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Awareness, Knowledge and Attitude of Students of a Plateau State Tertiary Institution to Blood Donation

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ABSTRACT

Introduction: Inadequate blood donors and lack of voluntary blood givers in our setting may be linked to the dart of correct information on blood and its donation against popular myth and assumptions that deter people from blood donation. Aim: This study seeks to determine the awareness knowledge and attitude of newly admitted students of a state own health care training institution on blood donation. Methods: Structured questionnaire on Awareness, knowledge and attitude to blood donation was administered to consecutively recruited subjects. The attitudinal disposition to blood donation was confirmed by positive history of or actual donation. Results: one hundred and eighty out of two hundred newly admitted students mean aged 23.7± 3.0 years completed and returned their questionnaire. One hundred and sixty one (89.4%) subjects are aware of blood donation mainly through personal communication, the media and the national blood transfusion service. All the subjects knew something

about blood and blood donation while 75% were positively disposed to blood donation. The positive attitude to blood donation was confirmed by both 16.1%history of previous donation and 8.9% actual end of study donor enrolment and donation. Conclusion: we conclude that the awareness about blood donation among new intake into tertiary institutions may be high in our setting. A high number of individuals favourably disposed to blood donation may not actualise their intention by actual blood donation.

Key words: Blood and Donation, Students, Awareness, Knowledge, Attitude

1. INTRODUCTION

Inadequate blood donors and lack of voluntary blood givers in our setting may be linked to the dart of correct information on blood and its donation against popular myth and assumptions that deter people from blood donation. The combined effect of poor information and myth is the unending difficulty in raising sufficient blood to meet transfusion needs particularly from voluntary donations.

In Benin city, within the South-South oil rich region of Nigeria, Nwagoh and others in 2013 reported a 22.1% blood donation rate among their health worker in the university of Benin teaching hospital with a 41.7% voluntary donation.[1] The overall donation rate among the male and female health workers in their study was 14.5 and 7.5% respectively.[1]Astudy carried out in South Western Nigeria by Salaudeen and others in 2011 among students of a tertiary institution reported that 61 per cent of their subjects had good knowledge about blood donation. Despite this level of knowledge, about 85% of them never donated blood before while 75% who had, did so in aid to their close associates.[2] Lack of opportunity to donate was responsible for 45% non-donation while 29% desire gift items.[2]

Agrawal et al., reported an 81% voluntary blood donation among the people of Ittackhand where 67% of blood units are collected from the male sex.[3] Lack of awareness and the fear of getting sick and infection, existing ill health and inept use of available blood were identified deterrents to blood donation in Ittackhand.[3]The sources of information on blood donation in their study were television and radio, print media, school and colleges, workshop and blood donation camps as well as inter personal communication.[3]Eighty two per cent of 200 students included in a Dhaka university study, in 1997 (Hosain et al) had positive attitude to blood donation with only 16% having ever did donate.[4] Non donors in their study exercised physical harm and fear as reasons for declining to donate blood.[4] Never ask to donate was reason of 40% non-donation among paramedical health personnel with a 49.2% voluntary blood donation by doctors (Gilani et al, 2007).[5] Allen J et al (1993) reported that increase knowledge increases perceived risk to donation which decrease the intention to give blood.[6]

In Chennai India,Uma and others (2013) reported on the knowledge of their donors on blood donation. The found a 51.2% and 77.4% correct knowledge on interval of blood donationand accepted age limits.[7]Fifty seven per cent of their subjects felt creation of blood donation opportunity is motivational while the fear of pain is responsible for 55% prospective donor hesitation.[7] A knowledge attitude and beliefs study in northern India in 2014, show that not asking people to donate blood is responsible for 40.75% decision not to.[8]Dudey and colleagues in the same study also identified lower knowledge score on blood donation, false beliefs and association of blood donation to infertility. Television communication was identified the most effective means in their study.[8] In a Canadian study, Hupfer et al (2005) documented altruism as the dominant reason for blood donation with concern about adverse effects on the mind of more women than men.[9] Glynn and colleagues reported the desire of 61% and 73% of older donors in the united states for cholesterol and prostatic specific antigen screening as incentives to blood donation.[10] Younger American blood donors at school, military and universities, on the other hand preferred compensatory incentives, gifts or monetary token.[10]

There are no data in our setting on the awareness, knowledge and attitude of people to blood donation. This study seeks to determine the awareness knowledge and attitude of newly admitted students of a state own health care training institution on blood donation.

