Evaluating Knowledge, Attitudes, Beliefs, and Behavior of Muslim Migrants Regarding Blood Donation

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Abstract

Background: Blood donation is an essential life-saving intervention that promotes a proactive approach to life-threatening situations, regardless of the human setting. However, discrepancies exist in various populations' understanding of blood donation that can adversely impact their donation practices. Among Muslim migrant populations, these aspects are further highlighted by their unique cultural and religious beliefs, attitudes, and behaviors that add further complexities to decision-making regarding blood donation. This research aimed to explore the knowledge, attitudes, beliefs, and behaviors of Muslim migrants in New Zealand regarding blood donation. Additionally, it sought to identify critical information that should be included in an existing questionnaire that assesses these aspects for Muslim migrants.

Method: This research employed an exploratory-sequential mixed-method approach using the Theory of Planned Behavior (TPB) as a framing lens. In the first phase, focus groups were conducted with purposively sampled Muslim migrant participants recruited from community centres, mosques, and healthcare facilities. Focus groups included a total of 31 first-generation Muslim migrants aged 18 to 66 who had lived in Auckland, New Zealand, for at least three years. The groups included both older (50-66 years) and younger (18-49 years) participants, representing backgrounds from Pakistan and India. A thematic analysis of this data revealed seven key themes. In the second phase, a relevant pre-existing questionnaire was identified through the literature, with the themes identified in Phase I informing the development of an additional open and closed-ended questionnaire. Both questionnaires underwent expert validation to ensure their clarity, relevance, and appropriateness for Muslim migrants.

Results: Phase I identified seven key themes from the thematic analysis of the focus groups: 1. The importance of knowledge for blood donation; 2. Islamic expectations and priorities regarding blood donation; 3. Weighing up risks and benefits related to blood donation, 4. Gendered, familial, cultural, and social dynamics influencing blood donation; 5. Perceived role of blood banks: 6. Acculturation and country of origin influence blood donation behaviors; and 7. Health promotion recommendations for blood donation approaches.

Phase II: The themes from Phase I informed the adaptation of Polonsky's survey, "Understanding Barriers and Enablers to Blood Donation Amongst Sub-Saharan African Migrants and Refugees", which formed Part A of the questionnaire, together with a discrete set of 10 questions formulated to constitute a distinct section, denominated Part B of the questionnaire, to address these specific domains. Both Part A and Part B of the questionnaire underwent expert validity testing and calculation of the content validity index (CVI). The questionnaire's content validity index (CVI) was 1.0 for clarity, relevance, and appropriateness, indicating strong content validity. The overall S-CVI/Ave also scored 1.0, suggesting that the instrument is robust and well-validated for Muslim migrants. This process resulted in the development of a culturally relevant questionnaire to better understand the barriers and enablers of blood donation, ultimately contributing to improved blood donation strategies.

The results highlighted the importance of blood donation and knowledge about eligibility and procedures. Islamic teachings that support saving lives were acknowledged, but concerns over blood contamination and lifestyle differences led many to prefer donating only to other Muslims. Cultural norms also significantly influenced women's participation, with many requiring male family members' approval to donate blood. Despite challenges in understanding New Zealand's blood donation protocols, participants expressed trust in the safety of the system. Notably, younger participants, having integrated more into New Zealand society, showed a higher likelihood of donating blood compared to their elders

Conclusion: The study's findings reveal novel insights into the gendered, cultural, and familial dynamics influencing blood donation among Muslim migrants in New Zealand, emphasizing the importance of involving families and encouraging women in blood donation initiatives. The study highlights how Muslim migrants' integration issues specific to New Zealand further complicate these challenges. The findings underscore the need for tailored, culturally appropriate blood donation strategies and policies that address barriers and actively engage families and community leaders, fostering a more inclusive blood donation environment for Muslim migrants.

Future studies should focus on enhancing the psychometric validation of the current research instrument and adopting a co-design approach involving Muslim blood

recipients and community stakeholders to ensure culturally sensitive and effective interventions.

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Attestation of Authorship

I hereby declare that this submission is my work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgments), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed:

Date: 14-10-24

List of Abbreviations

ATB	Attitude Toward Behavior
AUTEC	Auckland University of Technology Ethics Committee
C-Section	Caesarean-section
CVI	Content Validity Index
FGD	Focus Group Discussion
FIANZ	The Federation of Islamic Associations of New Zealand
HBM	Health Belief Model
I-CVI	Item-level Content Validity Index
NZBS	New Zealand Blood Service
PANZ	The Pakistani Association of New Zealand
PBC	Perceived Behavioral Control
S-CVI	Scale-level Content Validity Index
S-CVI/Ave	Scale-level Content Validity Index (Average method)
S-CVI/UA	Scale-level Content Validity Index (Universal Agreement method)
SN	Subjective Norms
SDT	Self-Determination Theory
TANI	The Asian Network Incorporated
TPB	Theory of Planned Behavior
TTM	Transtheoretical Model
WHO	World Health Organization

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Chapter 1: Introduction

1.1 Introduction to the Chapter

The first chapter introduces the research topic's development and context, focusing on the global and specific background of blood donation in New Zealand. It provides a comprehensive overview of migration trends globally and within New Zealand and examines general beliefs and behaviors surrounding blood donation, particularly among Muslim migrants. In this chapter, the socio-economic and cultural impacts of migration are examined, highlighting the diverse cultural and social backgrounds and experiences of Muslim migrants. Next, the chapter presents the rationale and significance of the research topics, questions, and the aim of investigating the topic. It also outlines my positionality and personal context in choosing the study area. In addition to describing the research design, the chapter concludes with an overview of the thesis organization.

1.2 Background

Blood donation plays a vital and central part in the healthcare system of any given country. Ensuring a safe and sufficient blood supply is considered a universal human right. Lives can be saved through safe and effective blood transfusion, further helping improve population health outcomes (World Health Organization[WHO], 2022). Blood transfusion is an essential procedure, the importance of which cannot be overstated in saving lives; it is a vital component of a nation's healthcare system, deployed in the treatment of medical conditions and various surgical procedures (Baron et al., 2020). There are two broad categories of systems for donating blood: voluntary and compensated. Beyond simple operational variations, these systems differ in terms of ethical implications and effects on the sustainability and safety of blood supplies. The WHO advocates voluntary blood donation as crucial to preserving a sufficient, sustainable, and safe blood supply. To ensure the safety and dependability of blood for transfusion purposes, the WHO promotes blood collection from donors who give voluntarily and without payment, especially those from low-risk categories (WHO,2022).

These donation systems have important ethical consequences. Providing blood voluntarily demonstrates civic duty and unity, showing it to be a community service that benefits recipients and donors alike (Polonsky, Brijnath, et al., 2011). The foundation of

this system is voluntary service to remove any financial incentive or compulsion, putting the supply of blood at risk. On the other hand, systems of compensated donation, which involve donors receiving payment, can potentially jeopardize blood safety by encouraging those who are more vulnerable to infectious diseases to donate blood, even though doing so could put receivers' health at risk (Chell et al., 2018).

The system of voluntary donation directly affects the sustainability of the blood supply. Safe blood provision, from a cultural standpoint, means sourcing from donors whose practices align with both medical safety standards and cultural acceptability (Bennett, 2015). Non-remunerated voluntary blood donations are generally of higher quality and are associated with lower transfusion-transmissible infection risk, contributing to the overall safety and sustainability of the blood supply (Lownik, 2012). This is because volunteer donors are more likely to give blood regularly, offering a steady and dependable supply of blood that can be extremely important in times of need or emergency.

Across the world, blood-collecting organizations are faced with a major and continuous challenge: keeping enough blood products on hand to adequately offset the ever-rising demand (Gehrie et al., 2020). This issue becomes particularly pronounced in all countries, including high-resource countries, where the demand for blood products has surged in recent years (Gammon et al., 2021; World Health Organization, 2022). In New Zealand, the need for blood or plasma arises every 18 minutes, highlighting the constant demand for these life-saving resources (Mammen et al., 2022). To meet this demand, the New Zealand Blood Service (NZBS) must collect more than 3,500 donations each week. It is estimated that as many as three lives can be saved by one donation of whole blood (Burge, 2020; Shaffer, 2020).

The importance of mobilizing and retaining donors is crucial to ensuring an adequate blood supply. The behaviors of healthcare professionals, the intentions and behaviors of potential donors, religious beliefs, misconceptions related to blood transfusions, and altruism all play a role in motivating or discouraging blood donations (Ashipala & Joel, 2023; Mohammed & Essel, 2018). For effective strategies to encourage blood donors, it is essential to understand what influences their behavior (Asamoah-Akuoko et al., 2017).

Research has shown that the geographical factors, migration patterns, and epidemiology of diseases requiring blood have the potential to impact the demand, need, and utilization of blood within a country (Baker et al., 2022; Shashikala et al., 2017, December; World Health Organization, 2022).

However, knowledge, attitudes, beliefs, and behaviors regarding specific cohorts of blood donors are largely unknown (Klinkenberg et al., 2019; Makin, 2019). The accelerated rise of migrant populations worldwide, including in low-resource countries such as Kenya, has given rise to this concern. Kenya's regional hub status in East Africa has influenced its diverse migration status (Makin, 2019). However, the blood donation rate is lower in migrant communities due to a lack of awareness about donation, fear of the process, and distrust of medical services (Shrivastava et al., 2016). Addressing these migrant knowledge, attitudes, and beliefs towards blood donation with culturally and religiously informed approaches is crucial for engaging Muslim donors effectively (Ashipala & Joel, 2023; Mohammed & Essel, 2018).

The escalating importance of voluntary blood donation is magnified on a global scale as an outcome of increasing diversity within communities, especially due to the influx of migrants transitioning from low-resource to more affluent nations (Makin et al., 2019). The interplay between migration and blood donation practices is complex. Migrants often hail from regions where voluntary blood donation is not a common practice, perhaps due to a lack of structured healthcare systems or pervasive cultural beliefs that do not emphasize the significance of blood donation as a communal responsibility (Alanzi & Alsaeed, 2019). One study, for instance, found that inadequate awareness and knowledge of the importance of donating blood in certain low-resource settings can influence blood donation practices in host countries following migration (Polonsky et al., 2018b). This lack of awareness can persist even after migration, affecting the inclination of migrants to donate blood in their new host countries (Polonsky et al., 2018b)

Moreover, the resettlement process itself can create barriers to blood donation among migrant populations. The stressors associated with migration, including cultural adaptation and the navigation of complex healthcare systems, can overshadow the consideration of blood donation (Bustamante et al., 2017). Additionally, migrants may

encounter language barriers, misinformation, or even fear of discrimination, which can further inhibit their participation in blood donation programs (Klinkenberg et al., 2019). Furthermore, the necessity for blood-type diversity within the donor pool is heightened by the genetic diversity of migrant populations. Certain blood types that are rare in the host country's population may be more common among migrants, making their contribution to the blood supply not only valuable but sometimes critical for patients with rare blood-type compatibilities (Nasif et al., 2022). Given these factors, the blood supply must expand proportionally to keep pace with the requirements of contemporary healthcare systems, or it can result in many negative impacts such as compromised patient care, delay or suspension of medical procedures, and even risk to public health. Solutions to tackle this problem include adopting strategies that help improve blood collection, creating awareness regarding blood donation amongst migrants, and establishing a system that can effectively distribute and utilize these products (Cimaroli et al., 2012; Syed et al., 2022).

1.2.1 New Zealand's Muslim migrants and health-seeking behaviors

Muslims in New Zealand are a diverse community with vibrant representation from South Asia, the Middle East, and Africa to Southeast Asian countries. The community has been shaped to a significant extent by migration (Stuart, 2014). Although the Muslim population in New Zealand is relatively small, with only 57,276 members and a 1% share of the total population, as a religious minority, Muslims are growing at a rapid pace in the country (Stats NZ Tatauranga Aotearoa, 2022). Muslim migrants are from a variety of national and ethnic origins. Most of New Zealand's Muslims (77%) were born overseas, with 29% identifying as Indian and 21% as Middle Easterners, including Iraqi, Iranian, and Arabian. Compared to the general population, which has a rate of just 25% under the age of 15, the Muslim population is relatively young, with 61% of its members under that age (Stats NZ Tatauranga Aotearoa, 2019) which puts them at risk of isolation and cultural marginalization. They also confront significant difficulties in addressing the diverse needs of young people within their society, especially regarding the transmission of religion and culture (Kolig & Kabir, 2008).

When seeking healthcare, Muslim migrants are often faced with cultural, religious, and social challenges. A thorough understanding of these behaviors is crucial to providing

them with effective healthcare services. In many Muslim cultures, families and communities play a significant role in decision-making, including health-related matters (Rassool, 2015). This may occasionally result in a predilection for home treatments and hesitation about consulting a doctor. Furthermore, opinions on certain medical procedures and gender-specific roles in healthcare environments, such as favoring healthcare professionals of the same gender—may be influenced by religious convictions (Chakraverty et al., 2020). For example, to comply with modesty norms, female patients may look for female healthcare professionals. If there are not enough female providers or if the healthcare system does not meet these needs, this could limit access to healthcare (Attum et al., 2018). Gender-specific challenges pose additional barriers, according to the social roles assigned to men and women in health-seeking behaviors, especially for mental health issues. People may be reluctant to seek mental healthcare due to embarrassment or shame in their families (Christianson et al., 2021).

For Muslim migrants, the propensity to interact with the healthcare system in the host nation may be influenced by their prior experiences with healthcare in their home nations, which may have involved dissimilar standards of care or mistrust of medical facilities (Suphanchaimat et al., 2015). These worries can be lessened by fostering trust through community involvement and care that is sensitive to cultural differences. These religious practices and socio-cultural traditions may also shape the migrants' perspectives on blood donation. For instance, Islamic law supports blood donation between individuals of different faiths, underscoring the importance of fostering harmonious relations and benefiting humanity, regardless of religious differences (Bagasra, 2021; Mahfouz et al., 2021). This viewpoint aligns with the Islamic concept of Sadaqat (a voluntary charitable act towards others), which emphasizes charitable acts as a means of community support and spiritual reward (Mahfouz et al., 2021). Conversely, certain religious doctrines might express reservations or prohibitions regarding blood transfusion or blood-related practices due to interpretations of sacred texts or cultural traditions (Shrestha, 2015). In some cases, religious beliefs may intersect with misconceptions or fears surrounding blood donation, further influencing individuals' decision-making processes (Doerry et al., 2022). Understanding the

intersection of socio-religious beliefs towards health behaviors like blood donation, particularly among Muslim migrants, becomes increasingly relevant (Coppens, 2024).

1.2.2 New Zealand blood supply system and blood donation

Regarding the donation and use of blood, there is a notable distinction among countries with high, medium, and poor levels of resources. In high-resource countries, blood was donated on average 38.1 times per 1,000 people in 2014 (3.8%), which is 12 times more than in low-resource countries, where blood was donated 2.3 times per 1,000 people (0.23%) (range 0.40–7.46) (Ahmed et al., 2014). Massive trauma, cancer treatment, and heart and transplant surgery are the main uses of transfusions in high-resource nations. In New Zealand, patients 60 years of age or older receive the majority of blood transfusions (WHO,2022). High-resource nations, however, also have difficulty raising enough money to meet the cost of rising blood donation needs and services (Gammon et al., 2021; Jones et al., 2021). Moreover, the extended life expectancy observed in high-resource countries, including New Zealand, has contributed to the response to the rising demand for blood products.

In New Zealand, the blood donation and supply system are operated by the NZBS. Donation is an altruistic act, based on free donation; it operates voluntarily and without remuneration to keep the blood supply going. This system helps to guarantee the nationwide availability of a homogeneous and safe pool of blood commodities for medical treatment purposes. The donation collection occurs at several mobile locations, including workplaces and community centres, shopping malls as well as in nearly 95% of high schools (Ameratunga et al., 2002; Wei et al., 2023). The importance of blood transfusion is reflected in the fact that it plays a critical role in treating many medical conditions and surgical procedures and is essential to New Zealand's health system. The country commonly needs urgent blood supplies, with someone requiring a life-saving blood or plasma transfusion every 18 minutes in Aotearoa, but less than 4% of eligible New Zealanders donate (Madden-Smith,2023). Even with a yearly rise of up to 4% in blood demand, the country already struggles with attracting new donors to the NZBS and putting in place improved mechanisms aimed at satisfying healthcare needs (Stats NZ Tatauranga Aotearoa, 2022). Approximately 3,500 blood donations a week are required for the NZBS to adequately meet this demand. According to Stats NZ

Tatauranga Aotearoa (2022), by 2028, there is expected to be one million senior citizens in New Zealand, causing problems for blood collection organizations and the blood supply generally.

Several variables, such as scientific and technological advancements in medicine, a significant increase in life expectancy, the growing need for a wide range of medical procedures, and a rapid increase in migration into high-resource countries, can be ascribed to the rise in demand (Boudoulas et al., 2017; World Health Organization, 2008). Additionally, during unforeseen events like the Whakaari eruption (White Island: NZ Police Complete Identification of Volcano Victims,2019) or other emergencies, the need for blood products rises dramatically. A prime example is the aftermath of an attack on a mosque in Christchurch in March 2019, where a swift response was necessary to save lives by the immediate utilization of 520 units of blood, platelets, cryoprecipitate, and fresh plasma (Badami et al., 2020; Burge, 2020). However, there is limited cultural and ethnic inclusiveness in blood donation initiatives, such as campaigns and recruitment strategies (Makin, 2019). This issue holds increasing significance globally, particularly as communities become more diverse due to the growing number of migrants relocating from low-resource to high-resource countries (Makin, 2019). Various studies have concluded that minority groups and migrants often have lower rates of participation in blood donation (Gahan et al., 2022; Makin, 2019).

A cultural adaptation is required due to a mismatch between in-country health systems and those from their country of origin, with the blood donor systems shining a spotlight on migrant integration into healthcare systems. For example, migrants may not be aware of the donation regulations and face communication barriers within host societies. Necessitating the need for a more inclusive and responsive blood donation service to meet the migrant needs (Khaw et al., 2023; Kuguyo et al., 2020).

The studies cited above underscore that a cultural and economic perspective is crucial in developing strategies to enhance blood donation practices globally (Patel et al., 2019). Understanding the health behaviors of potential migrant donors, including those from Muslim backgrounds, is crucial for integrating migrant communities into the host country's healthcare system (Klinkenberg et al., 2019). Addressing these issues requires

tailored healthcare policies and culturally sensitive healthcare practices to bridge the gap and ensure better health outcomes for migrants (Abubakar et al., 2018). The need for cultural adaptation is paramount as the health systems in New Zealand might not align with the expectations or experiences of migrants from different countries. As a result of such misalignment, migrants may have difficulty accessing appropriate healthcare, resulting in poor quality of life. The domain of blood donation systems exemplifies the critical need for effective integration strategies to facilitate migrant assimilation into healthcare systems (Khaw et al., 2023; Kuguyo et al., 2020).

1.3 Research Questions

1. What is the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation?

2. What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the knowledge, attitude, beliefs, and behavior of the Muslim migrant population regarding blood donation?

3. How valid and reliable is the developed questionnaire for the migrant population it is to be applied?

1.4 Aims of the Study

1. To explore the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation in New Zealand.

2. To develop a culturally relevant, empirically tested questionnaire that will assess knowledge, attitude, beliefs, and behavior about blood donation for the Muslim migrant population. This includes an exploration of both the barriers to and facilitators of blood donation within these communities.

3. To determine the validity and reliability of the developed questionnaire for future health promotion efforts among migrants.

1.5 Rationale and Significance of Study

Blood donation programs aim to ensure a sufficient blood supply to meet the needs of a population (Ifland, 2014). However, there is a significant gap in blood donation rates globally. For instance, South Asia and Africa face low donation rates, with Africa at about 5 donations per 1000 people (Dhingra, 2013), and the Middle East also falls short of the necessary rates to meet transfusion needs (Gader et al., 2011). Challenges such as insufficient quantities of blood and disruptions in the supply chain further impact the quality and availability of blood products (Lownik, 2012).

Conducting a study to assess the knowledge, attitudes, beliefs, and behaviors of Muslim migrants concerning the donation of blood is significant for several reasons. Muslim migrant communities form a substantial part of the population in many countries, and enhancing blood donation rates within these communities can significantly impact the overall availability of blood. Understanding the cultural and religious factors influencing blood donation behaviors is crucial as specific religious beliefs might impact the disposition of Muslim migrants to donate blood. Addressing these factors through culturally appropriate education can dispel myths and misconceptions, thereby increasing contributions to donation drives, which is critical for meeting the needs of diverse populations and improving the healthcare integration of Muslim migrants. Migrants often face barriers such as language difficulties, a lack of awareness of the need for blood donors, and mistrust of healthcare systems. Understanding their specific knowledge and attitudes allows healthcare providers to develop culturally sensitive educational programs and outreach efforts to address these barriers effectively (Shah, 2024).

Even though multiple studies have been conducted regarding blood donation behavior and intention, they were mostly focused on Anglo-Saxon cultures (Bednall et al., 2013). Very little work has been carried out on the beliefs and behaviors of migrants from low-resource countries now residing in high-resource countries, and their role in the donation of blood (Polonsky et al., 2018b). Moreover, none of the research to date conducted in high-resource countries has applied behavioral models, in particular, the Theory of Planned Behavior (TPB) model to underscore the donor expectation of

culturally and linguistically diverse migrant populations (Polonsky et al., 2013), and their barriers to and enablers of blood donation (Hossain Parash, 2020).

According to this theory, attitudes, subjective norms, and perceived behavioral control all contribute to creating behavioral intentions in this population. Using the TPB to understand, assess, and forecast blood donation patterns will enable the development of focused interventions that successfully promote blood donation among Muslim migrants. Using the TPB, a novel framework in this situation, can close knowledge gaps and provide new approaches for raising blood donation rates among this population. Therefore, the contribution of new knowledge of the proposed research is in the presentation of a comprehensive analysis of blood donation factors that can be used to evaluate the knowledge, attitude, and belief-behavior component of blood donations among Muslim migrants in New Zealand. This analysis is framed within the context of the Theory of Planned Behavior (TPB) tailored specifically to address the unique cultural, religious, and social dynamics of this population group in New Zealand.

The first aim of this research was to provide new insights into the knowledge, attitudes, beliefs, and behavior of Muslim migrants in New Zealand regarding blood donation. Understanding the intricate socio-cultural hurdles that impact blood donation in high-resource nations with communities of Muslim migrants will be aided by the current research. The findings from such studies can inform policymakers, healthcare administrators, and future researchers about the specific challenges faced by Muslim migrants regarding blood donation. As a result, targeted blood donation strategies can be developed to address the unique needs of this community. Healthcare services can increase donor participation, maintain a stable blood supply, and build trust in the donation process, ensuring fair access to blood donation and strengthening community health and engagement (Jeanes et al., 2018).

1.6 Positionality

As a medical professional, I have been profoundly influenced by my experiences and my country's healthcare needs. The knowledge I have built over my career in medicine, psychiatry, surgery, and gynecology has been very useful. I gained extensive hands-on experience in teaching hospitals in the capital province during my tenure as a junior

medical officer and house surgeon. After being awarded a distinction in my master's degree, I decided to pursue my studies at the doctoral level and was soon enrolled in a PhD study related to environmental and health sciences.

The healthcare system in my country, i.e., Pakistan, is very deprived, especially of safe blood for medical needs. As a crucial part of our healthcare system, blood donation supports everything from emergency care and surgery to chronic illness treatment. Even though blood donation programs are usually successful, there are several myths and cultural barriers that must be overcome so that lives can be saved, and health outcomes improved.

In this PhD, my scope of work is exploring knowledge, attitudes, beliefs, and behaviors regarding blood donation among Muslim migrants living in New Zealand. My interest in this line of research comes largely from my involvement with community health and a personal aim to tackle the key issues facing migrant populations. There is a need for the recognition of and intervention in cultural, language, and religious barriers to enable an open, inclusive health system. My interest is related to my identity as a Muslim migrant in New Zealand, and to know more about health services that cater to the unique mix of cultural, linguistic, and religious barriers that Muslims face.

Unsurprisingly, people are subject to misunderstandings and ignorance around the availability of blood donations, with significant implications for public health. Culturally sensitive education based on Islamic teachings and resources will help deliver more informed responses within the Muslim community to encourage participation in blood donation drives. Several benefits are possible because of this research, including bridging healthcare gaps, enhancing the blood supply, and promoting community-wide health.

1.7 Thesis Overview

This study follows the following structure:

Chapter 1: Introduction. This chapter introduces and builds a foundation for the current research, beginning with a discussion of the significance of understanding behaviors associated with blood donation within New Zealand's Muslim migrant community. It

also provides the framework of the study, including the key aims, rationale, and significance of the study, along with introducing the theoretical framework, i.e., the TPB, that underpins the investigation.

Chapter 2: Review of Literature. This chapter provides a comprehensive overview of existing literature relevant to blood donation behaviors in general and particularly migrant populations worldwide. This chapter also discusses the theoretical construct that guided the current research. The literature review lays the foundation for identifying the factors influencing blood donation behaviors and practices among Muslim migrants in New Zealand with the help of a critical analysis of previous local and global comparative research.

Chapter 3: Research Design. This chapter discusses in detail the ontology, methodology, and methods used. Firstly, the methodology is addressed, including discussions concerning the research philosophy, reasons why pragmatism was used, research methodology, and research strategy. In the second part of the chapter, the ethics, sampling, data collection, and analysis methods used in the study are explained. It describes the two distinctive phases of the study (qualitative and quantitative).

Chapter 4: Phase I: Qualitative Study – Focus Group Findings. This chapter outlines the first phase of the study, the qualitative phase, conducted through focus group recruitment, and the sampling process used in establishing focus group discussions (FGDs), followed by a thorough thematic analysis to identify the key themes of the study. The key themes of the study were identified and discussed in detail using insights gained from focus groups. The importance of this part of the research lies in the systematic collection, analysis, and interpretation of qualitative data. Most importantly, it builds the foundation for Phase Two of the study, providing a comprehensive foundation for the subsequent analyses.

Chapter 5: Contextualizing Focus Group Findings Within Existing Literature. This chapter involves comparing and contrasting the findings from the thematic analysis of focus groups with the existing literature. This framing provides a deeper understanding of how Muslim migrants in New Zealand donate blood and how their practices differ from those of earlier studies. The chapter draws attention to the gaps and

inconsistencies in the existing body of knowledge by placing the findings in a larger academic framework.

Chapter 6: Phase II: Quantitative Study and Mixing of Methods: This chapter (covering the quantitative study) outlines the process of mixing qualitative findings from focus group analysis with the adaptation and content validation of Polonsky's survey (Polonsky et al., 2013). It outlines the considerations and steps taken to refine the research instrument and the systematic development of the draft questionnaire. Specifically, it describes how the insights gained from the FGDs were used to create a second questionnaire (consisting of open-ended and close-ended questions), which was subsequently tested for content validity. It discusses in detail the process of finalizing and scrutinizing the questionnaire highlighting the ethical considerations, content validation, and feedback from the expert panel.

Chapter 7: Conclusion. The final chapter summarizes the research study's main findings and their implications for healthcare services, education, and policy on blood donation among Muslim migrants. It also highlights the potential opportunities for future questionnaire validation research and interdisciplinary approaches within the field of Muslim migrants' blood donation behavior. This chapter also discusses the strengths and limitations of the study.

Chapter 2: Review of Literature

2.1 Introduction to the Chapter

The literature review chapter comprehensively explores the existing literature, both regional and global, on migrant populations and blood donation, identifying current knowledge and the gaps in current understandings. This serves as an overview to locate the focus of the thesis research topic. The review begins with an examination of the general literature on blood donation, encompassing studies that provide insights into the overall trends in blood donation practices and the challenges and motivations associated with these practices. Subsequently, the focus narrows down to literature specifically addressing the knowledge, attitudes, beliefs, and behaviors among Muslim migrant populations regarding blood donation. This review highlights a significant gap in understanding the multifaceted factors affecting how willing these populations are to donate blood.

The literature review delves into specific areas such as the general knowledge of blood donation processes among Muslim migrants, the religious beliefs that influence their decisions, and behaviors toward blood donation. It explores how the unique socio-cultural and religious contexts of Muslim migrants influence their willingness to donate blood, addressing both the barriers and facilitators. While identifying existing research limitations, it underscores how individual and collective factors affect the blood donation rates of Muslim migrants. The gaps in knowledge identified and the limitations in existing studies frame the research questions that serve as the study's foundation. Moreover, the understanding acquired from the review gave direction to the context of the research design, discussed in the next chapter. The literature review also included the theoretical background, the TPB. The present study used the TPB as a broad framing approach that allowed an assessment of whether its constructs of attitudes, subjective norms, and perceived behavioral control could retrospectively explain observed behaviors and beliefs regarding blood donation among Muslim migrants in New Zealand. TPB provided valuable insights into beliefs and social influences that guided the development of the research questions and the overall research design, influencing the research design and findings reported in subsequent chapters.

The next section of this chapter discusses the methodological approach used, detailing how various databases were searched for relevant literature, critically appraised for inclusion/exclusion, and documented using the PRISMA flowchart process. This published literature was then reviewed for current understandings of the knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation. The identification of gaps in knowledge and limitations in existing studies through the initial analysis laid the foundation for the research questions of this study, thus setting the stage for addressing these gaps with future empirical investigations that focus specifically on methodological improvements.

2.2 Approach to the Literature Review

The literature was comprehensively searched through the literature review question, the databases searched, and the eligibility criteria. The following electronic databases were searched: Medline, PsycINFO, EBSCO Health, Sociological Collection, CINAHL Plus, Science Direct, Scopus, ProQuest Dissertation and Thesis, PubMed, Academic Search Complete Cochrane Library; prominent local and international journals were also searched, including *Social Science and Medicine*, *Global Public Health*, and *The Lancet*, drawing on primarily empirical studies published in English from 2013 to 2023.

Additionally, the author conducted a targeted search of grey literature and reports from the WHO and utilized resources from Google Scholar published during the same period to enhance the comprehensiveness of the literature review. Grey literature was extensively integrated to provide a broader perspective on the subject, particularly due to the focus on religious, socio-cultural, and adaptation challenges faced by Muslim migrants in new host environments. Grey literature encompasses materials that are not conventionally published, such as reports, conference proceedings, and other unpublished documents, such as university theses, which are crucial for capturing timely and context-specific information. The inclusion of grey literature was driven by the recognition that issues pertinent to Muslim migrants often present newsworthy insights but are not featured in the empirical literature. It was felt this could probably add richness to the literature. An example of grey literature here is the document called "Exploring the Challenges of Encouraging Blood Donation in Diverse Ethnic Communities" which was released by NHS Blood and Transplant based in the UK region.

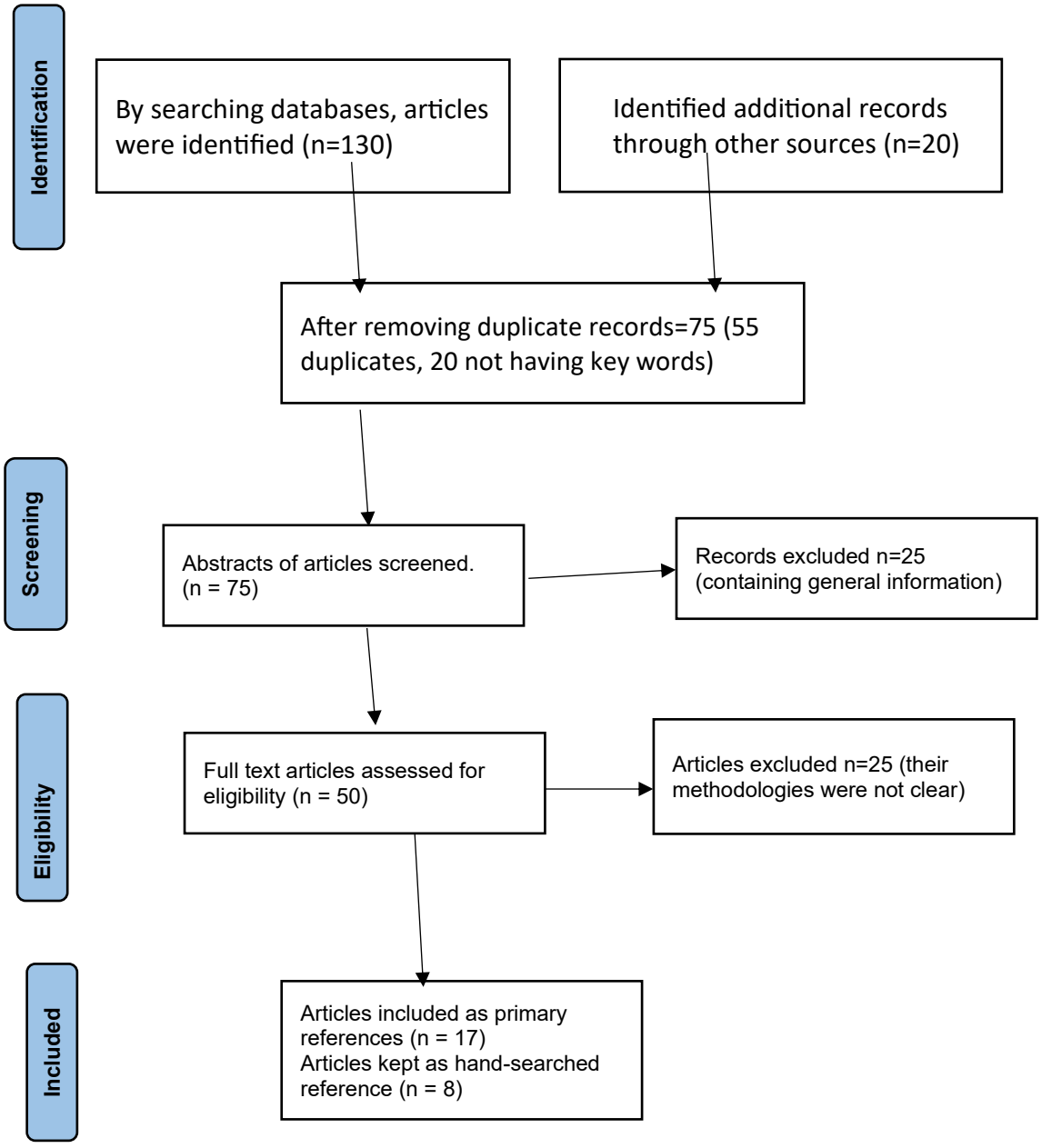
This document delves into the obstacles related to culture and faith that hinder blood donation participation among minority groups such as Muslims; it also offers suggestions on how to overcome these hurdles through community involvement tailored to specific cultural backgrounds and health awareness campaigns that are culturally sensitive. Such grey literature sources offer valuable perspectives that are often absent from academic journals, capturing the socio-political dynamics and public sentiments affecting these communities.

