perceived by the respondents

Blood donation and current willingness to donate blood

A significant higher proportion of respondents were willing to donate blood (58.2%, 349) as compared to those who were not willing (41.8%, 251), as shown in Table 8.

	Experienced blood donors		Prospective blood donors		Total	
	N=177	%	N=423	%	N=600	%
YES	129	63	220	188	349	251
NO	72.9	35.6	52	44.4	58.2	41.8

Table 8. Distribution of respondents' current willingness to donate blood

Discussion

The purpose of this study is to determine the factors affecting blood donations among selected sites in Manila. Out of 600 respondents, 177 (70.50%, 177) had been blood donors; (29.50%, 423) were non blood donors. The respondents were asked basic questions about themselves including sex, age, educational level, occupation, income and religious affiliation. The demographic profiles were done to determine the concerns and views of the blood-donating population.

The number of male donors was higher compared to female donors, a proportion was similar to the findings in France (Abolghasemi *et al*, 2010), and China (Zaller *et a.*, 2006). This could be due to the fact that males have fewer exclusion criteria than females. For instance, more women are more likely than men to be temporarily restricted from donating blood because of their low hematocrit or red blood cell level when they are menstruating. This means that they cannot donate blood as often as their male counterparts, according to NHS Blood and Transplant (2012). Respondents, aged 39-48 years old presented the highest proportion in the study. This was similar to the study done in Congo (Duboz *et al.*, 2010). This result could be due to the fact that maturity matters among blood donors. According to Bigham (2010), blood donation among mature people tends to portray a positive outcome.

Many of the respondents finished their secondary education, but the majority had finished their tertiary education. This could be correlated to the study of Agrawal *et al.* (2013) that with increased educational level, awareness level toward blood donation also increased.

Majority of the respondents were self-employed; many were also unemployed. Despite their higher educational attainment, many of the graduates of tertiary education were unemployed. An assessment of their monthly incomes revealed that many of the respondents earned P16,000 to P30,000. Only a few had an income of P76,000 and above; just as white collar jobs got a low proportion in the study.

Most of the respondents were Catholics; after all, the Philippines is a predominant Catholic country.

Majority of the reasons of the respondents for donating blood was to donate for friends and family. This was also similar to the study authored by Giacomini *et a./* (2012) that "blood donation is a solidarity and lifesaving act." On the other hand, though the research was conducted in a third world country, results showed the least of the reasons was to donate blood for monetary exchange. It is also accurate to say that respondents were avoiding paid donors to take part in the blood donation even when they were in need.

Most of the respondents who had undergone blood donation were not able to donate after a year. Among those who had donated only once yet, the prevailing reason was to help their friends and families. Misgivings about blood donation traced to the anxiety regarding needle pains during donation, can be correlated to a research written by Gillespie (2015) where negative motivations as perceived by prospective donors were pain caused by needles and fainting after the donation process.

The researchers also asked the respondents what factors would motivate them to donate blood because of the increasing demand for donations. As earlier mentioned, the major motivation would be donating to help relatives and friends in need. Secondly, media dissemination could be a factor in encouraging people for could help increase awareness of the benefits that a donor can receive after donating. In other words, information dissemination can lead to an increase in bloodletting participation; this motivating factor also stood out in a study authored by Shakeri *et al.* (2014).

Medical conditions, like hypertension, diabetes, and anemia were also the main concern cited by the respondents who had not donated in the past. Next to this was the absence of opportunities and lack of time to donate blood. The percentages of these reasons were very close. Absence of opportunities had been identified as the negative factor in potential decision-making. This view echoes the results of the study in the United Kingdom conducted by Gillespie in 2015 which noted that in the UK, 27% of the current or lapsed donors were primarily motivated by the awareness that individuals may need blood in the future. Among all the motivating factors given, however, religious belief was the least concern when donating blood. In the study conducted by Abolghasemi in 2010, however, religious affiliations had a vital effect on pro-social and altruistic behaviors. For example, in Islam saving human lives and helping others against affliction are always enjoined. For in the holy Quran, Allah says, "Whoever saves a human life saves a life of the whole mankind."