2. METHODS

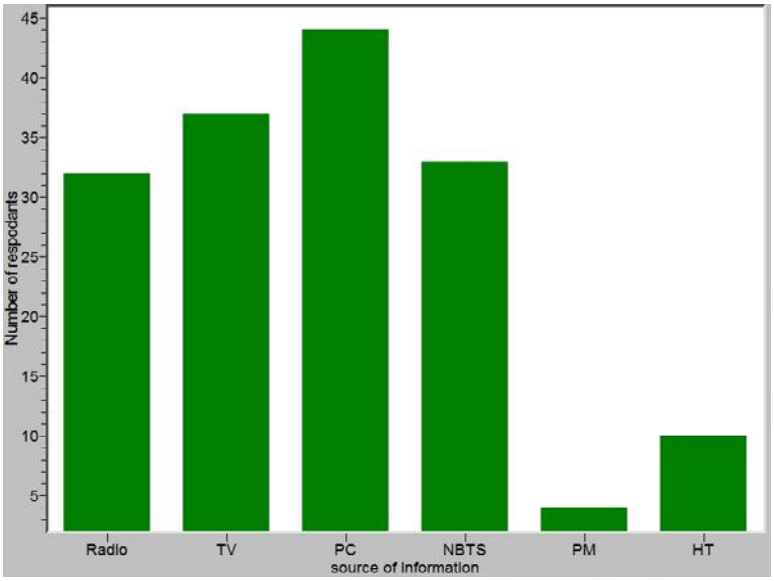
This was a cross sectional study carried out among newly admitted students of the College of Health Technology Zawan, Plateau State Nigeria. Structured questionnaire on awareness, knowledge and attitude of participants to blood donation was administered to consecutively recruited subjects. Participants responded to questions related to their bio data, awareness, knowledge and attitude to blood donation. The attitudinal disposition to blood donation was confirmed by actual completion of blood donor questionnaire with consent to participate in research and donation. Microsoft excel was used to analyse data which are presented in charts. Ethical approval was obtained from the Ethics Committee of the North Central Zonal Centre, of the National Blood Transfusion Service, in Jos Nigeria.

3. RESULTS

Two hundred newly admitted students into the Plateau State College of Health Technology, Zawan, were recruited into the study. One hundred and eighty completed their questionnaire and retuned while 20 (10%) did not. The age range of subjects who continued in the study was 18-40 (23.7 ± 3.0) years, 57 (31.7%) males and 123 (68.3%) females.

One hundred and sixty one (89.4%) were aware of blood donation while 19 (10.6%) were not. The highest number (27.5%) of participants got aware of blood donation through personal communication with those who were already informed. Information through the national blood transfusion service (NBTS) was the source for 33 (20.6%) while the television and radio provide awareness to 37 (23.1%) and 32 (20.0%) respectively. The minor sources of awareness on blood donation were health talks (6.3%) and2.5% was informed through the print media (Figure 1)

Figure 1



Key: TV-Television, PC-Personal communication, NBTS-National blood transfusion service, PM-Print media, HT- Health talk