The EndNote Software was used to organize search results, removing duplicates to ensure the integrity of the data. This process was limited by the lack of information regarding blood donation among Muslim migrants worldwide. The following section presents an in-depth review of the literature that contributes to a deeper understanding of blood donation knowledge, beliefs, and behaviors, aiding in a more critical understanding of the gap in the current literature.

2.3 Search Terms

To ensure a comprehensive analysis focusing on the evaluation of knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation, the following search terms were used: blood donation OR blood donors, knowledge, attitude, beliefs and behaviors, misconceptions, blood donation barriers, services, voluntary blood donation, blood safety, developing countries, transfusion-transmitted infection AND Muslim migrants, immigrant health, religious beliefs, migrant health services, health professionals, ethnic minority health OR public health campaigns OR social determinants of health OR cultural beliefs and health, developing instruments, and WHO. The Boolean operators 'OR' and 'AND' were strategically applied to integrate these search terms. The inclusion criteria were limited to articles written in English to maintain consistency in analysis, from 2013 to 2023. Figure 1 below provides an outline of the search and screening process.

Figure 1
PRISMA flow diagram



Note. The figure illustrates the selection procedures according to the PRISMA Statement (Moher, 2009).

2.3.1 Results

A total of 150 related research articles were returned using the above search terms. After examining the titles and abstracts of identified records, 20 of them were excluded because they did not align with the keywords. Exclusions were also applied to another 55 articles that were duplicated in different databases and 25 articles that contained only general information. Finally, 25 articles were chosen, out of which 17 were full-text quantitative articles, three were qualitative studies, one was a meta-analysis, and four

were mixed-method approaches. In addition, WHO reports, and grey literature were included.

Conducted between 2013 and 2023, the examined studies investigated blood donation patterns in several different worldwide settings. Some of them included Muslim communities, particularly focusing on migrants from the Middle East, South Asia, and Sub-Saharan Africa. Frameworks like the Theory of Planned Behavior (TPB) were used in many research designs, including intervention-based studies, cross-sectional surveys, and grounded theory. Among the main challenges identified were misunderstandings about safety, low knowledge, religious concerns (particularly about gender privacy and the acceptability of "halal" blood), and skepticism of medical institutions. Among the motivators were altruism, religious obligation, family support, and help from community and religious leaders.

While culturally tailored interventions showed promise, the studies often stressed the importance of more inclusive, community-driven approaches and called for more research, especially longitudinal studies assessing real donation behavior. Notwithstanding great advancement, important disparities still exist in dealing with the religious, cultural, and systemic elements affecting blood donation among migrant populations.

Although much literature on blood donation and knowledge, attitudes, and practices exists, the knowledge surrounding it, including blood physiology, understanding of blood groups, and donor eligibility criteria, varies significantly among populations. The process for selecting research data for this review involved a detailed analysis of recurring headings and themes across diverse literature sources from various countries (Munn et al., 2018). The relevant headings that emerged were: needs and disparities in global blood transfusion practices; knowledge about blood donation and donor's eligibility; Islamic teachings and expectations regarding blood donation; socio-cultural, gendered, and economic influence on blood donation; weighing up risks and benefits related to blood donation; the impact of migration on health beliefs and the act of blood donation; and health promotion recommendations for blood donation approaches. These themes provided a comprehensive framework for understanding the multi-

faceted nature of blood donation practices among Muslim migrants and for the development of effective interventions to encourage blood donation within this community. The subsequent sections offer an in-depth critical examination of the relevant literature.

2.4 Addressing Global Disparities in Blood Transfusion Practices

Blood is the most donated resource in medicine and plays an essential role in many life-saving medical scenarios. It is needed to replace lost blood and to make the blood circulate oxygen in the body. Its importance in medical practice is profound, ABO blood group identification has saved many lives (Simon et al., 2022; Ugwu et al., 2020). As blood can only be obtained from a healthy donor, a continuous stream of volunteer donors is vital to meeting ongoing needs for transfusions (France et al., 2022). Blood transfusions are crucial in various critical situations, including treating patients with blood disorders, cancer, trauma, or those undergoing emergency surgeries (Faqah et al., 2015). These scenarios underscore the necessity of maintaining a sufficient supply of blood, as its absence could lead to loss of lives or unnecessary suffering (Gammon et al., 2021). The demographics of transfused patients vary significantly across countries. In high-resource settings, most transfusions—76%—are administered to patients over 60 years old, primarily for supportive care in surgeries, severe trauma, and therapy for malignancies (Sharpe, 2023). However, in low-resource nations, children under the age of five receive almost 54% of blood transfusions, primarily to treat severe anemia (World Health Organization, 2017).

In low-resource countries like Sub-Saharan Africa, hemorrhage accounts for over 25% of maternal deaths, with an estimated maternal mortality rate of 542 deaths per 100,000 live births in 2017. Tragically, as many as 72% of these maternal deaths can be attributed to the lack of access to proper treatment for severe fetal hemorrhage requiring blood transfusions, with 99% of these occurring in developing countries (Tebabal et al., 2023). Access to safe blood transfusions could significantly reduce these deaths (Amanuel et al., 2021). In Nigeria, a significant number of blood donations are made directly to family members, indicative of the fragmented blood supply system and the inadequate availability of blood resources within the country (Tebabal et al., 2023).

Waheed and Hosseini (2023) discusses blood donation trends across a total of 133 countries, specifically stating that over 50% of blood supplies are derived from family members or replacement donors in 54 countries, but 90% come from voluntary, unpaid donors in 79 countries (Waheed & Hosseini, 2023). As of now, only 57 countries can meet their blood needs through voluntary donations (Alreshidi & Sula, 2022). A careful estimate suggests that the world's basic blood supply needs would be met by just 1% of the population donating blood (World Health Organization, 2022). Given the life-saving potential of blood, its availability remains a crucial concern for both healthcare institutions and society. Determining the actual need for blood products is challenging, as it is influenced by cultural, social, and educational factors (Puerto-Meredith et al., 2023). Developing solutions that effectively address blood donor motivation requires an understanding of the elements that drive blood donation behaviors (Asamoah-Akuoko et al., 2017).

2.5 Knowledge About Blood Donation and Eligibility Criteria

Research indicates that while there may be a high level of general awareness regarding blood groups, detailed knowledge about the donation process and specific eligibility criteria often remains poor. For example, a study in Medan, Indonesia, highlighted that while donors generally understood the health benefits of blood donation, many were unaware of specific medical criteria that determine donor eligibility. This lack of detailed knowledge can make it difficult to recruit and retain donors effectively (Ginting et al., 2023). Similarly, another study, in a hospital in India, revealed that while most donors knew their blood groups and understood that they could resume regular activities after blood donation, fewer were aware of specific donor eligibility criteria such as age and health requirements (Vimal et al., 2019).

Studies across various regions have demonstrated varying levels of knowledge and misconceptions that influence donation rates. In high-resource countries, while there is generally better accessibility to information and healthcare services, misconceptions and fears persist. For example, Charles et al. (2019) conducted research in Caribbean countries with high incomes, particularly Trinidad and Tobago and the Bahamas, focused on comparing knowledge, attitudes, and risk perceptions regarding blood donation and its transfusion. It revealed varied levels of awareness and misconceptions that affect

both blood donation and receipt among these populations (Charles et al., 2019). In addition, a multicentre study across 16 countries, primarily in more developed regions, revealed that even among university students, only 28.5% knew enough about blood donation to make informed decisions to donate blood (Eltewacy et al., 2024). Nevertheless, another Saudi Arabian study revealed that although 71.1% of respondents knew the importance of blood donation, and 96.7% held positive beliefs, the fear of needles and getting infected persisted. As a result of this study, it was suggested that educational programs are imperative in bridging the knowledge and practice gaps (Syed et al., 2022). Similarly, Alreshidi and Sula (2022) explored the barriers to blood donation in three countries (Turkey, Albania, and Saudi Arabia), uncovering unique deterrents in each. In Turkey, non-donors were noted to lack a specific reason for not giving, with 34% of people not donating citing no reason, with others citing medical restrictions or simply not considering it. In Albania, fear was the most significant obstacle, compounded by a lack of direct appeals for donations.

Contrastingly, in Saudi Arabia, the main impediment was the absence of donation requests, which led to a general lack of consideration of donating blood (Alreshidi & Sula, 2022). In contrast, low-resource countries face more pronounced barriers, including limited access to accurate health information and logistical challenges such as distance to donation centres (Zucoloto & Martinez, 2017). For example, in Kathmandu, Nepal, a study among health science students showed that while most of the students (97%) displayed a confident approach to donating blood, actual donation practices were low at 27.7%. Common barriers to blood donation identified included fear of needles and time constraints, pointing to gaps between knowledge, attitude, and practice (Neupane et al., 2021). Moreover, based on research conducted in the Netherlands, it was observed that migrant participants had a greater understanding of blood donation practices in their countries of origin. In the host country, participants believed that the blood supply was adequate, largely because they had never received direct or indirect requests to donate blood (Klinkenberg et al., 2019). This concurs with a study in Nigeria that, while there was good overall knowledge and a fair attitude concerning voluntary blood donation, it was not a common practice, with 91.5% of respondents saying they had never done it (Ehimen et al., 2016). This was due to the fear of feeling weak, the

potential for adverse health effects after donation, and concerns regarding safe procedures.

Despite overall good knowledge, there was still a significant absence of detailed knowledge about the blood donation process, its benefits, and the non-existent or minimal risks when performed in a controlled environment (Ehimen et al., 2016). In addition, a study in Korea by Kim et al. (2022) delved into the experiences and perceptions of migrants regarding blood donation, linking their willingness to donate to their socio-demographic status. This study found that there was a 28.6% donation rate among migrants before they migrated to Korea, with major deterrents being fear of pain and having no awareness of the donation process. Importantly, the study identified that the country of origin and employment status were significant factors influencing blood donation practices among migrants (Kim et al., 2022). Another study in Italy explored the attitudes and behaviors of migrants towards blood donation, connecting their willingness to contribute to their integration level and socio-economic conditions. The study revealed that although many migrants were open to the idea of donating blood, their participation was hindered by language barriers, unfamiliarity with the healthcare system, and concerns that their health may be adversely affected by donation. This resulted in a lower donation rate among migrants compared to the host population, with the researchers recommending providing targeted outreach and education to overcome these obstacles (La Raja et al., 2014).

2.6 Islamic Teachings and Expectations Regarding Blood Donation

Various studies have documented that donating blood is associated with religious motivation (Zucoloto & Martinez, 2017). For instance, a study in Malaysia showed that religious beliefs can significantly influence health behaviors, including blood donation (Abd Hamid et al., 2013). In Iran, Charseatd (2016) highlighted that religious beliefs significantly foster positive attitudes toward blood donation among young adults. It is suggested that religion plays an important role in prosocial behaviors, such as blood donation (Charseatd, 2016). Islamic teachings emphasize the sanctity of life, with blood donation often framed as an act of charity (sadaqah jariyah) and a moral responsibility (Isah et al., 2022). Islam's positive stance on blood donation can increase the inclination of Muslim migrants to donate blood.

Research indicates that many Muslim donors perceive blood donation as a religious duty. For instance, a study in Saudi Arabia found that 91% of donors view blood donation as a religious obligation and expressed a strong willingness to donate blood, particularly to friends or relatives in need, without expecting compensation (Gader et al., 2011). van Dongen (2016) reported that Moroccan migrants in New Zealand, who were aware of their religion's supportive view towards blood donation, showed a higher likelihood of considering donation than those who were less informed about these religious encouragements. This underscores the impact of religious awareness on donation intentions (van Dongen, 2016). The likelihood that a person will become a regular blood donor increases if blood donation is considered a religious act or a moral responsibility (Hossain et al., 2022; Martinez et al., 2014). Of note is that more than 80% of Bangladeshi Muslim students viewed blood donation as a moral obligation and an act of Islam (Hossain et al., 2022). Additionally, a study of the Saudi military population revealed the influence of Islamic values on attitudes toward both blood and organ donation, thus reinforcing the integral role of religious beliefs in shaping donation behaviors (Mobarek Alanazi, 2023).

The role of Muslim scholars in assisting Muslim migrants in donating more blood is crucial since they address cultural and theological issues that may otherwise prevent migrants from donating blood (Goldsmith et al., 2023). They can provide fatwas and religious counsel that explain Islamic viewpoints regarding blood donation, clarifying that Islamic rulings permit receiving blood from any healthy donor, regardless of dietary habits, which could help dispel such misconceptions and encourage participation to dispel myths and misunderstandings (Abd Hamid et al., 2013). A fatwa (an Islamic law ruling issued by a qualified Islamic authority) supporting blood donation might reassure Muslim migrants that this kind of deed is not just acceptable but praiseworthy in Islam.

Several Muslim scholars strongly argue that every practicing Muslim is obliged to donate blood (Alreshidi & Sula, 2022), a sentiment echoed in a study from Saudi Arabia, where most respondents acknowledged helping others as a religious duty, hence, blood donation was viewed favorably (Alharbi et al., 2018)These findings collectively emphasize the substantial impact of religion on promoting blood donation, indicating

that religious alignment can be a strategic approach in blood donation campaigns to effectively engage Muslim migrants.

2.7 Socio-cultural Influences on Blood Donation

Many structural, socio-demographic, and psychological factors influence blood donation behaviors, in addition to determinants and motivators (Hu et al., 2019). Each country and region's unique socio-cultural landscape has a significant impact on influencing these attitudes. The dynamics of migration and the diversity of cultural beliefs significantly contribute to shaping health behaviors, particularly in the context of blood donation. Migrants often bring diverse perspectives on healthcare behaviors, including beliefs about blood donation that are rooted in their cultural and religious backgrounds. The act of migrating introduces individuals to new healthcare environments, often accompanied by a clash between cultural beliefs and host country medical practices.

Additionally, cultural practices and traditional health beliefs from migrants' countries of origin can influence their perceptions of blood donation. Studies have shown that migrants often retain these cultural beliefs even after relocating, affecting their engagement with blood donation in their new country (Polonsky, Brijnath, et al., 2011). For example, an African migrant's perceptions of racial discrimination and the experiences in the host country are key factors influencing blood donation (McQuilten et al., 2015). In Marseille, migrants from the Maghreb and Sub-Saharan Africa view blood donation as a way to express their sense of citizenship and belonging, suggesting that cultural beliefs influence their donation behaviors (Duboz & Cunéo, 2010). A significant barrier to voluntary blood donations among African migrants is traditional cultural values, as well as fears related to health and ineligibility to donate (Klinkenberg et al., 2019).

Many Muslim migrants prioritize donating blood for relatives or within their own ethnic or religious communities, which may contribute to lower participation in national blood donation programs in New Zealand (Polonsky, Renzaho, et al., 2011). Further, gender norms play a role—Muslim women may hesitate to donate due to concerns about modesty, physical weakness, or interactions with male healthcare workers, while some men worry that donation might affect strength and stamina (Al-Johar et al., 2016;

Alharbi et al., 2018; Erhabor et al., 2013; McQuilten et al., 2015). This practice is rooted in the cultural and religious importance of supporting and protecting family members, which can sometimes conflict with the broader public health need for regular blood donations. underscoring the need for culturally competent communication strategies. Another critical factor is trust in the healthcare system. Muslim migrants from regions with historically weak or corrupt medical systems may carry scepticism toward blood donation programs in the host country (Polonsky et al., 2018a). Concerns about ethical handling of blood donations, fears of discrimination, and a lack of culturally competent healthcare services can discourage participation. Research suggests that increasing religious awareness and engagement with community leaders can significantly influence donation rates. Studies in Bangladesh, Saudi Arabia, and Sub-Saharan Africa show that when blood donation is framed as a religious duty, donor participation increases (Hossain et al., 2022; Speekenbrink, 2024). Moreover, the socio-economic circumstances surrounding migration impact participation rates. Low-income migrants may also experience extra difficulties like restricted access to healthcare and information, which may have an impact on their motivation and capacity to donate blood (Ansar et al., 2017; Patel et al., 2019).

The socio-cultural complexities of global migration become more complex, posing challenges when communities are integrated into Western societies, and the associated challenges in adopting new health practices (Manji et al., 2023). The estimated Muslim population in New Zealand by 2050 is expected to be 3%. of the total population. This community faces unique challenges in health due to cultural, social, and systemic differences between their countries of origin and New Zealand (Kishi et al., 2019). One study explored how Muslim migrants in Aotearoa New Zealand navigate the complexities of assisted reproduction, where religious beliefs often intersect with economic considerations. This highlights the nuanced ways in which migrants' cultural practices influence their engagement with healthcare systems in their new homes (Martin-Anatias & Davies, 2023). Further emphasizing the theme of cultural adaptation, Buckingham et al. (2022) investigated how Muslim migrants in Auckland choose mosques, revealing that these individuals prioritize ethnic, artistic, and linguistic unity in their places of worship, viewing these spaces as essential for enhancing their social

integration and overall wellbeing (Buckingham et al., 2022). These studies collectively underscore how cultural adaptation influences Muslim migrants' interactions with various aspects of society, including healthcare and religious practices, where social stigmas, misinformation, and the need for culturally competent communication play significant roles.

Currently, New Zealand's integration policies and practices have faced criticism for failing to adequately address the unique needs of Muslim migrants. A review by Brown (2023), called for stronger measures that not only tackle integration challenges but also address their root causes. The author emphasized the importance of cultural sensitivity, policy support, and community engagement to ensure a smoother integration process for migrants. migrants.

2.8 Weighing Up Risks and Benefits Related to Blood Donation

When making decisions about blood donation, individuals often undergo a complex evaluation of perceived risks and benefits, weighing what is in their best interest. This process is influenced by personal beliefs, cultural norms, and available information (Huis in 't Veld et al., 2019). The health services and donor engagement decision-making are not straightforward, as deterrents and motivators vary widely across different cultural and socio-economic contexts. For instance, misconceptions about the permissibility of blood donation in certain religious communities, combined with a lack of targeted health education, contribute to lower participation rates among Muslim migrants (Ahmed et al., 2018). Misconceptions, such as the commercial nature of blood donation, also play a significant role in hesitancy, highlighting the importance of effective communication strategies to dispel myths and educate people on the non-commercial, life-saving purpose of blood donation (Rivas et al., 2020). Additional reasons for hesitancy include concerns about medical limitations, fear of needle pricks, potential health risks like fainting, and worries about the transmission of diseases due to improper sterilization (Syed et al., 2022). These perceived risks are weighed against the known benefits of donation, such as saving lives and promoting donor health.

Even in populations with a high willingness to donate, such as university students, donation rates remain low due to fears surrounding the sterility of instruments and false

beliefs about blood donation being a commercial activity (Cha, 2017). In Myanmar, over half of the participants expressed fears of contracting HIV or hepatitis from donating blood, revealing significant misunderstandings about the safety of the process (Viwattanakulvanid & Chan Oo, 2022). Similarly, in Ghana, many believe that donating blood could lead to spiritual or physical weakness (Dennis-Antwi et al., 2019), while in some communities, there is a misconception linking blood loss to impotence in men due to perceived connections between blood, semen, and physical strength (Copeman, 2012). Additionally, logistical barriers, such as inconvenient donation sites and inflexible hours, further deter potential donors, even among those who understand the life-saving benefits of blood donation (Ersan et al., 2012). Addressing both informational deficits and structural barriers is essential to improving donor acquisition and retention, highlighting that the decision to donate is shaped by a nuanced evaluation of what is perceived to be in the individual's best interest in light of social and cultural circumstances.

2.9 Migration and the Act of Blood Donation

There are considerable discrepancies between the health systems and, correspondingly, the blood donation systems in a host country and those in the migrants' countries of origin, commonly resulting in prolonged population health inequity. The gaps in the cultural integration of migrants into host societies, especially older adults, become particularly evident in the accessibility of and engagement with health services such as blood donation systems (Khaw et al., 2023; Kuguyo et al., 2020). In the context of blood transfusion, multiculturalism brings several significant implications worldwide (Kim et al., 2020), as migrants often bring diverse blood types, beliefs, and attitudes, and often have different rates of donation compared to native populations (Gahan et al., 2022).

A study conducted by Kim et al. (2022) focused on understanding the blood donation behaviors of migrants in Korea, contrasting their participation rates in their home countries versus their rates in Korea. Although 28.6% of migrant respondents had previously donated blood in their home countries, only 2.7% had donated blood in Korea (Kim et al., 2022). The significant drop highlighted a critical gap in the engagement of this population in Korea's blood donation efforts. This discrepancy catalyzed the study, prompting an in-depth analysis of the underlying causes and potential strategies to

foster a more inclusive approach to blood donation among migrants in Korea. Key findings revealed that language barriers, fear of discrimination, and insufficient targeted outreach were significant deterrents to blood donation among migrants. Further research into the barriers to blood donation among Sub-Saharan African migrants and refugees in Australia revealed that despite a general willingness to donate, negative attitudes, knowledge gaps, and feelings of discrimination were inhibiting factors (Polonsky et al., 2013). These factors are due to navigating into new host societies while facing different types of barriers, including lack of knowledge, cultural concerns, religious values, socio-economic issues, mythologies related to blood donation, a paucity of trust in blood donation services, and language barriers (Makin, 2019). This is especially problematic for blood donation organizations, as people needing blood is growing because of ongoing demographic shifts, while the pool of potential donors is getting smaller. Studies indicate that blood donation rates among immigrant groups and those with at least one parent who migrated from a non-Western country are often lower than the general population in many Western nations (Klinkenberg et al., 2019; van Dongen, 2016). The issue of the under-representation of migrant groups among blood donors is expected to worsen due to the expanding immigrant populace and the challenges blood establishments may face in supplying products for rare or specific blood groups (Ashipala & Joel, 2023). As a result of this under-representation, blood products from people of the same ethnic background as those requiring transfusions may not be available (Klinkenberg et al., 2019; van Dongen, 2016; Yazdanbakhsh et al., 2012).

This complexity was underscored in a study noting that African migrants in Australia lack knowledge and awareness about blood donation stemming from their low-resource home countries, which can continue to affect their donation practices even after relocating (Kanengoni-Nyatara et al., 2024). For this reason, the Rare Blood Program of Canadian Blood Services (CBS) provides rare red cells for transfusion to meet the needs of the population (Lomas-Francis et al., 2023). This insight is relevant not only to the African diaspora but also to the broader experiences of Muslim migrants in countries like New Zealand, where the integration processes are substantial and long-lasting.

2.10 Promoting Blood Donations

Given the aging global population and the increasing diversity within OECD countries due to migration, ensuring a stable blood supply that matches the population's needs is more crucial than ever (Eng, 2014; OECD, (2014, May)).[1] Promoting blood donations from migrant and minority communities is vital, particularly when blood types are needed to prevent transfusion complications (Spratling & Lawrence, 2019). Different migrant groups may have varying beliefs and practices regarding blood donation (Jamaa, 2020). Consequently, it becomes essential to develop and execute strategies that encourage blood donation among these migrant and ethnic groups (Francis et al., 2017). In current approaches and interventions, there is a lack of adequate cultural and religious sensitivity to promote blood donation among Muslim migrants (Dimo, 2017). Religious misconceptions are often overlooked, community engagement is not enhanced, and educational materials that are both culturally and linguistically accessible are lacking. As well, existing efforts neglect to engage community and religious leaders who can serve as influential advocates (Goldsmith et al., 2023). Because of these gaps, barriers like fear, ignorance, and discrimination remain unaddressed, which hinders effective blood donation participation (McQuilten et al., 2015).

To promote blood donation effectively, particularly among Muslim migrants, a multi-faceted approach should be adopted, in addition to addressing the barriers that deter Muslim migrants from donating blood, navigating cultural sensitivities, bolstering community engagement, and enhancing awareness. For example, community sensitization campaigns can dispel fears and clarify misconceptions about blood donation, particularly by highlighting its compatibility with Islamic ethical standards. This approach can encourage participation, especially among women who may face specific cultural barriers (Goldsmith et al., 2023). Educational efforts should focus on increasing knowledge about the blood donation process and ensuring that all communication is culturally and linguistically accessible (McQuilten et al., 2015). Enhancing the availability of donation centres near Muslim communities and possibly

[1] OECD countries generally considered high-resource due to their advanced economies and healthcare systems, face challenges in maintaining an adequate blood supply amid demographic changes such as aging populations and increased migration. This contrasts with low-resource countries, where financial and infrastructural constraints more significantly impact blood donation systems.

offering incentives can improve blood donation rates. Moreover, ensuring that donation times accommodate significant religious observances can also increase participation rates (Finda et al., 2022). Engaging community leaders and religious figures in promoting blood donation can be highly effective. These leaders can act as role models and advocates, providing reassurance and encouraging community members to donate blood, thus fostering a supportive environment for blood donation (Maghsudlu et al., 2009). These strategies should be integrated into ongoing blood donation campaigns and supported by research to ensure they meet the evolving needs of Muslim migrant communities and effectively enhance their participation in blood donation programs.

2.11 The Research Gap

The current literature on blood donation among migrant communities reveals significant gaps that need addressing to enhance understanding and improve donation rates. Notably, there is a distinct lack of studies applying behavioral models, such as the TPB, to analyze the motivations and obstacles faced by culturally and linguistically diverse migrant populations in high-resource countries. This omission is critical as behavioral models can offer insights into the psychological and social drivers that influence donation behaviors and provide a structured framework to develop targeted interventions (Hossain Parash, 2020). Despite the acknowledgment of the under-representation of Muslim migrant communities among those donating blood, there is limited comprehensive research investigating the actual on-the-ground situations and the effectiveness of strategies employed to engage these communities, and none to date in New Zealand. Most studies pay attention to general population trends without investigating the explicit challenges and facilitators for migrant groups, specifically Muslim migrants in countries like New Zealand. This gap highlights the need for in-depth, context-specific studies that can inform culturally sensitive and inclusive blood donation campaigns.

The review provided a more in-depth understanding of the socio-cultural barriers to blood donation in high-resource countries with Muslim migrant populations. It also provided insights to inform targeted campaigns and initiatives to encourage blood donation in this community.

2.12 Review of Theoretical Models

2.12.1 Introduction

This section presents and evaluates various theoretical frameworks that have been proposed to understand behavioral intentions and practices in population health, including the health belief model (HBM), the transtheoretical model (TTM), the motivation model (altruism), self-determination theory, and the theory of planned behavior (TPB). Theoretical frameworks are instrumental in shaping the methodology and enriching the discussion. Therefore, in this section, each framework is critically evaluated by detailing its development, application in healthcare, adaptations over time, and relevance to the research aims and objectives of the present study concerning blood donation among Muslim migrants.

2.12.2 The Health Belief Model (HBM)

The HBM, developed in the 1950s, is a framework for understanding and predicting health-related behaviors by examining individuals' beliefs about health risks and health benefits and their motivations to engage in preventive actions (Anuar et al., 2020). It includes the following central points: perceived susceptibility (the degree to which a person thinks they may be attacked by a disease), perceived severity (the person's opinion about the seriousness of the problem and the likelihood of it affecting them), perceived benefits (the acceptance of the idea that performing a specific course will indeed minimize the risk), and perceived barriers (obstacles that hinder behavior change, such as cost or fear) (Asingwire, 2023). On top of that, the model incorporates cues to action (triggers such as reminders and symptoms that encourage behavior change) and self-efficacy, which is the individual's belief in their ability to accomplish the target behavior. The HBM provides the basis for constructing health promotion interventions that target the corresponding aspects of a particular health issue, intending to reduce the barriers, increase the perceived benefits, and thus persuade adopters to behave positively, to the benefit of their health.

Limitations of the HBM

The HBM is useful for understanding health behaviors, but has some limitations in studying blood donation. Among its major limitations is its focus on individual cognitive factors, which may not adequately consider social effects and altruistic motives that are

important in the context of blood donation. As an example, the model often ignores the impact of social norms and expectations, which are crucial to motivating individuals to donate blood (Khazaei et al., 2022). Additionally, the HBM overlooks actual obstacles to blood donation, like restricted donation service hours and the need for more public awareness (Sereti et al., 2021). There is also the possibility that the model's concepts, such as perceived benefits and severity, are not always aligned with the particular phobias and anxious thoughts of potential blood donors, such as needle phobia, health risks, or transmissible diseases (Theodoratou et al., 2024). These limitations indicate that although the HBM provides a framework for understanding health behaviors, alternative models or methodologies must be added to it that represent the psychological and contextual factors driving blood donation behavior more accurately.

2.12.3 Transtheoretical Model (TTM)

Previously known as the Model of Stages of Change, according to Prochaska and Velicer (1997). The core idea of the TTM is that changing one's behavior is a continuous, repeating process that goes through several stages rather than a single, isolated incident (Prochaska & Velicer, 1997).

The TTM serves as the foundational framework for improving health-related behaviors. It suggests that people trying to modify their health-related behaviors may go through several phases of being prepared to make changes. The key stages are: pre-contemplation (denying the need for change or not intending to make any); contemplation (considering changes seriously); preparation (making minor changes); action (actively bringing about change in themselves for less than six months); and maintenance (working consistently for at least six months) (Hashemzadeh et al., 2019). The TTM further expands this idea by implying that individuals go through a series of stages known as the Processes of Change (POC) while making progress. These stages show the different phases that individuals go through while navigating the journey of behavior change. The TTM provides a thorough framework comprising five key stages, with their characteristics and challenges, to understand and facilitate behavioral transformations (Hashemzadeh et al., 2019).

Limitations of the TTM

The TTM has been used to analyze several health-related actions, such as giving blood. Although the capacity of this model to pinpoint the stages of behavioral change that potential donors may be in, makes it useful for blood donation studies, it ignores societal elements that impact the process of behavior change, such as culture, socio-economic status, and income. Various critics have also noted that the TTM fails to take into account the versatility and multidimensionality of human functioning (Mimiaga et al., 2009). Moreover, the stages in TTM can sometimes overlap or be ambiguous, making it difficult to categorize individuals accurately. This ambiguity can complicate the development of stage-specific interventions and lead to inefficiencies in targeting interventions and measuring their effectiveness (Adelia et al., 2023).

Additionally, TTM emphasizes individual change over time, which may not capture the immediate decision-making processes, such as the choice to donate blood at a given opportunity. This model may overlook the impact of specific events or encounters that can instantly motivate an individual to donate blood (Goldfinger, 1989). This focus on longitudinal change might miss important contextual or situational factors influencing a person's decision to donate at a specific time. Further, it often places less emphasis on the immediate cultural, social-economic, and environmental factors that can be crucial in decision-making for blood donation (Popovsky et al., 1995). These factors are crucial in understanding donation behaviors, especially in diverse populations (Felix et al., 2017).

2.12.4 Motivation Model – Altruism Model

Altruism is often described as helping out others at one's own expense, with no specific advantage to oneself; rather, an implicit benefit of feeling social good arises (Batson & Powell, 2003; Konrath et al., 2016). Blood donation is frequently cited as an example of prosocial or altruistic behavior. However, altruism is defined and measured differently in various contexts, making it difficult to understand this phenomenon completely (Ferguson et al., 2019; Sibinga et al., 2019; Sparrow et al., 2019). It is commonly defined as an act of helping out others as a gesture of goodwill, while not expecting anything in return as an advantage or benefit, and also without taking into consideration the issue or cost one has to bear (Mattis et al., 2009; van der Wath & van Wyk, 2020). The most

common reason for blood donation, therefore, is altruism, which is the primary motivation for most recruitment campaigns (Evans & Ferguson, 2014). In addition, generic altruism-based slogans, like 'Do something amazing: save a life, give blood', can overshadow donor motivations (Clary et al., 1998). This singular focus on altruism may neglect other significant motivations that drive individuals to donate, such as personal satisfaction, social recognition, or even practical incentives. By focusing solely on altruistic appeals, such campaigns may fail to resonate with individuals whose motivations extend beyond the simple desire to help others, thereby potentially limiting the overall effectiveness of these campaigns in reaching a broader audience.

Limitations of the Altruistic Model

Though altruistic models frequently highlight a personal expense without anticipating any form of compensation, a comprehensive approach to studying the diverse motives that motivate altruistic behavior in the context of blood donation is missing (Batson, 2014; Evans & Ferguson, 2014). Moreover, altruism, derived from helping others, is often combined with both personal satisfaction and the benefit of others. This is supported by psychometric and behavioral economic evidence demonstrating the influence of motivations on blood donor preferences (Evans & Ferguson, 2014; Ferguson, 2021). Reluctant altruism, stemming from scepticism towards others' willingness to donate, and a sense of social responsibility, signifying a duty to contribute blood, are also pivotal factors in shaping altruistic conduct (Kuruvatti et al., 2011). Furthermore, egoistic motives, like hedonism, characterized by helping driven by personal benefit without regard for the recipient's well-being, along with reputation enhancement, functioning through indirect reciprocity, and kin selection, where individuals prioritize assisting family members, are supplementary aspects to take into account (Clavien & Chapuisat, 2013).

