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RESEARCH ARTICLE

THE DISTRIBUTION OF ABO BLOOD GROUPS AND RHESUS FACTOR AMONG REGULAR BLOOD DONORS IN AL-MADINAH AL-MONAWARAH , SAUDI ARABIA 2016 .

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Abstract

Objectives: The study aimed to determine the distribution of ABO and Rhesus D (RhD) blood groups in Al-Madinah Blood Bank regular donors .

Methods: A cross-sectional study that was carried out at Al-Madinah Blood Bank during the period from 21 November 2016 to 15 December 2016 . The participants were regular blood donors , and the samples were collected during the time of blood donation.

Results: The frequencies of ABO groups were 45.3% for O group, 27.7% for A group , 18.9% for B group and 8.1% for AB group. For Rhesus factor it was 87.9% positive and 12.1% negative.

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Introduction:-

Until now , around 30 blood group systems are recognized according to International Society of Blood Transfusion[1]. Among these systems , ABO and Rh blood group systems have utmost importance. The importance of these two groups is due to the fatal complications that could be encountered in case there was incompatibility between the blood groups during the process of blood transfusion[2]. In addition to that , studies show relations between blood groups and some diseases [3-9].

In Saudi Arabia , some studies have been done to determine the distribution of ABO and Rh group systems . O group have had the highest incidence in the all-region of the kingdom and AB group were the lowest , while there was differences in the A and B groups distribution as A group tend to be higher in the west and lower in the east , while B group was higher in the east and lower in the south[10-13] .

Objective:-

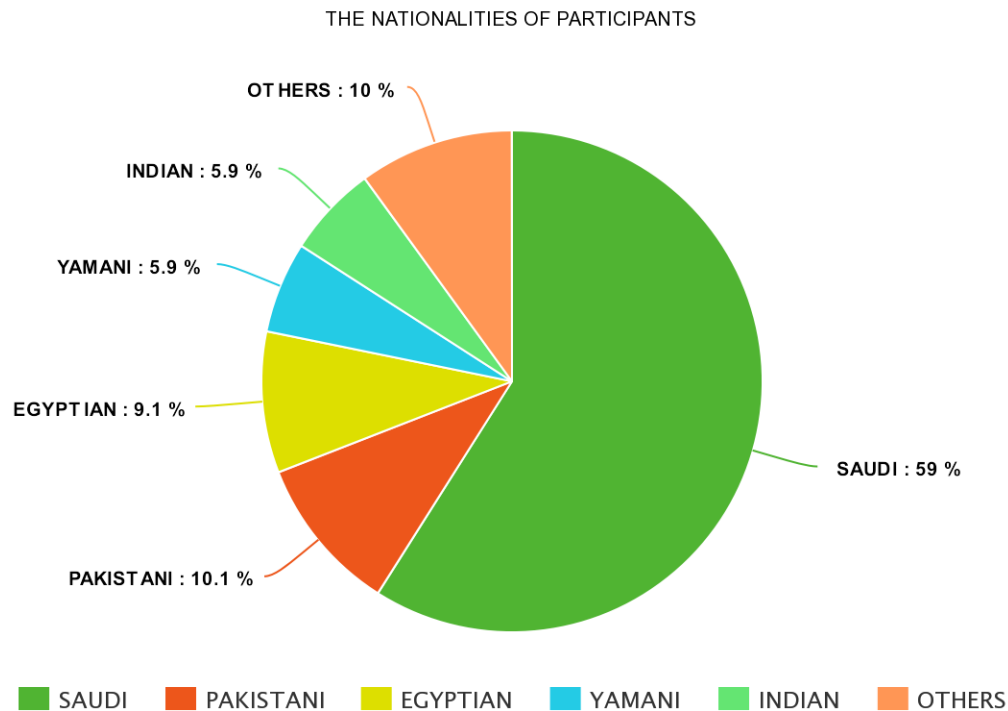
To know the frequencies of ABO and Rhesus D (RhD) blood groups in AL-Madinah Blood Bank regular donors and compare our results with the others that carried out in the kingdom.

Methodology:-

It was a cross-sectional study that was carried out at Al-Madinah blood Bank during the period from 21 November 2016 to 15 December 2016 . The subjects were 307 and they were regular blood donors . The sample was collected during the blood donation process after explaining the idea of the research to the subjects and taking the consent from them . Then the ABO blood groups and Rh factor were determined and the frequencies of the distribution of them were calculated .

