
Gamification App to Support for Blood Donation



Blood donation is a vital, altruistic act that supports public health by ensuring an adequate blood supply for medical emergencies. It is a socially responsible activity that also offers a sense of personal satisfaction and self-care. Despite these benefits, the commitment to regular blood donation can be hindered by uncomfortable experiences, which negatively impact donor motivation. One significant deterrent is the experience of deferral, where potential donors are disqualified based on eligibility criteria. This is especially impactful for young and first-time donors, often leading to their permanent abandonment of blood donation. Negative emotions and misunderstandings during the deferral process, coupled with poor communication from staff, exacerbate this issue, as deferred donors may believe they are ineligible for longer periods or permanently, further decreasing their intention to return.

Strategies to Mitigate Deferral Impact

Effective strategies are essential to mitigate the negative effects of deferral experiences and to preserve donor motivation. Enhancing communication, providing clear information about deferral reasons, and employing targeted recruitment can help address these issues. Information and communications technology (ICT) platforms, inspired by successful health promotion and telemedicine implementations, could facilitate such support. Currently, most blood donation apps focus on facilitating the donation process and reminding citizens of their next donation. A significant opportunity exists to offer unique value by tailoring systems specifically to address the deferral experience. Understanding the psychological responses and specific needs of deferred donors is crucial. Temporary deferrals require motivation and guidance for health improvement, whereas permanently deferred donors could contribute indirectly by promoting blood donation.

Gamification as a Motivational Tool

Gamification, the use of game-design elements in non-gaming contexts, is an innovative approach to enhancing donor motivation. Some blood donation centres worldwide have already implemented gamified elements, rewarding donors with badges, gifts, and certificates. Government blood donation apps in countries like the United States and Canada have integrated gamified elements to boost donor motivation. Although the impact on blood donation is yet to be fully studied, gamification has shown promise in improving commitment to therapy and health self-monitoring. Therefore, it holds potential for increasing motivation in the blood donation context. Implementing gamification requires understanding various deterrents to blood donation and designing a system that addresses these challenges while fostering intrinsic motivation through engaging and rewarding activities.

Integrating Theories of Planned Behaviour and Self-Determination

To effectively design a system that addresses donor deferral, it is beneficial to integrate the Theory of Planned Behaviour (TPB) and Self-Determination Theory (SDT). TPB asserts that specific behaviours are determined by intention, influenced by attitude, subjective norm, and perceived behavioural control. In blood donation, additional constructs such as moral norms, descriptive norms, past behaviour, and self-identity are incorporated to better predict donor behaviour. SDT emphasises the importance of satisfying basic psychological needs for competence, relatedness, and autonomy. It categorises motivation from amotivation to intrinsic motivation, proposing that behaviours persist when internally motivated. Integrating TPB and SDT, studies have shown that motivational orientations significantly enhance the predictive power of blood donation intentions and behaviours. This theoretical framework supports the implementation of gamified elements that nurture intrinsic motivation by addressing psychological factors.

Designing a Gamified ICT System for Deferred Donors

Drawing from the aforementioned theories, a gamified ICT system was designed to support deferred blood donors. The design process involved identifying the key challenges faced by deferred donors: lack of knowledge about deferral, weak donor identity, and reduced motivation. The system aims to address these issues through awareness and knowledge, interaction and validation, and motivational drivers. Gamified activities such as educational quizzes, character management, and social interactions were developed to engage users and foster a sense of community. Initial feedback from a preliminary evaluation indicated a positive reception of the gamified design, with participants expressing interest in

downloading and recommending the app. However, the study's limitations, including a small sample size and potential biases, suggest that further research is necessary to refine the design and validate its effectiveness in a larger, more diverse population.

The proposed gamified ICT system aims to address the overlooked issue of donor deferral by enhancing donor knowledge, identity, and motivation. The system fosters intrinsic motivation through engaging activities and social interactions by integrating theories of planned behaviour and self-determination. While initial feedback is promising, further research with a larger sample size is essential to validate the system's effectiveness and refine its design. This innovative approach could significantly improve the blood donation experience and contribute to maintaining a stable and motivated donor base.

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