2.12.5 Self-Determination Theory (SDT)

It suggests that human motivation exists along a continuum, ranging from controlled (extrinsic) motivation to autonomous (intrinsic) motivation (Deci & Ryan, 2000). Intrinsic motivation arises from internal satisfaction, personal values, and the inherent enjoyment of the activity (Rheinberg & Engeser, 2018). For example, in Muslim migrant communities, migrants may view blood donation as a religious duty (sadaqah jariyah) or

a moral responsibility. It could be fostered through educational interventions that emphasize the humanitarian impact of blood donation, as well as by addressing concerns related to health risks, religious misconceptions, or access to donation services. Further, intrinsic motivation is particularly relevant in fostering sustained behavioral engagement in blood donation (France et al., 2017). Migrants who have internalized the personal significance of donation, such as the desire to help others, save lives, or contribute to the well-being of society, are more likely to develop long-term donation habits. Extrinsic motivation refers to behaviors driven by external rewards, social pressure, or obligations (Romaniuc & Bazart, 2015). Normative beliefs (a component of TPB) may align with extrinsic motivation when individuals feel socially compelled to donate blood due to encouragement from religious leaders, family, or community members.

Moreover, SDT can also help explain the role of acculturation and assimilation in shaping healthcare behaviors (Ramos, 2024). Migrants with greater exposure to the host nation's healthcare system and higher levels of cultural adaptation may develop greater intrinsic motivation to engage in prosocial health behaviors like blood donation. Those who feel a sense of belonging in the new country may internalize the health norms of the host society, thus increasing their likelihood of participating in blood donation programs. Conversely, individuals who experience marginalization, cultural dissonance, or mistrust of the healthcare system may rely more on extrinsic motivators, such as community-driven campaigns or faith-based endorsements, to guide their decisions.

Limitations of SDT

While SDT effectively explains how motivation evolves in response to external influences and personal values, it does not fully account for structural barriers, such as discrimination, language difficulties, or lack of trust in healthcare institutions, which may shape migrants' willingness to engage in blood donation (Randolph et al., 2020). Another limitation of SDT in this context is that not all health behaviors are inherently enjoyable or intrinsically rewarding—blood donation, for instance, may not provide immediate personal gratification, making extrinsic motivators necessary for initial participation (Gillison et al., 2019). Moreover, SDT's distinction between controlled motivation (i.e., obligation-driven actions) and autonomous motivation (i.e., self-driven

actions) may not always be as clear in collectivist settings, where actions are often intertwined with cultural and familial expectations rather than individual volition (Deci & Ryan, 2012). Unlike TPB, which emphasizes intentions as the primary determinant of behavior, SDT highlights the importance of autonomy and self-determined motivation in maintaining consistent health behaviors. For Muslim migrants, intrinsic motivation. Also, it assumes people have a lot of control over their motivation, whereas in the real world, systemic barriers, cultural norms, and outside influences frequently influence how people behave.

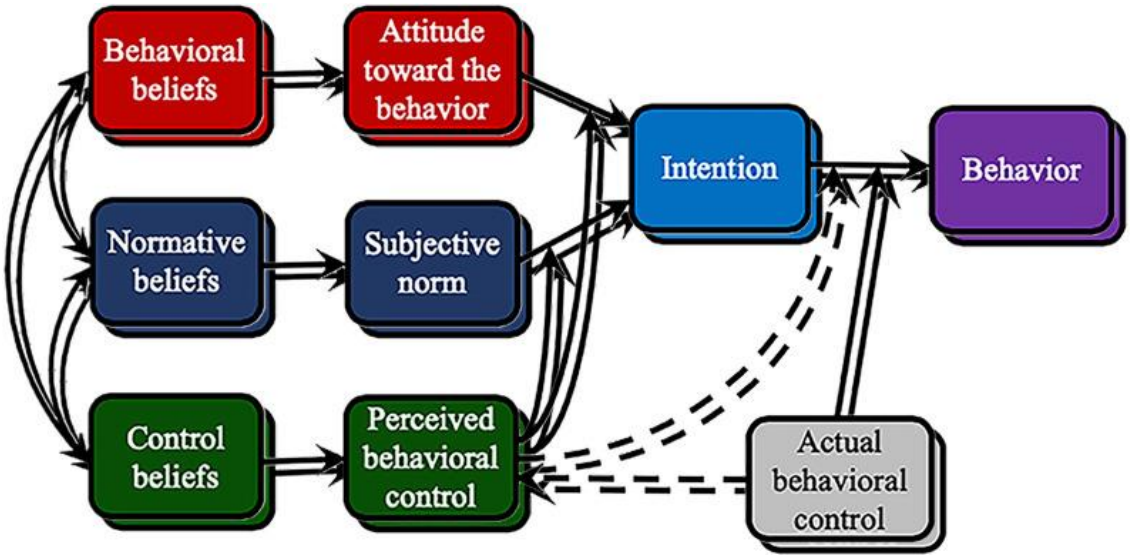
2.12.6 Theory of Planned Behavior

Research on blood donation, outside of New Zealand, has extensively utilized this theory as it offers a strong framework for understanding blood donation behavior. Giles and Cairns were among the first researchers to apply the Theory of Planned Behavior to blood donation. (Giles et al., 2004). This theory is used to explain human behavior and draws on constructs of subjective norms (SN), perceived behavior control (PBC), and attitude toward behavior (ATB). (Chen, 2017; Fishbein & Ajzen, 1977). The TPB examines how these constructs shape the logical reasoning, ultimately influencing decision-making (behavior) (Huang et al., 2022). The TPB's first construct is ATB, which is defined as an overall assessment of a person's conduct. Attitude is "an individual's positive or negative feelings about performing the target behavior" (Ajzen (1991, p. 188). Regarding blood donation, attitude means how people feel about giving blood again, good or bad. Subjective Norm is the "perception that most people who matter to the individual think that he [sic] either should or should not perform the behavior in question" (Giles et al., 2004, p. 381). Perceived Behavioral Control (PBC) refers to how much a person believes they can perform a behavior, based on their sense of control over it.

The theory highlights three key types of beliefs: behavioral beliefs, normative beliefs, and control beliefs (Bosnjak et al., 2020). Behavioral beliefs are the thoughts or expectations a person has about what will happen if they perform a certain action. These beliefs shape their attitude toward that action, whether they perceive it as good or bad, beneficial or harmful. For example, in this study, participants' recognition of the life-saving benefits of blood donation and the substantial influence of religious teachings positively affect attitudes. Similarly, the TPB states that subjective norms arise from

normative beliefs, which represent the expectations of important people like family, friends, and society. People tend to engage in actions they believe are common and acceptable within their social groups and adjust their behaviors based on their observations of others' actions (Yuriev et al., 2020). Furthermore, control beliefs influence perceived behavioral control (PBC), which refers to an individual's confidence in their ability to perform a behavior despite potential barriers or facilitators. Control beliefs directly impact PBC, making the behavior appear either more achievable or more difficult based on past experiences, knowledge, and available support (Bosnjak et al., 2020; M'Sallem, 2022). Empirical studies have shown that when perceived barriers(such as access to blood donation centers, fear of needles, misconceptions about health risks, or concerns regarding religious permissibility) are minimized through tailored interventions(if these individuals receive clear information from healthcare professionals, religious assurances from trusted figures, and logistical support e.g., transportation to donation centers, their perceived behavioral control may increase, leading to a higher likelihood of donation (Bosnjak et al., 2020). These beliefs collectively influence a person's intention to act, which in turn affects whether they follow through with the behavior (M'Sallem, 2022).

Figure 2
Theory of Planned Behavior as a theoretical model for the current research



Note. Adapted from Bosnjak et al. (2020, p. 354).

Currently, the theory has been applied for the evaluation of health-related behaviors, including people with chronic illnesses, diabetics, cancer survivors, and African migrants, making it one of the most widely used theoretical models in behavioral psychology. This model relies on the significance of anticipations and posits that behavior can be predicted through intention, which is a cognitive depiction of an individual's plans or projects regarding their actions (Chen, 2017; France et al., 2014). The TPB implies that an individual's state of mind or intention is a strong proximal predictor of future behavior (Hu et al., 2017). Self-efficacy, or the belief that one is capable of effectively accomplishing a task, is a safer interpreter of intention than PBC from the perspective of blood donation (Gilchrist et al., 2019; Jalalian et al., 2013). By combining widely shared beliefs about a behavior with their potential positive or negative outcomes, any individual's attitudes toward that behavior can be predicted. The TPB has been employed in studies related to blood donation innumerable times, for example, by Holdershaw et al. (2011), Reid and Wood (2008), Veerus et al. (2017), and Polonsky et al. (2013). The literature, however, does not document how this theory is applied to Muslim cohorts when it comes to blood donation.

2.12.7 Conceptual Framework

This research employed a TPB framework to underpin and guide the research by identifying, defining, selecting, and determining various aspects of the intentions and behavior of the blood donors. While focusing on intentions, importantly, the model also draws out socio-cultural attitudes toward blood donation. (It also helps reveal broader socio-cultural factors that influence this intention. These factors include cultural norms, religious beliefs, societal expectations, and family influences that shape people's attitudes toward blood donation. (Bosnjak et al., 2020; Veldhuizen et al., 2011). The choice to employ the TPB was made because it provides a focused framework for comprehending and predicting planned behaviors like blood donation, emphasizing attitudes, behavior, and practice. Unlike the theory of altruism, which is intricate and contextually variant, TPB provides a more structured framework regardless of the context. For example, while altruism assumes that people donate blood purely out of selflessness, TPB acknowledges that social influences, personal attitudes, and perceived ease or difficulty of donating also play crucial roles in shaping behavior, making it a more structured and predictive model."

Although many studies have examined the importance of TPB components as predictors in the field of blood donation, there are still significant limitations in its use according to a meta-analysis, most of the research on donation intention behavior (applying alternative constructs in the TPB model) was directed towards high-resource countries, such as Australia, Canada, the Netherlands, the United Kingdom (UK), and the US, as well as New Zealand (Bednall et al., 2013; Polonsky et al., 2013). The meta-analysis also concluded that none of these researchers applied the TPB model to culturally and linguistically diverse (CALD) and/or migrant populations (Polonsky et al., 2013).

These CALD and migrant communities are growing in number due to increased migration. Immigrant populations form substantial populations in high-resource countries like Australia, Canada, New Zealand, the UK, and the US. This is especially problematic for blood donation organizations, as continual demographic changes result in an increasing need for blood as the possible donor pool shrinks. Across cultures, migrants differ from the wider society in their attitudes toward blood donation (Grassineau et al., 2007). Furthermore, cultural differences exist within the general population in terms of people's perceptions of blood and blood donation (Burditt et al., 2009; Merav & Lena, 2011). Hence, models to predict blood donation behavior and intentions are likely to differ between ethnic or migrant groups. According to Aggarwal and Sharma (2012), research is limited to certain geographical and cultural settings, but it is still crucial due to the differences in attitudes and beliefs of people (Aggarwal & Sharma, 2012; Brayley et al., 2015; Polonsky et al., 2018b).

Among other ethnic populations, Muslim migrants also form a significant population cohort in many nations (Norris & Inglehart, 2012). There is a lack of empirical evidence concerning non-blood donors' intention to donate blood in Muslim countries. Furthermore, very little research has been carried out on the beliefs and behaviors of migrants and their role in the donation of host nations' blood supplies (Polonsky et al., 2018b). To understand diverse community blood donation intentions, empirical studies must be developed to identify their main antecedents in their country of origin (Mugion et al., 2021). Migrant populations' attitudes toward blood donation commonly differ from citizens of their host country due to cultural disparities and different belief systems (Polonsky et al., 2013). As a result, understanding migrants' participation and

involvement requires an understanding of historical cultural beliefs and institutional disparities between their home and host environments (Stuart et al., 2016).

Because human behavior is influenced by societal and cultural factors, it is reasonable to believe that different psychological beliefs and behaviors will function differently in different societies and cultures. Keeping the above in view, it is extremely important to examine the participation of Muslim migrants in blood donation within their new host social environments and healthcare systems.

2.13 Chapter Summary

This chapter provided an extensive analysis of both regional and global literature concerning blood donation practices. Initially, the review discussed the general literature on blood donation, highlighting studies that outline the prevalent trends, challenges, and motivations associated with blood donation practices globally. Then, it focused on immigrants and, specifically, Muslim migrants, setting the foundation for a more focused examination of literature that specifically addressed the knowledge, attitudes, beliefs, and behaviors of Muslim migrant populations regarding blood donation. The review pointed to a significant gap in understanding the complex factors influencing their willingness to donate blood. Although many recognize the medical necessity and altruistic benefits of blood donation, their perspectives and practices are profoundly shaped by a combination of socio-cultural, gendered, religious, and demographic factors. Further, the literature review explored specific dimensions such as the general awareness of blood donation procedures among Muslim migrants, the dominant attitudes and religious beliefs influencing their decisions, and actual behaviors toward blood donation.

Although other studies, such as those by Polonsky et al. (2013) and Renzaho (2013), have examined blood donation among Muslim and African migrant populations in Western countries like Australia, they did not focus exclusively on Muslim migrants or utilize the TPB framework in the New Zealand context. The unique contribution of this research lies in its specific application of the TPB to understand the determinants of blood

donation behaviors among Muslim migrants in New Zealand, addressing a gap in the literature by combining cultural, religious, and social factors within this framework. The TPB framework was selected as a guiding framework for this study due to its comprehensive approach to determining how attitudes, subjective norms, and perceived behavioral control influence intentions and behaviors. It helps to contextualize the complex interaction of beliefs, social pressures, and control factors influencing Muslim migrant blood donation practices. Through this theoretical model, a better understanding of existing behaviors can be gained, and targeted interventions developed that will encourage blood donation within this community. The insights gathered from the review have guided the employment of a suitable research methodology presented in the next chapter.

Chapter 3: Research Design

3.1 Introduction to the Chapter

The purpose of this chapter is to describe in detail the research methodology used to conduct this study. There are two main parts to this chapter. Firstly, the methodology is addressed, including discussions concerning the research philosophy, reasons why pragmatism was used, and research strategy. In the second part of the chapter, the process of selecting participants (recruitment), conducting focus group discussions, data collection, and applying thematic analysis is outlined. The steps taken to ensure the rigor and ethical integrity of the research are also discussed in the second section of the chapter.

3.1.1 Research aims

1. To explore the knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation in New Zealand.

2. To develop a culturally relevant, empirically tested questionnaire to assess knowledge, attitude, beliefs, and behavior about blood donation for the Muslim migrant population. This includes an exploration of both the barriers to and facilitators of blood donation within these communities.

3. To determine the validity and reliability of the developed questionnaire for future health promotion efforts among migrants.

3.1.2 Research questions:

1. What are the knowledge, attitudes, beliefs, and behaviors of the Muslim migrant population regarding blood donation?

2. What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation?

3. How valid and reliable is the developed questionnaire for the Muslim migrant population it is to be applied?

3.2 Research Methodology and Methods

The methodology represents a structured and theoretically grounded plan for conducting a study. It includes logical reasoning and strategies behind data collection, analysis, and evaluation. The methodology provides guidelines for researchers to follow, helping them determine the best approach to studying a subject (Pandey & Pandey, 2021). Research methods, on the other hand, are specific tools and techniques for collecting, interpreting, and analyzing data based on specific strategies, procedures, (Kapur, 2018). These methods include surveys, interviews, group discussions, experiments, and computational analysis. (Computational analysis involves statistical techniques, data modelling, and simulations to analyze large datasets, draw insights, and test hypotheses quantitatively). The choice of methods shapes the study design, influencing aspects like sampling, data coding, and analysis. The purpose of these methods is to assist researchers in generating data and discovering solutions to problems (Pandey & Pandey, 2021).

Research methodologies and methods are extensively utilized across various fields (Kapur, 2018). In healthcare research, for example, interviews and discussions help understand patient experiences and improve care quality (Jones et al., 2018). For example, a study on Iranian healthcare quality relied on in-depth interviews with individuals and group discussions (Kianian et al., 2022). To meet study goals and answer research questions, researchers need to establish a worldview, a set of fundamental beliefs about reality, knowledge, and values. This worldview directly influences their choice of research paradigm, which in turn guides in choice of an appropriate methodology, which defines the overall strategy for data collection, analysis, and interpretation. provides a structured framework for conducting the study. (Mackey & Gass, 2015). A well-defined methodology ensures that research is conducted systematically and aligns with the study's philosophical assumptions (Chilisa & Kawulich, 2012). Within this methodological framework, researchers choose specific methods, such as surveys, interviews, or computational analysis, to gather and analyze data. These methods must align with the methodology and the paradigm to maintain consistency and credibility in the research process (Creamer, 2018). The paradigm also integrates

philosophical perspectives, practical techniques, and socio-political considerations, shaping how researchers approach their study and interpret their findings.

3.3 Research Philosophy

According to Saunders et al. (2018), research philosophy encompasses the fundamental beliefs and assumptions about reality. These include ontological, epistemological, and axiological perspectives, which shape the research process, methods, and interpretation of outcomes (Kivunja & Kuyini, 2017). As a result, the worldviews of researchers are modelled by their assumptions about reality, knowledge, and morality (Alharahsheh & Pius, 2020). A researcher aims to clarify their ontological and epistemological notions so that they can choose the most appropriate method of research and methodology.

3.3.1 Ontology

Ontology is concerned with the existence of reality. Ontology is the central phenomenon of inquiry, that is, what a researcher sets out to study (Chilisa & Kawulich, 2012; Morgan, 2014). An understanding of the knowledge, attitudes, beliefs, and behaviors of the Muslim migrant population about blood donation requires an understanding of ontology. Researchers can learn how specific community views and constructs intersect to inform blood donation behaviors by examining the ontological underpinnings of their cultural and religious contexts (Cumming, 2012). This viewpoint enables a more thorough comprehension of both the innate beliefs and the external social influences shaping the attitudes and actions of the Muslim migrant population.

3.3.2 Epistemology

Epistemology refers to the nature and forms of knowledge, how it can be acquired, and how it can be communicated to other human beings (Gall et al., 2017). In blood donation research, epistemological questions shape the methods used to obtain reliable knowledge about donation practices by considering objectivity, subjectivity, validity, causality, and generalizability (Patton, 2014). Researchers then critically evaluate how their methodologies can produce accurate and meaningful insights, and in the case of the current study, into blood donation. This approach allows researchers to generate in-depth knowledge that informs policies and programs aimed at improving donation rates

while addressing the diverse factors influencing blood donation practices (Brown & Harris, 2018; Chilisa & Kawulich, 2012).

3.3.3 Axiology

Axiology, which deals with ethics and values, plays a crucial role in mixed-methods research but is often overlooked (Biddle & Schafft, 2015). In blood donation studies focusing on Muslim migrants, understanding axiology is crucial because cultural perspectives, minority status, and New Zealand's unique social context impact how research questions, design, and interpretation are shaped. This helps researchers understand knowledge, attitudes, beliefs, and behaviors around blood donation. For instance, factors such as altruism, cultural perceptions, and religious values influence donation behavior among Muslims (Asamoah-Akuoko et al., 2017). Islamic teachings support blood donation, and awareness of these positive attitudes can encourage Muslims to contemplate donating (van Dongen, 2016). In New Zealand, Muslim migrants are driven by a strong sense of citizenship despite socio-economic disparities (Duboz & Cunéo, 2010; Rahman, 2014). This sense of civic responsibility and community engagement potentially plays a vital role in their willingness to engage in donor behavior (Kolig, 2009).

Table 1
The philosophical assumptions and the study's approach

Characteristic	*Description*	*This Study's Approach*
Ontology	The study of the nature of reality. It defines reality and its comprehension.	This study combines subjective realities, e.g., individual beliefs and cultural norms influencing blood donation, and objective realities such as information on blood donation.
Epistemology	Knowledge is being studied—how it will be acquired.	The study integrates subjective experiences with objective data using qualitative and quantitative methodologies to obtain full knowledge about blood donation behaviors among Muslim migrants.
Axiology	The study of values. The role of values and ethics in research is examined here.	This research respects the cultural backgrounds as well as the religion within which the individuals operate during the whole course of research, hence ensuring it is ethically sound.

Pragmatism	A practical research approach. It emphasizes solving real-world problems as far as research is concerned.	Pragmatism has guided this study to integrate qualitative and quantitative methods, aiming to provide practical recommendations for enhancing Muslim migrants' blood donation practices.
Qualitative Descriptive Study	A method that supports naturalistic inquiry by offering simple explanations of events.	By describing Muslim migrants' knowledge, attitudes, beliefs, and behaviors regarding blood donation, the findings are grounded in actual experiences.
Quantitative Survey	A process for gathering organized numerical data so that variables may be measured, and trends can be statistically examined.	The survey will be utilized to measure the knowledge, attitudes, beliefs, and behaviors around blood donation among Muslim migrants, drawing on the qualitative findings. This allowed for a more comprehensive generalization and validation of the findings from the qualitative phase.

3.4 Research Paradigms

Paradigm is a Greek word that refers to a pattern or framework. Essentially, it is a common conceptual frame shared by a community of researchers. An established research paradigm defines how researchers conduct research and how knowledge is conceptualized within research communities based on a set of beliefs and values (Allemang et al., 2022). Researchers can formulate their conceptions about the essence of knowledge by applying paradigms and choosing the most appropriate approaches to tackle their research questions (Allemang et al., 2022). Kaushik and Walsh (2019) defined paradigms as both conceptual and operational "instruments" utilized for resolving particular research issues; essentially, paradigms act as guiding aids in the realm of social research. Cresswell (2014) identified four key paradigms: positivism/post-positivism, constructivism (or interpretivism), realism, and critical theory. Alharahsheh and Pius (2020) emphasized that the principal methodologies in social science research align with one of these paradigms.

In the context of this study, it was crucial to choose a paradigm (a framework that connects ontology, epistemology, theoretical perspective, methodology, and decision-making methods) that matched the goals of the study, and the characteristics of the

qualitative data obtained from the focus groups of Muslim migrants regarding blood donation. The following sub-sections present an outline of four paradigms with an explanation of the limitations of each for the current study's focus. Then, pragmatism, the paradigm that was employed in this study, is critically discussed.

3.4.1 Positivism

Also referred to as logical positivism, this paradigm asserts that real knowledge is acquired from experiences and is attainable through observation and experimentation. Positivism seeks to understand human behavior through observation (Ayeni et al., 2019). It utilizes concepts like objectivity, phenomenalism, deductivism, inductivism, and the distinction between normative claims and those that are scientific (Chilisa & Kawulich, 2012). Deductive reasoning is a tool used by positivists to assist researchers in gathering numerical data, frequently through surveys (Cecez-Kecmanovic et al., 2020). The method is typically associated with quantitative techniques that emphasize applicability across different scenarios, reliability, and clarity (Creswell, 2013; Kaushik & Walsh, 2019). This study, however, does not employ positivism because it focuses on the thematic analysis of qualitative data gathered from focus groups.

3.4.2 Post-positivism

Post-positivism brought forward a comparatively lenient form of positivism based on the argument that "no matter how faithfully the scientist adheres to scientific method research, research outcomes are neither totally objective nor unquestionably certain" Chilisa and Kawulich (2012, p. 40). Post-positivism builds on and critiques positivism, but the two paradigms are distinct. As opposed to positivism, post-positivism acknowledges the limitations and biases in scientific research and allows for a broader range of inquiry (Chilisa & Kawulich, 2012). Post-positivism permits a more sophisticated analysis of the facts, considering the complexities and diversity of human behavior that positivism might miss. This methodology frequently combines quantitative and qualitative methods to give a more thorough grasp of study problems (Panhwar et al., 2017). However, it might not provide the valuable, context-specific insights required for the goals of this study.

3.4.3 Interpretivism/Constructivism

Interpretivism emphasizes subjective interpretations and focuses on how people give meaning to the problems they face (Packard, 2017). It is commonly linked with qualitative approaches and informal discussion, where participants' viewpoints are extensively incorporated into the investigation. Consequently, such research progresses to encompass overarching patterns, eventually leading to comprehensive insights (Creswell & Poth, 2016; Rehman & Alharthi, 2016). This philosophy is linked to methods such as social constructivism, hermeneutics, and phenomenology. Interpretivist theory emphasizes the notion that humans interpret physical phenomena to make sense of them (Saunders et al., 2018). Based on this paradigm, human experiences and social contexts (ontology) construct reality, which is subjectively interpreted by the participants (Bleiker et al., 2019).

Although interpretivism offers compelling insights into unique experiences through qualitative methods, it may not produce generalizable results. According to Bleiker et al. (2019), this paradigm can potentially restrict how broadly the results can be applied because the participants' common meanings and beliefs might not hold in other contexts. Interpretivism likely has limitations in applying the results to other contexts, leaving unaddressed the larger goal of improving blood donation behaviors among Muslim immigrant populations.

In conclusion, while interpretivism, post-positivism, and positivism are all useful research frameworks, they were not appropriate for this study's research questions on beliefs and contexts. Rather, an approach that could inform the thorough examination of the cultural and religious elements of blood donation practices was needed for this study to properly provide the context-specific understanding as well as survey development that these other paradigms were unable to offer. Thus, pragmatism is deemed more suitable for the study's aim.

3.5 Pragmatism

The paradigm of the current research is pragmatism, as it facilitates the integration of methods due to its strong reliance on the principles of contemporary science (meaning it values evidence-based approaches and practical outcomes), which includes utilizing

the experimental method (as it provides a structured way to test solutions and address human challenges effectively) as a blueprint for addressing human challenges (Kelly & Cordeiro, 2020). It provides a framework for investigating study questions through various data collection and analysis methods (Creswell et al., 2007). In pragmatism, the research methodology is selected based on the research questions and problems being investigated, rather than on the method used to answer them. According to Brierley (2017), a pragmatic approach is more appropriate for addressing research problems in the field of study rather than depending on presumptions like ontology or epistemology (Brierley, 2017). This implies that the emphasis should be on practical results rather than theoretical frameworks. This suggests that the choice of technique is contingent upon the research subject at hand and that certain approaches may be more appropriate for tackling certain questions than others.

Considering these points, the pragmatist principles that underlie this research are intended to evaluate the blood donation knowledge, attitudes, beliefs, and practices of Muslim migrants.

3.5.1 Justification for employing pragmatism

Pragmatism claims that the research question is crucial in deciding the epistemology, ontology, and axiology to use (Saunders et al., 2018). The use of a pragmatist philosophy in this study is driven by its potential to yield useful outcomes (Onwuegbuzie et al., 2010). Pragmatism allows for the integration of both qualitative (focus groups and thematic analysis) and quantitative (questionnaires) methods (Denzin, 2010) to explore and assess blood donation behaviors among Muslim migrants in New Zealand. It has been suggested that it suits mixed-methods research well because it allows various paradigms to coexist harmoniously, thereby enabling researchers to explore real-world challenges effectively (Onwuegbuzie et al., 2010). This approach ensures that the insights generated are not only feasible but also directly applicable to healthcare policy and practice, aligning with the research's objective to improve blood donation services.

The choice of pragmatism is consistent with its principles of linking knowledge to action and providing solutions to real-world challenges (Long et al., 2018). The relationship between ideas and actions is considered the basis for knowledge by pragmatic

researchers (Kaushik & Walsh, 2019). This perspective values knowledge as a tool that guides and improves human behavior by offering practical solutions to real-life problems (Cresswell & Plano Clark, 2011; Kaushik & Walsh, 2019). By combining pragmatism and, to some extent, constructivism, the research addresses both the practical concerns of blood donation and the participants' subjective perspectives.

The methods applied in the first phase of the study utilized thematic analysis not only to identify themes in the data but also to explore the meanings behind those themes, reflecting the participants' experiences within their cultural, religious, and social contexts. This process is aligned with the reflexive thematic analysis described by Braun and Clarke (2021). While the TPB served as a useful interpretative tool, the analysis remained flexible, allowing themes to emerge organically without being constrained by the framework. This approach ensured that the data reflected the unique context of the Muslim migrant population, using TPB as a lens rather than a strict guide.

In Phase II, following the pragmatic approach, the quantitative phase validated and expanded on the findings from the qualitative phase. The thematic findings from Phase I informed the selection of an existing questionnaire (Part A) and the creation of a new section (Part B). Part A was adapted from Polonsky et al.'s (2013) published questionnaire, "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees' questionnaire", while Part B was developed with open-ended and closed-ended questions specifically designed to capture the religious, cultural, and gender dynamics identified during the qualitative phase. This ensured the survey effectively measured the key themes that emerged from the focus groups.

The adapted survey, combining structured and open-ended questions, will gather measurable data on the prevalence of specific behaviors and attitudes, which, in turn, inform healthcare policies and outreach strategies tailored to the religious and cultural needs of Muslim migrants (Denzin, 2010). By combining qualitative exploration with quantitative verification, this mixed-methods approach ensured that the study's recommendations were grounded in rich, context-specific insights, reinforced by statistical evidence. This integration highlights the pragmatic aim of producing

actionable outcomes, ultimately contributing to practical improvements in blood donation services for Muslim migrants in New Zealand.

3.6 Design of the Study: mixed-method design using a sequential exploratory approach

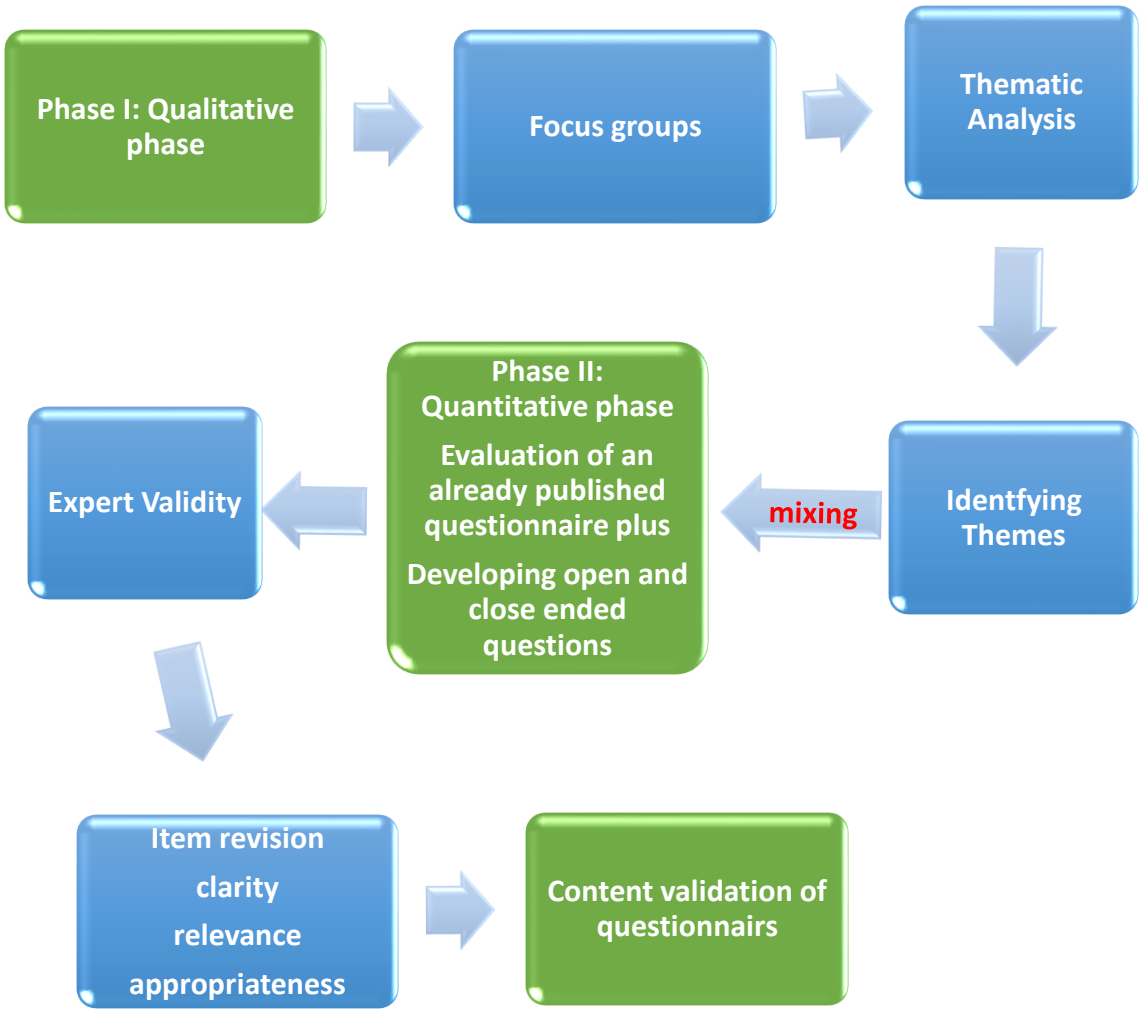
This research employed the sequential exploratory approach (Cresswell & Plano Clark, 2011) using TPB as a conceptual framework. Sequential exploratory mixed methods are important as they have a higher value for the qualitative phase and have an extensive prospective developing background and population-specific tools (Cresswell & Plano Clark, 2017; Onwuegbuzie et al., 2010). An exploratory sequential method is a technique where qualitative research is carried out first to probe deeply into a phenomenon before going on to the quantitative phase, for further analysis (Cresswell & Plano Clark, 2017). This method yields findings during the exploratory phase that direct the design of the succeeding quantitative phase. Finding themes and correlations that may be verified later or scaled up using quantitative methods in a bigger population sample is one of the main goals of this stage. This strategy is especially helpful for studying intricate, context-specific processes that may be difficult for quantitative data alone to capture (Morgan, 2014).