Figure 2

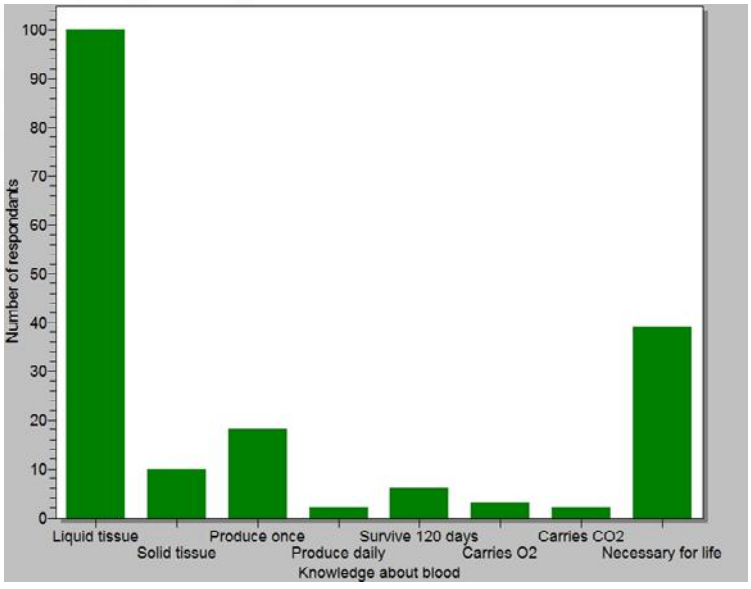
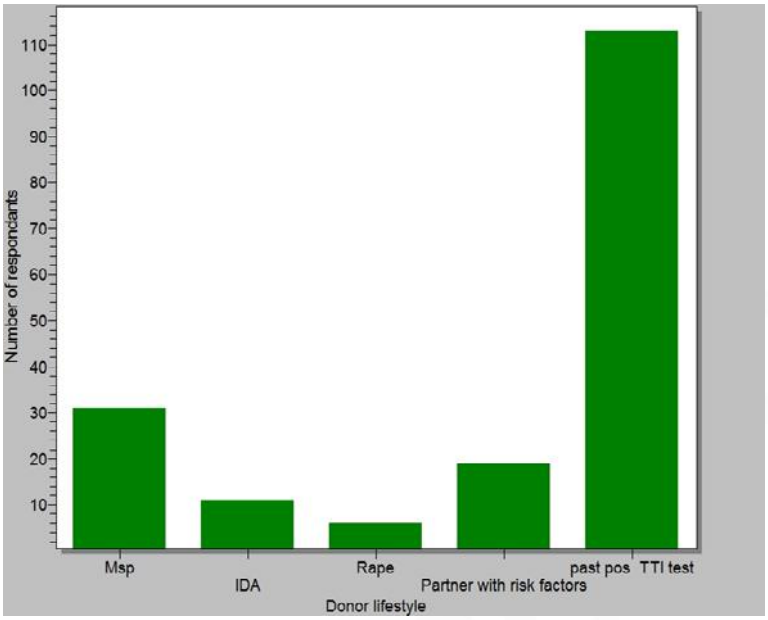


Figure 3



Key: Msp-Multiple sexual partners, IDA-Injection drug abuse, TTI-Transfusion transmissible infections