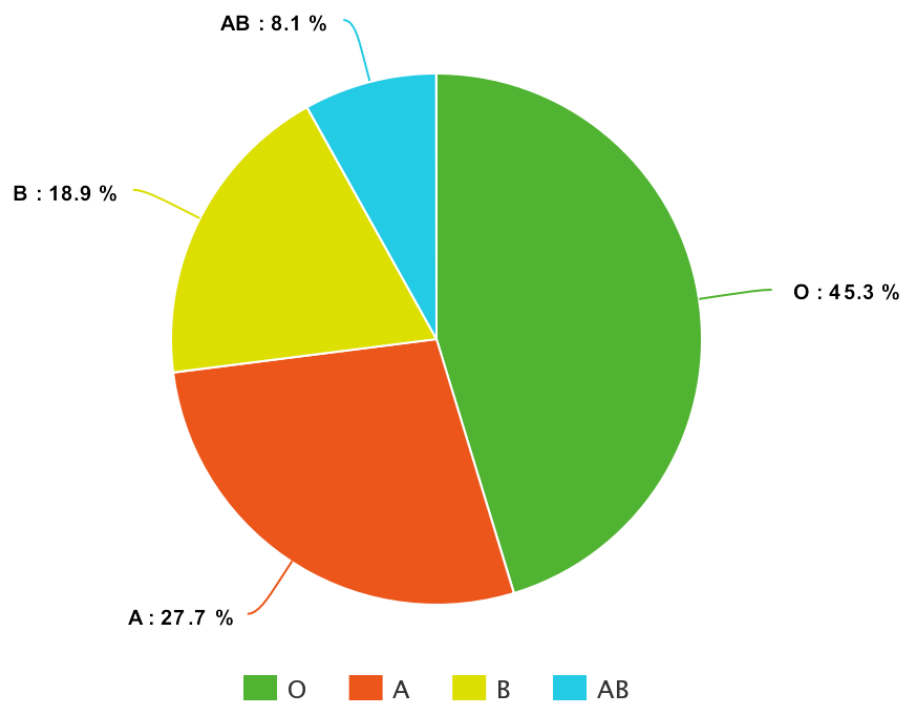
Result:-

The total number of the subjects was 307 as 305 were male and 3 were female. 59% of the participants were Saudis and 41% were non-Saudis. The non-Saudis nationalities were as following: Pakistani 10.1%, Egyptian 9.1%, Indian and Yamani each of both were 5.9% and 10% were other nationalities. The frequencies of ABO groups for all the sample were 45.3% for O group, 27.7% for A group, 18.9% for B group and 8.1% for AB group. For RhD it was 87.9% positive and 12.1% negative. Overall frequency of ABO and Rhesus blood groups were as following: 38.4% O+, 25.1% A+, 16.9% B+, 6.8% O-, 6.5% AB+, 2.6% A-, 2.0% B- and 1.6% AB-. For Saudis, ABO frequencies were: O 47.0%, A 28.2%, B 15.5% and AB 9.4%, while the RhD were positive in 87.3% and negative in 12.7%. The overall frequencies for Saudis were O+ 38.1%, A+ 26.5%, B+ 14.4%, O- 8.8%, AB+ 7.7%, A- and AB- 1.7% for each of them and B- 1.1%.



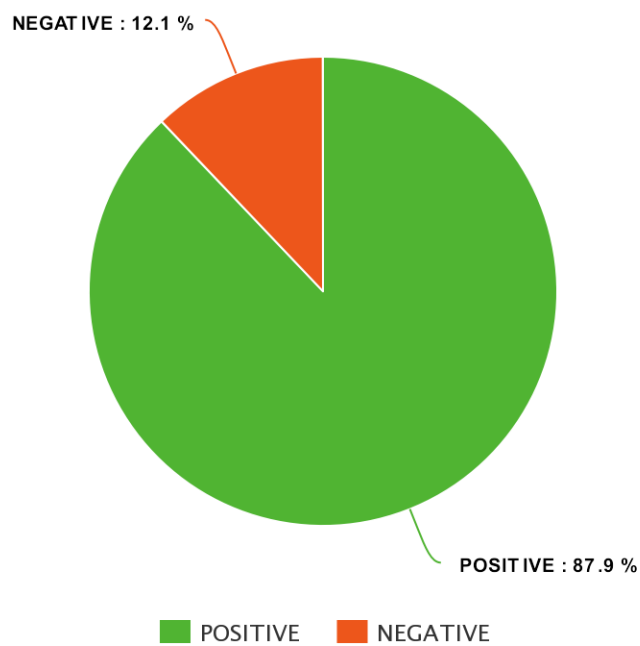
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Frequencies of ABO groups in the whole sample