The sequential exploratory design employed in this study allowed for the generation of themes from the qualitative phase, which were then tested and validated through the quantitative phase. This method not only ensures that each phase builds upon the previous one but also enhances the overall robustness of the study by allowing for triangulation—combining qualitative and quantitative findings to provide a more nuanced and complete interpretation than either method could achieve independently (Cresswell & Plano Clark, 2017) which integrates both qualitative and quantitative data collection and analysis.

Mixed-method research combines the strengths of qualitative and quantitative approaches, allowing for a comprehensive and multi-dimensional understanding of the research problem. Mixed methods are particularly useful when neither a purely quantitative nor a purely qualitative approach would be sufficient to address the research questions (Morgan, 2014). The mixed-method approach has increasingly been adopted by health sciences (Creamer, 2018). By using mixed methods, the researcher

gains a holistic perspective, as qualitative insights can uncover complex, context-specific dynamics, while quantitative data can confirm these findings and assess them across a larger population.

Figure 3
Design of the current study showing the mixing of methods



The multiple phases' findings can be combined or triangulated to provide a more nuanced and complete interpretation than if they were considered independently (Cresswell & Plano Clark, 2017; Wess et al., 2022).

3.7 Qualitative Research

Qualitative research is a versatile and broad methodological approach to understanding real-world phenomena, including many methods for accomplishing this task (e.g., qualitative hermeneutics or phenomenology, and grounded theory) (Bradshaw et al.,

2017). While these approaches differ in their underlying theories and the methods employed, they all challenge one or more assumptions of mainstream medical philosophy by primarily attempting to probe the depth and intricacy of human experiences as they are lived through participants' interpretations (Austin & Sutton, 2014). Contrary to quantitative research, which deals with numerical data and statistical analysis, qualitative research is a form of scientific examination that seeks acceptance of the interpretation of words/trends, not necessarily measuring countable materials. A variety of methods are used in this process, including personal experiences, focus groups, case studies, interviews, observational studies, interactive sessions, and visualizations (Johnson et al., 2020).

Being an exploratory qualitative descriptive study, Phase One sought to address (Hunter et al., 2019), the first two research questions: 1. What are the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation, and 2. What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation to capture the perspectives of Muslim migrants regarding blood donation.

3.7.1 Justifications for using the qualitative descriptive method

A qualitative descriptive approach is commonly used to describe experiences and perceptions, especially in an area of study with limited information available (Sandelowski, 2010). As a result, the most appropriate design would likely be a qualitative descriptive design since it recognizes both the subjective nature of the problem and the diverse experiences of its participants. By using this design, researchers can present findings in a way that closely reflects or resembles their original research question (Bradshaw et al., 2017). Healthcare intervention studies that aim to comprehend participant perspectives and improve the therapeutic relevance of findings are increasingly including this methodology (Doyle et al., 2016). Taking their philosophical underpinnings from pragmatism, qualitative descriptive studies are closely aligned with naturalistic inquiry and the interpretive paradigm. A key component of this approach is that it captures the richness of participants' experiences without manipulating their surroundings (Sandelowski, 2010), and flexible, inductive methods

are required to ensure the integrity of data so that results can be easily understood and integrated into clinical practice and health service delivery. Mixed methods studies often use this methodology to explain quantitative findings, develop questionnaires, and evaluate results (Doyle et al., 2016).

After discussing the research philosophy and methodology, the next section of this chapter will describe the stages of recruitment, data collection, and data analysis of Phase One.

3.8 Recruitment

Due to COVID-19 restrictions, online platforms were used to advertise my study (during January and February 2023). Flyers were written in English and Urdu (see Appendix B) and were advertised on the social media pages of community organizations such as the Pakistan Association of New Zealand (PANZ), Federation of Islamic Associations of New Zealand (FIANZ), and The Asian Network Incorporated (TANI) in Auckland, New Zealand's largest city where most Muslim migrants reside. Interested participants were requested to communicate with the researcher. Those who expressed interest and met the eligibility criteria were subsequently grouped for discussion.

3.8.1 Sampling criteria

The target population for the focus groups was the purposively sampled Muslim migrant population residing in Auckland, New Zealand, for between three and seven years. Men (aged between 18 and 66) and women (aged between 18 and 66) were sought (NZBS, 2024). Those selected were engaged in a variety of occupations and family roles, fulfilled the inclusion criteria, were available to take part, and could express their thoughts (Cations et al., 2020; Cresswell & Plano Clark, 2011). The focus groups were single-gender and divided into younger (18-49 years) and older (50-66 years) age groups to respect cultural norms and ensure participant comfort. Gender segregation facilitated open discussions, while age division allowed for capturing diverse perspectives relevant to different life stages and experiences within the Muslim migrant community. This approach ensured a respectful and supportive environment, enhancing the quality of the data collected. Four focus groups were held. Efforts were made to ensure a gender-

balanced, age-diverse selection of participants overall, occupying a variety of social roles (family members, occupations):

- FGD1 consisted of older women aged 50-66.
- FGD2 comprised younger women aged 18-49.
- FGD3 included older males aged 50-66.
- FGD4 involved younger males aged 18-49.

3.8.2 Inclusion criteria

- Adults 18 to 66 years.
- First-generation Muslim migrants living in New Zealand for between three and seven years.[2]
- Being able to read and speak conversational English.
- Holding permanent residency or New Zealand citizenship.

3.8.3 Exclusion criteria

- Individuals under 18 or over 66 years of age. (Age limitations on blood donations serve to safeguard the well-being of both donors and recipients. Individuals under 16 were not included in the study due to concerns regarding immaturity that could impact their ability to engage and provide feedback actively. Similarly, adults over 66 years of age were not included, considering the increased health risks and slower recovery rates.)
- Those with comorbidities. (Individuals with comorbidities were excluded to prevent complications during donation due to their health conditions and to maintain a representation of experiences from healthy donors, in the general population.)
- Muslim migrants living in New Zealand for more than seven years.
- Those unable to read and speak conversational English.

[2] Selecting individuals who have lived in the new country for three to seven years is considered beneficial because this period allows for observable acculturation processes and adaptation strategies to be more evident. Research indicates that, during the initial years, migrants undergo significant adjustments in various aspects of their lives, including social, economic, and psychological domains. This timeframe is crucial as it represents a phase where the initial challenges of migration start to stabilize, and patterns of integration or issues become clearer. Ainsaar, M. (2023). Life Satisfaction of Immigrants and Length of Stay in the New Country. *Social Sciences*, *12*(12), 655.

3.9 Developing the Focus Group Discussion Guide

Constructing questions based on the literature review was the first step in the iterative process of creating the semi-structured interview guide. Initially, fifteen open-ended questions were developed from the literature and discussed with supervisors. The questions were then revised to improve comprehension. These open-ended questions were utilized to gain insight into the perceptions and experiences of participants without imposing the researcher's perspective. For example, regarding knowledge, participants were asked, "Tell me about blood donation and your understanding of blood donation." For beliefs, participants were asked, "Tell me about what is important to consider when you donate blood," and "Describe any benefits you think come from donating blood." To explore attitude, participants were asked, "Tell me how you donated blood." Moreover, the wording of the questions was kept simple and free of jargon to ensure participants could easily understand (Kvale & Brinkman, 2009). This approach helped to reduce the effect of researcher bias (Morris, 2015). Specifically, questions that started with suggestive phrases such as "Did you…?", "Were you…?", or "Was it…?" were avoided. Instead, questions began with neutral interrogatives (who, what, when, where, why, and how) or neutral invitations (tell, describe, and explain) (Kvale & Brinkman, 2009). The semi-structured interview guide was used for the discussions (see Appendix F), and further probing was conducted within the group members' discussions where necessary. At the end of each session, the researcher thanked the participants for sparing time for the discussion.

3.10 Approach to Focus Group Discussions

The qualitative descriptive research method involving FGDs provided valuable data about participants' experiences regarding blood donation. FGDs are particularly effective for exploring collective views and behaviors as these encourage respondents to discuss their perceptions, associations, and beliefs openly and freely (Krueger & Casey, 2015).

This method involves the researcher, as a moderator, facilitating a group conversation among participants, allowing for dynamic interaction and discussion concerning the topic. Unlike the individual interview setup, focus groups encourage participants to engage with each other, which can lead to the emergence of diverse viewpoints and

richer data (Byers et al., 2002). During FGDs, the researcher takes on a less prominent role, guiding and observing the discussion while enabling participants to lead the dialogue. This setup can foster a more open and interactive environment where participants feel more comfortable sharing their experiences and opinions. By taking this approach, the researcher can collect open-ended data and observe group dynamics to understand how participants think and feel about blood donation (Akyıldız & Ahmed, 2021). Although focus groups can vary greatly in dynamics, participants may not feel comfortable sharing their experiences, especially on sensitive topics (Stewart & Shamdasani, 2014).

The ideal number of participants for FGDs typically falls within the range of about six to nine people and can be beneficial for discussing emotionally charged topics in detail, as mentioned by Krueger and Casey (2015). However, adjustments can be made based on the specific needs of the community being studied (Carey & Asbury, 2016). For collective communities, larger groups can sometimes be advantageous; however, it is essential to maintain a size that ensures all voices are heard without making discussions unmanageable (Carey & Asbury, 2016).

Participants who showed interest through the flyers and were eligible according to the selection criteria were asked to provide their written informed consent (see Appendix C) to participate in the discussions through a Teams link. They were informed that participation was voluntary, and they could withdraw from the group at any time at their convenience. After receiving their informed consent, information sheets were sent to the eligible participants (Appendix D).

3.11 Conducting the Focus Group Discussions

All FGDs were carried out online due to the COVID-19 pandemic at the same time as the data collection period (19th Feb, 07th, 13th, and 25th of March 2023), while recognizing the importance of face-to-face group discussion, this was not an option. However, this modification was documented and included in the ethical approval documents (Appendix T). A Teams link was generated and shared with all participants. A day before the discussion, gentle reminders were also sent via text messages to all potential participants. Each focus group session was conducted in English (due to English being

spoken by the participants, and most of the Muslim migrants know English very well (Barber Rioja & Rosenfeld, 2018). Therefore, to maintain the compatibility of language among the group members, it was important to use a language that is common among them, and that was the English language (Kamberelis et al., 2018).

The sessions began by welcoming and thanking participants for agreeing to participate in the study. Each FGD ran for approximately 60 to 90 minutes of discussion. This timeframe suggests it allows sufficient time for participants to express their views (Krueger, 2014). Although some participants chose not to use their cameras and only participated via audio, this did not impact the flow of the conversation.

During the discussions, important non-verbal cues were observed, such as pauses and hesitations, especially when sensitive topics like receiving blood from non-Muslims were discussed. These moments indicated underlying discomfort, even when participants verbally agreed with certain points. Before moderating the FGDs, a practice session with the researcher's family members was conducted. This allowed the researcher to gain hands-on experience in managing group discussions effectively, and how to encourage quieter participants to contribute and maintain balanced participation throughout the session, as well as helped create an open and dynamic environment during the actual FGDs, fostering engaging and productive discussions.

Each FGD developed its flow, with participants actively engaging with each other. The open-ended prompts encouraged a range of opinions on blood donation practices and beliefs. For example, when I asked, "Do you have concerns about receiving blood from a non-Muslim donor?" participants shared detailed cultural and religious perspectives, showing how deeply these issues were connected to their beliefs.

At the end of each FGD, participants were thanked for their time and contributions. Overall, the focus group method was instrumental in this study as it provided a platform for Muslim migrants to discuss and reflect on their collective experiences and beliefs regarding blood donation, leading to valuable insights that might not have emerged through individual interviews alone. The moderator recorded each FDG on Teams and also noted nonverbal communication that took place.

3.12 Socio-Demographic Profile of Focus Group Participants

The participants were grouped based on their age and gender categories. Of the participants, 14 were male and 17 were female, ensuring a balanced representation across genders. The majority of participants, especially from the older age groups, had attained tertiary or intermediate qualifications. However, there were exceptions, with 10 participants being college graduates, five holding post-graduate degrees, and two participants being holders of PhDs, both of whom were doctors.

Among the participants from the older age groups, seven individuals were either unemployed or retired. On the other hand, 13 participants were engaged in full-time jobs, while six worked part-time alongside their studies. Additionally, five participants, including one female, were running their businesses. Participants from Pakistan spoke Urdu, while for the Indian nationals among the participants, the primary language was predominantly Hindi. Sixteen participants had been residing in New Zealand for five to seven years, while fifteen participants had a shorter duration of stay (3 to 5 years). Each focus group session was conducted in English. To maintain the compatibility of language among the group members, it was important to use a language that is common among them, and that is the English language (Kamberelis et al., 2018).

Table 2
Demographic information of FGD participants

	FGD 1	**FGD 2**	**FGD 3**	**FGD 4**	**Total Participants**
Gender					
Male		7		7	14
Female	10		7		17
Religion	Muslim	Muslim	Muslim	Muslim	Muslim
Age					
20-35	3	1	_	_	4
35-50	7	6	4	4	21
50-70	_	_	3	3	6
Marital Status					
Married	7	7	5	6	25
Unmarried	2	_	_	_	2
Widowed/Divorced	1	_	2	1	3
Country of Origin					
Pakistan	5	3	4	4	16
India	5	3	3	3	14
Egypt	_	1	_	_	1
Education Level					

PhD	1		_	1	2
Post-Graduate	1	1	1	2	5
Tertiary	4	1	3	2	10
Graduation	1	1	_	_	2
Intermediate/below	3	4	3	2	12
Duration in NZ					
3-5 Years	3	5	2	5	15
5-7 Years	5	4	3	4	16
Employment Status					
Full-time employed.	3	5	2	3	13
Self-employed	1	1	_	3	5
Part-time/Student	4	1	1	_	6
Unemployed/Retired	2		4	1	7
First Language					
Urdu	5	3	5	3	16
Hindi	3	2	6	1	12
Others	1	1		1	3

3.13 Analysis

A digital recorder was used to record all four FGDs. In addition, field notes were taken throughout the discussions, including time references in the margins, to highlight significant points. Soon after each FGD, the audio recording was transcribed into a transcript after repeatedly listening to the recording.

In the current study, thematic analysis was carried out to analyze the findings of the focus groups. Thematic analysis is a commonly utilized approach for recognizing and examining patterns or themes within the data (Braun & Clarke, 2012). It can be employed across viewpoints and research inquiries. This method enables researchers to create an intricate depiction of data that yields insights reflecting the experiences and viewpoints of participants (Braun & Clarke, 2012; Nowell et al., 2017). This approach worked well for the study because it helped to find and delve into the themes connected to blood donation behaviors among Muslim migrants in New Zealand.

3.14 Steps of Thematic Analysis

As proposed by Braun and Clarke (2012), thematic analysis followed the six steps of the strategy described in the following sub-sections.

3.14.1 Familiarization with data and code creation

FGD transcripts were read and re-read multiple times, absorbing the nuances and specific details of each discussion. This process allowed immersion in the textual environment, ensuring a thorough understanding of the material. Notes were made and highlighted significant segments of the dialogue that were directly related to the research questions. These highlighted segments were then assigned preliminary codes that captured the core meaning of participants' responses (Braun & Clarke, 2012). For instance, in FGD1 (older females aged 50-66), codes such as "concern about blood purity," "religious barriers to blood donation," and "community perspectives on blood donation" were identified. These codes were rooted in the participants' direct expressions and helped maintain a close connection between the data and the emerging analysis.

Step two involved conducting coding sessions with the focus group discussion data. The coding process was carried out for FGD1 initially. Then repeated for FGD2, FGD3, and FGD4. Each group yielded codes that captured shared themes as well as distinct viewpoints. For example, in FGD2, codes like "personal health concerns," "family influence on donation decisions," and "awareness of donation benefits" were noted. Although there were overlaps between the different groups, new insights also surfaced, particularly between age groups and genders.

Step 3: Comparison and Refinement of Codes: Once all FGDs had been coded, a comparative analysis of the codes across all the groups was conducted. This involved identifying shared patterns and unique codes within each group. For example, "weighing up risks" appeared across multiple groups, while "family influence" was more prevalent in the younger generation. Frequently occurring codes were grouped into broader categories to form preliminary subthemes, such as "perceived risks of blood donation," which included codes like "concerns about blood purity" and "trust in healthcare providers." Following this initial coding phase, the FGD transcripts were re-read to identify any additional potential codes in a cyclical and reflective process. Subsequently, initial concepts aligned with the research purpose, and questions were dissected and simultaneously recorded and developed textual observations in the margins. The codes were written on small pieces of paper along with a few details. The use of these types

of tools was useful in organizing and synthesizing data to subsequently develop meaningful subthemes.

3.14.2 Exploring the themes

After completing the coding and data compilation, a comprehensive list of diverse codes was generated. Following the model proposed by Braun and Clarke (2012), these codes were then systematically categorized into subthemes based on shared meanings, relationships, contexts, or thematic relevance. The 'cut and paste' method was used to record the preliminary themes in a Word document and included pertinent passages from participant remarks to maintain attention on the data. It prevented it from straying from the main ideas (Bjornson, 2021). Through a process of comparison, integration, and restructuring, these subthemes were transformed into overarching themes. This method facilitated the transition of initial codes into well-defined subthemes and themes, while some codes were excluded (Braun & Clarke, 2012). An iterative analysis process, with ongoing data collection informed by the analysis of prior transcripts, was further discussed with my supervisors to reach an agreement on the accuracy of the ongoing subtheme development. Over 10 months were taken for this analysis method. The ongoing identification of the theme development required synthesizing and organizing the data effectively (Braun & Clarke, 2006; Nowell et al., 2017; Vaismoradi et al., 2016).

3.14.3 Reviewing themes

The initial phase involved the individual examination of each FGD. This process included several steps, such as comparing themes obtained from FGD1 and FGD2, while a similar comparison was made between FGD3 and FGD4. Finally, themes were compared and contrasted across all four focus groups. The entire process was reviewed thoroughly to ensure that the data corresponded meaningfully with the themes and to identify distinct differences between them. While some themes corresponded — for instance, two seemingly distinct themes merged to form a single theme — other themes showed divergence between FGDs and were treated accordingly. Similarly, irrelevant themes were identified and placed under the category of 'miscellaneous' to temporarily store the codes. As Braun and Clarke (2006) suggested, creating new themes based on the data and discarding those that do not fit is an essential part of the research process. This

comprehensive analysis allowed the researcher to verify that key themes were consistent across groups, with any differences noted and understood. Saturation was achieved when repeated analysis and comparisons no longer produced new codes, categories, or themes. Instead, findings became repetitive and predictable, indicating that the data had been fully explored, and all relevant themes had been captured (Doody et al., 2013). In this regard, the review phase is critical to the rigor of the study (Braun & Clarke, 2012). This process of analysis and refining of the themes meant drawing meaningful conclusions while highlighting the comparison of themes across all focus groups (Doody et al., 2013).

3.14.4 Refining themes

After deriving themes from the data collected, the dataset and codes were iteratively revisited to define the parameters for each theme, just to check that each theme was distinct and to see if there were additional subthemes to enrich the description of the theme further. This included organizing new codes into subthemes and then aligning related subthemes into themes (Braun & Clarke, 2012). During the process of identifying themes in the data analysis phase, the researcher and supervisory team ensured that each theme was coherent within itself and distinct from the others, and thus ensured that the data accurately represented and aligned with the research questions.

3.14.5 Defined themes

After conducting a complete analysis of each theme, under the guidance of the supervision team, the themes were finalized, providing a rich and nuanced description of each one. These descriptions were supported by specific examples from the data, illustrating how the themes were systematically derived through subthemes and coding. The process of defining the themes involved capturing their unique essence and articulating their relevance to the broader research questions. For example, the subthemes— “blood donation saves lives,” “the importance of knowing blood group,” “understanding the physiology of Red Blood Cell production,” and “eligibility and ineligibility for blood donation”—contributed to a deeper understanding of a broader theme: “The Importance of Knowledge for Blood Donation.” These subthemes provided insight into how knowledge influenced participants' attitudes toward donation. Participants in the current study emphasized the life-saving potential of blood donation,

with one participant noting, “knowing that donating blood can save lives makes it feel like a duty.” This aligns with findings from Jamal et al. (2019), who highlighted the importance of educating potential donors about the impact of their donations on saving lives.

The other subtheme, "Importance of Knowing Blood Group," was also prevalent. Many FGD participants knew their blood types and the significance of receiving matching recipients blood groups. This aligns with findings from Gahan et al. (2022). Similarly, understanding basic concepts like "Red Blood Cell Production" was linked to participants’ willingness to donate. Participants who clearly understood how their body regenerates blood were more likely to donate. This finding is consistent with the study by Li et al. (2021), which highlighted how knowledge of bodily processes, like red blood cell regeneration, reduces fear and hesitation toward donation. The thematic findings provide practical insights that are further linked with existing literature by directly addressing the research questions and linking these subthemes to the larger topic of knowledge. This integration highlights how the findings of this study align with or expand upon prior research, reinforcing the study’s contribution to the field. Some challenges arose in refining these themes, such as overlapping themes between belief systems and knowledge, which necessitated repeated visits to the data to ensure clear boundaries between themes. This process ensured that each theme was coherent and distinctly relevant to the research questions.

3.14.6 Reporting

The naming of each theme typically arises organically during the analysis process, as it reflects the alignment of the codes and subthemes, encapsulating the essence of the patterns observed. Finally, the findings were then reported to and discussed with supervisors in detail, which helped in furnishing a foundation for Phase Two of the study (Braun & Clarke, 2012).

3.15 Reflections on the Analysis

During the process of thematic analysis of this study, I followed the guidelines set forth by Braun and Clarke (2012). However, to further enhance the rigor of the process, I reviewed the insights from their later works published in 2016 and 2021, In recent

literature, Braun and Clarke (2016, 2021, 2022) have critiqued the way thematic analysis (TA) has often been applied across various fields, including sports, exercise, and counseling. They pointed out common mistakes and misconceptions in the implementation of TA, particularly focusing on the risks of using the method incorrectly and portraying themes in a superficial or unstructured way. The intention behind this criticism was not to modify the TA technique itself but to underscore the importance of researchers correctly and rigorously applying it across fields.

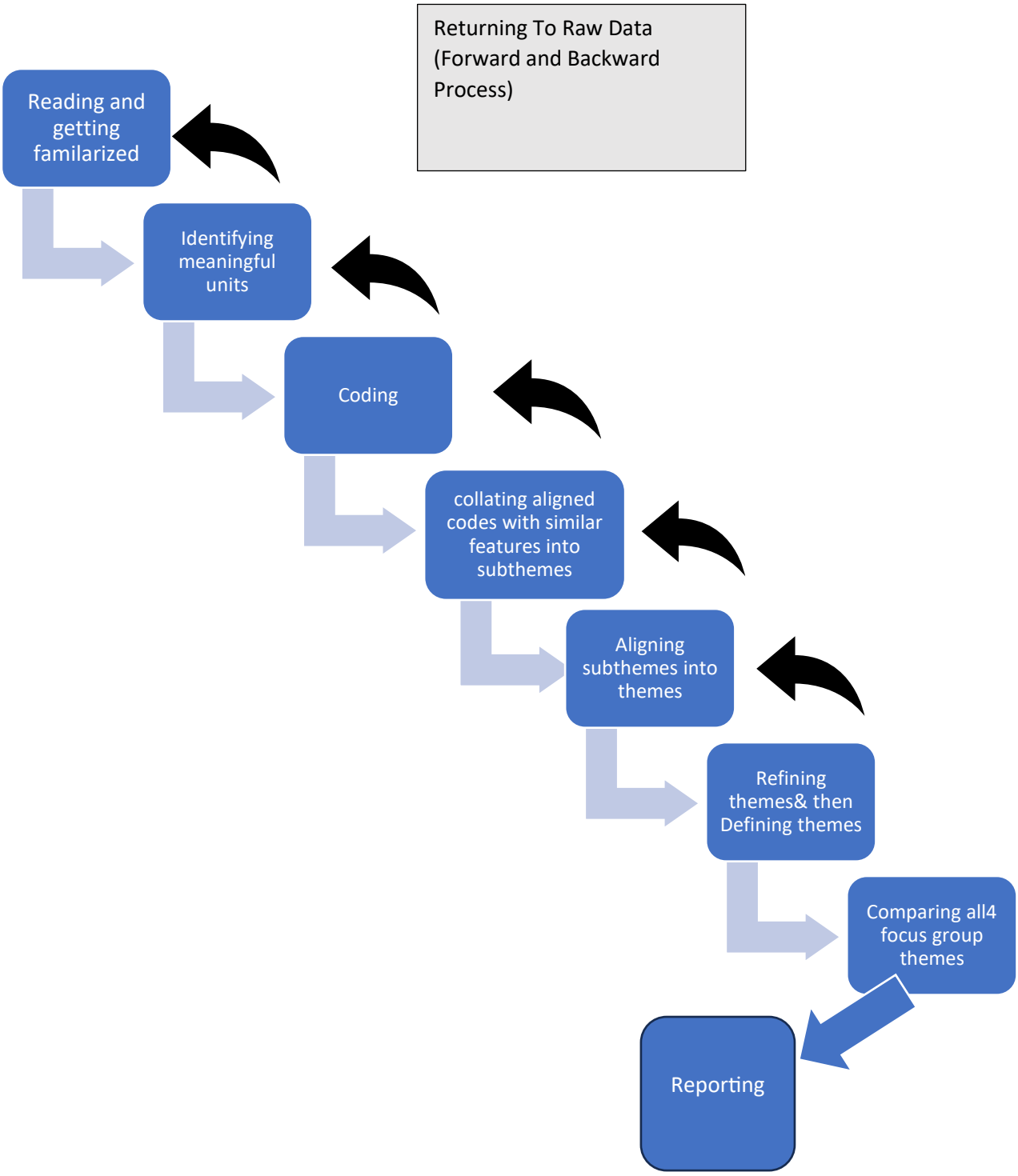
In their 2016 work, which focused largely on sport and exercise, Braun et al. (2016), pointed out that "themes should not just summarize the data but should be organized around a central organizing concept that provides explanatory power" (p. 194). They warned against the tendency in some research applications to merely group data without interpreting its deeper meaning or connection to the broader research questions. This misapplication risks reducing the richness of the findings, leading to superficial conclusions.

Taking these critiques on board, I ensured that in my research, I avoided common misconceptions highlighted by Braun and Clarke (2016, 2021, 2022), particularly the mistake of using themes as mere summaries of data. Instead, I focused on ensuring that the themes I developed were conceptually robust and grounded in both theoretical and contextual understanding. I also applied their recommendations for reflexivity. This allowed me to generate themes that not only captured the data's complexity but also offered explanatory insights into the phenomena under study.

Figure 4 explains the full thematic analysis process.

Figure 4

Six steps of thematic analysis applied in my research, derived from the steps outlined in Braun and Clarke (2012)



3.16 Rigor

Rigor refers to the quality of being careful, thorough, and accurate. According to Cresswell (2014), it is crucial for mixed-methods researchers to rigorously analyze qualitative data, as it significantly shapes the development of the subsequent quantitative phase, and to strive for precision to reflect trustworthiness in the research outcome. In the qualitative research phase of the present study, ensuring the trustworthiness of the findings was essential and was addressed through meticulous adherence to Lincoln and Guba's (1988) principles of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1988).

3.16.1 Credibility

Credibility involves the rigorous verification of the transcripts. The accuracy of the transcripts was continually assessed through regular meetings with supervisors until consensus was achieved, ensuring that the interpretations faithfully represented the participants' inputs. Engagement with participants for a prolonged period and investigator triangulation ensure an accurate representation of participants' opinions (Singh et al., 2021). These measures collectively enhanced the trustworthiness of the research findings, which were then utilized to inform the subsequent quantitative phase of the study.

3.16.2 Transferability

All steps and processes in the current study have been described in detail, as well as the research context, methodology, and thematic outcomes, ensuring transparency and enabling other researchers to evaluate whether the findings can be applied in different environments (Lincoln & Guba, 1988). The study's inclusion of focus groups composed of participants from diverse backgrounds within the Muslim migrant community enriched the heterogeneity of the findings, capturing a broad spectrum of experiences. This diversity enhances the study's relevance and potential transferability to similar contexts outside the study, such as other health promotion initiatives targeting culturally or religiously specific populations.

3.16.3 Dependability

Current methods stress that to preserve reliability, rigorous documentation and frequent supervisory review are essential (Nowell et al., 2017). Dependability was

rigorously upheld through the establishment of a detailed audit trail. This included documenting every aspect of the research process, from the identification of codes and categories to the thorough analysis of major themes. Regular meetings with the supervision team at each stage of the research to double-check processes were held. Repeated updates and reviews of the data analysis process with research supervisors ensured that the methodology was consistently applied and remained transparent. Additionally, the research process allowed for modifications prompted by unforeseen circumstances or findings, with all changes meticulously recorded along with their implications for the research

3.16.4 Confirmability

Confirmability was achieved through rigorous self-reflection and continuous dialogue about potential biases with the research supervisors before and during data collection and analysis. This proactive approach minimized the potential for bias impacting the research outcomes (Johnson et al., 2020).

The audit trail also played a crucial role in supporting confirmability by providing clear, documentary evidence that the findings were derived from the data and not influenced by the researcher's personal biases or expectations (Forero et al., 2018).

3.17 Ethical Considerations

Auckland University of Technology Ethics Committee (AUTEC) approved the study entitled "Evaluating the Knowledge, Attitude, Beliefs, and Behaviors of Muslim migrants regarding Blood Donation in New Zealand", as indicated by reference number 21/381 (see Appendices A and G). The approval process was meticulous and conducted in stages, with each phase requiring a comprehensive submission of recruitment strategies, data collection methods, and details on how voluntary participation was ensured. The first phase of the study was a qualitative phase that utilized FGDs. AUTEC mandated comprehensive documentation concerning the recruitment of focus groups and the methods of data collection at this stage. They also required assurances about how voluntary consent would be secured according to ethical standards.

Protocol

Due to the constraints imposed by the COVID-19 pandemic, the FGDs were conducted online. This amendment was included in the ethics approval letter (Appendix T). Despite these challenges, the online sessions were adequately managed to ensure participant consent and privacy.

To ensure the safety of participants and to maintain data collection efforts, all focus group discussions (FGDs) were conducted using the Microsoft TEAMS platform as part of COVID-19 and its related limitations. A link for accessing the meeting was provided to participants before the sessions took place on the TEAMS meeting platform. It was advised that participants test their access to the platform to prevent interruptions during these discussions. Participants needed to join the sessions in a safe place in their homes to prevent others from overhearing their conversations, so that everyone's privacy would not be compromised. Inputs from participants and nonverbal signals, including tone and pauses, were carefully observed and recorded for further study for those who chose to engage with audio. By emphasizing TEAMS' encryption capabilities and its nature, these modifications enhanced privacy and confidentiality in the setting. A reminder of consent is given before each session.

A voluntary and informed consent process: A consent form and participant information sheet were provided to potential participants before each focus group session (see Appendices C and D). They were required to return a signed consent form to confirm their informed consent. This process ensures participants are fully aware of the fact that this process must be voluntary, ensuring they do not feel coerced. Participants' roles, the study's nature, the researcher's identity, and so forth were all included in the form. To facilitate the process of asking questions and making informed choices, participants were given ample time to ask questions. In addition, participants were given an information sheet explaining the purpose and goals of the study, as well as the participant's role and potential risks and benefits.

Anonymity and confidentiality: The participants were assured of the anonymity and confidentiality of the data. For the sake of preventing discomfort or vulnerability, the researcher did not collect unnecessary personal details, and no identifiable information was obtained. Data collection times were scheduled according to the convenience of

participants, considering their busy schedules and work hours, maintaining their autonomy and privacy. As a result of this approach, ethical standards were maintained between researchers and participants.

Safety and risk management: Participant safety was assured, upholding the ethical principle that harm should be minimized. This ensured that the research process was handled with integrity and that participants' rights and welfare were protected.

Cultural sensitivity: Clarifications regarding cultural appropriateness and safety measures were also sought to ensure compliance with ethical standards. Data collection was conducted following cultural and religious norms, with appropriate boundaries maintained. The researcher was careful to ensure cultural sensitivity and respect when discussing participation with male family members in cultures where women seek permission from them. Female participants were more comfortable and willing to participate because of this approach.

All concerns raised were adequately addressed and submitted to AUTEC, resulting in full approval being granted on November 15, 2021. Due to the constraints imposed by the COVID-19 pandemic, the FGDs were conducted online. This modification was documented and included in the ethics approval letter, detailed in Appendix A of this thesis.

The second phase of the study, which is quantitative, also received ethical clearance from AUTEC under the same reference number (see Appendix G). Experts were recruited to evaluate existing questionnaires and to participate in validating the chosen questionnaire along with a new questionnaire, resulting in psychometric testing. The application underlined a commitment to upholding ethical research practices, including detailed procedures for informed consent, the safeguarding of participant privacy and confidentiality, and the minimization of potential risks. These ethical principles are pivotal to ensuring that research is conducted with integrity and respect for the dignity and rights of the participants.

Further details about the ethical considerations and procedures can be found in Appendices C, D, I, and J. All prospective participants received written information about

the study. Those indicating a willingness to participate were furnished with an information letter detailing the study's scope and were required to provide written informed consent. Throughout the study, participants' privacy and confidentiality were rigorously maintained by substituting real names with code numbers, and participants were reminded of the importance of confidentiality regarding the discussion details outside the study context. Overall, the process of preparing and securing ethical approval highlighted the complexities of conducting research within diverse social and political contexts, reinforcing the necessity to protect and remain accountable to vulnerable groups while adhering strictly to ethical principles.

