Original Article

Blood Group, HIV And HBsAg Status Of Apparently Healthy Nigerians

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Summary

A number of key medical information such as blood groups and genotype, HIV status, of most Nigerians is unknown to them as long as they are apparently healthy. An individual’s knowledge of his/her blood group, HIV and Hepatitis B status proves invaluable in cases of emergency blood transfusions or blood donations. Apparently healthy individuals at a national exhibition who consented were enrolled into this study. Their bio-data was obtained and their ABO blood group determined. They were screened for HIV and HBsAg using rapid test kits. Out of 250 participants, male /female ratio was 3:1 and the median age was 38 years (16 to 59 years). Majority (58%) of them were civil servants while (14%) were students. Most (30%) were from the north central zone of the country while the north western and south western zones accounted for 18% each. One person (0.4%) was HIV positive while 6.4% tested positive for HBsAg. Blood group O was the commonest at 53%, followed by group A with 24%, 96% of all participants had a positive rhesus factor. Regular medical checks should be promoted for the purpose of knowing one’s health status.

Keywords: HIV, Hepatitis B, Blood group, Healthy

Introduction

Medical identities are simple ways to communicate important health information to first responders in an emergency\textsuperscript{1}. Knowledge of important information such as an individual’s health status and basic vital health information is very necessary and may save life in conditions like emergency blood donation or transfusion. A medical identity provides medical information about individuals including basic facts such as ABO blood group and Rhesus typing and may come in different forms\textsuperscript{1, 2}. The various form of storing medical information or identity has evolved through the years especially in developed countries from basic self-knowledge to more sophisticated means such as storage on accessories such as medical tags, bracelet and necklace which an individual
wears, to more complex gadgets like phones and remote server software and programs\textsuperscript{2, 3, 4}.

Medical information such as blood groups and genotype, HIV status, of most Nigerians is unknown to them as long as they are apparently healthy\textsuperscript{7}. The majority of the populace would go about life’s normal business unless this is interrupted by ill health\textsuperscript{5-8}. This may lead to medical issues such as sudden death syndrome or diseases that present late or in really advanced stages at which little can be done to save life\textsuperscript{6, 8}. Knowing more about one’s health history, can improve recovery chances in bad medical condition\textsuperscript{11}. An individual’s knowledge of his/her blood group, HIV and Hepatitis B status proves invaluable where the need for emergency blood transfusions or blood donations arises. Inculcating a culture of frequent planned medical checks and evaluation may help in propagating a health conscious habit\textsuperscript{5, 11}.

This study was conducted to determine the blood group, HIV and HBsAg status of apparently healthy Nigerians in order to create awareness of the importance of knowing one’s status.

The outcome of the evaluation will be useful to the individuals concerned and may save life, also in driving government policies/interventions such as: blood donation initiative, health insurance policies and public health campaigns on some infectious diseases.

**Methods**

This study was carried out at the First National Education Innovation Exhibition in Abuja in November 2012. Two hundred and fifty apparently healthy Nigerians, who consented to the study, were enrolled and their bio-data was obtained. Samples were collected and tested to determine their ABO blood group and rhesus factors. Further testing was done to determine the presence of HIV and Hepatitis B virus using rapid test kits.

ABO blood group analysis was done using the “Grouping antisera A, B, AB&D reagent by Biotec. Twenty microlitre of blood was mixed via rocking with one drop of antisera on a clean tile; the reaction was allowed to develop for 2 minutes after which the presence or absence of agglutination was indicative of a particular blood group. HIV status determination was done using the “Determine kit by Alere Medical Co.Ltd” and hepatitis B by Diaspot rapid test kit by Sam Tech Diagnostics. The two assays utilize test strips: for hepatitis B, 4mls of blood was collected in EDTA anticoagulant bottle and the plasma separated out. The test strips were immersed in the plasma for about 15 seconds. Results were read after 15 minutes, different lines appearing on the test strips were indicative of result. Results were interpreted according to the guide in the manufacturer’s manual. Whole blood was used for HIV status determination. The test strips were interpreted in line with manufacturer’s instruction. Results were issued out and those who tested positive were referred for further management.

**Results**
A total of 250 participants were enrolled in the study. There were more males than females (3:1) enrolled in the study and more than half of the people screened fell within the age groups of 30-49 with the median age being 38 years (table 1).