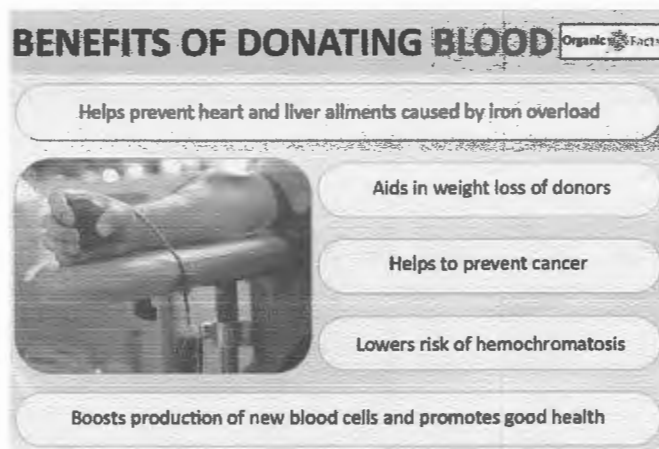
Opinions regarding the common risks of blood donations were also asked. A low proportion of respondents answered that fainting was an extreme risk during donation of blood. Worry about fainting stems from the view that blood donation involves the removal of blood from the circulatory system; in fact, some people pass out while giving blood or after the blood donation process. During the blood collection process the blood volume decreases and causes a sudden drop in blood pressure. To address this problem, the American Red Cross (2014) recommends drinking plenty of fluids and maintaining a diet high in iron before a donation appointment.

Another extreme risk perceived by potential donors was acquiring a disease; however, since blood centers follow strict safety procedures and screening, this should not be a concern (Miller Keystone Blood Center). The respondents also consider anemia as a medium risk during blood donation. Since anemic people are not allowed to donate blood, this concern is out of the question. For it is really unsafe for anemic people to give blood; moreover, the low blood count among the anemic can be dangerous because of depleted oxygen levels. Body weakness also scares prospective donors for vital components, like glucose, are lost from the body.

In blood collection a large needle (16 to 17 gauge) is used. Although the size of the bore is large, majority of the respondents note that pain caused by the needle was only a small risk. Feeling weak after donation was perceived as the least possible risk associated with bloodletting. The respondents saw this reason as the least influential factor to affect potential donors to give blood.

Despite the risks associated with blood collection and donation, many were still willing to donate blood. But to encourage more donors to donate blood, important information –about the safety measures involved in the procedure and screening of donors—should be clarified. More important, the five impressive benefits of donating blood should be disseminated (www.organicfacts.net):

Figure 3. The Five Impressive Benefits of Donating Blood



Conclusion

The study showed that most of the chosen respondents were prospective blood donors and within the age group of 29-38 years old. The main motivating factor to donate blood among those previous blood donors was to help families or friends. The main reason for not donating blood was lack of opportunities, especially job commitments. The risks from blood donation, as perceived by the respondents, were mainly their vulnerability to disease when donating blood, and their fainting from weakness due to blood loss.

Dissemination of the safety measures involved in bloodletting, as well as the screening of donors for health and disease-free transfusion should be emphasized. More important, the benefits of donating blood should be stressed and widely disseminated. Thus, more donors would be enticed to help our blood bank centers.

Recommendations

The following recommendations were made based on the study:

1. Flyers on blood donation, including the heroic act of saving people's lives, the benefits of blood donation, and risks, must be given to different barangays. Barangay officials should be in charge of disseminating the flyers.

2. The media should participate in correct information dissemination regarding blood donations. Promotion of blood donations could be via commercials as well as through the social media.
3. There is need for credible and reliable medical groups and the Red Cross to sponsor bloodletting projects, conduct seminars on blood donation, and provide accessible venues for bloodletting.
4. Blood Bank Centers should be made available to every district so that these will be accessible to possible blood donors.
5. For future researchers, focusing on the benefits of blood donation, and explaining the risks and safe procedures will address the declining number of donors.
6. Since the study was limited to the City of Manila, other research work may build on the results of this study and perform other studies in other sites of the country. #

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