3.18 Chapter Summary

This chapter outlines the methodology, methods, and research design employed in the study, with a focus on the rationale for adopting pragmatism as the guiding research philosophy. Pragmatism was selected due to its flexibility and suitability for addressing the questions of this research, which aims to explore both the subjective experiences and quantifiable factors influencing blood donation behaviors among Muslim migrants in New Zealand. The chapter also described the sequential exploratory mixed-methods approach used, beginning with qualitative data collection and analysis to inform the subsequent quantitative phase.

The qualitative phase utilized FGDs to capture rich, narrative data, offering deep insights into the participants' perceptions, beliefs, and experiences regarding blood donation. These FGD discussions were analyzed using thematic analysis, which was expected to uncover several major themes. This qualitative exploration informed the development of the quantitative instrument, which was divided into Part A and Part B.

Part A, adapted from an existing questionnaire by Polonsky et al. (2013), "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees' questionnaire," and tailored to assess the barriers and enablers of blood donation relevant to the New Zealand Muslim migrant context. Part B, developed from the themes generated through the qualitative phase, focuses specifically on religious, cultural, and gender dynamics unique to the Muslim migrant population. Both parts

have been validated and integrated into the quantitative study design, as discussed in Chapter 6.

This structure is intended to ensure that the quantitative phase directly addresses the key insights gathered from the qualitative analysis, enhancing the rigor and relevance of the study. In Chapter 4, the findings of FGDs will be presented.

Chapter 4: Phase I: Qualitative Study – Focus Group Findings

4.1 Introduction to the Chapter

This chapter reports the findings of the FGDs among the Muslim migrants in New Zealand that addressed the first two research questions: 1. What are the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation? and 2. What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation? Based on the primary data collected from these four focus groups, the thematic analysis identifies seven major themes providing a thorough grasp of the variables impacting Muslim migrants' blood donation. These themes are:

1. The importance of knowledge for blood donation.

2. Islamic expectations and priorities regarding blood donation.

3. Weighing up risks and benefits related to blood donation.

4. Gendered, familial, cultural, and social dynamics influencing blood donation.

5. The perceived role of blood banks

6. Acculturation and country of origin influence regarding blood donation behavior.

7. Health promotion recommendations for blood donation approaches.

The chapter also highlights how the younger generation views blood donation differently from their predecessors, largely due to their greater integration into New Zealand society. It also points out participants' views of areas where blood donation campaigns and services should be improved to better serve New Zealand's Muslim migrant population. The emerging themes will guide suggestions for enhancing blood donation programs for Muslim migrants in New Zealand, presented in the final chapter.

Table 3 provides a brief overview of these themes and their subthemes.

Table 3
Themes and subthemes

Themes	Subthemes
Theme 1: The importance of knowledge for blood donation	Blood donation saves lives. Importance of knowing blood group. Understanding the physiology of red blood cell production. Eligibility and ineligibility for blood donation.
Theme 2. Islamic expectations and priorities regarding blood donation	Saving a life is like saving the whole of humanity. No religious/gender discrimination and prioritization for blood donation. The reward of all good deeds from Allah without compensation is expected.
Theme 3: Gendered, familial, cultural, and social dynamics influencing blood donation	Cultural and family dynamics and expectations of male roles in the protection of women. Cultural prohibitions around blood donation. Prioritizing Islamic family and friends for donation to ensure purity of blood (consumption of Halal food). Second-generation migrants were more enthusiastic about blood donation than older generations.
Theme 4: Weighing up risks and benefits related to blood donation	Fear of receiving blood from a non-Muslim. Blood screening for various infections. Fears (needles, side effects, contamination, and infection).
Theme 5: Acculturation and country of origin influences on blood donation behavior	Being culturally different from the dominant culture. Unfamiliarity with the New Zealand system versus familiarity with the home country system. Lack of opportunity, and health education. Positive effects of navigating New Zealand systems and society on blood donation behaviors. No experience of Blood donation. Access to health information (access versus lack of access).
Theme 6: Perceived role of blood banks	Blood banks (processes/verification). Role of Muslim Blood Camps.
Theme 7: Health promotion recommendations for blood donation approaches	Recommendations for incentivizing blood donation.

4.2 Description of Themes and Subthemes

4.2.1 The importance of knowledge for blood donation

This theme discusses how individuals' knowledge about and attitudes toward blood donation affect their blood donation behavior. While most participants were aware of

the significance of blood donation, their level of understanding regarding blood physiology and donor eligibility criteria (including medical reasons, pregnancy, breastfeeding, and general health) varied significantly. The subthemes that emerged from the discussion and are covered under this broader theme are: blood donation saves lives, importance of knowing blood group, understanding the physiology of red blood cell production, eligibility, and ineligibility for blood donation.

4.2.1.1 Blood donation is seen to save lives

It was collectively agreed by all participants that blood donation was a life-saving activity and saving a human life is an important teaching of the Muslim faith:

> *"We should do it because our religion encourages us to save people's lives and to every court, whatever you can do, whatever is a small or a good big thing. So, I think we can save a life."*
>
> (P1, FGD1, Female)

Participants underscored that blood donation is an important part of every country's healthcare system, and all citizens, with few exceptions, should take part in this life-saving activity. They also alluded to the need for hospitals to arrange for different types of blood to be available in a short time, such as in case of emergencies, accidents, or surgeries, therefore contributing to the need for adequate reserves of different blood types, which was seen by these participants as an imperative to save more lives:

> *"Yeah, blood donation is a very important part of the healthcare system of any country. In some situations, patients need blood to save their lives by blood transfusion, like sometimes in C-sections, trauma, accidental injuries, and many other medical conditions, blood is always needed in hospitals, I think it's important for that."*
>
> (P1, FGD3, Female)

Being able to voluntarily participate in blood donation activities was highly appreciated by the participants. A few female participants shared their prior experiences of donating blood voluntarily in universities and colleges. Participants outlined that culturally organized camps in which blood donation was included facilitated and encouraged Muslim people to voluntarily donate blood:

"I believe voluntary blood donation is a good question. One of our social responsibilities is to make our society healthy for each other with good health, build a good society."

(P1, FGD3, Female)

4.2.1.2 Importance of knowing your blood group

The subtheme of knowing "your blood group" was reported in all FGDs. Participants believed that the knowledge about one's blood groups helped in times of emergency. Many of the participants were aware of their blood groups and the importance of receiving matching recipients blood groups:

"Everybody should know their blood group, just in case blood is required for transfusion, in case of any injury or surgery, then the patient's blood group should be known."

(P2, FGD2, Male)

Most male participants were regular blood donors and kept records of their type of blood in case of emergency. Their knowledge sources are either from personal experience or word of mouth.

"Yeah, I know my blood group is A+ positive and it is a general, uh, blood group, which can be given to anybody. And there are some restrictions in accepting the group from others, but I can give my blood group blood to anybody."

(P6, FGD4, Male)

Most female participants attested to knowing their blood groups; however, only one female participant had donated blood, and other female participants had neither donated nor considered doing so in NZ because blood donation was a low priority in their lives. Among these participants, a few females who were married and had children had gotten to know about their blood groups at the time of their Caesarean-section deliveries. It was revealed in discussions that more male participants knew about their blood group at a relatively younger age than participants in the older age female group.

"My blood group is B positive. And I don't know if somebody would need that. So, unless it's just in a very acute emergency and somebody I know needs it. Otherwise, it's never a priority."

(P1, FGD1, Female)

4.2.1.3 Knowledge of the physiology of red blood cell reproduction

The importance of blood donation, stimulating red blood cell (RBC) reproduction, was highlighted in all group discussions. Participants with medical or higher educational backgrounds mentioned some exact explanations about the physiology of RBC reproduction, whereas other participants stated that health information received from their medical encounters and the Blood Donation Act raised their awareness about RBC reproduction. Most participants agreed that the body produces new blood cells, which are healthier and fresher, after donation. Different participants stated a variety of durations –15 days, 120 days, and three months – that the body needs for reproducing new blood cells. It was believed by most of the participants that the benefits of blood donations are reciprocal for both donor and receiver:

> *"There are a lot of benefits to donating blood if you donate blood, then every time you donate blood, then you can produce new blood cells in your body, which is very healthy, and one blood cell has 120 days life is spent going to die anyway after 120 days. So, it's very important to donate."*
>
> (P5, FGD 1, Female)

The source of information about blood donation for a few participants who had never donated blood was word of mouth. A few of them related it to a regular monthly menstrual cycle as a female participant, while explaining that the blood reproduction process gave the example of a regular menstrual cycle and stated that it is almost a similar process:

> *"It's like the period, you get one and then you get another one. So, it's like something like that. So, we are not going to lose anything."*
>
> (P2, FGD1, Female)

4.2.1.4 ***Comprehension of the eligibility and ineligibility criteria for blood donation***

Most participants stated they knew about the eligibility criteria for blood donation, such as age, weight, absence of certain illnesses, pregnancy, and breastfeeding restrictions. They stated that a healthy person, having no medical problems, would be eligible to be a donor*:*

> *"Any healthy person who doesn't have any communicable disease eligible, can do it, I guess. Yeah. Any healthy person, male or female doesn't matter. It doesn't matter. Both can do it."*

(P2, FGD1, Female)

Participants outlined that those persons with certain health conditions and taking medicines need to avoid donating blood as it might have caused some adverse effects in their blood. Moreover, people suffering from contagious diseases and health issues should be exempt from donating blood:

> *"I think there was one thing maybe at the back of my mind, what I'd heard from different people previously, was that any person who is hypertensive and taking hypertensive medication is not allowed to donate. So that's what I am. I take regular medication so that's what I knew. I never went there to ask for it that can add donate blood and I'm also on medication."*
>
> (P3, FGD2, Male)

Female participants of both groups and males from the relatively younger FGD explained that pregnant and breastfeeding mothers should not donate blood because their body needs more nourishment:

> *"And I'm not sure if females who are breastfeeding or are pregnant also cannot donate blood, because, at that time, they need that for themselves."*
>
> (P5, FGD3, Female)

Being of a younger age, low body weight, and physical weakness were stated as factors informing eligibility. Notwithstanding, participants also generally agreed that a healthy young person fulfilling all eligibility criteria should be preferred for donation over a lower body weight donor:

> *"I feel as though there should be a weight limit. Because I think that if someone is under say, like maybe 45 kgs, it might be unhealthy for them to donate too much blood, and it might have a detrimental effect on their health. And I also feel there should also be an age limit."*
>
> (P3, FGD1, Female)

4.2.2 Islamic expectations and priorities regarding blood donation

Islamic expectations, religious beliefs, and cultural practices significantly influence blood donation behaviors among Muslim migrants in New Zealand. Islamic teachings emphasize the sanctity of life, with blood donation often framed as an act of charity

(**sadaqah jariyah**) and a moral responsibility. The central tenet of Islamism is the saving of human life, which was mentioned in all FGDs. The subthemes emerging in this broader theme are: saving a life is seen as saving humanity, prioritization of blood donation without gender and religious discrimination, and the reward of all good deeds from Allah without compensation is expected. The discussions highlighted the strong impact of spiritual teachings on their donation behavior. Most participants outlined honoring Muslim beliefs around kindness towards humanity as a central part of their faith. Participants were clear that Muslims never hesitated to help each other, and that this imperative was related to the teachings of Islam.

4.2.2.1 Saving a life is seen as saving humanity

A Quranic verse states, "If anyone saved a life, it would be as if he saved the whole humanity." (*The Qur'an*, 2004, 5:32), which was brought up with pride in all FGDs. The participants interpreted the verse in different ways, but all of them were aware of the message. Both male and female participants contended that saving human life was a primary teaching of their religion, and they took pride in being Muslims. Most of the discussions declared that Muslims were generous and would go as far as possible to save a human life. Religion was discussed as a primary source of inspiration that directed decisions to help community members. The participants stressed the beauty of the religion of Islam, which asks people to give to those who need it. The female participants felt similarly that Islam encouraged them to donate to help those in need, for which they would then receive a reward in life after death.

> *"Yeah, Islam says that saving one person is like saving the entire mankind and our Prophet Muhammad (PBUH) also preached to save lives. And if you are giving blood and you are just donating it without making any, uh, monetary profit and you are saving human being, then nothing can be better than that."*
>
> (P2, FGD1, Male)

4.2.2.2 Prioritization for blood donation without religious or gender discrimination

As discussed above, Muslims in the FGDs stated that they were proud to be part of a community that is inspired to save humanity. Participants stated that there should be no religious or gender discrimination when deciding about blood donation. Almost all participants approved of donating to everyone. If the blood is screened and free from

diseases, anyone can give and receive blood from anyone. Participants repeatedly talked about the preaching of saving humanity, not only the Muslim community:

> *"I don't care who is receiving my blood and benefiting from it, whether he is, uh, who, whoever he, she, whatever religion, I don't care if I'm giving my blood. That's for human beings. This is it."*
>
> (P4, FGD4, Male)

A few female participants expressed the integration within their community and believed in prioritizing their community among others. They outlined that Muslims cannot receive blood from everyone; hence, to fulfil their need, Muslims need to donate more blood to Muslims:

> *"I believe that as mentioned earlier, Muslims feel like they don't want to receive blood from non-Muslims, so I think not pressure, but it gives us more of a duty as a Muslim community to donate blood for our fellow Muslim people who need help. We'd like to help everyone, but especially for those who don't want to accept blood from non-Muslims, I feel like we should step in and help them first."*
>
> (P1, FGD1, Female)

4.2.2.3 The reward of all good deeds from Allah without compensation is expected

Most of the male and female participants emphasized that any honor or reward associated with donating blood was only from Allah and that no monetary compensation for blood donation should be accepted or given. The discussion highlighted that faith and the desire to be rewarded in life after death were important to Muslims, as most participants preferred their good deed of blood donation to carry over into the next life. A few males discussed how they had donated blood to relatives and friends when back in their country of origin and felt that, in return, when they needed blood in case of any family emergency, those relatives and friends would then donate. In their opinion, this formed a chain of reciprocity well beyond any tangible or monetary compensation:

> *"And if you are giving blood and you are just donating it without making any, uh, monetary profit and you are saving human there shouldn't be any money or any sort of compensation involved here."*
>
> (P5, FGD 4, Male)

The selling of blood was, in general, seen as a highly inappropriate act; however, a few male members described how, in less developed countries, such as in their hometowns, some people sell blood (as professional donors). This process had reciprocal benefits for both the donor and receiver, and people asked for their help if they needed blood supplies for family emergencies:

> *"I mean, no, selling blood should not be accepted, professional donors should not be accepted. Yeah. Professional donors. This is a very important point. There are professional donors and people. We should not accept blood from professional donors. Yes, it is not advisable."*
>
> (P3, FGD4, Male)

4.2.3 Gendered, familial, cultural, and social dynamics influencing blood donation

This theme describes various significant gendered, familial, and cultural dynamics influencing blood donation decisions and acts among Muslim migrant community members in New Zealand. The subthemes discussed in the following subsections are protective cultural family dynamics and expectations towards males, prioritizing Islamic family and friends for a donation to ensure purity of blood, and the younger generation showing greater enthusiasm for blood donation.

4.2.3.1 Protected cultural family dynamics and expectations towards males

Cultural and family dynamics played crucial roles in blood donation decisions for this cohort of Muslim migrant participants. The female participants of the older age group suggested that immigrants' cultural dynamics were important elements to consider when understanding their attitudes and behavior regarding blood donation:

> *"The cultural experiences we have from our backcountry, we continue having them because if we are interested in learning about the attitude and the behavior regarding blood donation of only migrants, or you can say first-generation migrants, then we must understand these cultural dynamics is important reflection."*
>
> (P2, FGD1, Female)

Most of the participants were of the view that male members should act more responsibly because, biologically, men are stronger than women and hence have more capacity to physically withstand giving blood and protect female members of the family. Therefore, they were culturally expected to take the lead in donating blood in times of

emergency and need. Interestingly, for this reason, comparatively fewer females have donated blood in their lifetime:

> *"Families are very reluctant when a woman wants to give blood like for instance, when someone is hospitalized. And the doctor asked that they need volunteers for a blood donation. It's always men who step up. And if even a woman says that they want to do that, they say no, you just stay. I think there is a kind of a perception going on that we say is okay."*
>
> (P4, FGD1, Female)

Female participants agreed with this and outlined that their male family members were seen to be more like a "shield' or gatekeeper to protect female family members. By contrast, male participants responded that it was their responsibility to do this.

> *"Yeah, a protective kind approach towards the woman, it's not to put her down or away from doing something good."*
>
> (P2, FGD1, Female)

The men stated that they tried to protect women from such blood donation experiences, expressing their support and concern towards female members who might be more vulnerable through their roles in taking care of family and homemaking. Hence, men prefer to volunteer when emergencies happen:

> *"No look, uh, there's no discrimination. This is only male because we have more care for our ladies. So, like the one brother said, this is just out of, you know, courtesy that you (man) go first. If my sister, my daughter, anybody can go."*
>
> (P5, FGD4, Male)

Another important point raised by both male FGDs was accessibility, where it was believed that men's outward social roles made it easier for them to attend to civic responsibilities than women; therefore, generally, in Muslim society, men are the first contact when any urgent help is required so the males should volunteer first:

> *"Males are mentally more prepared to go because they are more responsible. And the women are, uh, busier with kids than, uh, other family. Okay. And then normally they're weak."*
>
> (P1, FGD4, Male)

Attitudes about female autonomy in decision-making and its influence on blood donation were another important factor that affected decisions made by female blood donors. Most of the female participants opined that they preferred to gain the approval of their male family members before engaging in donation activities:

> *"It is the stance of all Asian females' lives to get the acceptance of their husbands."*
>
> (P3, FGD3, Female)

Many female participants unanimously agreed that getting male members' oversight and consent reduced their risks of donating to fraudulent people, such as those who might misuse the blood, etc. On the other hand, male participants believed that females generally had complete autonomy in making any decisions as long as they kept male family members informed.

> *"They (women) at least need to have some consent from the elders of the family, it can be the father, or it can be the husband. Mostly, it's not about getting permission but getting informed consent. You just let them know that this is what you're doing. Most of the time, they'll say yes."*
>
> (P2, FGD1, Female)

4.2.3.2 Prioritizing Islamic family and friends for a donation to ensure purity of blood

Many participants shared that they prioritized their family and Islamic community friends in the host country for donating and receiving blood. Trust, blood purity, and the onus of responsibility towards close relatives were discussed as key reasons. This preference is rooted in the belief that blood from these trusted sources is pure, based on their adherence to halal dietary laws, which exclude alcohol and non-halal foods. The elderly specifically articulated a deep concern about the purity of blood, equating the intake of non-halal substances with the contamination of blood. Therefore, they strongly opposed receiving blood from non-Muslims or outsiders, fearing the potential impurities that could arise from different dietary habits.

> *"I'm talking about a family member, an elderly person. They didn't want you to take blood from a non-Muslim. I tell you why because they believe it is not pure blood. So, they are concerned that if somebody is drinking (alcohol), and they are not eating halal (food items forbidden*

in Islam are not halal), then it will add dirt to their blood and make their blood impure. I would rather die than take blood from someone whose blood is not pure."

(P2, FGD1, Female)

Participants shared that family and close community ties are prioritized in health-related decisions, according to cultural values. The preference for receiving blood from family members and close friends highlights their belief that blood from known people is safe and suitable. Male participants felt that blood donation was a reciprocal act, whereby friends called them in time of need, and that they could then contact them when any family member needed it. Blood can be obtained from other healthy donors if family or friends cannot donate, but personal networks remain the top priority.

"Most probably people would say that the close relative brother or son, or, you know, someone who's male, people prefer to receive blood from the family. So, it's safer."

(P1, FGD4, Male)

4.2.3.3 Younger generation shows greater enthusiasm for blood donation

Newly arrived migrants' adoption of host society belief systems, such as civic responsibilities, resulted in behavioral changes among migrants. Many younger generation participants expressed having better access to blood donation information and resources than their parents, though this may not apply uniformly to all of them. Participants in all FGDs spoke about their children having closer engagement with the host society, through experiences in education institutes, enhanced English language proficiency, and participation in different activities providing learning opportunities that were seen to contribute to a willingness to make voluntary donations:

"With education, awareness, and these societies, kids are more aware and educated. As soon as they get the chance. They are very much ready to donate."

(P5, FGD4, Male)

The male participants from the older group stated that, as compared to their generation back in their country of origin, today's young generation has more opportunities through college and universities, and their access to social media and YouTube, and they can donate blood voluntarily more easily if they want to:

"Kids are more aware and educated. They go voluntarily and sometimes they donate without hesitation, because in the universities, they are encouraged to donate blood, and blood teams come to their classes and encourage them."

(P5, FGD4, Male)

4.2.4 Weighing up risks and benefits related to blood donation

The theme "weighing up risks and benefits related to blood donation" emerged from discussions on concerns, fears, and apprehensions that disincentivized the donation of blood by these men and women. Furthermore, the perceptions and beliefs of participants about blood donation are also discussed in this section. The subthemes under the broader theme are: fear of receiving blood from a non-Muslim, blood screening, from various infections (needles, side effects, contamination, and infection), blood donation causes no side effects or only temporary side effects, and smokers and drug addicts are considered unsuitable donors.

Many of the male participants from the older age group thought that every person has their reasons for not donating blood. if the person does not have any medical condition and is only scared, then they can be convinced through counselling.

"If somebody is not donating, he will have the reason that I will become weaker. If it is that reason, then you can explain to him. And some people may have a disease, so, yeah, I can't, and I can't donate. So, if somebody is not donating for a reason, then that's okay."

(P4, FGD4, Male)

4.2.4.1 Fear of receiving blood from a non-Muslim

This subtheme, fear of receiving blood from a non-Muslim, was apparent throughout all the FGDs and served to dissuade Muslim migrants in New Zealand from receiving blood from non-Muslim strangers. The participants in all male and female FGDs agreed that receiving blood from unknown non-Muslim persons should be avoided as much as possible. However, donating to non-Muslims was discussed as an appreciable and acceptable act. The key reasons were that non-Muslim donors had a higher chance of being people who consume alcohol, which is strictly prohibited in Islam, yet quite common among non-migrant New Zealanders. It was believed by many of the

participants that consuming alcohol causes impurity, which is unacceptable to Muslims. It was mentioned as a boundary line for Muslims, which they cannot cross under any circumstances. However, a few of the male participants disagreed and stated that consuming alcohol does not cause any change in the blood. Moreover, it was agreed by most of the participants that Muslim recipients should always try and find out who the donor of the blood is and where it is coming from:

> *"Muslims are very much concerned about receiving blood, because it may be the blood of some alcoholic, it may be the blood of some smoker, and it may be the blood of some person who is using things like that which are not allowed for Muslims. Hence, it's a matter of concern while receiving blood."*
>
> (P2, FGD2, Female)

4.2.4.2 Blood screening for various infections

Blood screening for various infections was another significant subtheme in discussions with young male participants. Aside from the disinclination towards non-Muslim donors because of the risk of the consumption of any substance by the donor, which is forbidden in Islam, including drugs and alcohol, the issue of the screening of blood was another significant factor that affected their blood-receiving behavior in general. This subtheme highlights the participants' concerns regarding the screening of blood for infectious and contagious diseases, as well as for germs carried by smokers or alcoholics.

> *"I'm not very sure how the blood banks work. But if they have those types of screening, and all that stuff, that can take it out and preserve the blood out of these things so it could be good to use."*
>
> (P4, FGD2, Male)

4.2.4.3 Fears (needles, side effects, contamination, and infection)

This subtheme – the fear of needles, fear of side effects, and fear of contamination and infection – was evidenced in almost all FGDs. Fear of needles was particularly evident in discussions with the older female group, as it was one of the factors that restrained some of them from donating blood. Fear of needles and the transfer of diseases were discussed by both male and female participants. Some participants were not afraid of needles themselves as much as receiving an infection through the needles. A few females, while fearing needles, drew on their professional experience to free

themselves from this fear, and this led them to donate blood. In contrast, others, despite being willing to donate, never actually did so because they were neither encouraged nor explicitly asked, highlighting a gap between intention and action that could be bridged with more targeted outreach and support.

> *"Yeah, I'm always ready to give blood. But yeah, when I was studying medicine, then at that time, I was so scared of the pricks and needles. So yeah, I never went for donation, nobody forced me or asked me, so I didn't have a chance. But, yeah, and future if anybody needs or if anyone asks me, I will share blood."*
>
> (P2, FGD1, Female)

While fear of catching infections during the receiving of blood was important, they shrugged off the chances of being infected by giving blood in the host country, i.e., New Zealand. It was worth noting that participants who opted not to donate blood tended to distrust medical authorities and hygienic conditions.

> *"Yeah, I also agree with her because the transmission of infection is quite a reason for not donating blood back in Pakistan, but here people trust the medical authorities and they'll know everything would be clean, but still, because they are not habituated on giving blood so that's why they not doing that, yeah."*
>
> (P3, FGD 1, Female)

4.2.4.4 Blood donation causes no side effects or only temporary side effects.

A subtheme that emerged in all FGDs. A few participants who have donated blood or have seen blood donors closely shared personal experiences that it caused no side effects. A few participants stated that they occasionally felt dizzy or even a feeling of weakness, but that it felt better if they took juice or coffee. Furthermore, male participants suggested that donors with unknown underlying health issues might face adverse effects that they would not be prepared for. Interestingly, only one female participant had donated blood, whereas some male FD members were regular blood donors or associated with blood donation groups:

> *"I think blood donation doesn't cause any side effects. If you feel a little bit weak, you just get better, as soon as you drink a coffee or something."*
>
> (P2, FGD1, Female)

4.2.4.5 Smokers and drug addicts are considered unsuitable donors

Concerning who might be unsuitable for donation, in particular smokers and drug addicts, was discussed, mostly among male participants. However, drug addiction as a criterion for ineligibility also emerged in the theme of weighing up risks and benefits related to blood donation. Mixed opinions were presented by the respondents of FGDs in this regard. Many male participants believed that if a person is healthy, medically fit, and does not have any contagious disease, then, even if he smokes cigarettes, he should be fine in donating blood without transferring any infection or disease. However, these participants preferred a non-smoker as a donor over a donor who was a smoker.

> *"I believe smokers can donate blood, there is no harm in giving blood if it is not related to a specific disease. Smoking and all those things have little impact for a time being in the blood. And that's nicotine, once it's gone, it's gone."*
>
> (P4, FGD2, Male)

Furthermore, many of the participants stated that a few types of strong drugs might cause some adverse effects in the blood of consumers, and that the blood of drug addicts needed to be scanned before donations were accepted. The type of drugs being consumed by the potential donor, the duration of the addiction to smoking or drinking alcohol, and the time of last ingestion of drugs were also mentioned as reasons to consider before making any decision regarding receiving blood from them.

> *"I would not take blood from smokers, because we don't know what they smoke with normal cigarettes. It can be anything, you know, if they say we adjust the smoker, but we're not sure, you know, they can smoke something high, and that can affect our health too? And yeah, that's my stance on it."*
>
> (P3, FGD2, Male)

4.2.5 Acculturation and country of origin influences on blood donation behavior

This theme presents the variance in experiences and perceptions of participants related to blood donation both in their countries of origin and in New Zealand. The subthemes addressed: being culturally different from the dominant culture; unfamiliarity with the New Zealand blood donation system versus familiarity with the home country's blood donation system; lack of information, opportunity, and health education; positive

effects of navigating New Zealand systems and society on blood donation behaviors; no experience of blood donation; and access to health information (versus lack of access). Most participants have shared the fact that they have not seen any active campaign for blood donation in New Zealand as compared to their hometown. However, the participants were unanimously satisfied with the safety measures and procedures being followed in New Zealand.

4.2.5.1 Being culturally different from the dominant culture

This subtheme was apparent in almost all FGDs, where participants shared their views about differences in the cultures and lifestyles of New Zealand and their countries of origin, which persuasively affected the decision of migrants to donate or receive blood in the host country. The young female participants also shared the issues Muslims have while being a minority community in a different country, where they must be very vigilant before receiving blood donations. However, given the fact that the majority is Muslim back in their home country and the donor is probably a Muslim, they do not have to be concerned about this before receiving blood, even if they are taking it from a blood bank or any organization.

> *"So, I'm talking about Pakistan, because most of the people are Muslim. So, at times, people don't think on these lines where the blood is coming from and this and that, but I can completely understand like from India or other parts, where the Muslims are in the minorities, these issues, these cultural issues, they kind of take effect once a blood donation behavior."*
>
> (P2, FGD1, Female)

On the other hand, a male participant from the older age group presented the idea of assimilating into the host country's society through the inclusion and sharing of values, knowledge, and blood donations. It was worth noting that the participants were not willing to leave behind their social criteria while trying to blend into New Zealand's culture.

> *"So rather than separating us, we have to meet them within those criteria and give our blood, our friendships and our knowledge of religion, knowledge of our background, our countries, whether it is Pakistan, India."*
>
> (P7, FGD4, Male)

4.2.5.2 Unfamiliarity with the New Zealand blood donation system versus familiarity with the home country Blood Donation system

This subtheme appeared in almost every discussion. Most participants shared their unfamiliarity with the blood donation process in the host country, regardless of whether they were regular donors in their home countries, as only a few participants had any experience of donating blood in New Zealand. An older female participant stated that she was a regular donor in her home country, but after coming to New Zealand, she never donated again, therefore, she does not know what the requirements or protocols for donation are. A male participant had a similar experience.

> *"Yes, I donated three times, back in my country, but only to my family. Okay. Uh, they were in need, so I donated three times, but not in New Zealand. It is new for me over here. I have never heard about it."*
>
> (P3, FGD4, Male)

Another young female participant who does not know her blood group identified New Zealand's inaccessible and complex medical protocols as one of the factors behind not knowing her blood group. She was endorsed by a fellow participant in the same group:

> *"Because living in New Zealand, it's not very easy to get to know your blood type. So, you can only get to know your blood type if you're in India or Pakistan because it's much easier there. So yeah, that's another hurdle that stops us because we don't, I don't know my blood type."*
>
> (P1, FGD1, Female)

A young female participant shared that she was a regular donor, and she was accustomed to the procedure of blood donation in her country of origin, but the lack of any opportunity or active donating campaign did not allow her to gain any familiarity with New Zealand's healthcare process involving blood donation. Another group's older female participant, who is not a blood donor, clarified that it is because she never gets any opportunity to donate blood in New Zealand and hence is not familiar with any donation camps, blood banks, or organizations.

> *"Back home we have our charitable trust that we have a donation we have a camp going around every three months or four months, so I have a lot of experience from my back home from my charitable trust*

for a long and I've been doing it. In New Zealand, I never got the chance to do anything as the donation comes towards me the opportunity."

(P2, FGD1, Female)

4.2.5.3 Lack of information, opportunity, and health education

This subtheme, "lack of information, opportunity, and education," was apparent in almost all FGDs. Many female participants from both older and younger groups shared their inability to participate in any blood donation activity because they had never heard of any ongoing blood donation campaigns or organizations in their vicinity where they could go and donate blood. They also expressed the view that, without having any emergency call for donations or any active campaigning advertisement for this purpose, they did not know when and where to go for the donation even if they wanted to donate.

"I think there's just no sense of urgency now, like, from what I know, at least because none of my friends have ever needed blood urgently. So, I'm not entirely sure where I should go, if I wanted to donate blood. So, I think one of the biggest areas, for me at least is just lack of information."

(P4, FGD1, Female)

Another statement made by a young female participant was that people are not inculcating the idea of donating blood in the young minds of their children; hence they need an active awareness and education program to get motivation for this purpose. Therefore, the participants reiterated the need for more education and advertising to change the mindsets of the people and to bring about positive change in society.

"First of all, we have not grown up with this mindset that we should. Also living in New Zealand, it's more about lack of awareness. If there are advertisements or stores or radio, television, or even on YouTube or any media form, if there is awareness for people to remind us to go and donate, because I think that will encourage everyone."

(P1, FGD1 Female)

4.2.5.4 Positive effects of navigating New Zealand systems and society on blood donation behaviors

During the discussions, a subtheme emerged which was agreed upon by almost all the participants. They were content with the well-managed and organized system of New Zealand and expressed their satisfaction with the society, management, and healthcare

system in New Zealand compared to their home countries. In comparison to their country of origin's healthcare facilities, participants found New Zealand's system more organized and reliable, and thought there were more available services for people in need:

> *"The other thing is we always perceive New Zealand as a valid country. And, yeah, and I think these kinds of perceptions do help, kind of observing someone to donate blood."*
>
> (P1, FGD1, Female)

A female participant from the older group expressed her willingness to donate blood when needed. She was confident that hospitals would provide the necessary blood to deserving recipients, even if the blood group was unique or not readily available.

> *"To if what was needed, then I think most likely we go to hospital and hospital usually has a blood supply. But it wasn't supply or blood group was not there I would be more than happy to contribute. So, because the system here is whenever anybody needs blood, they go to hospital. Everything is provided for them."*
>
> (P5, FGD3, Female)

Even though almost all of the female participants did not have any experience of donating blood in New Zealand, they were content with the healthcare system of the host country. An older female participant communicated her faith in New Zealand's system by stating that hospitals provide the patients with whatever is required including arranging blood for better treatment:

> *"So, because the system here is whenever anybody needs blood, they go to the hospital. Everything is provided for them."*
>
> (P5, FGD3, Female)

The trusted blood donation organizations helping in saving lives were mainly noticeable during discussions with older male participants who shared their experiences and information regarding various blood donation organizations and blood banks. Almost all of the participants stated that they only prefer to go to a reliable and trustworthy organization to donate their blood to make sure that their blood is not being sold or used in any inappropriate way.

"In Pakistan, we used to have a system that as I was registered with Fatmeed, they used to give me a card every time I donate blood. One bottle for one bottle if I give them that card, they used to give me a bottle for whatever blood group, because they're collecting from so many people."