Figure 4

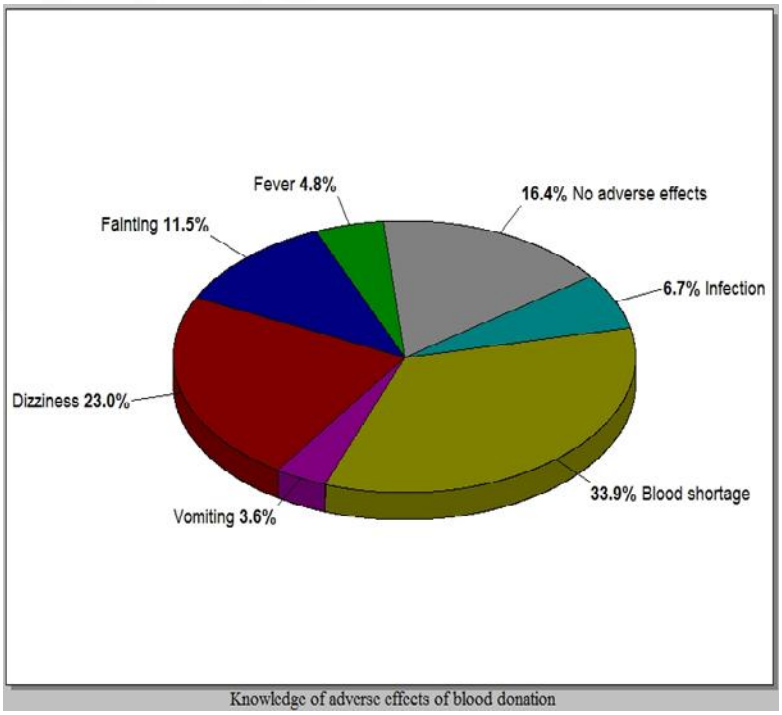


Figure 5

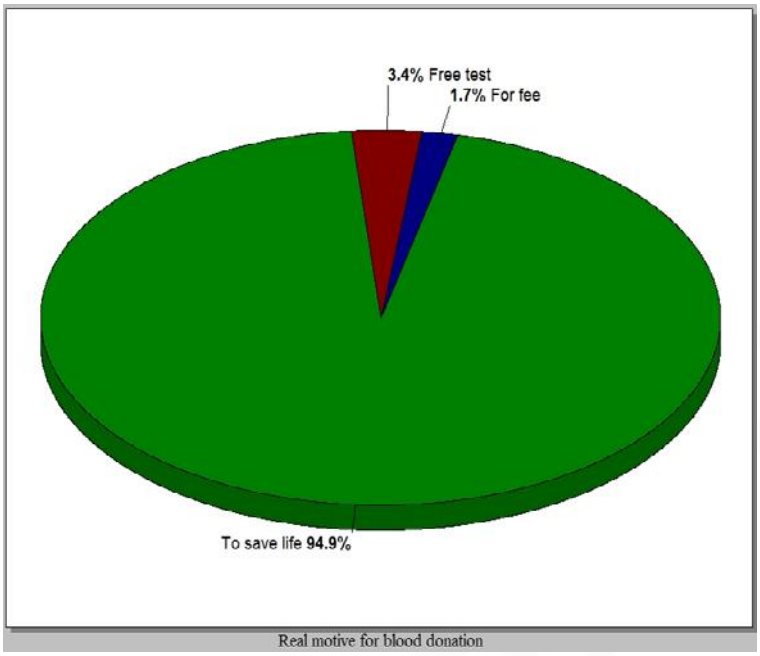
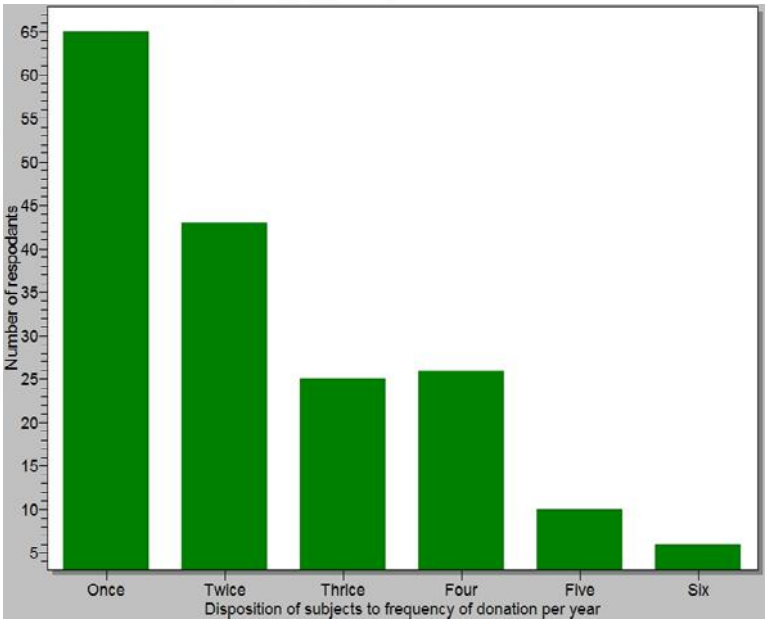


Figure 6



The knowledge of studied subjects on blood and blood donation varied greatly. One hundred (55.6%) knew that blood is a liquid tissue while 10 (5.6%) were of the opinion that blood is rather a solid tissue.

