

**STUDENT STUDY PROJECT**  
**“A Survey on distribution of Blood types among  
the students of Dr.BRR Government Degree  
College Jadcherla”**

**Department of Zoology**  
**Dr.BRR Government College, Jadcherla**  
**Dist:Mahabubnagar-509001**

**(Accredited by NAAC with “B<sup>++</sup>” Grade  
An ISO 9001-2015 Institution  
Affiliated to Palamuru University)**



**SUBMITTED BY:**

<b>C.SRINIVAS GOUD</b>	<b>III B.Sc. (BZC)</b>	<b>20033006445522</b>
<b>K. SRINIVAS GOUD</b>	<b>III B.Sc. (BZC)</b>	<b>20033006445555</b>
<b>G. GOVINDCHAND</b>	<b>III B.Sc. (BZC)</b>	<b>20033006445531</b>
<b>B.NARESH</b>	<b>III B.Sc. (BZC)</b>	<b>20033006445513</b>
<b>D NARESH</b>	<b>III B.Sc. (BZC)</b>	<b>20033006445528</b>

**Supervised by: B.Ravinder Rao, Asst.Prof.of Zoology**

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**SUBMITTED BY:**

C.SRIKANTH GOUD	III B.Sc. (BZO)	20153006445522
K. SRINIVAS GOUD	III B.Sc. (BZO)	20153006445535
G. GOPICHAND	III B.Sc. (BZO)	20153006445531
E.NARESH	III B.Sc. (BZO)	20153006445515
D NARESH	III B.Sc. (BZO)	20153006445528

Supervised by: B.Ravinder Rao, Asst.Prof.of Zoology

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Academic Year 2022-23

  
Supervisor

  
Head of the Department  
DEPT. OF ZOOLOGY  
Dr. B.R.R. GOVT. COLLEGE  
JADCHERLA

  
Principal  
PRINCIPAL  
Dr.B.R.R. Govt. Degree College  
Jadcherla

Department of Zoology  
Dr.BRR Government College, Jadcherla  
Dist:Mahabubnagar-509001

**B.Ravinder Rao**  
Assistant professor of Zoology  
Dr.BRR Government College  
[ravinder17967@gmail.com](mailto:ravinder17967@gmail.com)  
Jadcherla-509301  
Mahabubnagar District  
Telangana State, India.

Email:

Mobile:9885184432

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### CERTIFICATE

This is to certify that the project work entitled "A Survey on distribution of Blood types among the students of Dr.BRR Government Degree College Jadcherla"

is a bonafide work done by C. SRIKANTH GOUD , K.SRINIVAS GOUD,  
G.GOPICHAND,B.NARESH,D.NARESH the students of B.Sc. (BZC) T/M, VI semester students under my supervision in Zoology at the Department of Zoology Dr.BRR Government College Jadcherla during 2022-23 and the work has not been submitted in any other college or University either part or full for the award of any degree.

Place:

Date:



B.Ravinder Rao  
DEPT. OF ZOOLOGY  
Assistant Professor of Zoology, COLLEGE  
Dr. BRR Government Degree College  
JADCHERLA



Signature of External examiner  
examiner



Signature of Internal

### DECLARATION

We hereby declare that the project work entitled with "A Survey on distribution of Blood types among the students of Dr.BRR Government Degree College Jadcherla " is a genuine work done by us under the supervision of Sri B.Ravinder Rao, Assistant Professor, Department of Zoology,Dr.BRR Govt.degree College,and it has not been under the submission to any other Institute University either in part or in full, for the award of any degree.