(P2, FGD4, Male)

Male participants from the older group stated that they would like to get to know where and how their donated blood is being used. They wanted to be sure that their blood was given to a deserving receiver instead of being sold as a commodity because they were donating blood to save someone's life in the name of humanity, not to trade it.

"I want my blood to be, to be used properly. Yes. I will never give to any organization or who is going to sell my blood. No way. I will only give that it'll be used for humanity free of cost."

(P2, FGD4, Male)

Another male participant from an older group did not have any personal experience of donating blood but expressed his positive expectations from New Zealand's system in comparison to their country of origin.

"So, I mean, it would be nice to, I guess, for more information to be spread around that, especially if people – presumably under control in New Zealand – have past experiences from their home countries, which may be negative."

(P5, FGD2, Male)

4.2.5.5 No experience of blood donation

This subtheme of "no experience of blood donation" was apparent through almost all discussions. Most of the participants from both female groups and old male groups did not have any prior experience of donating blood.

"On Facebook, there is a group I think that person is from Pakistan. I think they have camps at different places. I've heard about it, but I've never been there, to be honest."

(P2, FGD2, Male)

During discussions with females of various age groups, most of the female participants had never donated blood before and lacked any motivation to add it to their priority list,

especially in New Zealand where there is no immediate need to do so. Interestingly, even though some of the female participants knew people in their circle who were donating blood, and their workplaces were collaborating with donor organizations like the Red Cross, they still did not consider donating blood due to personal reasons.

> *"I never prioritize here and on didn't unless somebody needed my blood type, which I don't know."*
>
> (P1, FGD1, Female)

4.2.5.6 Access to health information (versus lack of access)

During the discussion, the subtheme of "access to health information (versus lack of access)" was evident. The participants proposed to improve understanding and make general health information easily accessible to the public. This can be done through social media campaigns, flyers, or any other form of advertisement, which would help to eliminate common misconceptions and apprehensions attached to the notion of blood donation.

> *"So, information like that, how long would it take? Is it going to impact me in any way and things like that? So, these things would be helpful and encouraging people to be more motivated to give blood."*
>
> (P3, FGD1, Female)

Both male and female participants agreed that people should have elementary knowledge about the aftereffects and side effects of donation, and the eligibility criteria for the donor. This would help to clear the general public's concerns and facilitate the making of informed decisions based on valid information.

> *"What if you are diabetic or you're pregnant? Can you give blood to all these little questions, medical-based questions that need professionals, we need more clarity on that. So that will make the thing clearer."*
>
> (P1, FGD1, Female)

A male participant from the older group stated that the lack of donation camps or any active campaigns for blood donation is the key factors that mean they do not feel there is any need to donate blood:

"You know, there are not enough forums. There is there is not enough opportunity. There is no demand because if there are other positions that appeal to people rush, but we don't find any stalls or any of the forum's organizations, any hospital, which asks for donations, and that's why people cannot come forward."

(P7, FGD4, Male)

4.2.6 Perceived role of blood banks

The theme "perceived role of blood banks" was identified from the FGD data that focused on the participants' accessibility to blood banks, perception of the role and work of the blood banks in receiving, storing, screening donations, and then providing blood in times of need. Many participants did not have any firsthand experience with blood banks, nor were they fully aware of the process involved, yet they appreciated the role of the blood banks. Perceptions and trust in blood banks, and the role of Muslim blood banks/blood donation systems, are two subthemes under the broader theme of the perceived role of blood banks. These subthemes highlight the varying levels of confidence that participants have in blood bank processes, including their trust in the screening and verification procedures. They also emphasize the significance of culturally and religiously aligned blood donation systems, such as Muslim blood banks, in enhancing trust and participation among Muslim migrants. These subthemes underscore the importance of culturally tailored blood donation systems in fostering a sense of safety, community involvement, and alignment with religious values, thereby encouraging greater engagement in blood donation activities.

4.2.6.1 Perceptions and trusts in blood banks

Although most participants thought that they would prefer only their family members to receive their blood, almost all male participants were more lenient about giving blood to random donors through blood banks. Both male and female participants comprehended the fact that they cannot keep track of the donations, hence they authorized the bank to utilize the donated blood when and where it was required and believed that blood banks would eventually distribute it to those in need.

"I don't think so there shouldn't be any, any kind of discrimination that the blood should go to the family only because, again, if it is just getting added to the blood bank, then any person, I mean, be a family or non-family, can get it as long as they can make use of it."

(P3, FGD2, Male)

Most participants only had a rough idea about the main purpose of the blood bank being to store blood donations for emergencies. However, for male participants from the younger group, the blood bank was still a last resort.

> *"I believe the main purpose of the blood banks is to get sufficient blood in there so that in case of any critical situations or emergencies where people need to be rushed to hospital and blood transfusion is required. So, the blood banks, they have sufficient blood of different types so that when required, those blood banks can supply to the hospitals."*
>
> (P4, FGD2, Male)

During the discussion, some younger male participants expressed their reluctance to receive stored blood from blood banks. However, another participant from the same group had a different perspective. He suggested that they should consider using a family member as a donor instead and let someone else in need, who does not have a matching donor available, receive the blood donation from the blood bank. This was an interesting and compassionate viewpoint.

> *"I agree if there is any chance and we have a choice, then we will try to get from a family member instead of using the storage or the blood bank blood so that it can be used for someone else."*
>
> (P8, FGD2, Male)

4.2.6.2 Role of Muslim blood banks/blood donation systems

The idea of separate Muslim blood camps (blood banks that cater specifically to Muslim needs according to their religious needs and certainty of getting blood from a donor who consumes only halal food, i.e., foods allowed in Islam) in the host country was suggested by the explanation that it would help in improving Muslims' image in a foreign country. The background was to ensure the availability of adequate blood from Muslim donors to provide blood donation to needy people, particularly to those Muslims receiving transfusions who otherwise would not receive blood from any random non-Muslim donors. Yet most male participants expressed the view that separate Muslim blood camps would not add any value or encourage Muslims to donate more. They further

said that once blood is donated to any camp or organization, it does not matter which denomination used the blood donation:

> *"It'll improve our image, that as Muslims, that we are contributing to society from this point of view. Yes. But having this one will have a positive image of Muslims in society. But, uh, from a donating point of view, I, I don't think so, I can give my blood to any of the camps. It doesn't matter if they are Muslim, Hindu, or Christian."*
>
> (P2, FGD4, Male)

In contrast to the findings mentioned above, a female participant from a younger group shared her experience of visiting a Muslim blood bank expecting that the receiver would be a member of a minority Muslim community who otherwise would not be able to arrange blood donation for him/her in a foreign land with most non-Muslim donors:

> *"I have grown up with that family, where we have camped, we do our camping where we can go and donate our blood, and we knew that that blood goes to our Muslim community."*
>
> (P3, FGD1, Female)

4.2.7 Health promotion recommendations for blood donation approaches

In the discussions surrounding health promotion recommendations, the topic of compensating blood donors to enhance donation rates was a notable theme. Only one sub-theme supported this theme: recommendations for incentivizing blood donation**.** Participants suggested giving counselling, appreciation certificates, blood donation cards, and free medical appointments as a few of the various modes of incentives that can be used to persuade people to donate blood. By contrast, a few older female participants believed that compensation in terms of reduced working hours, gym membership, or a pick-and-drop service would be accepted and would encourage more people to participate in blood donation.

4.2.7.1 Recommendations for incentivizing blood donation

This subtheme of "recommendations for incentivizing blood donation" was apparent throughout all discussions. The younger female group suggested various other forms of incentives that can be given to potential donors to encourage them and persuade more people to come forward for donations:

"You can have a one-week free membership gym membership might motivate you."

(P2, FGD1, Female)

Treating donors with respect and showing hospitality was considered important by a few participants. Relative to females, male participants were more assertive in their opinion that no reward or compensation should be involved, and blood donation is purely a voluntary act.

"No, I think, uh, when somebody comes there, I think if you offer him a cup of coffee or tea, but as you go to the blood bank, they are offering, that should be enough."

(P1, FGD4, Male)

Incentives must be carefully considered in blood donation campaigns, ensuring they reinforce the community-oriented, voluntary spirit of donation while effectively increasing donor engagement.

"The recognition or compensation should not necessarily be in the monetary form, but it could be in anything that opens up the possibility of making it easier for the donor to return for the same cause at some point again in life."

(P1, FGD4, Male)

4.3 Chapter Summary

The thematic analysis of focus group findings offered detailed insights into the blood donation knowledge, attitudes, beliefs, and behaviors of Muslim migrants in New Zealand. Participants of the study recognized blood donation as a life-saving measure consistent with Islamic principles, particularly the belief that "saving one life is like saving all of humanity." However, perceived knowledge about blood physiology and eligibility varied. It was found that attitudes were seen to be influenced by religious beliefs, cultural norms, and familial expectations, which often prioritized male donors over female donors due to protective roles and concerns about women's health. Participants also described several barriers to blood donation, including fear of receiving blood from non-Muslims, concerns about impurity, and navigating New Zealand's healthcare system, which presents challenges due to unfamiliarity with the protocols. However, trust in its safety was indicated as high. These findings directly address the first research question, concerning Muslim migrants' knowledge, attitudes, beliefs, and actions about blood donation in New Zealand, by outlining various factors impacting community blood donation habits.

These findings also partially answered the second research question: "What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the knowledge, attitudes, beliefs, and behavior of the Muslim migrant population regarding blood donation?". The results of the focus group data analysis offer a basis for understanding the essential components of a culturally relevant questionnaire, such as awareness of blood donation, beliefs influenced by Islamic teachings, and cultural and familial dynamics. However, the analysis also reveals themes and subthemes that need further investigation in the form of a questionnaire for a subsequent survey. Knowledge gaps were found, for example, in the areas of eligibility requirements, blood types, and the physiological advantages of donation. These findings imply that the questionnaire should examine the impact of culture and religion on blood donation behavior in addition to basic knowledge and beliefs. Additionally, themes related to cultural fears and misconceptions about blood donation, such as women's reluctance to donate blood, need representation in a questionnaire to be able to better understand Muslim migrants' attitudes and beliefs about blood donation practices.

The next chapter expands on the contextualization of the qualitative findings generated from the qualitative phase and supporting literature.

Chapter 5: Contextualizing Focus Group Findings Within Existing Literature

5.1 Introduction to the Chapter

This chapter aims to explain the qualitative findings that explored the blood donation knowledge, attitudes, beliefs, and behaviours of Muslim migrants in New Zealand. The first section provides a summary of the findings, which are then contextualized within the existing literature to provide a more thorough insight. This contextualization was essential for validating the findings, identifying similarities and discrepancies, and highlighting the unique dynamics influencing this community.

The second section discussed the seven themes that emerged from the qualitative data, reflecting the distinct cultural, religious, and social dynamics influencing blood donation within this community. The key themes identified were: 1. The importance of knowledge for blood donation; 2. Islamic expectations and priorities regarding blood donation; 3. Weighing up risks and benefits related to blood donation, 4. Gendered, familial, cultural, and social dynamics influencing blood donation; 5. Perceived role of blood banks; 6. Acculturation and country of origin influence blood donation behaviors; and 7. Health promotion recommendations for blood donation approaches.

5.2 A Brief Summary of All the Themes

The analysis of the FGDs highlighted various themes and subthemes related to blood donation among Muslim migrants in New Zealand. Participants emphasized its life-saving aspects, the importance of knowing blood types, the physiology of RBC production, and the criteria for donor eligibility. Exemptions to donations were suggested for those with certain health conditions, pregnant or breastfeeding women, and individuals on medication. Islamic teachings played a significant role in shaping participants' attitudes toward voluntary blood donation. This principle underpinned the agreement against any form of discrimination in blood donation, irrespective of religion or gender. Participants emphasized the spiritual rewards from Allah rather than any material compensation.

The FGDs also revealed the significant influence of gendered, familial, and cultural dynamics on decisions related to blood donation. Males, as decision-makers and

protectors within families, took the initiative in blood donation, especially in times of national emergency. Women, especially, reported challenges related to acculturation and a lack of familiarity with New Zealand's blood donation system, which, along with lifestyle demands, contributed to low participation rates. However, there remains a gap in active participation in blood donation among Muslim migrants among women, due to competing lifestyle demands and other priorities. A generational shift was observed, with the younger generation of migrant families showing greater integration into the host society and hence more propensity to engage in blood donation behaviors. Receiving blood from non-Muslim donors was strongly discouraged due to concerns about blood purity, especially when it came to alcohol and drug use by donors. On the other hand, giving blood to non-Muslim donors was seen favorably. One of the main concerns was the thorough screening of blood to prevent contamination. Participants suggested non-monetary incentives such as counselling, appreciation certificates, and free medical appointments to encourage blood donation. Many participants were hesitant about receiving blood from New Zealand blood banks, and they preferred family members as blood donors to ensure compatibility and trust, while younger males were more likely to offer their blood to people randomly through banks. There was a mixed response to the idea of establishing Muslim blood banks that cater specifically to the religious needs of Muslims and ensure that blood is drawn from donors who consume only halal food. While some saw it as a method to help the community, others were worried about its wider ramifications.

Additionally, while most participants expressed concerns about accepting donations from professional donors (people who donate blood primarily for financial compensation), some participants offered nuanced views or did not express strong opinions on the matter. Moreover, many participants were generally satisfied with the NZ healthcare system, which may have contributed to a decreased sense of urgency to donate blood.

5.3 The Importance of Knowledge of Blood Donation

Knowledge plays an important role in shaping blood donation behaviors. Participants of this study emphasized the life-saving aspect of blood donation, with one noting, "Knowing that donating blood can save lives makes it feel like a duty." This aligns with

the findings from Jamal et al. (2019), who highlighted the importance of educating potential donors about the impact of their donations on saving lives. A comprehensive understanding of blood donation, including eligibility criteria, the donation process, and the need for blood in society, significantly impacts attitudes and behaviors among potential donors, particularly within migrant communities (Gahan et al., 2022; Hossain et al., 2021; Raymond et al., 2014; Renzaho & Polonsky, 2013; Zeleke & Azene, 2022). Many FGD participants knew their blood types and the significance of receiving matching recipients blood groups. However, their knowledge was drawn largely from their personal experiences of blood donation or medical treatment rather than systematic public health campaigns, highlighting a gap in formal information dissemination (Jemberu et al., 2016; Mohammed & Essel, 2018).

According to the current study, men are generally more informed about blood donation and more likely to donate blood than females, a finding similar to other studies among Muslim populations (Alfouzan, 2014; Syed et al., 2022). However, this contradicts the results of Raghuwanshi et al. (2016), which found that female students were generally more knowledgeable about blood donation than their male counterparts; however, these student participants included no migrants or non-Muslims. Nevertheless, that finding supports the notion that females with a medical background possess greater knowledge about blood donation, thereby endorsing the findings of the present study (Raghuwanshi et al., 2016). Different communities have different cultural characteristics, educational opportunities, and gender role expectations, which suggests that specialized educational strategies are necessary to address specific gaps in awareness among different demographic groups**.**

Additionally, migrants often bring with them understandings and practices related to blood donation from their countries of origin, even though these may not be in alignment with the requirements in the host country. For example, according to Klinkenberg et al. (2019), African-Surinamese and Ghanaian immigrants in the Netherlands were more familiar with blood donation practices at home than in the Netherlands, resulting in lower participation rates owing to their unfamiliarity with local donation procedures. Moreover, Sekkarie and Abdel-Rahman (2017) reported that Muslim migrants' hesitation toward blood donation stems from uncertainty about

compliance with Islamic principles, including whether their donation aligns with religious laws on medical intervention (Sekkarie & Abdel-Rahman, 2017). While the study by Polonsky and Ferdous (2018) primarily addresses African refugees and migrants, some findings, such as concerns about healthcare trust, use of donated blood, and the implications of cultural and religious beliefs, may also be relevant to Muslim migrants, as the study included Muslim migrants too. However, the article does not explicitly focus on Muslim participants or provide a detailed discussion on Islamic perspectives related to blood donation (Polonsky et al., 2018a).

As a result, targeted educational efforts are needed to bridge this awareness gap and enable migrants to better integrate into the healthcare system of the host country. The discussions suggest that knowledge about the need for blood in the host country and the responsibilities associated with being an immigrant citizen collectively impact the decision-making of donors. Likewise, Gahan et al. (2022) directed research examining the barriers to and motivators of ethnic minority blood donation among Australian communities of minorities, and found that many minority groups did not know that blood donors were needed, and did not know about the ongoing need for blood products (Gahan et al., 2022). The lack of knowledge of these groups is not only responsible for the under-representation of minorities in blood donation, but also affects their willingness to donate (Klinkenberg et al., 2019).

The need for a comprehensive education and awareness program regarding blood donation is underscored by the findings of this current study and is backed up by existing literature. Participants stressed the need to understand the side effects, eligibility criteria, and overall blood donation process to clear up public misconceptions and facilitate informed decisions. The participants observed that people had many misperceptions regarding blood donation that dissuaded many potential donors from coming forward. Following previous research, ethnic minorities in host countries often defer blood donation and have less understanding of it (Frye et al., 2014).

While knowing the importance and benefits of blood donation for society is critical, the study findings suggested that other factors like time restrictions, health worries, and conflicting commitments frequently limit people from putting this awareness into

action. For example, some individuals acknowledged the importance of donating blood but refrained from doing so because of these challenges (Hu et al., 2022; Murtagh & Katulamu, 2021). It is apparent that while focus group participants of the present study had a broader understanding of blood donation's vital role in saving lives, there was a disconnect between this understanding and actual donation practices, with many participants never having donated blood in New Zealand. This aligns with the results of a study that found 92% of the participants never donated blood to charity despite strongly motivating themselves to do so (Hossain et al., 2022). Similarly, despite their positive attitudes toward blood donation, the lack of volunteerism observed in university students from developing countries illustrates this disconnect between knowledge and action (De Los Santos & Firmo, 2019). Additionally, according to Allerson (2012), 60.3% of young adults wish to know their blood group, but this motivation does not necessarily translate into an actual donation. Many other factors, including information related to the system, the need for blood reserves, and facilitation in accessing the donation point, are equally significant in motivating people to donate (Klinkenberg et al., 2019; Suemnig et al., 2017; Teferi et al., 2021). The participants in the present study also emphasized hospitals' need for adequate blood reserves, especially during emergencies, accidents, or surgeries.

Additionally, while knowledge is essential, fostering long-term behavior change requires systematic policy implementation and sustained educational efforts. The findings reveal a significant gap in understanding blood donation processes in New Zealand, as many individuals rely on GPs and nurses for information. Since healthcare providers are often the first point of contact, this directly addresses Research Question 2—what critical information needs to be included in a culturally relevant questionnaire—by highlighting the need for educational content covering eligibility criteria, donation procedures, and the importance of blood donation. Tailoring health promotion efforts through multiple channels, not just healthcare providers, aligns with the study's goal of developing a culturally informed tool to assess blood donation knowledge, attitudes, beliefs, and behaviors among Muslim migrants (Murtagh & Katulamu, 2021; Teferi et al., 2021).

5.4 Islamic Expectations and Priorities Regarding Blood Donation

Religious beliefs and cultural practices play a crucial role in shaping blood donation behaviors among Muslim migrants in New Zealand. The concept of saving a life as synonymous with saving humanity is deeply rooted in Quranic teachings, as evidenced by participants' frequent references to verses like "Whoever saves a life is as if he has saved all mankind." (*The Qur'an*, 2004, 7:189). In this study, participants overwhelmingly agreed that blood donation is a moral imperative and is endorsed by Islamic principles, which strongly influenced their beliefs and attitudes toward the act. This aligns with previous research by Padela et al. (2012) who noted that blood donation is often seen as a form of *sadaqah* (voluntary charity), a core Islamic value promoting compassion and selflessness (Alfouzan, 2014).

The participants of the current study were against the idea of selling blood and rejected receiving money for donations, viewing blood donation as a charitable and selfless act to highlight their ethical and religious beliefs. This finding aligns with results from previous research (Al-Hawary et al., 2022; Uthman, 2023) showing that Islam strongly supports Muslims giving blood and organs to those in need without asking for any compensation (Isah et al., 2022; Van den Branden & Broeckaert, 2011). Although this study demonstrates the role that religious beliefs play in motivating blood donation, it does not fully explore other social and cultural factors such as community norms, trust in healthcare systems, or social pressures, which could also affect donation practices.

Further, in contrast to previous studies that have indicated that mythical beliefs or misconceptions, such as the belief that blood donation can make people weak or ill (Hossain et al., 2022; Isah et al., 2022; Padela et al., 2022) — may prevent people from participating, but this study did not find such concerns to exist. Instead, the primary motivator of these attitudes was religious endorsement. However, it raises questions about the sustainability of these attitudes in contexts with a reduced influence of religious sentiments or when religious texts are interpreted differently.

5.4.1 Interplay of Religious Beliefs and Cultural Practices

Islamic teachings on blood donation intersect with the cultural practices and social norms of Muslim migrants in New Zealand. Islamic teachings often frame blood

donation as an act of charity (sadaqah jariyah) and a moral responsibility. The concept of saving a life as synonymous with saving humanity is deeply rooted in Quranic teachings, as evidenced by participants' frequent references to verses like "Whoever saves a life is as if he has saved all mankind." (*The Qur'an*, 2004, 7:189).

However, cultural practices and religious beliefs interplay to influence the blood donation behavior of Muslim migrants. Islam plays a significant role in shaping individuals' everyday lives, including their spiritual beliefs, dietary habits, clothing choices, and interpersonal interactions, both public and private. Unlike many Western societies, religion is not limited to specific rituals or days. Because religion and culture are inseparable, if religion were removed from culture, the cultural fabric itself would be fundamentally influenced. There are similarities between all religious traditions, such as Buddhism, but there is a particularly strong fusion in Muslim communities. This cultural-religious blending significantly influences attitudes toward blood donation. Many Muslim migrants report concerns about receiving blood from donors who might consume alcohol and drugs, showing both religious and cultural boundaries of trust. Approval from family or community leaders is frequently necessary, which strengthens a collectivist mindset in which choices are made following religious and communal norms rather than just by the individual.

These nuances show that blood donation is seen by many Muslim migrants as a spiritual and cultural obligation in addition to a medical or selfless deed. In order to establish cultural credibility, public health initiatives that seek to increase participation among Muslim communities must address religious concerns, make clear that giving blood is acceptable under Islamic teachings, and include well-known religious leaders.

5.5 Gendered, Familial, and Cultural Dynamics Influencing Blood Donation

This theme examines the role gender plays, as well as familial, cultural, and social dynamics in influencing blood donation decisions among New Zealand's Muslim migrant community. Muslim beliefs around men's external roles and their roles as protectors of women were deemed very important for the participants of the current study. Most of the participants viewed men as being more inclined to engage in duties like blood donation because of their outward societal roles. However, this perception seems to be

rooted in gender norms within the community, and how much it affects real-life actions may differ from person to person and family to family. Thus, in Muslim society, men are typically the first to reach out for urgent assistance, whereas female participants of the study opined that they preferred to gain the approval of their male family members before engaging in donation activities. This finding is quite similar to a study by Spratling and Lawrence (2019), which showed that females had limited access to civic and social engagement, such as blood donation campaigns, due to cultural norms that prioritize male leadership in such activities.

The cultural values and the need for the family's approval before donating blood raise serious concerns about the participants' autonomy when it comes to making decisions about their health. This dynamic represents conventional family arrangements, but it also raises the possibility of a barrier that may prevent women from independently taking part in blood donation campaigns. This is in contrast to findings from studies on (non-Muslim) migrant women in Australia who, even after having significant challenges such as miscarriages and facing discrimination by medical staff, still felt motivated and ready to donate blood without the need for familial approval (Polonsky, Renzaho, et al., 2011; Polonsky et al., 2013). Therefore, while this contrast offers insights into differing cultural and familial influences between non-Muslim and Muslim migrant women, caution is needed, as community dynamics vary, and further research is required to explore these differences, especially among Muslim migrants.

Additionally, Samani (2018) explored how social and economic variables are reshaping gender roles in Muslim homes in Australia. According to the survey, Muslim women frequently take on the role of breadwinner in their homes, challenging the gender roles (Samani, 2018). Similarly, Balode and Račius (2023) found that Muslim women in the Baltic States navigate a delicate balance between traditional expectations and their aspirations, suggesting that gender dynamics could influence blood donation behavior differently than was found in the current study (Balode & Račius, 2023). Despite these findings, to the best of my knowledge, no prior study has specifically investigated the concept of Muslim male members of the family taking the lead in donating blood.

Notably, little is known about how cultural and familial obligations intersect with gender roles in terms of whether they specifically deter blood donation among different demographic groups of Muslim migrants and how these factors affect women's participation in blood donation. Various researchers have noted in the context of African migrant groups that family opinions have a complex role in donation decisions; some migrants prioritize blood donation within their community, while others reject family approval (Gahan et al., 2022; Klinkenberg et al., 2019; Oviedo et al., 2022). Understanding these subtleties is crucial in evaluating the influence of these factors on women's blood donation participation, particularly in Muslim migrant communities.

5.6 Weighing Up Risks and Benefits Related to Blood Donation

In addressing the research questions, the findings of the present study reveal the complex interplay between risk perceptions, cultural values, and familial obligations in shaping blood donation behaviors. Despite participants' acknowledgment of the importance of blood donation, many expressed apprehensions regarding getting an infection or impurity while donating blood, through the syringes or other medical equipment being used. This finding is consistent with existing literature that highlights similar concerns regarding fears related to blood donation, such as anxiety over needles, pain from blood collection procedures, seeing blood flow, poor facilities, faintness after donation, physical ineligibility, and anxieties related to adverse events like fainting and dizziness, which may hinder donation (Burzynski et al., 2016; Dean et al., 2018; Kelley et al., 2021; Spratling & Lawrence, 2019).

However, the findings of the current study reveal an interesting and novel perspective. In contrast to the participants' strong fear of infection when receiving blood, they believed that the risk of contracting diseases from blood donation was extremely low. This finding is similar to the findings obtained by Abdulkareem (2023). This suggests that while the participants expressed caution regarding infection risks, they did not view blood donation as a high-risk activity, indicating a nuanced understanding of medical risks (Abdulkareem, 2023). These findings are in contrast to those from studies in East and Southeast Asia, where concerns about hygiene and contamination are prevalent (Gilchrist et al., 2019). A cultural and contextual difference highlights this discrepancy, leading to a deeper understanding of the unique fears and beliefs of different

populations. The current study also revealed that cultural perceptions and family responsibilities significantly influence blood donation decisions. In most cases, participants did not donate blood unless they had an acute emergency or had other responsibilities. This aligns with research suggesting that family obligations often take precedence over health-related activities, particularly in collectivist cultures (Khatoon et al., 2018; Piersma & Merz, 2019). Despite these barriers, younger male participants expressed a willingness to donate more regularly, reflecting a generational shift in attitudes toward blood donation.

The participants faced a complex dilemma in weighing the risks and benefits of blood donation against cultural responsibilities and fears of infection. It was difficult for the participants to strike a balance between their family obligations and their cultural values. Moreover, blood donation was not always perceived as necessary due to deep-seated conflicts between participants' sense of duty to their families and society and their concerns about the risk involved in donation procedures. Similar to the findings of Khatoon et al. (2018), this hesitation can be attributed to a wider cultural context that emphasizes family responsibilities and cultural norms. Similarly, in other cultural settings, time constraints and family responsibilities were significant barriers to blood donation, according to Piersma and Merz (2019).

The participants' risk-benefit concerns reflect a conflict wherein participants had to weigh their concerns about potential health risks and impurities against the need for blood donations recognized by society and altruism endorsed by the Quran. This situation may unintentionally overshadow the positive impact of blood donation, both for recipients and the broader community, and fearmongering about perceived risks.

5.7 Perceived Role of Blood Banks

Based on the findings of the study, Muslim migrants showed a marked preference for donation to blood banks while expressing reservations about receiving blood from non-Muslim donors, reflecting significant cultural and religious tensions surrounding blood donation and transfusion practices. A primary reason for this preference may stem from the fear that blood from unknown or non-Muslim donors, especially those who consume alcohol or drugs, will be considered haram, potentially affecting the recipients' spiritual

well-being (Rizkitysha & Hananto, 2022). According to prior research, religious beliefs heavily influence Muslims' decisions regarding blood transfusions, resulting in them favoring blood transfusions from within their community so that donors adhere to Islamic principles (Rahimi & Sharifian, 2020; Sabbouh, 2021; Yaacob, 2019).

Despite having a favorable opinion regarding donating at blood banks, few participants shared their experiences of donating blood at such institutions, with only one participant donating at a blood bank in New Zealand. Participants' limited personal experience suggests that the positive attitude is not being reflected in their actions. Several studies have found that Muslim people prefer to donate blood solely to their close family members (Hassan et al., 2018; Waheed et al., 2015). This lack of personal experience with blood donation at blood banks among the study participants may be the result of several reasons, including convenient accessibility and the absence of a strong campaign to inform them about the need for blood from Muslim communities. For instance, studies have shown that providing information on how blood is donated and why blood reserves are needed can significantly increase the willingness of individuals to donate (Dorle et al., 2023). For example, a cross-sectional study by Taibah Al-Haqqan (2016) in Kuwait suggested that a lack of knowledge regarding blood banks and accessibility are key barrier to improving blood collection at such centres.

To address these barriers, the study participants suggested that policymakers should use social media campaigns and advertising programs to encourage blood donations, particularly within Muslim communities. This finding is consistent with the findings of previous research, that social media campaigns, advertisements, and the strategic placement of blood donation centers closer to Muslim communities could help increase participation(Gahan et al., 2022; Haddad et al., 2020).

There was also a suggestion from some participants that separate blood donation systems for Muslims should be created. Although some participants believed that such systems could improve Muslims' image and meet their blood needs better, this approach risks further segregating them rather than fostering integration and mutual understanding.

Blood donation is likely to be more effective if it is approached from an inclusive standpoint that respects religious concerns while promoting its universality over time. The study findings support the possibility that Muslim migrants' attitudes toward blood donation are influenced by their religious beliefs and subjective norms. Participants expressed a preference for donating only within a specific community(family) and showed a lack of familiarity with blood banks, suggesting that positive intentions do not automatically lead to action in this context, especially in the absence of targeted outreach and education efforts.

5.8 Health Promotion Recommendations for Blood Donation Approaches

Health promotion is inherently ingrained within Islamic societies, as Islam offers crucial guidance on the promotion of good social and health activities (de Leeuw & Hussein, 1999). The study findings revealed a nuanced approach to incentivizing donors, which carefully balances the altruistic nature of donations with the encouragement of participation. While participants acknowledged the effectiveness of counselling, appreciation certificates, blood donation cards, and free medical appointments, monetary compensation, which was common in Pakistan and India (Pai et al., 2024) was strongly opposed. The assertion is that blood donation remains a community-oriented and voluntary activity that is in line with Islamic values that prioritize social and physical well-being (de Leeuw & Hussein, 1999). Non-monetary incentives, especially those providing practical benefits, were more appealing to young participants and some older males, suggesting a possible generational shift in attitudes toward blood donation. If they are aligned with underlying ethical and religious principles, this shift indicates an increasing openness to alternative forms of encouragement. This finding is similar to a study finding by Sinfield (2019) that non-cash incentives can motivate donations without undermining the voluntary nature of the practice.

Moreover, participants in the study stressed the importance of engaging the community and community leaders directly in planning and carrying out blood donation campaigns. This is consistent with the findings of a study reporting that communities that feel ownership and responsibility over the campaigns have better outcomes and greater participation (Fallon, 2021). Further, participants in the present study expressed significant concerns about the health and lifestyle of non-Muslim blood donors, such as

drug addicts and those who consume alcohol. Voiced instead were questions about the validity of blood screening, the infection/disease of the potential donor, the medicines and types of drugs consumed by the potential donor, the duration of addiction to smoking or drinking alcohol, and various other conditions that can affect the donor's eligibility. It has also been reported that nicotine and drug use are significant factors influencing donors' eligibility and deterring acceptance among blood donation recipients (Patel et al., 2019). These factors should be upheld by blood donation organizations and governmental authorities on the basis that, despite considerable knowledge of blood donation in this small cohort of Muslim migrants, a significant number, NZ-wide, do not donate blood, and the country needs 30,000 new donors to meet the demand (Fallon, 2021).

5.9 Extent of acculturation to host society and Country of Origin Influences on Blood Donation

In the study, the findings on acculturation and the influence of country of origin on blood donation highlight the complex interplay between cultural integration and health behaviors. It was emphasized that assimilation into the host society is important, including the sharing of values, knowledge, and civic responsibilities. This suggests that acculturation increases willingness to donate blood as a means of integrating into the host society. However, other research suggests that acculturation has little to no influence on blood donation behaviors, particularly among African migrants (McQuilten et al., 2014; Polonsky, 2011; Renzaho & Polonsky, 2013). This discrepancy may be due to cultural differences or differing levels of integration and acceptance within host societies.

One of the most significant challenges in the acculturation process is the language barrier (Al Shamsi et al., 2020). This barrier can prevent recent migrants from accessing accurate information about the benefits of blood donation and the processes involved, thereby reducing their willingness to participate (Boenigk et al., 2015). Interestingly, participants of the current study did not specifically mention language issues as a barrier, likely because many Muslim migrants in New Zealand often come from countries where English is spoken widely, such as South Asia and the Middle East. Most migrants

in these regions speak English as a second language, and upon arriving in New Zealand, they are functionally proficient in it (Al Shamsi et al., 2020).