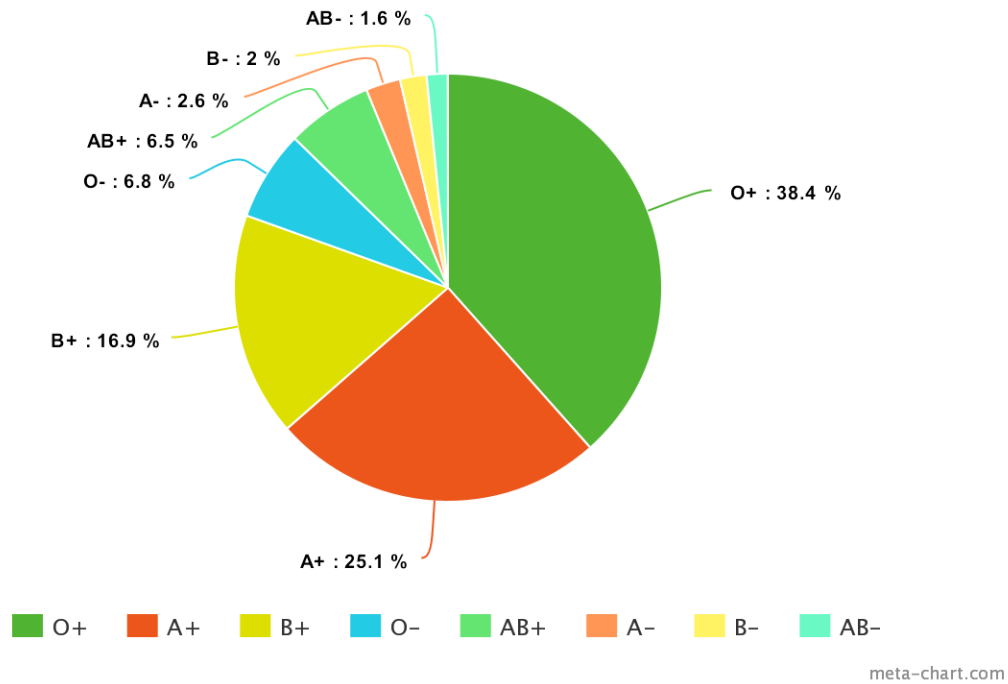
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THE PERCENTAGE OF Rh(D) FACTOR IN THE WHOLE SAMPLE