NAME OF THE STUDENT	CLASS	H.T.NUMBER	SIGNATURE
C.SRIKANTH GOUD	III BZC	20033006445522	
K..SRINIVAS GOUD	III BZC	20033006445555	
G. GOPICHAND	III BZC	20033006445531	
B.NARESH	III BZC	20033006445513	
D.NARESH	III BZC	20033006445028	

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Name of the student	class	H.T Number	Signaturu
C.SRIKANTH GOUD	III BZC	20033006445522	
K.SRINIVAS GOUD	III BZC	20033006445555	
G.GOPICHAND	III BZC	20033006445531	
B.NARESH	III BZC	20033006445513	
D.NARESH	III BZC	20033006445528	

## ABSTRACT

International Society of Blood Transfusion has recently recognized 33 blood group systems. Apart from ABO and Rhesus system, many other types of antigens have been noticed on the red cell membranes. Blood grouping and cross-matching is one of the few important tests that the anaesthesiologist orders during perioperative period. Hence, a proper understanding of the blood group system, their clinical significance, typing and cross-matching tests, and current perspective are of paramount importance to prevent transfusion-related complications. Nonetheless, the knowledge on blood group system is necessary to approach blood group-linked diseases which are still at the stage of research. The study conducted from January 2021 to February 2021 and the results showed that O+ blood group is predominant with 38% followed by B+ 31%, A+, 15%, AB+ 7%, O- 3% A- 1% and A- 2.5% B- 2.5% and AB- 1% is not represented in this selected group of students. Overall Rh Positive individuals are 97% and Rh Negative individuals are 9%. This review addresses all these aspects of the blood groups system.

Key words: ABO blood types, antibody typing, blood group system, Rhesus type.

## Introduction:

Karl Landsteiner has been credited for the discovery of ABO blood group system in 1900. His extensive research on serology based on simple but strong scientific reasoning led to identification of major blood groups such as O, A, and B types. The term "blood group" refers to the entire blood group system comprising RBC surface antigens whose specificity is controlled by a series of genes which can be allelic or linked very closely on the same chromosome. "Blood type" refers to a specific pattern of reaction to testing antisera within a given system. Days back the knowledge of not only transfusion-related problems but also specific disease association with RBC surface antigens. Compatibility testing, and subsequent transfusion practices. He was awarded Noble Prize in 1930 for this discovery. His obituary lists an immense contribution of more than 346 publications. Later, Jan Jansky described classification of human blood groups of four types. At present 33 blood group systems representing over 300 antigens are listed by the International Society of Blood Transfusion. Most of them have been cloned and sequenced. The genes of these blood group systems are autosomal, except XG and XK which are X-borne, and MIC2 which is present on both X and Y chromosomes. The antigens can be integral proteins where polymorphisms lie in the variation of amino acid sequence (e.g., rhesus [Rh], Kill), glycoprotein's or glycolipids (e.g., ABO). Rhesus-system is the second most important blood group system after ABO. Currently, the Rh-system consists of 50 defined blood group antigens out of which only five are important. RBC surface of an individual may or may not have a Rh factor or immunogenic D-antigen. Accordingly, the status is indicated as either Rh-positive (D-antigen present) or Rh-negative (D-antigen absent). In contrast to the ABO system, anti-Rh antibodies are, normally, not present in the blood of individuals with D-negative RBCs, unless the circulatory system of these individuals has been exposed to D-positive RBCs. These immune antibodies are immunoglobulin G (IgG) in nature and hence, can cross the placenta. Prophylaxis



## **Benefits of blood transfusion**

Blood transfusion can save a patient's life and limit the complications of severe blood loss.

- A lot of bleeding can lead to a seriously low hemoglobin level and cause damage to body organs due to a lack of oxygen.
- If bleeding continues the body's supply of platelets and plasma are also decreased. Then, blood cannot clot and bleeding will not stop.

Blood transfusion benefits patients by treating or preventing these situations.

## **Risks of blood transfusion:**

Canada's blood supply is one of the safest in the world but blood can never be risk-free. In Canada, the risk of transfusion-transmitted disease for each unit of blood is:

- HIV (AIDS) about 1 in 21.4 million
- Hepatitis C about 1 in 12.6 million
- Hepatitis B about 1 in 7.5 million

Other risks of blood transfusion are:

- Hemolytic reactions: the patient's own blood destroys the transfused blood. This is due to a human error. Careful patient identification steps are followed to make sure the correct blood is given.
- Bacterial infection (highest with platelet transfusions).