On the rate of blood production, 18 (10.0%) opined that blood is produced once in a lifetime while 21.1% are of the opinion that it has a daily production. Six (3.3%) indicated that blood survives for 120 days in circulation. 3.3% and 1.7% knew that blood was responsible for the transport of

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oxygen and carbon dioxide respectively. One hundred and thirty nine (77.2%) affirmed that blood was necessary for life (figure 2).Twenty four participants responded that it was not necessary to be healthy to donate blood to another person while 86.7% agreed that being in good health is a pre requisite for blood donation. The subjects' response on lifestyles varied greatly with 62.8%, 17.2%, 6.1% and 3.3% are of the pinion that a prospective donor should be disqualified on the grounds of previous positive test to TTIs, having multiple sexual partners, engaging in injection drug abuse or a victim of rape respectively. 19 (10.6%) agreed that an intending blood donor whose sex partner has any of the above risk lifestyles be disqualified (figure 3).

The knowledge of participants on the type of blood donation is; 116 (64.4%), 16.7%, 10.0% and 8.9%: voluntary, for self, for fee and in aid to a needy relation respectively. Subjects' responses on the volume of blood collected at a donation were, 87 (48.3%), 28.9% and 22.8% less than 250 mls, 250-500 mls and above 500mls respectively. Before blood donation, 101 (56.4%) believed that prospective donors should take extra meal, 22 (14.5%) suggested liberal oral fluid intake while 29.1% were for both. One hundred and thirty participants identified the adverse effects of blood donation as: blood shortage; 33.9%, dizziness; 23.0%, faint; 11.5%, infection; 11.5%, and vomiting; 3.6% (figure 4).

The attitude of our subjects to blood donation in this study also varied widely. 136 (75.6%) were favourably disposed to donating blood while 24.4% were not. Of 167 subjects who stated their reasons for the disposition to consider blood donation; 99 (59.3%) would be attracted for voluntarily donation, 24.0% for fee and 16.8% for self. Fifty (27.8%) of all the respondents would not demand for material gifts to donate blood while 72.2% would. One hundred and forty five students indicated whish incentives compensation for blood donations. Seventy two (49.7%) would request for refreshment, while 40.0% and 10.3% would ask for money and souvenir respectively. Responding on the primary motive to donate blood, 168 (94.9%) would do so to save lives, 6(3.4%) would be for the benefit of free tests while 3 (1.7%) would be for cash payment (figure 5). On the frequency of donation, 61.7% would want to donate 1-2 times, 29.2%; 3-4 times and 9.1%; 5-6 times (figure 6). 152 (84.9%) would recommend blood donation for members of the community while 28 (15.1%) will not. Twenty nine (16.1%) of the participants donated blood before while 83.9% have never. Sixteen (8.9%) of our subjects donated blood at the end of the study, constituting 11.8% of those favourably disposed to blood donation.