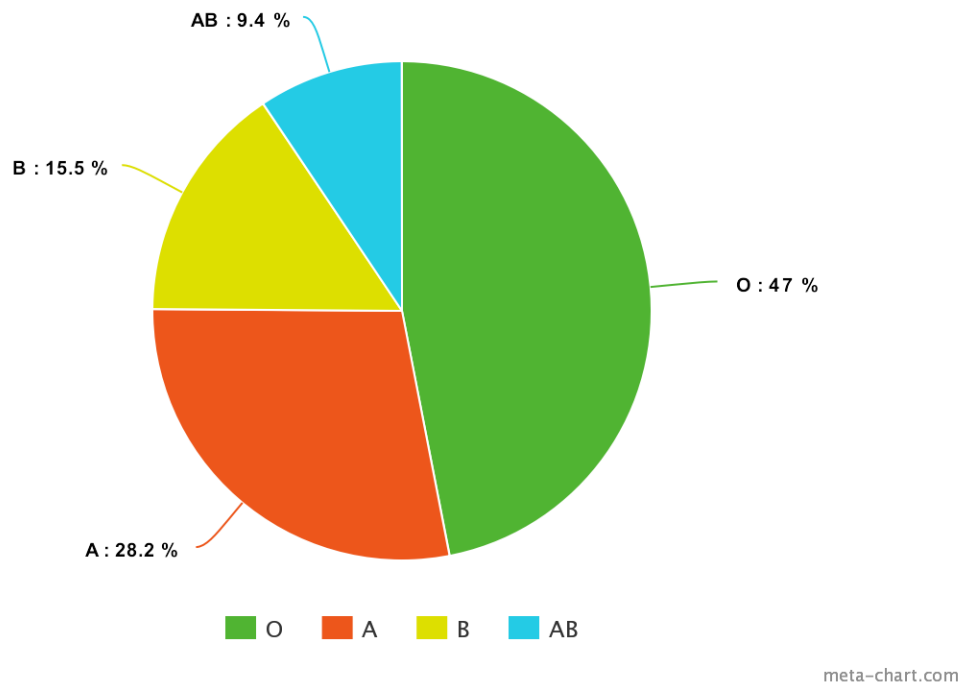


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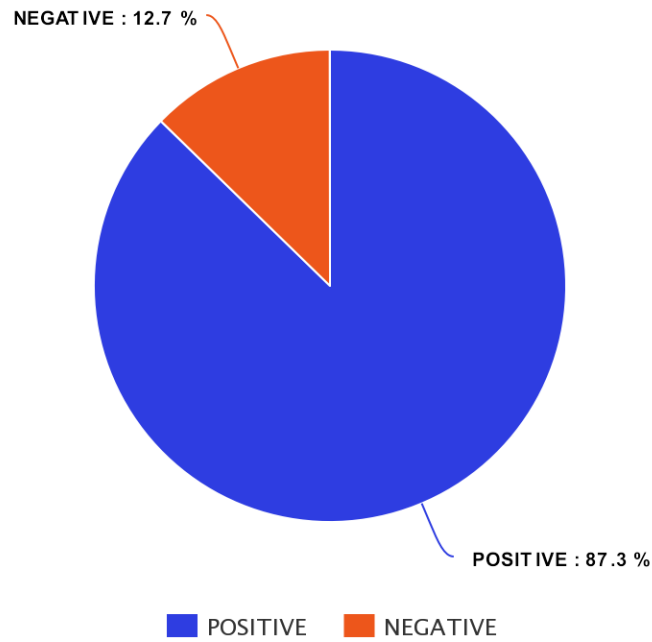
THE FREQUENCIES OF OVERALL ABO AND Rh(D) GROUPS IN THE WHLE SAMPLE



THE FREQUENCIES OF ABO GROUPS AMONG SAUDIS

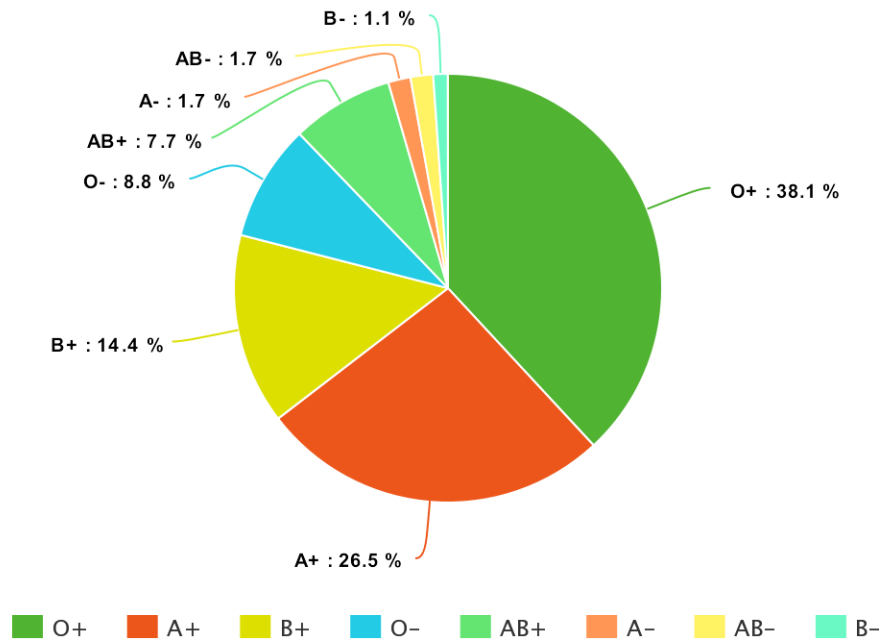


THE PERCENTAGE OF Rh(D) FACTOR AMONG SAUDIS



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THE FREQUENCIES OF OVERALL ABO AND Rh(D) GROUPS AMONG SAUDIS



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Discussion:-

The results of this study showed agreement with other studies that done in the kingdom in that O group has the highest prevalence and AB is the lowest[10-13]. In addition , it showed agreement in that A group has higher prevalence among Saudis in Al-Madinah (northwest) in compare with eastern region of the kingdom [10-12].

Conclusion:-

The study shows similarity in the frequencies of ABO and Rh blood groups with other studies that was done in Arabian Peninsula area .

Conflict of interest and Funding:-

The investigators have no conflict of interest to disclose , and they have not received any research grant from any organization for this project .

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3. Mr. Ibrahim AlNugrani .
4. ALL the workers in the Al Madinah Blood Bank

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