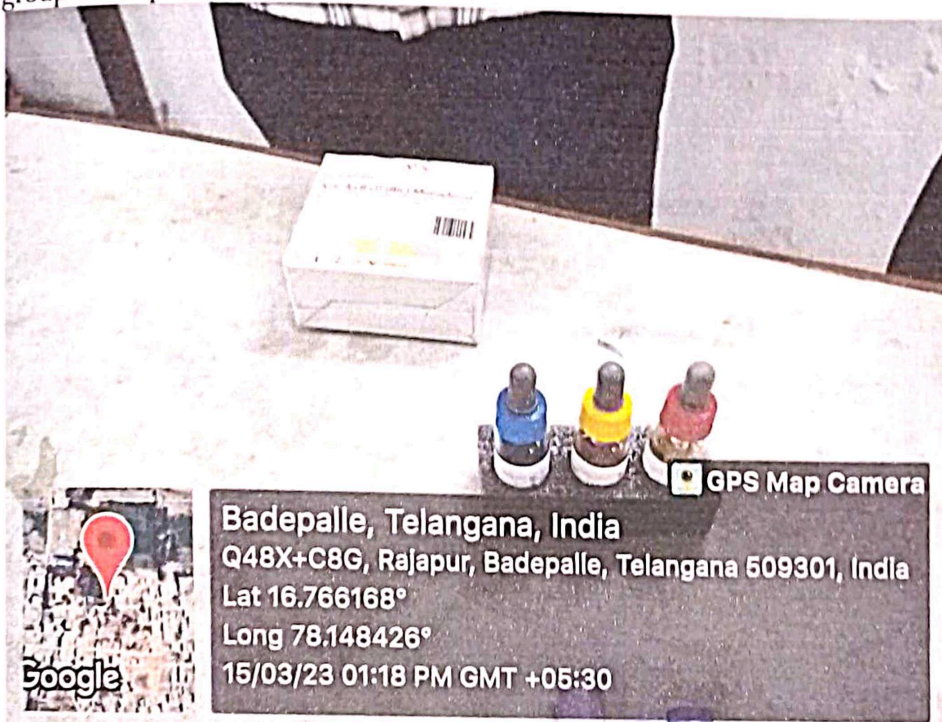
Side-effects could include: itching, skin rash, fever, or feeling cold. More serious side effects such as trouble breathing are very rare.

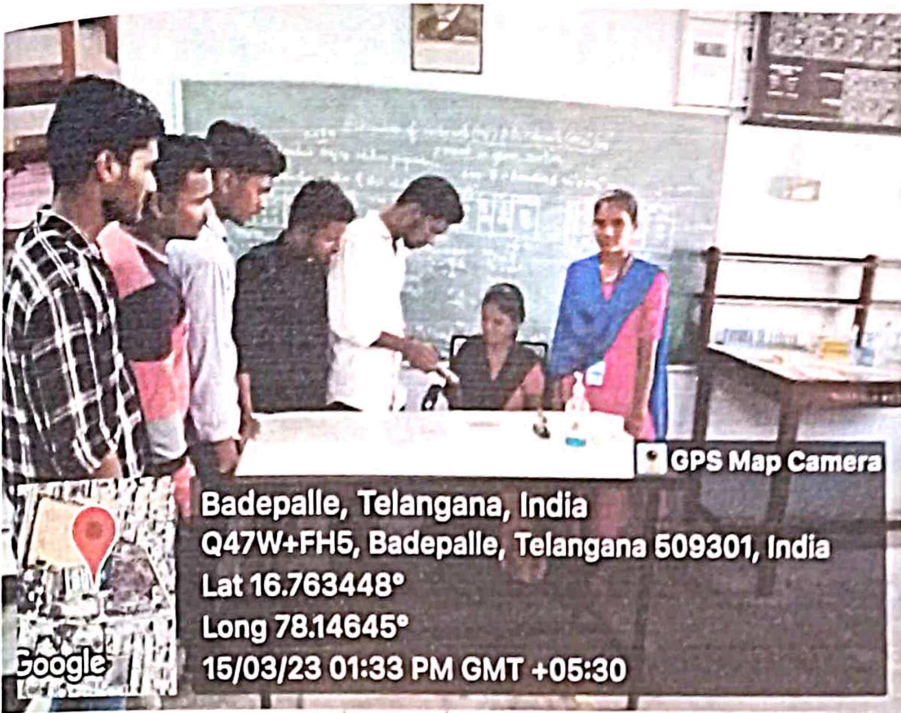
Blood transfusions are very carefully matched to the patient's blood type but transfused blood is not identical to your blood. Transfused blood can also have effects on your immune system.