**Table 1: Age & sex distribution of the participants**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male (%) n=190</th>
<th>Female (%) n=60</th>
<th>All (%) n=250</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>9 (4.7)</td>
<td>4 (6.7)</td>
<td>13 (5.2)</td>
</tr>
<tr>
<td>20-29</td>
<td>30 (15.8)</td>
<td>12 (20.0)</td>
<td>42 (16.8)</td>
</tr>
<tr>
<td>30-39</td>
<td>62 (32.6)</td>
<td>17 (28.3)</td>
<td>79 (31.6)</td>
</tr>
<tr>
<td>40-49</td>
<td>59 (31.1)</td>
<td>21 (35.0)</td>
<td>80 (32.0)</td>
</tr>
<tr>
<td>50-59</td>
<td>29 (15.3)</td>
<td>6 (10.0)</td>
<td>35 (14.0)</td>
</tr>
<tr>
<td>60-69</td>
<td>1 (0.5)</td>
<td>0 (0.0)</td>
<td>1 (0.4)</td>
</tr>
</tbody>
</table>

Figure 1 shows that geographical distribution was skewed towards the North central zone (30%), this group was followed by North West and South West zone evenly represented with (17.6%) 44 persons each, and North East zone had the least at 8%. Figure 2 shows that the majority of the people studied were civil servants (57.7%), followed by students (13.7%).

**Table 2: Blood group distribution**

<table>
<thead>
<tr>
<th>Blood group</th>
<th>Rhesus Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos.</td>
<td>Neg.</td>
</tr>
</tbody>
</table>

Figure 2: Occupational distribution of participants

Technocrats comprising mainly of lecturers, engineers, lawyers, journalists, IT personnel and a few accountants were 11.3%, while the group of low cadre (6.5%) had drivers, domestic helps and security/gate attendants. House wives, applicants, and clergy were 3.2% and grouped together has ‘other’. Table 2 shows that blood group O was the commonest 52.8% followed by blood groups A and B with 24 and 19.6% respectively, AB blood group was the least at 3.6%.
HBV and HIV prevalence of the population is shown in Table 3 with occurrences of 6.4% for HBV and 0.4% for HIV infections.

**Table 3: Prevalence of HIV & HBV**

<table>
<thead>
<tr>
<th>Test</th>
<th>No</th>
<th>Result</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>250</td>
<td>16</td>
<td>6.4</td>
</tr>
<tr>
<td>HIV</td>
<td>250</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>

**Discussion**

Useful health details were discovered from this random screening of apparently healthy individuals conducted at the First National Education Innovation Exhibition in Abuja metropolis. The mean age of the population studied was 38 years: 2 age groups had the largest distribution (30-39/40-49). Majority of attendees were civil servants and students as the event was an education/innovative exhibition. Geographical distribution was skewed towards the North central zone (30%) which is also not surprising as the location was in Abuja; this group was followed by North West and South West zone evenly represented with (17.6 %) 44 persons each, all geographical zones were well accounted for with the North East having the least at 8%.

Amongst the participants blood group O was the commonest (52.8%) which is in concordance with other published works stating blood group O as the group with the highest frequency of distribution in Nigeria\textsuperscript{9,12}, followed by blood group A\textsuperscript{13} with 24.0%. The wide distribution of blood group O seen in this population is an advantage for blood donation campaigns because this provides a huge donor reservoir for blood donation as more than half of the described population had the same blood group O; awareness and education of these donors may serve well in emergencies and situations that require blood/organ donation\textsuperscript{14}. It is particularly noteworthy the availability of true universal donors in this population: blood group O with a Rhesus negative factor. Five persons had group O negative blood type. This donors are compatible with any other blood type, as there are no proteins on the Red blood cells, making it suitable for them to donate blood to other types without a rejection reaction occurring. Group O negative red blood cells are also safest for newborn infants with under-developed immune systems\textsuperscript{14}. The availability of this group in the populace shows a healthy reservoir for blood donation programs.

Important health facts were revealed from this random screening of apparently healthy individuals as evidenced in Table 3. Out of the total number screened, 16 (6.4%) were positive for HBV while one person tested positive for HIV (0.4%). This pattern agrees with the national prevalence rates of hepatitis B which is much higher than HIV (
13.7% as compared to HIV prevalence of 3.2%) 10.

Conclusion
Important and useful facts were revealed to participants by this randomized screening exercise. Regular blood screening and medical checks should be advocated for, for the purpose of knowing one’s medical identity and health status.

References