4. DISCUSSION

The mean age 23.7 ± 3.0 years of our study group is similar to the mean age of donors, in a recent report (Damulak et al), donating blood to the blood service in Jos.[11]The mean age in this study is similar but less than 30 years mean donor age reported by reported by Rateesh and colleagues in a blood donation awareness study.[12] These findings suggest increasing interest and participation of young people in blood donation activities, particularly at educational institution base events. Further stimulation of the young population in the community by creating awareness on blood donation could encourage blood donor enrolment, long term safe life style and commitment to repeat donations. The high rate of awareness (89.4%) on blood donation among subjects in this study concurred with 92.0% knowledge about blood donation among medical students in Karachi (Zeeshan et al, 2014).[13] It is however higher than the knowledge about blood donation among students of a tertiary institution in South-Western Nigeria (Salaudeen et al).[2] The level of awareness about blood donation in our subjects is higher than 52.4% recorded by Olaiya et al among a largely educated Lagos based blooddonors.[14]The sources of information on blood donation that reached our subjects were inter personal communication, television, radio, activities of the national blood transfusion service at blood donation camps and social events, health talks and print media. These information sources are similar to the findings of Agrawal and colleagues (2013) in their knowledge and attitude study, among people of Ittackhand, towards voluntary blood donation.[3]The collaboration of the NBTS and the media organizations in dissemination of informational advertorials on blood donation might have contributed to the high rate of blood donation awareness among our subjects. There is need to deepen partnership with media organizations to attain hundred per cent blood donation awareness among the populace to raise sufficient safe blood givers. There appears, that young people talk to one another on blood donation more than hearing from any other means of communication, stressing the need to intensify on public awareness.

The subjects' general knowledge of blood is low in this study. A minority of our subjects considered blood as a solid tissue (5.6%) and produced once in a lifetime (10.0%). Although 84.4% had some lone correct information on blood, there was no general understanding of blood as a liquid tissue, necessary for life, produce daily and circulates within the intravascular spaced for approximately 120 days transporting oxygen and carbon dioxide (figure 2). It has long been established that haemopoiesis in the adult is limited to the red marrow where 2.5 billion red blood cells, 2.5 billion platelets and 1.0 billion white blood cells are produced daily with the potential of 6-8 fold increase when challenges like reduction in blood level are occasioned.[15] There is need to train blood donor mobilizers and recruiters on these basic facts about blood to enrich their scientific knowledge, evidence based prospective blood donor education and sensitization that will result in more informed voluntary blood donor enrolment.

The knowledge of our subjects on reason for donor disqualification on prospective donor health and the risk of contracting and transmitting TTIs were inconsistent. Majority of our respondents were aware that donors should be healthy while a minority (13.3%) were of the opinion that good health is not necessary to donate blood. The national blood transfusion service requires good health as a pre requisite for a prospective blood donor selection and donation.[1] The contrary minority may be justified by the necessity of phlebotomy in management of polycythaemia.[16]Prominent reasons for donor deferral among our subjects are the risks for transmission of the TTIs. This concern is supported by Tessema et al (2010) who reported a 9.5% crude TTIs among Ethiopian blood donors.[17]The knowledge of our subjects on these risk factors for exclusion from blood donation was high for past positive test to the TTIs, however,the knowledge of individual risks that may lead to contracting the TTIs is low in our setting(figure 3). The concentration of knowledge on past positive TTIs test may be a result of sustained campaigns against the spread of the human immunodeficiency virus over the years. There is need to include discussions on these risk factors during donor sensitization and blood donation awareness talk to enhance the self-exclusion of intending blood givers with risk exposure.

The undocumented general perception that blood donation requires self-fortification may be responsible for 56.4% of 179 subjects opting for extra meal and 29.1% desiring offer of both extra meal and liberal oral fluid to donate. The intake of extra meals would stimulate intestinal motility and increase splanchnic circulation with attendant reduction in cerebral blood supply. [18]There is need to caution intending blood donors against intake of heavy meals in the peri-donation period to reduce the chances of increasing intestinal blood supply with attendant systemic hypotension and exaggeration of the central impact of blood donation on the nervous system. The volume of blood taken at donation is ill understood by our subjects as 22.8% and 48.3% opined that greater than 500mls and less than 250 mls respectively is withdrawn at each donation. The explanation of the volume of blood taken at a donation (250-500 mls depending on the bag) out of the approximate total blood volume of 5000mls could educate and allay anxiety in intending donors.[1]The knowledge of our subjects on the types of blood donation showed that voluntary and autologous blood giving are known to the majority; 64.4% and 16.7 respectively, similar to a dominantly voluntary blood donation rate documented earlier in our centre (Damulak et al, 2014).[19]The education of the populace on voluntary blood donation should be sustained asthe safe modes of blood donation are autologous andvoluntary.[20] We call for the conversion of knowledge and attitude from family replacement and paid to voluntary blood donation. We further encourage the education of prospective blood donors on autologous donation which, where possible, would eliminate the complications of allogeneic blood transfusion.