Many participants also pointed out that in their countries of origin, where Muslims dominate, blood donors do not have to worry about religious compatibility. However, due to their minority status in their host country, they had to be vigilant about receiving blood donations, reflecting broader challenges of relocation and integration. The caution comes from these challenges, whereby the fear of receiving blood from non-Muslim donors may outweigh the perceived benefits of receiving blood from a Muslim donor. The lack of cultural familiarity in the host country often leads to hesitancy among Muslim migrants in New Zealand when receiving blood from non-Muslim donors. These findings explain well the results of a few previous studies where ethnic minorities are under-represented in blood donation activities, and are very low in number (van Dongen, 2016). Additionally, a study showed a clear relationship between the donor's actions and aspects of migration-related socio-political issues, including mental and physical challenges when donating blood in the event of administrative or linguistic limitations. These findings also acknowledge that citizenship, language proficiency, and information availability are crucial factors that influence donation (Oviedo et al., 2022).

5.9.1 The socio-economic barriers to blood donation

Immigrants often face significant challenges in healthcare accessibility and inclusivity, including blood donation activities, because of socio-economic barriers. Many immigrants' employment is precarious and often involves low wages, lack of health insurance, and limited paid time off. Consequently, they cannot participate in activities other than those that directly address their immediate survival needs. According to Klein and von dem Knesebeck (2018), immigrants often prioritize immediate financial concerns over their health due to economic hardship (Klein & von dem Knesebeck, 2018). Taking this approach can lead to reduced participation in health-related activities, including blood donation. Additionally, as identified by Boenigk et al. (2015) social exclusion and distrust in the recognized healthcare system further contribute to this trend, as immigrants tend to engage more comfortably in community-based activities, thus isolating themselves from public health initiatives that could increase their participation in formal blood donation services. Furthermore, Horvat et al. (2014)

concluded that there is a significant knowledge gap regarding the benefits, safety, and procedures of blood donation, which is often exacerbated by misinformation. The lower rates of blood donation among immigrant communities can be attributed to this disparity.

5.9.2 Intergenerational differences in blood donation

Among the participants, there were intergenerational differences in blood donation practices, suggesting shifts in attitudes and behaviors, particularly among second-generation members of migrant families. Younger generation, who are more exposed to New Zealand's education and social systems, tend to show higher levels of engagement in health-seeking activities, though individual motivations and experiences vary (Separa, 2024). These findings were similar to a study conducted in the US that showed that blood donations by young donors are more common than those by older populations (Klinkenberg et al., 2019). As a result of the younger generation's experiences in educational institutions, their greater English language proficiency, and participation in various extracurricular activities contribute to their closer integration with that society. This integration raises not only a sense of belonging to the community but also a deeper understanding of civic responsibilities, including blood donation. Studies have shown that more educated individuals tend to donate blood more frequently due to a better understanding of the importance of blood donations and their health benefits (Ferguson et al., 2012). The higher blood donation rates among the younger generation may also be attributed to peer influence and social networks. Those who perceive blood donation among their peers as a normative behavior are more likely to give blood themselves (Alfieri et al., 2019). Participants of the present study highlighted that, generally, second-generation migrants have better access to information and resources about blood donation than their parents did.

5.9.3 Importance of trust-based healthcare and blood donation system

As a result of the differing experiences and perceptions of various immigrant communities regarding blood donation and healthcare services, it is evident that a trust-based healthcare system is necessary. In the current study, the participants expressed trust in the New Zealand Medical Authority's health safety and quality control standards. They were quite sure about the precautionary measures, cleanliness, hygiene, and

sterilization of the instruments to avoid any risk of blood contamination or cross-infection from needles. By establishing this trust, participants were assured that their blood would be handled carefully and given to deserving recipients after thorough screening. The confidence expressed in this study contrasts sharply with findings from other studies, where the study participants expressed a lack of trust in the safety measures at the hospitals, as well as fears about transmitting infection to their families (Abdel Wahed et al., 2020; Galehdar et al., 2020; Sachdev et al., 2021). The contrasting findings highlight the importance of trust in the healthcare system in influencing health behaviors. Indian donors, for example, are less likely to donate blood due to a lack of trust in hospital safety measures (Sachdev et al., 2021). For voluntary health behaviors to flourish, healthcare systems must build and maintain trust. The results of the current study are consistent with findings from the Netherlands, where negative service experiences and discrimination were not perceived as barriers to blood donation (Kelley et al., 2021; Klinkenberg et al., 2019).

However, these findings on the absence of racism in blood donation services contradict the previous research conducted with migrant minorities (particularly with African communities). For example, research with African migrants in Australia, Canada, France, and the US has shown the significant impact of perceived discrimination on their intention to donate blood, thereby inhibiting actual donation (Francis et al., 2017; Gahan et al., 2022; Singleton & Spratling, 2019; Spratling & Lawrence, 2019). Moreover, people from ethnic minorities, particularly people from Black and Caribbean backgrounds, reported less trust in the UK's healthcare system, regardless of their status as blood donors (Ghoshal et al., 2022). Another study conducted in the US found that African Americans had a lower level of trust in the healthcare system, and this mistrust harmed the willingness to donate blood (Brown et al., 2024). Similarly, a study in Canada found that Aboriginal people had lower trust in the healthcare system, which was associated with lower blood donation participation (Horvat et al., 2014; Vogel, 2015).

There was no explicit expression of racism in the study participants' experience, but existing literature shows systemic racism persists in healthcare, manifesting in attitudes toward health professionals and access to healthcare. Among minority patients, including migrants, Woodward et al. (2021) found that implicit bias occurs frequently

among healthcare providers, resulting in substandard care. This raises questions about the equity and inclusiveness of healthcare systems, as well as suggests that efforts to increase blood donation among immigrant communities must address the underlying issues of mistrust, potential racism, misinformation, and systemic bias. Although trust is important, it is insufficient if no tangible steps are taken to eliminate systemic biases and to improve accessibility to blood donation services and healthcare for everyone.

5.9.4 Enhancing healthcare equity through inclusive blood donation approaches

This study's findings show that many immigrants in New Zealand do not know how the blood donation system works there, which greatly reduces their chances of donating. Participants indicated that a lack of information regarding the blood donation process, such as where and when to donate, is a major barrier, particularly for those who had previously donated blood in their countries of origin. This lack of awareness has caused a significant drop in regular blood donations among these communities. New Zealand is not the only country with this issue; similar issues have been reported in Australia, where African immigrants face barriers due to unfamiliarity with the host country's blood donation practices (Francis et al., 2017). There are broader implications for healthcare equity associated with the under-representation of migrants in blood donation activities in Western countries. For instance, in Belgium and Germany, research found that having a less diverse group of blood donors leads to less diverse blood supplies, causing a lack of a suitable blood pool for patients of the same ethnic groups (Gahan et al., 2022). To make sure there is enough blood for all patients, no matter their background, it is crucial to actively include immigrant communities in blood donation programs.

Participants in this study also pointed out that their willingness to donate blood is also influenced by how well they adapt to a new culture and the host society's healthcare system. Including ethnic and racial minorities in blood donation programs is a crucial step toward enhancing healthcare equity, but achieving this will require addressing barriers such as language, mistrust of healthcare systems, and cultural differences. A multifaceted approach is needed to ensure fair participation and representation (Makin, 2019). There must be special, tailor-made approaches in place for migrant groups with diverse backgrounds and ethnicities to help them deal with their unique

problems. For example, when people over 50 years old give blood for the first time and are told they cannot donate again within a year, there is a decrease in the likelihood of them giving blood again in the future (Davison et al., 2019). For this reason, different strategies should be developed for different age groups to motivate donation (Greffin et al., 2021). By addressing migrant communities' specific health concerns and cultural beliefs, we can help to overcome these challenges and increase their inclusiveness in blood donation campaigns.

5.9.5 Need for culturally competent care in blood donation services

According to the study's participants, NZ healthcare providers should possess cultural awareness and be sensitive to the needs and expectations of these communities. In the absence of culturally competent staffing, migrants may be more likely to encounter misunderstandings and miscommunication, which could potentially reduce the number of blood donations (Aning, 2023). According to several studies, patients' likelihood of seeking medical attention or engaging in blood donation activities can be negatively impacted by undesirable interactions with their healthcare providers, which in turn can negatively impact their trust in the healthcare system (Heaman et al., 2013; Polonsky et al., 2018b). Patients and healthcare professionals must therefore communicate politely and with an awareness of cultural differences. As an example, Shaz et al. (2009), discovered that the attitudes and actions of healthcare personnel significantly influence the desire of African Americans to donate blood. The current study's participants expressed that fostering trust and promoting blood donation participation may be enhanced by culturally competent care.

Providing culturally competent care often involves healthcare providers acknowledging and respecting migrant patients' diverse backgrounds in addition to other elements like efficient communication and tailored health education. These programs may include offering translation, culturally sensitive educational materials, and direct community engagement (Horvat et al., 2014). Besides enhancing trust in the healthcare system, such measures may contribute to an increase in the number of migrants who donate blood, even if several factors could affect this result. Further, in the present study, several participants emphasized that effective communication strategies must consider

the linguistic and cultural diversity of immigrant populations to raise awareness and encourage participation in blood donation.

5.10 Theory of Planned Behavior

The TPB has the potential to provide a framework for understanding human behavior from the perspective of attitudes, subjective norms, and perceived behavioral control. Although the TPB is a powerful theory that can explain many behavioral patterns, including blood donation, its applicability to the cultural, familial, and gendered social agency and capital of Muslim migrant communities has both strengths and limitations

5.10.1 Alignment of study findings with constructs of the theory of planned behavior

The findings of this study are aligned with several TPB constructs. For example, knowledge about blood donation, including blood group identification and eligibility criteria, directly relates to participants' attitudes toward blood donation in this study. As evidenced by participants' recognition of the life-saving benefits of blood donation and the substantial influence of religious teachings on attitudes regarding blood donation, these are in line with TPB, which suggests that greater knowledge leads to more favorable attitudes, which are key predictors of behavior intentions (Ajzen, 1991).

Themes highlighted that religious motivations and community obligations strongly compel their community to donate blood as an act of both charity and selflessness, consistent with the notion that social approval (desirability) can motivate behavior. The appeals for donations from religious leaders and community figures are in line with TPB's supposition that the degree to which one perceives peer pressure or social desirability to perform (or not perform) a behavior significantly shapes intentions (Ajzen, 1991). Thus, the TPB framework underscores the importance of shaping positive attitudes, leveraging community and religious leaders to influence subjective norms, and enhancing perceived behavioral control through clear information and supportive logistics, such as flexible donation hours and culturally sensitive settings.

5.10.2 Limitations of TPB for this study

While TPB has been instrumental in understanding intentions to donate blood, its application in culturally and religiously specific contexts, such as among Muslim migrants, presents significant limitations.

In Muslim societies, health-seeking and promoting behaviors such as blood donation are commonly made collectively by families or communities. And are often deeply connected to Islamic teachings, cultural customs, and community expectations that go beyond individual intentions and perceptions. The TPB's focus on individuals and non-cultural orientation may have oversimplified the impact of religious beliefs on health behaviors (Batcup et al., 2024). The emphasis on individual decision-making within the TPB might not adequately address this aspect of health behavior.

A substantial limitation of TPB is that it characterizes subjective norms as relatively stable constructs (Elkins, 2022). The results of the current study suggest that such norms are both fluid (intergenerational) and deeply rooted in the changing cultural and religious beliefs throughout the process of acculturation and the arrival of new generations. For instance, while the TPB can accommodate religious norms affecting blood donation behavior, it may not accurately reflect how these norms interact with specific fears, such as concerns about taking blood from non-Muslims or fears of contamination. These culturally particular anxieties, which have a significant impact on behavior, are not adequately reflected in the broad attitudes that the TPB usually emphasizes (Gahan et al., 2022).

The study findings revealed the gendered and family dynamics that significantly shape blood donation behavior among Muslim migrants. The TPB framework considers perceived behavioral control as an individual construct, whereas, for the Muslim migrant participants in the current study, it was seen to be shaped by multi-layered family and cultural aspects, particularly for women participants (Govere & Govere, 2016). Additionally, the TPB only partially captures the broader social–environmental factors for the study population (e.g., access to blood donation centers, knowledge about how donations can be made, and culturally sensitive health promotion efforts) that are crucial in shaping people's perceptions of control.

Furthermore, the TPB framework is limited in its ability to explain acculturation and assimilation into the host nation's healthcare system (Polonsky et al., 2018a). The research also showed that second-generation migrants, who were more included in Kiwi society, were more likely to engage in blood donation. This finding implies that

acculturation to the normative behaviors of one's country may indeed affect blood donation behavior. This formulation explicitly specifies how cultural adaptation and the integration of home/host country norms may impact behavioral intentions and actions, which are not listed in TPB (Polonsky et al., 2018b).

One of the most significant weaknesses of the Theory of Planned Behavior (TPB) is that it does not clearly distinguish between intrinsic motivation (doing something because one wants to) and extrinsic motivation (doing something because of external pressure or rewards) (Ramos, 2024). TPB focuses mainly on how people form intentions based on their attitudes, social norms, and perceived control, but it does not deeply explore why they feel personally motivated or pressured to act. (While TPB acknowledges social influences through subjective norms, it does not deeply examine the psychological reasons behind motivation, whether it comes from internal satisfaction (intrinsic) or external rewards/pressure (extrinsic). This is where motivation-based theories like Self-Determination Theory (SDT) (Deci & Ryan, 2000) can complement TPB by clarifying whether people donate because they want to or because they feel they have to.

The TPB is primarily generated in Western research contexts and is frequently applied to European populations, yet it lacks an understanding of the multiple intersecting cultural and religious nuances that may determine how decisions are made among Muslim migrant communities. For example, the Theory of Planned Behavior (TPB) may not fully explain how emotions, spirituality, and religious beliefs—especially in the context of Islamic values—affect blood donation decisions, suggesting a gap for more complex models. A more comprehensive model would examine how acculturation shapes traditional Islamic health beliefs and practices, influencing behaviors like blood donation. For instance, a Muslim immigrant in a Western country may initially avoid donating due to religious concerns but later embrace it upon seeing religious leaders endorse the practice or feeling social encouragement from their new community. The TPB framework could include these external influences (Liu & Han, 2023). Such a criticism highlights the need to adapt or expand theoretical models to accommodate diverse non-western populations.

5.11 Summary

This chapter has contextualized the qualitative research findings related to blood donation knowledge, attitudes, beliefs, and practices among Muslim migrants in New Zealand within the broader literature. The primary objective of this chapter was to explain the findings, identify similarities and discrepancies, and discuss how existing theories, such as the TPB, explain blood donation behaviors in this community. From comparing the insights from focus groups with existing research, it is evident that different cultural, religious, and social dynamics uniquely influence Muslim migrants.

This chapter addressed the first two research questions and helped identify the critical information needed for a population-based questionnaire. The findings underscored the importance of understanding religious and cultural dynamics when analyzing blood donation behavior among Muslim migrants. This requires an understanding of how cultural, religious, and familial connections impact blood donation decisions for migrant communities, including second-generation migrants, who were more likely to be attuned to the need for blood due to their integration into New Zealand society. A better understanding of these barriers is crucial to the development of targeted strategies for addressing blood donation service delivery and policy development.

Chapter 6 presents the quantitative phase of this mixed-methods study.

Chapter 6: Phase II: Quantitative Study and Mixing of Methods

6.1 Introduction

Following the qualitative insights gained from Phase I, Phase II of this study focuses on selecting and adapting a validated questionnaire to capture the knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation. The transition from qualitative to quantitative methods is crucial for validating and quantifying the themes identified in the focus group discussions, ensuring that the questionnaire developed accurately measures the constructs that emerged during Phase I. This chapter outlines the process of identifying and adapting a relevant questionnaire, utilizing a rigorous methodology that incorporates expert feedback and thematic analysis from the first phase.

Phase II began with a literature review aimed at identifying existing, relevant questionnaires addressing the knowledge, attitudes, beliefs, and behavior of Muslim migrants regarding blood donation in the host country. Given the research process timelines and an in-depth qualitative component that preceded it, the research supervisors advised adapting an existing, validated questionnaire to assess its applicability within the context of Muslim migrants in New Zealand. After reviewing various options, the Polonsky et al (2013) questionnaire was selected due to its high relevance for the present study, its application of the TPB, and its focus on the perspectives of immigrants regarding blood donation behavior.

To ensure the questionnaire was relevant, clear, and appropriate for the Muslim migrants, an expert review panel was recruited. As outlined in Section 3.7 of the methods chapter, the mixed-methods approach involved adapting and analyzing the published questionnaire while developing new, open, and closed-ended questions derived from focus group findings of Phase I. The expert reviewers used a questionnaire review tool (see Appendix K) to assign scores, which were subsequently used to calculate the questionnaire content validity index (CVI). Incorporating the feedback from the expert panel, the questionnaire was refined to enhance its relevance and effectiveness for Muslim migrants in New Zealand.

Additionally, a set of theme-based open-ended and closed-ended questions was developed to address missing information identified during the FGDs to capture more subtle perspectives on the specific beliefs and behaviors of Muslim migrants regarding blood donation and the barriers they faced. Using such a comprehensive approach ensured that the refined questionnaire would be culturally sensitive and aligned with the needs of Muslim migrants, thus making it a more appropriate research tool.

By combining existing validated tools with new, culturally specific questions, this phase addresses the second question, which focuses on identifying critical information for a culturally relevant survey, and the third question, which assesses the validity and reliability of the questionnaire for the target population. The following sections will detail the literature review, the selection and adaptation of the questionnaire, and the integration of the qualitative findings into the final survey instrument, ensuring its relevance and applicability to the Muslim migrant population in New Zealand.

6.2 Objectives of this Phase

1. To conduct a literature review to identify relevant questionnaires that assess the knowledge, attitudes, beliefs, and behavior of Muslim migrants regarding blood donation in the host country.
2. To evaluate the clarity, relevance, and appropriateness of the adopted questionnaire, making certain that it appropriately represents the subject of the study and considers the unique cultural and religious nuances of the intended audience.
3. To evaluate the content validity of the questionnaire so that it is representative of the topic under research.
4. To identify any potential flaws or weaknesses in the questionnaire design, wording, or formatting.

6.3 Development of the Draft Questionnaire Literature Search

A literature search of the PubMed electronic databases and the National Center for Biotechnology Information (NCBI) was carried out in March and April 2023. This search was for tools, methodologies, strategies, and questionnaires that assess the knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation. This

search used the following search terms based on the study's research questions: 'blood donation behavior' OR 'blood donation attitude amongst migrants' OR 'migrant communities and blood donation' OR 'Muslims and blood donation' OR 'Muslim community in New Zealand' AND 'questionnaire' OR 'survey' OR 'blood donation surveys'; and with the terms 'knowledge', 'attitude', 'practice', 'behavior', and 'beliefs' used for each database search. After consultation with the supervisors, ResearchGate was also searched to look for questionnaires specifically.

6.3.1 Inclusion criteria

The inclusion criteria limited results to those references in English related to the topic at hand. As an example, articles that applied the TPB and/or assessed knowledge, attitude, and practice were included. In addition to being available in full text, these articles also included beliefs about blood donation and blood donation practices among migrants. They also presented a tool for assessing the topic of interest.

6.3.2 Exclusion criteria

References specific to the non-Muslim community, organ donation behavior/practice, health issues about children, gender, careers, or any other area of health were excluded. Additionally, irrelevant references, inaccessible resources, or tools not pre-tested before use were excluded.

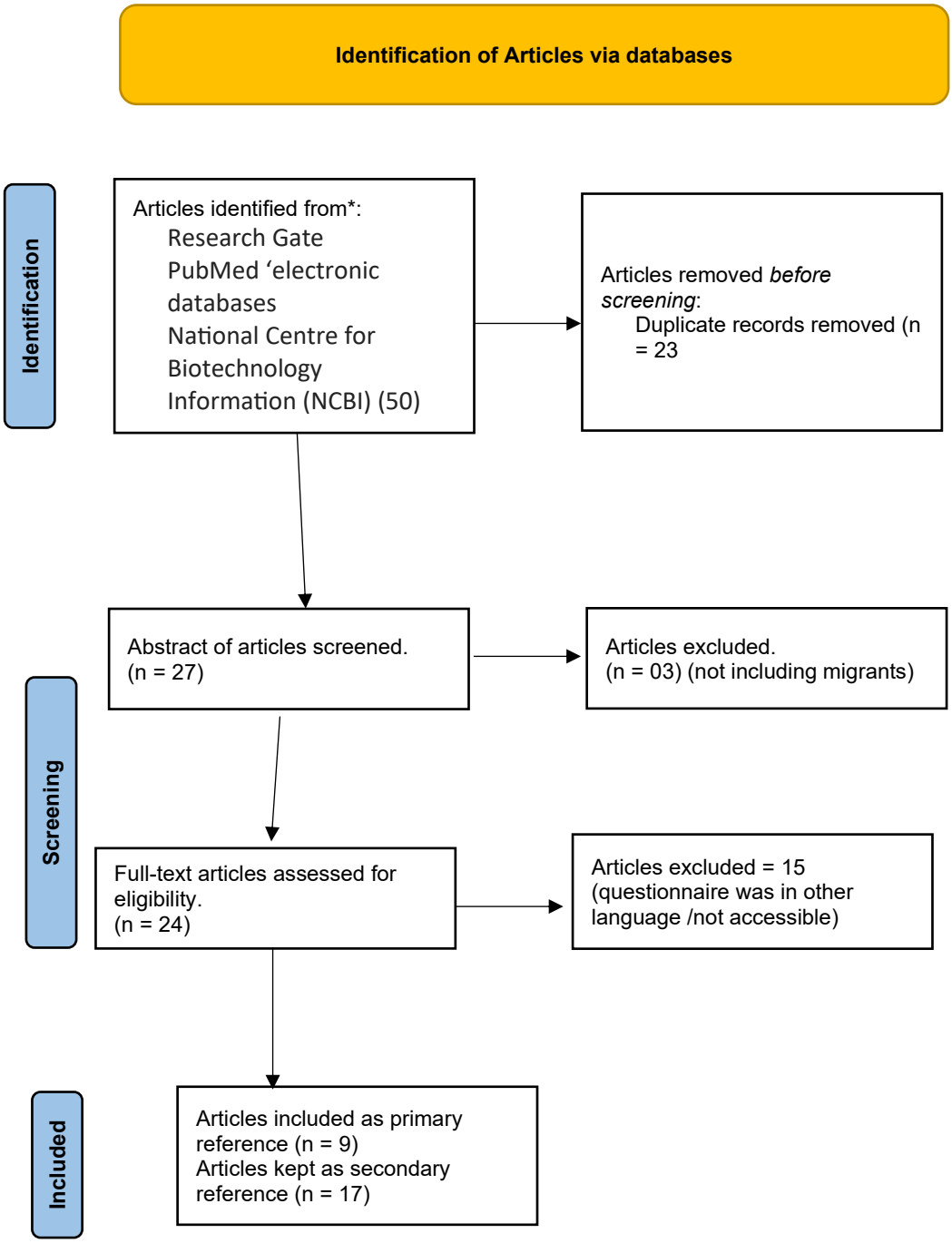
6.4 Search Results

This analysis encompassed assessing the tools, methodology, strategy, and reliability of the questionnaires employed in the articles, thereby ensuring a comprehensive evaluation of their quality and suitability for the research. According to the criteria, nine references were included; the decisions were cross-referenced with the supervisor's decisions for a consensus on the suitability of the questionnaires before the expert panel review. The results obtained from the initial search were subjected to a screening process based on the predefined inclusion and exclusion criteria noted above. This screening involved reading the abstract of each reference to assess its relevance to the study's topic and objectives. Inclusion-criteria-compliant references were then selected for further analysis. Subsequently, the full content of these selected references, known as the primary references, was obtained for a comprehensive review. To ensure a

comprehensive search had been conducted, a review of the reference lists of the primary articles was conducted to identify any additional relevant sources that had not initially been considered. Any found to be appropriate and applicable to the research were obtained and used as hand-searched references in the study. This systematic approach aimed to incorporate literature viewed as most suitable and pertinent to support the research findings. The selected articles were subjected to meticulous analysis to ascertain their relevance to the current study. They underwent further examination to evaluate their strengths, weaknesses, and alignment with the study's specific requirements.

The PRISMA flowchart illustrates the study flow and the inclusion and exclusion of studies and ensuring a transparent overview of the comprehensive review process. Its flexibility allowed contextual information to be provided and specific aspects of the review process to be clarified, while still utilizing the standard headings and captions within the main flowchart for consistency (Rethlefsen & Page, 2022).

Figure 5
Flow chart of the search return and the process of including and excluding articles (Moher, 2009)



6.5 Draft Questionnaire

Drawing from the existing literature and theoretical framework, this study provided a robust foundation for developing a culturally relevant questionnaire that can assess

Muslim migrants' knowledge, attitudes, beliefs, and behaviors surrounding blood donation. This questionnaire has two parts. Part A (Appendix L) of this questionnaire is adapted from Polonsky et al. (2013), the questionnaire "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees' questionnaire, which is an already-published instrument that has been utilized in previous studies. It has been selected through a comprehensive literature review, highlighting the importance of culturally relevant tools in health behavior research. The second section of the questionnaire (Part B) is formulated based on the analysis of the data collected from FGDs in Phase I (Appendix M).

Hyman et al. (2006) stated that utilizing questions from previous surveys is entirely acceptable and offers notable advantages in new research. This approach of 'recycling' questions eliminates the need to start from scratch and reinvent existing measures. Moreover, since these questions have already undergone testing, researchers can reasonably rely on their methodological robustness. This prior testing ensures that the questions are effective in accurately measuring the specific constructs related to the study, such as knowledge, attitudes, beliefs, and behaviors about blood donation. The methodological approach employed in developing the questionnaire for this study has been widely utilized in numerous previous studies, indicating its established effectiveness and suitability (Tidbury et al., 2021).

The authors of the studies listed in Table 4, below, were contacted by email with a formal request to provide the questionnaire employed in their respective studies.

Table 4
Authors contacted for using questionnaires in blood donation studies

	Title of the Research	Author	Population Origin	Country under Study
1	African culturally and linguistically diverse communities' blood donation intentions in Australia: integrating knowledge into the theory of planned behavior	Michael Jay Polonsky (Polonsky et al., 2013)	African communities from Central Africa, Eastern Africa, Western Africa, and Southern Africa	Australia

2	A comparison of the knowledge, attitude, practice, and motivation toward blood donation among Albanian, Saudi, and Turkish citizens	Mateq Ali Alreshidi, Idris Sula (Alreshidi & Sula, 2022)	Natives (Muslims) of Albania, Saudi Arabia, Turkey	Albania, Saudi Arabia, Turkey
3	Knowledge, attitudes, and motivations towards blood donation among King Abdulaziz Medical City population	Najd Alfouzan (Alfouzan, 2014)	Natives (Muslims) of Saudi Arabia	Kingdom of Saudi Arabia
4	Knowledge, attitude and practices towards blood donation in Pakistan: A nationwide survey	Usman Waheed, Muneeba Azmat, Hasan Abbas Zaheer (Waheed et al., 2015)	Natives (Muslims) of Pakistan	Islamic Republic of Pakistan
5	Knowledge, attitude and beliefs of people in North India regarding blood donation	Anju Dubey, Atul Sonker, Rahul Chaurasia, Rajendra Chaudhary (Dubey et al., 2014)	Natives of India	India
6	Knowledge, attitude, and practice towards blood donation among residential students and teachers of religious institutions in Bangladesh – A cross-sectional study	Mohammad Sorowar Hossain, Md. Hasanul Banna Siam, Mohammad Nayeem Hasan, Rifat Jahan, Mahbubul H. Siddiqee (Hossain et al., 2022)	Natives (Muslims)	Bangladesh
7	Knowledge, attitude and practice regarding blood donation among graduating undergraduate health science students at the University of Gondar, Northwest Ethiopia (2018)	Mulugeta Melku, Fikir Asrie, Elias Shiferaw, Berhanu Woldu, Yalelet Yihunew, Daniel Asmelash, Bamlaku Enawgaw (Melku et al., 2018)	Natives	Ethiopia
8	Motivators, facilitators, and barriers to blood donation in Australia by people from ethnic minority groups: Perspectives of sub-Saharan African, East/South-East Asian, and Melanesian/Polynesian blood donors	Luke Gahan, Barbara Masser, and Tanya Davison (Gahan et al., 2021)	sub-Saharan African, East/South-East Asian, and Melanesian/ Polynesian	Australia
9	Knowledge, attitudes, and motivations towards blood donation among King Abdul-Aziz Medical City population.	Karobi das (Karobi, 2014)	Natives	India

6.5.1 Questionnaire No. 1

The questionnaire was adopted from the study: "African culturally and linguistically diverse communities' blood donation intentions in Australia: Integrating knowledge into the Theory of Planned Behavior".

This research was conducted by Polonsky et al. (2013) to investigate the applicability of the TPB in an Australian community with a mixed culture and language. Additionally, a potential antecedent to the model is knowledge about blood donation. This is important because the TPB assumes that individuals do not donate blood without making an informed decision. In previous studies, the TPB has been used extensively to assess community donation intentions. The four constructs of the TPB were based on measures that had been previously validated in the context of blood donation literature. The author was contacted to gain access to the statistical scores. Polonsky confirmed that the questionnaire demonstrated sound reliability and validity and has been employed in several other studies. Notably, it has been utilized in:

- Renzaho, A. M., & Polonsky, M. J. (2012). Examining demographic and socioeconomic correlates of accurate knowledge about blood donation among African migrants in Australia. *Transfusion Medicine, 22*(5), 321-331.
- Polonsky, M. J., Ferdous, A. S., Renzaho, A. M. N., Waters, N., & McQuilten, Z. (2018). Factors leading to health care exclusion among African refugees in Australia: The case of blood donation. *Journal of Public Policy & Marketing, 37*(2), 306-326.
- Francis, K. L., Polonsky, M. J., Jones, S. C., & Renzaho, A. M. N. (2017). The effects of a culturally tailored campaign to increase blood donation knowledge, attitudes, and intentions among African migrants in two Australian States: Victoria and South Australia. *PLoS One, 12*(11), e0188765.

These precedents underscore the questionnaire's robust application across diverse migrant populations. Results showed that those who have had positive experiences and attitudes about blood donation responded more positively to calls for donation because they felt safe and intended to donate. Moral reasons and personal recognition were found as persuasive factors for many donors, with intrinsic rewards and social

recognition playing a greater role in motivating them. Donor loyalty is significantly enhanced when donors experience a satisfying donation experience, as opposed to obstacles such as medical complaints and cold treatment. According to the study, both intrinsic and extrinsic motivations must be considered when recruiting and retaining blood donors in culturally diverse populations.

Table 5

Details about the questionnaire, Scores/statistics for reliability and validity

Aspect	Description
Purpose	Explore blood donation beliefs, knowledge, and barriers among CALD African migrants/refugees in Australia, which were identified in a range of interviews and focus groups
Total Number of Items	Approx. 60+ items
Rating Scale	7-point Likert scale and semantic differentials True/False/Don't Know format for knowledge questions
Knowledge Scale Reliability	KR-20 = 0.78 (acceptable)
TPB Constructs Reliability	Cronbach's Alpha ≥ 0.70 (good internal consistency)
Validity	Face, content, convergent, and discriminant validity confirmed through expert review and factor analysis
Language Administration	Administered by bilingual interviewers in participants' preferred languages

Adapted from (Polonsky et al., 2013).

Table 6
Demographic profile of the participants, questionnaire no. 1

Total Participants	425
Male	239 (56.2%)
Female	186 (43.8%)
Ethnicity	African communities from Central Africa, Eastern Africa, Western Africa, and Southern Africa
Age	16+
Residency Status	Immigrants/refugees
Country under Study	Australia

6.5.1.1 Strengths

The questionnaire offers a solid starting point for examining migrant knowledge, practices, and behaviors around blood donation, though its applicability to different migrant populations may require further exploration.

Exploration of immigrants' perspectives: The questionnaire explores the perspectives of immigrants regarding blood donation practices in their host country, which is crucial for understanding migrant experiences and challenges.

Utilization of a Likert scale: Respondents were provided with a seven-point Likert scale, offering a structured and quantifiable method for measuring attitudes, opinions, or beliefs. This allows for efficient measurement and analysis of their responses.

Critical exploration of challenges faced by immigrants: The questionnaire investigates the challenges faced by immigrants, including discrimination, non-inclusion, and feeling alienated. This comprehensive exploration provides valuable insights into the barriers and demotivating factors experienced by the respondents.

Examination of respondents' knowledge: The questionnaire investigates the respondents' general knowledge related to blood donation, including eligibility criteria, disease transfusion risks, and basic information about blood physiology. This helps assess their understanding and awareness of blood donation practices.

Assessment of satisfaction with the healthcare system: The questionnaire measures respondents' satisfaction with the healthcare system of the host country, providing insights into their preferences and experiences in accessing healthcare services.

6.5.1.2 Weaknesses

Lack of in-depth exploration of religion: The questionnaire does not thoroughly explore the influence of religion on blood donation behavior, which is an important factor to consider, especially among Muslim migrants.

Limited exploration of blood banks and organizations: The questionnaire does not address the involvement of blood banks or other blood bank organizations in the

donation process, which could provide valuable insights into the influence of these institutions on donation behavior.

Absence of gender impact: The questionnaire does not specifically investigate the impact of gender on blood donation practices, which could be a significant factor in understanding donation behaviors and patterns.

Lengthy questionnaire: The questionnaire is quite lengthy, which may pose challenges for respondents, particularly in an unmotivated environment. Long questionnaires can lead to respondent fatigue and potentially impact data quality.

The questionnaire used in this survey is highly relevant to the current study due to its application of the TPB and its focus on the perspectives of immigrants regarding blood donation behavior. It effectively addresses issues such as inclusion challenges, racism, cultural disparities, and healthcare system differences between host and home countries. While the questionnaire does not extensively explore the religious perspective, it aligns closely with the objectives of the current study. The provision of a Likert scale facilitates quick responses and enables data quantification, backing a thorough understanding of the research subject.

