

Blood Group Typing of Students of Govt.Degree College Doda, Jammu and Kashmir: A Case Study

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DOI: [10.36348/sjm.2022.v07i10.003](https://doi.org/10.36348/sjm.2022.v07i10.003)

| Received: 30.08.2022 | Accepted: 04.10.2022 | Published: 16.10.2022

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Abstract

ABO blood group system was the 1st human blood group system to be discovered. Blood group is an integral part of clinical diagnosis using various hematological techniques to understand hematological disorders. Blood type is a classification of blood based on the presence and absence of antibodies and inherited antigenic substance on the surface of red blood cells. It is important to have clear information on blood groups in case of blood transfusion and related matters. It is also mandatory to have complete history of patient including the blood grouping and for the establishment and maintenance of blood banks. The present study was carried out among the students of Govt.Degree College Doda, Jammu and Kashmir from 10th of May to 20th of June 2022 in which 950 students participated. The collected data was statistically analysed in the form of Pie charts and bar diagrams by using Microsoft Excel software.

Keywords: Blood, Antibodies, Blood grouping, Antigen.

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INTRODUCTION

The term blood refers to a fluid connective tissue that circulates throughout the body, facilitates different cells with nutrition and oxygen supplies and removes wastes therefrom. It comprises of numerous cells and proteins making it thicker than pure water. The adult male person has approximately 5 liters of blood. Blood grouping (Blood type) refers to the classification of blood based on the presence or absence of the antigens, the inherited substances, on the surface of Red Blood Cells (RBCs). These antigens consist of inter-membrane proteins attached with carbohydrates or other groups depending on the blood group system. Some of these antigens are also present on the surface of other type of cells. Several of these red blood cell surface antigens can stem from one allele or an alternative version of a gene and collectively from blood group system [1]. This blood group or type refers to specific pattern of reaction to testing antisera with in a given system [1]. Any small alteration in the blood parameters reflects the overall health of an individual and this is the only tissue which can be transferred into the human body easily and instantly with the

information of blood type of an individual. These group vary markedly in different races and ethnic groups across the world [2]. There are 42 blood groups as recognized by the International Society of Blood transfusion and an individual blood group is one of many possible combinations of blood group antigens [3]. An individual always has same blood group throughout life, but in rare of the rarest cases an individual blood type changes through addition or suppression of antigens in infection, malignancy or autoimmune disease [4]. The blood group can also change in a person by bone marrow transplant and is done for many lymphomas and leukemias.

Blood types are inherited and represents contribution from both parents of an individual. The two most important blood group systems are ABO and Rh that determine someone's blood type i.e (A, B, AB and O) with +ve and -ve denoting Rhd status for blood transfusion.

MATERIAL AND METHODS

The present study was carried out in Govt. Degree College Doda, Jammu and Kashmir, located at

33.1457⁰N latitude and 75.54⁰E longitude, with an altitude of 950m from sea level. The blood typing test was conducted by students of B.Sc 6th semester under the supervision of Head Dept. of Zoology. The test was conducted from 10th May 2022 to 20 June 2022. During this process a total of 950 students participated in blood grouping. Students were motivated and awared for the same.

Blood group Analysis

The tests were performed in GDC Doda by using Spanclone Anti A+, B+ and D+, (Rho) monoclonal diagnostic kit by following standard protocol. For this purpose clean glass slides were used taking three drops of blood from each student and dropping them at different location on the slide. Cotton ball was used to stop the flow of blood if required. In the 1st drop Anti A was added, Anti B was added to

2nd drop and on 3rd drop anti D was applied with dropper. Then blood samples with monoclonal antibodies were mixed gently with the help of toothpicks keeping them for two minutes undisturbed for getting the results.

Statistical Analysis

The numerical data collected from this was analyzed in the form of Pie chart and Bar diagram by using Microsoft Excel software.

RESULTS AND DISCUSSION

A total of 950 students participated in blood grouping. Out of them 580 were male students and 370 were female students. Male student participation was quite higher in terms of percentage than female students.