## **Materials and Methods:**

A group of six members planned to visit selected students i.e., First year, Second year, Final year students and Staff members of Dr.BRR Government Degree College Jadcherla. The team explained about the blood typing procedure and after the concensus from the person the blood is collected on a white tile in three spots meant for A, B and D antigen typing. The antigens are

then added to the blood drops of the person. Based on the observation of agglutination the blood group of the person is confirmed.





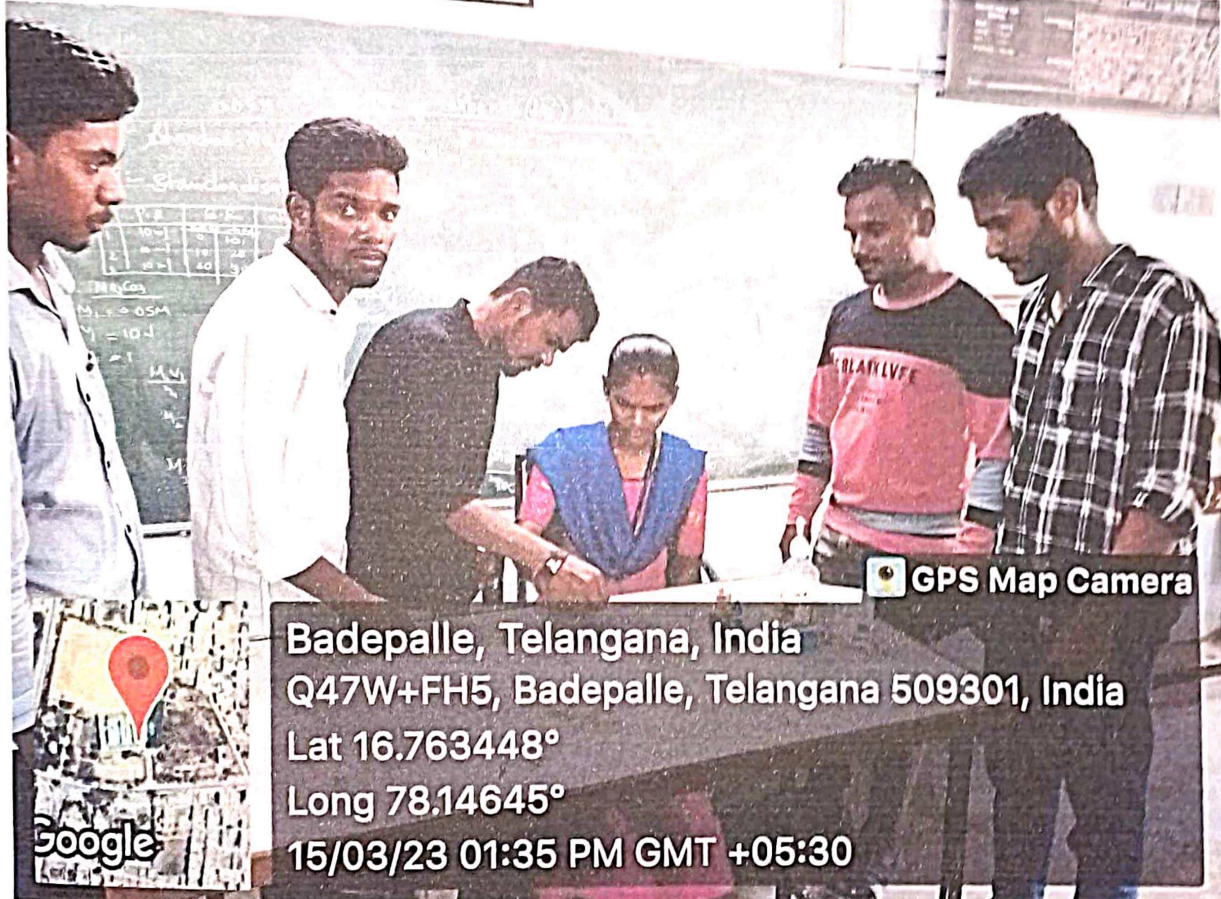
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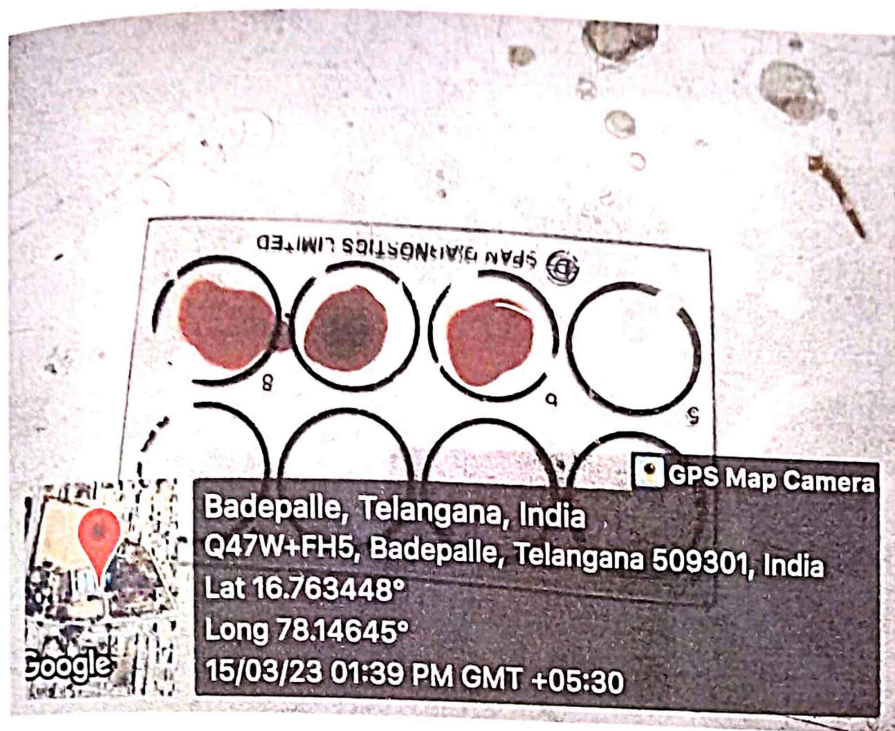
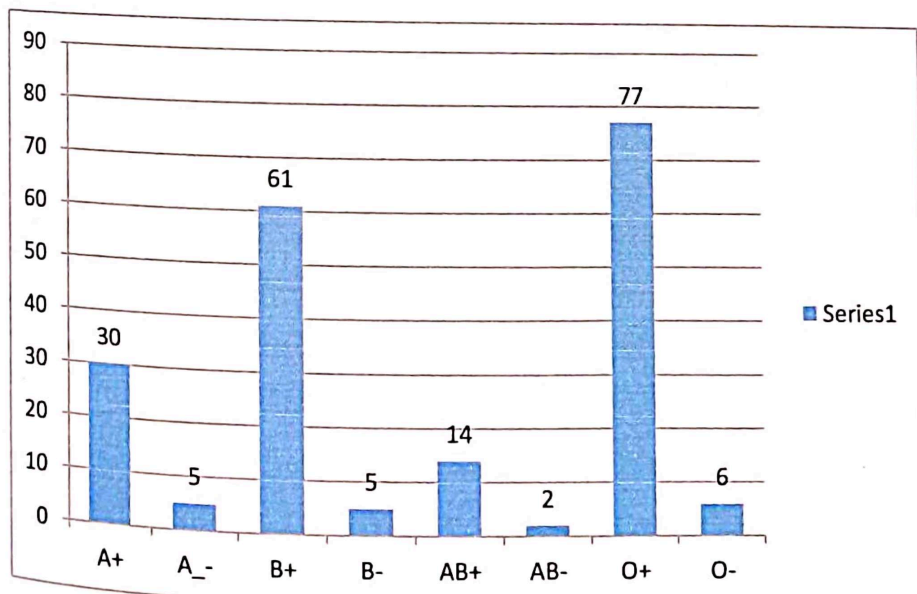
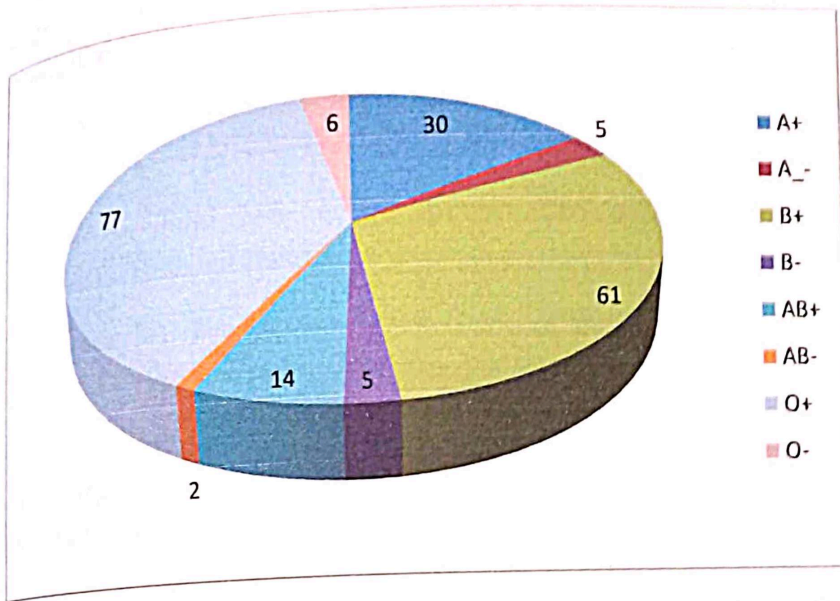


Fig.1: Group members collecting the blood and testing the blood group of students of Dr.BRR Government Degree College Jadcherla.

Table.1: Number of persons with their blood group

A+	A-	B+	B-	O+	O-	AB+	AB-	TOTAL
30	5	61	5	77	6	14	2	200





Fig'2: Graph showing distribution of Blood types among the students of Dr.BRR GDC Jadcherla

### Results:

In the present study 100 samples have been collected from the students of Dr.BRR Government Degree College Jadcherla, The study conducted from January 2021 to February 2021 and the results showed that O+ blood group is predominant with 38% followed by B+ 31%, A+, 15% , AB+ 7%, O- 3% A-1% and A- 2.5% B- 2.5% and AB- 1% is not represented in this selected group of students. Overall Rh Positive individuals are 97% and Rh Negative individuals are 3%. This review addresses all these aspects of the blood groups system.

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