

IDEATION PHASE LITERATURE SURVEY

TEAM ID	PNT2022TMID33788
PROJECT NAME	Plasma Donor Application

PAPER 1: BLOOD DONOR APP USAGE BEHAVIOUR AND PERCEPTIONS: CONSIDERATIONS FOR A BLOOD DONATION APP (ANDREA POTGIETER, MAY 2022)

This article aimed to determine whether South African blood donor app usage behaviour and perceptions were conducive to introduce a blood donation app, and what these behaviours and perceptions could reveal, to support South African Blood Donation Organizations in their recruitment and engagement endeavours. The research problem discussed in this article sought to highlight the app usage behaviour of blood donors, and their perceptions about a proposed blood donation app. forming part of a larger sequential mixed-methods study, the data presented in this article were gathered through a quantitative online questionnaire involving 2154 South Africans respondents. The value of this research lies in the insight gained into the behaviour and perceptions of South African blood donors, which can inform the conceptualization and design of a blood donation app, thereby improving its efficacy and subsequently supporting the strategy of employing such a technology to increase blood donation.

PAPER 2: A CROSS-PLATFORM BLOOD DONATION APPLICATION WITH A REAL-TIME, INTELLIGENT, AND RATIONAL RECOMMENDATION SYSTEM(RASHIK RAHMAN, SEPTEMBER 2021)

In this research work, they have designed a real-time, intelligent, and rational recommendation system using sentiment analysis of the user's feedback, response rate of the donor, and the current geo-location information and finally develop a cross-platform application for blood collection and distribution system. To process and generate features from the user feedback, they have designed a Bi-directional LSTM-based deep learning model. They chose the flutter framework to develop our cross platform applications. Firebase, a Google platform for mobile and web applications, has been used in the proposed application for authentication man. The

quality of the recommendation of the potential donors has significantly improved. Moreover, they have conducted rigorous requirement analysis from real users and evaluated the performance of the application through both indoor and outdoor testing.

**PAPER 3: NEAREST BLOOD & PLASMA DONOR FINDING: A MACHINE LEARNING APPROACH
(NAYAN DAS ,MD. ASIF IQBAL,2020)**

This paper present the necessity of blood has become a significant concern in the present context all over the world. due to a shortage of blood, people couldn't save themselves or their friends and family members. A bag of blood can save a precious life.Statistics show that a tremendous amount of blood is needed yearly because of major operations, road accidents, blood disorders, including anemia, hemophilia, and acute viral infections like dengue, etc. Approximately 85 million people require single or multiple blood transfusions for treatment. Voluntary blood donors per 1,000 population of some countries are quite promising, such as switzerland (113/1,000), japan (70/1,000), while others have an unsatisfying result like india has 4/1,000, and bangladesh has 5/1000. Recently a lifethreatening virus, covid-19, spreading throughout the globe, which is more vulnerable for older people and those with pre-existing medical conditions. For them, plasma is needed to recover their illness. Our purpose is to build a platform with clustering algorithms which will jointly help to provide the quickest solution to find blood or plasma donor. Closest blood or plasma donors of the same group in a particular area can be explored within less time and more efficiently.

PAPER 4: THE BIOLOGY OF PLATELET-RICH PLASMA AND ITS APPLICATION IN TRAUMA AND ORTHOPAEDIC SURGERY(J. ALSOUSOU ,M.THOMPSON ,P. HULLEY ,A. NOBLE ,2009)

Although mechanical stabilisation has been a hallmark of orthopaedic surgical management, orthobiologics are now playing an increasing role. platelet-rich plasma (prp) is a volume of plasma fraction of autologous blood having platelet concentrations above baseline. The platelet α granules are rich in growth factors that play an essential role in tissue healing, such as transforming growth factor- β , vascular endothelial growth factor, and platelet-derived growth factor. Prp is used in various surgical fields to enhance bone and soft-tissue healing by placing supraphysiological concentrations of autologous platelets at the site of tissue damage. The

easily obtainable prp and its possible beneficial outcome hold promise for new regenerative treatment approaches.

PAPER 5:INFLUENCE OF THE APPLICATION OF PLATELET-ENRICHED PLASMA IN ORAL MUCOSAL WOUND HEALING(JEROME AH LINDEBOOM ,KESHEN R MATHURA ,2007)

This paper present the study to describe and quantify the therapeutic value of platelet concentrate on the capillary density in oral mucosal wound healing. Ten patients, five males and five females, were included in the study with a mean age of 54.2 ± 9.1 years for females and 57.6 ± 6.9 years for males. Donor platelet counts from whole blood had a mean value of $248.5 \pm 13.5 \times 10^9/l$, while the value of platelet counts in the prp had a mean of $975.9 \pm 97.9 \times 10^9/l$. Wound healing was significantly accelerated in the prp-treated mucosal wounds during the first 10 postoperative days. after the second week, no obvious differences between the prp or placebo side could be noted.