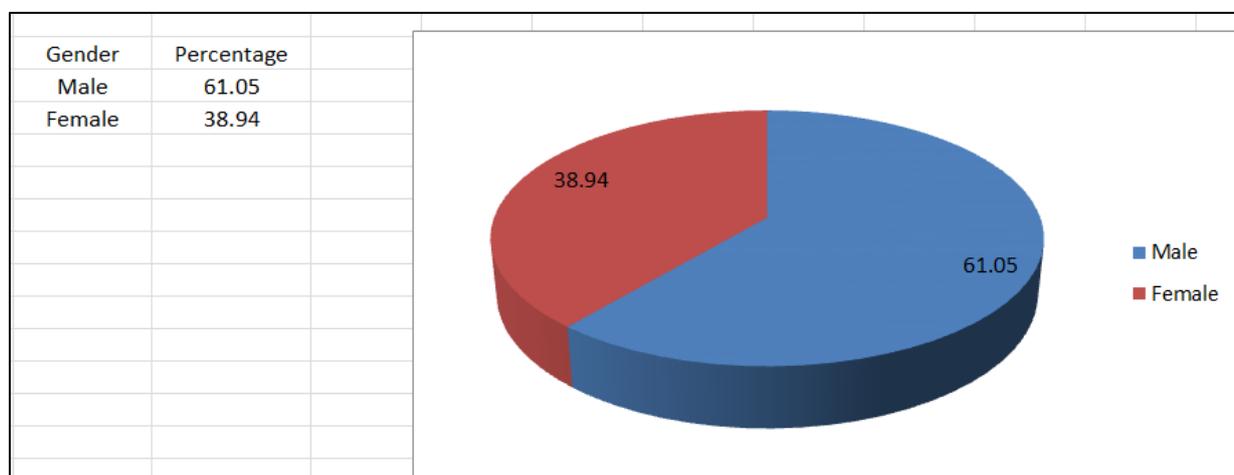


Fig: Showing table and Pie diagram depicting Percentage of male or female students participated in blood grouping

The present study of blood grouping of the college students yields significant information on the diversity of blood groups across the society. During the course of observation it was observed that most dominant blood group was A^{+ve} (27.42 %) followed by B^{+ve} (25.26 %), O^{+ve} (21.12 %), AB^{+ve} (15.7 %), B^{-ve}

(6.31 %), A^{-ve} (2.10 %), O^{-ve} (1.36 %) and AB^{-ve} (0.73 %) respectively.

After analysis it was observed that (A^{+ve}) blood group was most common among the college students and AB^{-ve} the rarest. Rh^{-ve} was least present as compared to the Rh^{+ve}.

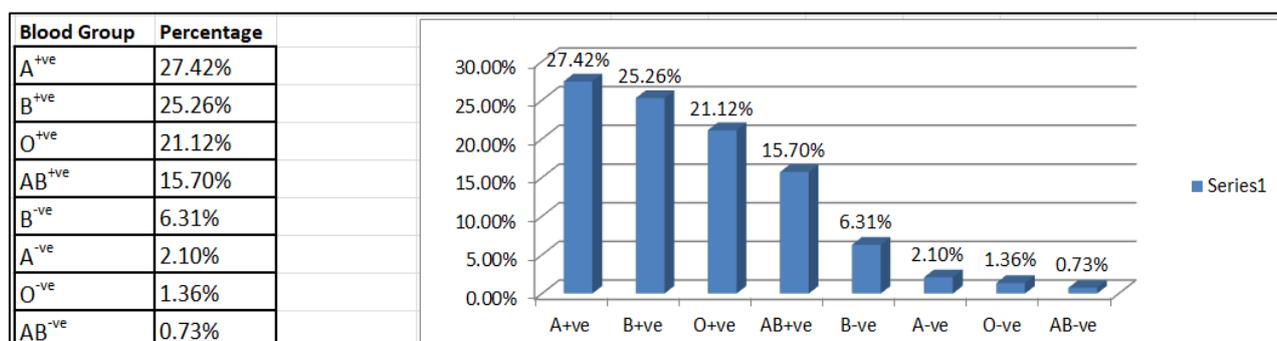


Fig: Showing table and bar diagram depicting different blood groups of participants and their percentages

Although this study was limited to some students of GDC Doda, but it gives us an idea of the blood groups of other parts of district Doda of Jammu and Kashmir also because students belong to different regions and genetic backgrounds. Also blood group information is important component of inventory management of blood banks and blood transfusion facility for the patients as well as during emergency supply in any state or any part of the world.

CONCLUSION

The present study regarding the blood group typing of students of GDC Doda concludes that most common blood group was A^{+ve} (27.42 %) followed by B^{+ve} (25.26 %), O^{+ve} (21.12 %), AB^{+ve} (15.7 %), B^{-ve} (6.31 %), A^{-ve} (2.10 %), O^{-ve} (1.36 %) and lastly AB^{-ve} (0.73 %). The study also reveals that A^{+ve} and B^{+ve} shows almost equal frequency. Male respondents are more as compared to females. This information can be useful for blood banks, blood donation and collection societies from various groups etc. Besides the information based on rarest blood groups can be utilized for emergency cases that need rarest blood groups in medical emergency.

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