The association of blood donation with adverse effects is known to our subjects. Blood shortage is the most understood complication of blood donation as suggested by 33.9% of 165 respondents. Other adverse effects of blood donation known to our subjects were dizziness, fever, faints, vomiting and infections (figure 4). This finding is supported by Allen et al (1993) who reported increase perception of risk to blood donation with increased level of education.[6] There is need to educated potential blood donors on regular monitored blood donation which is associated with no significant blood shortage.[21] It is also important to inform prospective donors of possible side effects that are self-limiting and the measures that would prevent or aids early resolution should any occurs.[1,21]

The disposition of our subject towards blood donation is very high (92.8%) reflecting their awareness on blood donation. The disposition of our subjects to blood donation is similar to 82% reported by Hosain and colleagues (1997) among 200 students studied in Dhaka University and 80% positive attitude documented by Elsafi et al (2015) among college students in Dhahran, Saudi Arabia.[4,22]The disposition to donate bloods in our study is higher than 42% reported by Zeeshan and co-workers (2014) among undergraduate medical students in Karachi.[13]The attitude of our subjects disposed to blood donation is to give voluntarily (59.3%), for fee and for self/relation. The attitude towards voluntary donation reflects 85% voluntary blood donation reported recently in Jos (Damulak et al, 2014).[19] There is need for attitudinal change from paid and replacement donation towards voluntary and autologous donation among our growing young population in view of associated superior safety.[20] Majority of subjects in this study desire incentives ranging increasingly from souvenir, refreshment and outright cash gift for blood donation. The primary motive for our subjects to donate blood would be; to save life in 94.9%, free TTIs testing and fee payment (figure 5). Incentives have been identified as one of the keys among awareness to donate blood, reduced anxiety and adverse events to encourage commitment to long term blood donation (Ringwald et al, 2010).[23] This show that even when donors desire gifts in return for blood donation in our setting, live saving remains the objective. We concurred with AlenaBuye (2009) who recommended the design of cash and non-cash incentives that fit blood donation setting that would meet the desire of most of donors in developing country.[24] The intention of 175 subjects in our study to donate blood between once to six times in a year (figure 6), suggests the potential will of locals to commit to repeat blood donation. While we recommend regular donation, too frequent phlebotomies on a donor would however predispose to iron lack and anaemia as about 200mg of iron goes with each blood unit of 500 mls.[25] Tailoring of donor education towards retention could realise committed donors who would live safe lifestyles and become long term regular safe blood givers at no risk of iron lack. The willingness of 84.9% of our subjects to educate their community on blood donation, if explored, would be a useful tool for community awareness on this humanitarian service. The positive history of blood donation in 16.1% and actual donation of 8.9% at the close of research participation confirmed the positive attitude of our subjects to blood donation. The proportion of previous donation in this work is similar to that reported from Dhahran Saudi Arabia (Elsafi et al, 2015).[22] Motivation of persons with practical positive attitude to blood donation with donor identifier souvenir without compromising altruism may encourage donor; donor recruitment and return donations.

5. CONCLUSION

We conclude that the awareness about blood donation among new intake into tertiary institutions may be high in our setting. It is further concluded that the knowledge of young people on blood and blood donation is scattered between established known facts. A high number of individuals favourably disposed to blood donation may not actualise their intention by actual blood donation.

RECOMMENDATION

We recommend the design and implementation of a robust enlightenment campaign involving the media on blood and its donation, highlighting the requirement for recruitment, likely unpleasant donor experiences and the need for attitudinal change towards commitment to blood donation and retention.

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