6.5.2 Questionnaire No. 2

"A comparison of the knowledge, attitude, practice, and motivation toward blood donation among Albanian, Saudi, and Turkish citizens."

A survey was conducted by Alreshidi and Sula (2022) to explore the impact of diverse cultural backgrounds, economies, and geographies on the attitudes toward blood donation in Albania, the Kingdom of Saudi Arabia, and Turkey. The primary objective of the survey was to gain insights and identify the following:

- How each country's cultural background, economy, and geography influence their respective populations' attitudes towards blood donation.
- Factors influencing blood donation and reasons that hinder people from donating blood.
- People's behavior and approach regarding donating blood.
- The difference in the level of knowledge between blood donors and non-donors

- Misconceptions related to blood donation.

Method: Social media platforms were used to distribute self-administered questionnaires automatically collected using Google Forms. The respondents demonstrated whether they agreed or disagreed with each statement using the Likert scale.

Table 7
Demographic profile of the participants, questionnaire no. 2

Total Participants	1281
Gender	N/A
Ethnicity	Albanian (858), Saudi Arabian (273), Turkish (90)
Religion	Islam
Age	16+
Residency Status	Natives of their respective countries
Country under Study	Albania, Kingdom of Saudi Arabia, Turkey

6.5.2.1 Strengths

- It saves time by providing multiple options to answer the questions, enabling the respondent to quickly select the appropriate answer.
- It also provides a Likert Scale with a few questions for a structured and quantifiable way to measure results.
- It investigates the behavior and knowledge of people from the same religion, Islam, but with diverse cultural and linguistic backgrounds.
- A look at the general eligibility criteria for blood donors as well as the health risks associated with it, is provided in this article.
- It investigates the general perception of monetary compensation for blood donation.
- The respondents belonged to different age brackets, ranging from over 16 to 60+ years of age, providing diverse perspectives from multiple generations.

6.5.2.2 Weaknesses

- The study focused on native respondents from their respective countries of residence, thus limiting the exploration of immigrants' perceptions, behaviors, and attitudes toward blood donation practices.

- Family members and individuals were not found to influence blood donation decisions in this study.
- Gender and racial discrimination in blood donation behavior were not explored in the study.
- Scores/ statistics for reliability and validity were not available from the author.

6.5.2.3 Relevance to the current study

This questionnaire is very important and valuable as it predominantly consisted of Muslim respondents hailing from three distinct countries and cultures, thereby offering a unique religious perspective. Furthermore, the inclusion of a Likert scale in the questionnaire enhanced the ease of response for participants.

However, it should be noted that since these respondents were native citizens of their respective countries, the migrant perspective was not fully represented in this study.

6.5.3 Questionnaire No. 3

"Knowledge, attitudes, and motivations towards blood donation among King Abdul-Aziz Medical City population."

The study was carried out by Alfouzan (2014) in King Abdul-Aziz Medical City and two primary care health centres in Riyadh, Saudi Arabia. Researchers aimed to examine how Saudis think about blood donation, their attitudes, and their motivations.

Method and analysis: A convenient non-random sampling technique was used for selecting participants who were at least 16 years old for this cross-sectional study. Data entry and quantitative analysis were conducted using SPSS (Statistical Package for Social Sciences) version 20.

Table 8
Demographic profile of the participants, questionnaire no. 3

Total Participants	349
Male	46.1%
Female	53.9%
Religion	Islam
Ethnicity	Arabian
Age	<20 to >50
Residency Status	Native citizens
Country under Study	Kingdom of Saudi Arabia

Several areas were covered in the self-created questionnaire, including demographic data, knowledge, attitude, practice, and reasons for not donating blood.

6.5.3.1 Strengths

- It assesses knowledge regarding blood banks.
- It was conducted in a conservative Muslim society and specifically investigates the religious perspective on blood donation behavior.
- It explores knowledge about the general eligibility criteria of blood donors.
- The reliability of the knowledge scale was shown by a Cronbach's alpha score of 0.81. The Cronbach's alpha value for the attitude scale was 0.85, indicating even more strong dependability for the instrument utilized in this investigation.

6.5.3.2 Weaknesses

- To assess knowledge about the minimum required interval between two donations, respondents were provided with options containing exact figures to choose from. However, the correct answer, which is three months, was not included among the options.
- Similarly, when investigating whether respondents were aware of their blood types or not, the options did not include a complete range of blood types.
- The study was conducted exclusively with native citizens of their respective countries, limiting the exploration of perspectives from immigrants.
- It does not explore the influence of family members or other individuals on blood donation behavior.
- It does not assess the role of gender in blood donation behavior.

6.5.3.3 Relevance to the current study

This questionnaire provided a valuable set of questions to get insights from Muslim participants. Importantly, all the respondents of this survey belonged to the same ethnic background and were native citizens. Consequently, the survey lacked the inclusion of diverse cultures, ethnicities, and the migrant perspective. Furthermore, several crucial items were missing from this survey, such as the exploration of family consent, the availability of correct answer options, and the comprehensive inclusion of the complete

range of blood groups in the questions put to the respondents. These limitations highlight the need for further research to address these important areas in the present study.

6.5.4 Questionnaire No. 4

"Knowledge, attitude, and practices of blood donors toward blood donation."

This descriptive study was conducted in India by Karobi (2014) to assess the knowledge and attitudes of blood donors and find out how knowledge and attitudes are related to selected demographics. The research employed a descriptive non-experimental survey approach. The researcher selected 60 blood donors using a purposive sampling technique.

Method: A detailed questionnaire on knowledge and expressed practices, using a Likert scale, was developed. In this study, paper and pencil were used for the "practice" section which gives full autonomy to the participants of the study. Statistics were used to analyze collected data both descriptively and inferentially.

Table 9
Demographic profile of the participants, questionnaire no. 4

Total Participants	60
Male	59
Female	1
Ethnicity	North Indians
Age	18-57
Residency Status	Native citizens
Country under Study	India

6.5.4.1 Strengths

- This questionnaire includes a broader range of questions about the fundamental knowledge of blood donation behavior, making it a valuable tool for gathering more comprehensive information.
- The questions regarding participants' attitudes toward blood donation in this questionnaire differ from others and have the potential to provide more insightful knowledge about their attitudes.

6.5.4.2 Weaknesses

- The use of paper and pencil techniques in the practice section can be time-consuming and may lead to inefficiencies for participants when filling out the form, particularly in unmotivated environments where writing can be challenging.
- It does not assess the impact of religion or culture on the decision-making process by the donor.
- This study does not explore the influence of family member(s) or any other individual.
- It does not comprehensively explore the barriers or demotivating factors.
- It did not explicitly mention specific reliability and validity scores. However, according to the author, the questionnaire was constructed and content validated before usage.

6.5.4.3 Relevance to the current study

This questionnaire provides a different set of questions for the current study. It is important to accept its limitations. The inclusion of the paper and pencil technique to allow for more detailed responses may have made it less efficient and challenging for respondents to fill out on time. Additionally, the questionnaire falls short of adequately addressing some aspects that are crucial for our study such as the migrant perspective, religious considerations, diverse cultural influences, the role of family, and other common barriers and demotivating factors.

6.5.5 Questionnaire No. 5

"Knowledge, attitude, and practices towards blood donation in Pakistan: A nationwide survey."

A descriptive study was conducted in Pakistan to evaluate the level of knowledge, attitudes, and practices related to blood donation, as well as to identify the factors that influence individuals' decision to donate or not (Waheed et al., 2015). This study also focused on understanding the motivations and misconceptions of potential donors (specifically young populations) regarding transfusion practices, considering the respective social and cultural context.

Materials and methods: The study was cross-sectional and descriptive amongst young undergraduates between the ages of 18-25. This study utilized a robust multi-stage random cluster sampling methodology, which ensured a representative sample from diverse regions and institutions, including colleges, universities, and reputable organizations. The total number of forms collected was 3,000, and a random selection of donors and non-donors was included.

The study was generalized by including university-based blood organizations, the Armed Forces Institute of Transfusion (AFIT), and the Pakistan Red Crescent Society (PRCS). The questionnaire consisted of 30 closed-ended multiple-choice questions divided into four topics (socio-demographic characteristics, knowledge, attitudes, and practices), with each section containing multiple options. For statistical analysis, SPSS software version 17 was used. The questions related to the knowledge, attitude, and practice sections were analyzed separately from each other.

Table 10
Demographic profile of the participants, questionnaire no. 5

Total Participants	3000
Male	70%
Female	30%
Ethnicity	Punjabi, Pathan, Sindhi, Siraiki, Muhajjir, Kashmiri, Balochi
Religion	Islam
Age	18-25
Residency Status	Native citizens
Country under Study	Pakistan

6.5.5.1 Strengths

- The questionnaire comprehensively evaluated knowledge, attitudes, and practices related to blood donation. It also identified the factors influencing both donor and non-donor behavior, which is directly relevant to the study's objectives.
- The questionnaire effectively explored the influence of family members or other individuals on the donor's decision to donate blood.
- As a point of interest, while the majority of participants in the study were Muslims, religion itself was not the primary focus. However, this demographic

composition still delivers valuable understandings of the beliefs, and faith of Muslims regarding blood donation practices, offering a clear and specific perspective. Open-ended questions may enhance the questionnaire's effectiveness, regardless of whether they are addressed.

- The inclusion of structured questions and the option to answer them with or without addressing the open-ended questions may enhance the efficiency of the questionnaire.

6.5.5.2 Weaknesses

The participants in the study were students aged 18 to 25 years. As a result, the findings offer a limited perspective within a specific age group, and the participants may not have had extensive experiences to share.

- The questionnaire does not explore personal fears, such as the fear of needles, fear of losing blood, fear of fainting, and fear of infection from transfusion. It fails to address demotivating barriers, including the inaccessibility of blood donation facilities.
- It does not explore the migrants' perspective and their potential issues in blood donation practice.
- It does not assess the participants' knowledge of blood physiology, nor does it ascertain knowledge about general eligibility criteria for blood donation.
- It does not explicitly report reliability and validity scores within the document. However, it mentions the use of a pre-tested questionnaire with 30 questions
- Due to the study being conducted in Pakistan with native participants, who are predominantly Muslims, it does not thoroughly investigate the following factors:
    - Impact of cultural differences on blood donation practices.
    - Differences in the quality of healthcare services between the host country and participants' home countries.
    - Fear among participants of receiving blood from non-Muslim donors.

6.5.5.3 Relevance to the current study

Although religion was not the primary focus of the study, as the survey was conducted in Pakistan, with a predominantly Muslim majority, it naturally reflects a Muslim

perspective. Moreover, the questionnaire did consider the diverse ethnic backgrounds of the respondents.

On the other hand, the questionnaire has some limitations. It lacks several essential questions that are crucial for the current study. For instance, it does not address important aspects such as the fear associated with blood donation, the perspective of migrants, knowledge about general eligibility criteria, understanding of blood physiology, and demotivating factors. It is also important to note that the study does not account for the differences in literacy rates across different regions of the country, which could negatively impact its generalizability. According to the authors, the research did not analyze in depth how religion and blood transfusion practices interact in a predominantly Muslim country like Pakistan. Although the questionnaire is well-designed overall, it does not contribute significantly to the current study due to these missing elements.

6.6 Approach to Obtaining Permission to Use the Questionnaire

Of the nine first authors contacted via email (during March-April 2023) to request a copy of their questionnaire (Woolf & Edwards, 2021), two authors did not respond. One questionnaire received was in Hindi, and an English version was not available. One author responded positively; however, their study was qualitative, rendering the questionnaire inapplicable to our study. On a positive note, five authors willingly shared their questionnaires (between March and April 2023). Additionally, permission was sought from these authors to utilize their questionnaire in the present study. However, for the present research, I have selectively incorporated questions for Part A of the questionnaire (Appendix L) derived from Polonsky et al.'s survey "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees questionnaire" (Polonsky et al., 2013) as it directly aligns with our specific research objective to evaluate the knowledge, attitudes, beliefs, and behavior of the migrant population regarding blood donation.

Upon inquiry, as stated above in section 6.5.1, the primary author, Polonsky, confirmed that the questionnaire has been used in various studies, and the content validity and reliability of the data have already been assessed, as mentioned above. The supervision

team and I carefully discussed, selected, and adapted the questions that fit with the present study's aims and directly addressed the research objectives. This involved the exclusion of any questions that did not directly pertain to the study objective from the analysis. (The author has granted permission to alter the questions accordingly (Appendix U). With the help of my supervisors, a search for repetition was conducted within each section of the draft questionnaire, and it was amended (permission taken from the author).

Although many of the questions were deemed pertinent to our present investigation. However, it became evident that certain facets of Muslim faith, culture, and gender identity were absent from Polonsky's questionnaire. Consequently, informed by the thematic analysis from Phase I, a discrete set of 10 questions was formulated to constitute a distinct section, denominated Part B of the questionnaire, to address these specific domains. Part B (Appendix M) constitutes open-ended and closed-ended questions aimed at exploring the specific cultural, religious, and social factors influencing blood donation among Muslim migrants in NZ. Both Part A and Part B of the questionnaire underwent expert validation to ensure their clarity, relevance, and appropriateness for Muslim migrants.

Following consultation with the study supervisors, the questionnaire format was finalized at the Auckland University of Technology (AUT).

6.7 Survey Part B: Development of Questions, Justification, and Explanation

The quantitative questionnaire is composed of two distinct segments, Part A and Part B. Part A encompasses questions from Polonsky's survey named "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees questionnaire." (Polonsky et al., 2013) many of which were deemed pertinent to our present investigation. Part B consists of 10 questions derived from the FGDs' findings to be elaborated on in the next section.

6.7.1 The mixing of methods: Developing open-ended questions from Phase I findings

It became evident that certain facets of Muslim faith, culture, and gender identity were absent from Polonsky et al. (2013) questionnaire. Consequently, informed by the thematic analysis in Phase I, a discrete set of 10 questions was formulated to constitute a distinct section as Part B of the questionnaire, to address these specific domains.

The cumulative set of 10 questions within Part B was meticulously structured to address themes pertinent to blood donation that emerged from the FGDs. Two questions were included to gauge the perceived significance of knowledge about blood donation. A further two questions were devised to delve into the attitudes of respondents concerning the weighing-up of risks and benefits associated with blood donation. Additionally, three questions were dedicated to comprehending how participants perceived the role of blood banks within the context of blood donation. Furthermore, two questions were incorporated to explore the impact of acculturation in a new society and system, particularly in the context of blood donation behaviors. Lastly, one question was specifically dedicated to investigating the influence of gender, familial, and cultural dynamics on blood donation practices. Each of these questions was thoughtfully selected to align with the pertinent thematic areas, and an explanation of the rationale for the inclusion of each question is provided below.

Question 1: How do you think that people's beliefs impact their decision to donate blood?

Explanation/justification for Question 1, Part B: In an exploration of the theme "The Importance of knowledge for blood donation," valuable insights were gained on how belief systems significantly influence the decision-making process of Muslim migrants when it comes to blood donation. The discussions revealed that participants in the FGDs strongly linked their understanding of the importance of blood donation to their religious belief in the sanctity of saving human lives. Given the significance of this finding, it was deemed essential to collect responses from a larger sample of respondents in our quantitative survey to strengthen the reliability of the findings.

Question 2: How can the community be educated about the importance of blood donation in Islam?

Explanation/justification for Question 2, Part B: As discussed in the above paragraph, the role of Islamic teachings in imparting knowledge about the significance of blood donation was highlighted. Consequently, it was imperative to delve deeper into how these teachings could be harnessed to educate and motivate the community to participate in blood donation. Collecting responses from a broader range of participants would aid in a comprehensive analysis of the knowledge and recommendations regarding the utilization of faith-based preaching to promote and enhance blood donation among Muslim migrants.

Question 3: Describe any concerns you might have about the acceptance of blood from a non-Muslim donor/smoker/drug/alcohol addict.

Question 4: Provide answers to the following questions regarding the scenario of receiving blood. ***Please answer Yes or No. You would be concerned about receiving blood from: a. non-Muslim donor b. Alcohol consumer c. Drug addict d. Smoker e. Others, professional donors, persons with known illness (please specify).***

Explanation/justification for Questions 3 and 4, Part B: The findings within the theme of "Weighing up Risks and Benefits Related to Blood Donation" emphasize the concerns of Muslim migrants regarding their engagement in blood donation activities within non-Muslim societies. This concern is particularly evident when it comes to the possibility of receiving blood from non-Muslim donors. Therefore, it is both crucial and intriguing to gather more input from Muslim migrants regarding their perspectives on this matter in a quantitative survey. This will provide more data to combine with the responses received in the qualitative phase. Question 3 is designed to bring out participants' concerns, while Question 4 is intended to shed light on their actual practices and viewpoints in this regard.

Question 5: How can blood donation services improve accessibility for Muslim migrants?

Question 6: Describe strategies to incentivize Muslim donors to donate blood at a blood bank.

Question 7: One of the strategies suggested is to have separate Muslim blood banks to help encourage more Muslim donors. Describe your thoughts on this suggestion.

Explanation/justification for Questions 5, 6, and 7, Part B: The findings from the FGDs shed light on how distance to blood donation points/centres and related commuting challenges discourage Muslim migrants from participating in blood donation. Some participants even suggested that mobile blood donation drives could potentially address this issue. These findings suggest that further exploration of this issue is necessary, therefore, Questions 5 and 6 are included in gathering data from a more extensive group of individual Muslim migrants.

The literature review in Chapter 2 highlighted the lack of any specific studies that have explored the opinions of Muslim migrants on the concept of separate blood banks. The feedback received from FGD participants was mixed on this issue. Therefore, Question 7 is included in the survey to gather quantitative data and gain a clearer understanding of this.

Question 8: Describe how healthcare providers and policymakers could promote blood donation among Muslim migrants in New Zealand, considering their unique beliefs and cultural practices.

Question 9: Tell us about your experiences with blood donation services in your native country and host nation, with a brief comparison of similarities and differences between both.

Explanation/justification for Questions 8 and 9, Part B: These two questions specifically focus on Muslim migrants living in New Zealand. During FGDs, participants discussed their past experiences with blood donation in their countries of origin. Therefore, it would be valuable to gather comparative information regarding their experiences in their host country (New Zealand) and their countries of origin. Additionally, firsthand suggestions will be collected to understand how policymakers and healthcare providers

can support Muslim migrants in their blood donation efforts, considering their beliefs and cultural considerations.

Question 10: Among Muslim migrant community members in New Zealand, which cultural and familial factors do you believe influence their blood donation decisions?

Please select all that apply a. Gender b. First or second-generation c. Access to health education d. Language proficiency e. Other (please specify).

Explanation/justification for Question 10, Part B: The findings from the FGDs revealed that gender plays a significant role in the decision-making of Muslim migrants when it comes to blood donation. Typically, males are more inclined to take the lead in donating blood, while females are often perceived as more delicate or less likely to donate. Question 10 is designed to delve deeper into the factors that influence blood donation among Muslim migrants. Elements such as education, familiarity with the host culture, language proficiency, and health status were mentioned in various contexts. Therefore, it is crucial to further investigate and gather quantifiable responses to analyze the gender and cultural dynamics that impact blood donation within this group.

There are 10 questions listed in the table, but Figure 7 refers to the original themes from which they were derived.

Table 11
Development of questions (Part B) and their justification

	Theme	Question developed	Explanation/Justification
1	The Importance of Knowledge for Blood Donation	*1.* How do you think that people's beliefs impact their decision to donate blood?	Participants in the FGDs strongly linked their understanding of the importance of blood donation to their religious belief in the sanctity of saving human lives. Given the significance of this finding, it was deemed essential to collect responses from a larger sample of respondents in our quantitative survey to strengthen the reliability of the findings.
2	Islamic Expectations and Priorities Regarding Blood Donation	*2.* How can the community be educated about the importance of blood donation in Islam*?*	The role of Islamic teachings in imparting knowledge about the significance of blood donation was highlighted. Consequently, it was imperative to delve deeper into how these teachings could be harnessed to

			educate and motivate the community to participate in blood donation. Collecting responses from a broader range of participants would aid in a comprehensive analysis of the knowledge and recommendations regarding the utilization of faith-based preaching to promote and enhance blood donation among Muslim migrants.
3	Weighing Up Risks and Benefits Related to Blood Donation	3. Describe any concerns you might have about the acceptance of blood from a non-Muslim donor/smoker/drug/alcohol addict. 4. Provide answers to the following questions regarding the scenario of receiving blood. Please answer Yes or No. You would be concerned about receiving blood from: a. a non-Muslim donor, b. Alcohol consumer c. Drug addict d. Smoker e. Others, professional donors, persons with known illness (please specify).	The findings within the theme of "Weighing up Risks and Benefits Related to Blood Donation" emphasize the concerns of Muslim migrants regarding their engagement in blood donation activities within non-Muslim societies. This concern is particularly evident when it comes to the possibility of receiving blood from non-Muslim donors. Therefore, it is crucial and intriguing to gather more input from Muslim migrants regarding their perspectives on this matter in a quantitative survey. This will provide more data to combine with the responses received in the qualitative phase. Question 4 is designed to bring out participants' concerns, while Question 5 intends to shed light on their actual practices and viewpoints.
5	The Perceived Role of Blood Banks	5. How can blood donation services improve accessibility for Muslim migrants? 6. Describe strategies to incentivize Muslim donors to donate blood at a blood bank. 7. One of the strategies suggested is to have separate Muslim blood banks to help encourage more Muslim donors. Describe your thoughts on this suggestion.	The findings from the FGDs shed light on how distance and commuting challenges to blood donation points/centers discourage Muslim migrants from participating in blood donation. Some participants even suggested that mobile blood donation drives could address this issue. These findings emphasize the importance of delving deeper into this matter, therefore, Questions 6 and 7 are included in gathering data from a more extensive group of individual Muslim migrants. The literature review in Chapter 2 highlights the lack of any specific studies that have explored the opinions of Muslim migrants on the concept of separate blood banks. The feedback received from FGD participants was mixed on this issue. Therefore, Question 8 is included in the survey to gather quantitative data and better understand this.
6	Acculturation and Country of Origin	8. Describe how healthcare providers and policymakers	These two questions specifically focus on Muslim migrants living in New

	Influences on Blood Donation	could promote blood donation among Muslim migrants in New Zealand, considering their unique beliefs and cultural practices. 9. Tell us about your experiences with blood donation services in your native country and host nation, with a brief comparison of similarities and differences between both.	Zealand. Question 9 is designed to capture the comparative experiences of Muslim migrants between their home and host countries, focusing on how acculturation affects their engagement in blood donation. It aims to identify key differences and similarities, delving deeper into factors such as education, familiarity with the host culture, language proficiency, and health status, all of which were highlighted as influential in various contexts. This understanding will help reveal how adapting to a new society impacts blood donation behaviors among Muslim migrants. Additionally, firsthand suggestions will be collected to understand how policymakers and healthcare providers can support Muslim migrants in their blood donation efforts, considering their beliefs and cultural considerations.
7	Gendered and Familial, Cultural and Social Dynamics Influencing Blood Donation	A10, a Among Muslim migrant community members in New Zealand, which cultural and familial factors do you believe influence their blood donation decisions, please select all that apply a. Gender b. First or second-generation c. Access to health education. Language proficiency e. Other (please specify). b. Describe how access to health education and language proficiency influences the willingness of migrants and their children to participate in blood donation.	The FGDs highlighted that gender significantly influences blood donation decisions among Muslim migrants, with men more likely to donate and women often perceived as less inclined due to cultural and familial expectations. This question aims to explore specific factors such as gender roles, familial influence, access to health education, and cultural norms that affect blood donation practices within this community, seeking to identify the barriers and motivators for both men and women.

6.8 Ethical Considerations

The second phase of the study, which is quantitative, also needed ethical approval. AUTEC approved the recruitment of the expert panel members, and the data collection protocols (including for the expert panel review of the questionnaire). The approval number is 21/381 (see Appendix G). The application underlined a commitment to upholding ethical research practices, including detailed procedures for informed consent, safeguarding participant privacy and confidentiality, and the minimization of

potential risks. These ethical principles are pivotal in respecting the dignity and rights of participants and ensuring that the research is conducted with integrity.

To ensure procedural fairness, the consent form incorporated specific provisions whereby experts were prompted to indicate their preference regarding the disclosure of their identity. Participants were asked to explicitly state whether they wished to maintain the confidentiality of their identity by marking either “Yes” or “No” in response to the statement: “I would like my identity to remain confidential.” Furthermore, individuals who did not require confidentiality were given the option to express their willingness to be acknowledged in any publications as an expert reviewer of the questionnaire by marking either “Yes” or “No” in response to the statement: “Since I don’t require my identity to remain confidential, I would like to be acknowledged in any publications as an expert reviewer of the questionnaire.”

6.9 Expert of Advisory Team

The opinion of experts plays an important role in refining, improving, and potentially modifying necessary elements of the questionnaire (Almanasreh et al., 2019). According to the guidelines proposed by Armstrong et al. (2017), the optimal range for the number of expert reviewers of an instrument is suggested to be between 3 and 20 individuals. To adhere to this recommendation, the study engaged a well-qualified expert team comprising three experts from the local community. To recruit these members, different sources were explored during May–June 2023, including the websites of Muslim associations and referral-based contacts.

A team of three experts with diverse backgrounds in health and blood donation experience was invited to participate in forming an advisory team (see Appendix H for the invitation letter). Each member of the advisory group brought experience of working with Muslim migrants residing in Auckland, New Zealand, covering a range of socio-economic backgrounds, and one of them has been actively involved in blood donation for many years.

To select the experts, their expertise in the research topic and/or their knowledge of Muslim migrant communities in New Zealand was considered. Additionally, they were required to have permanent New Zealand residency or citizenship and proficiency in

reading and speaking English. Each team member was initially contacted through a formal email, followed by a phone call to request their participation in the expert review. Upon their verbal agreement, an electronic copy of the consent form (Appendix I) and participation information sheet (Appendix J) was provided to each member, with a request to send back a signed copy of the consent form. After the receipt of the signed consent forms, the questionnaire (Appendices L and M) and an evaluation form (Appendix K) were sent to the members for the assessment of the validity of the questionnaire. Polite reminders were conveyed through follow-up calls and emails to ensure the timely completion of the evaluation process. It was important to note that their participation in the expert panel was voluntary, and they retained the freedom to withdraw from the panel at any stage of the process. Before signing the consent form, there was ample opportunity for panel members to ask questions about the study, which enabled them to make informed decisions.

See Appendix P for profiles of the members of the expert advisory group.

6.10 Expert Validation Process

An expert validation process was undertaken to determine the experts' view of the content validity of the developing questionnaire and to use the experts' feedback to further improve the questionnaire (Polit & Beck, 2006). Validation requires expertise from various sources, including field experts and individuals with in-depth knowledge of the construct under development, familiarity with the target population, questionnaire users, data analysts, and decision-makers reliant on test scores.

Although well-established, reliable, and validated questionnaires must pass through widely recognized measures of construct validity, criterion validity, and content validity (Fernández-Gómez et al., 2020), yet, there is currently no internationally recognized standard procedure for obtaining validity in the context of health-related measurements, despite the rapidly growing demand for the application of instruments in both clinical and research settings (Fernández-Gómez et al., 2020). To validate the content of a questionnaire through an expert review process, both content validity and expert judgment should be considered in setting up a procedural framework for

implementation, while providing statistical options for data analysis to enable well-informed decision-making.

Experts are usually engaged in both the concept development and item generation phases (Elangovan & Sundaravel, 2021). The expert panel in this study contributed by refining elements of the questionnaire and adjusting them under the research theme to enhance the conceptual coherence of the questionnaire. The researcher requested the expert review panel to evaluate both parts of the study instrument. Concerning Part A, they were asked to examine the questionnaire that had been chosen, for which permission to use was obtained, and to review the questions therein. For Part B, the panel was asked to assess the questions formulated based on the thematic analysis of the data collected from the FGDs. In the item generation phase, the experts validated item clarity, relevance, and content appropriateness. Additionally, experts also examined the questionnaire's ability to evaluate the blood donation practice of Muslim migrant respondents, addressing potential biases and establishing standard or cutoff scores for decision-making. These experts offered valuable information, evidence, assessments, and judgments.

The main purpose of conducting the expert validity review is to ensure the quality and validity of the questionnaire approved for use.

6.11 Use of Expert Panel – Strengths and Limitations

The advantages of validating research tools with an expert panel are primarily in the capacity to draw on the diverse expertise of a variety of professional and community members' backgrounds and specialized skill sets. In the current study, such experts ensure a dynamic and robust questionnaire review process, contributing to the tool's content reliability. This process involved seeking input and feedback from experts in relevant fields (Boateng et al., 2018) in both the concept-creation and item-generating phases, which enabled a conceptually cohesive approach that accorded with the research objectives and the cultural perspectives of the population under investigation (Stahl et al., 2022). By incorporating expert input, this review enhanced the study's validity and addressed potential current issues or deficiencies in the questionnaire.

However, there are some limitations when employing an expert panel. Potential biases could result in an instrument that does not accurately represent the general population if the panel is not diverse or if members have viewpoints that are too similar. The study process may be slowed down by the lengthy procedure of choosing and recruiting panel members. Moreover, the panel's knowledge may not encompass all facets of the study issue, potentially ignoring some cultural intersections, especially in highly heterogeneous social groupings (Serrano-Ripoll et al., 2022).

6.12 Content Validity

An instrument's content validity can be measured by how well it represents the concepts or topics being estimated by the item (checklists, questionnaires, or scales). As the name implies, content validation is ensuring that test items (checklists, questionnaires, or scales) measure the topics they are supposed to measure, as evaluated by experts in the topics. It is a crucial aspect of scale development, analyzing an instrument's ability to accurately represent the concept being measured (Shi et al., 2012, p. 1). Content validation usually takes place either during the initial design phase of questionnaire development or when validating the translation, adjustment, and correction of its use in a different cultural context.

One widely utilized quantitative evaluation method for content validity is the CVI (Rodrigues et al., 2017). It is a measure used to assess the validity of individual items or questions within a questionnaire. It indicates how much consensus there is among experts about an item or all the items (scale) appropriateness, relevance, and clarity. This methodology is widely recognized in the field of instrument development. There are different measures for CVI and these focus on the index of expert consensus on: i) I-CVI – individual items in a questionnaire; ii) scale CVI (S-CVI) for all items in the questionnaire; and iii) S-CVI/UA, the universal agreement that measures the ratio index of items that all experts agree are valid (Polit & Beck, 2006; Rodrigues et al., 2017; Shi et al., 2012). There are different ways to calculate the S-CVI, including the average method (S-CVI/Ave) and the universal agreement method (S-CVI/UA) (Polit & Beck, 2006).

6.12.1 Average CVI

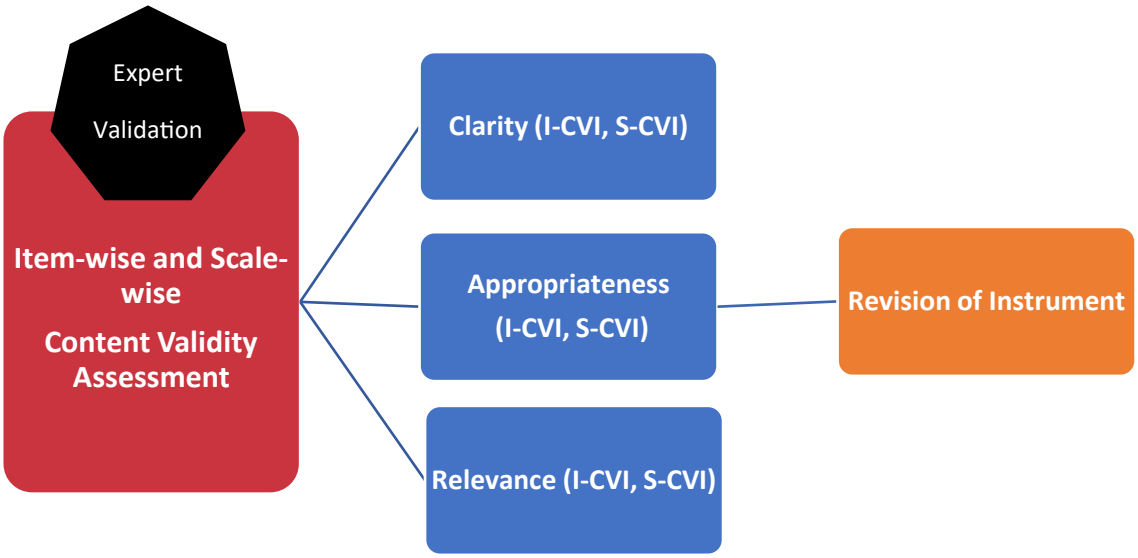
To calculate the S-CVI/Ave, all item I-CVI values are averaged. An I-CVI reflects the percentage of experts who think an item is relevant or essential. For example, an S-CVI/Ave equals 0.8 if 8 out of 10 experts rate an item as relevant. Using the S-CVI/Ave, it is possible to view the overall content validity across all items on the scale.

6.12.2 Universal Agreement CVI

The S-CVI/UA is calculated by determining the proportion of items that achieve a perfect content validity rating (I-CVI = 1.00). In other words, S-CVI/UA assesses whether all experts unanimously agree that certain items are relevant and essential for the construct being measured. S-CVI/UA is a more stringent measure compared to the S-CVI/Ave, and universal agreement between experts is required for each item to be considered relevant and clear (Polit & Beck, 2006). As a result, achieving a high S-CVI/UA score might be challenging.

For this research, the S-CVI/Ave was used because it provides a more lenient approach and allows for some variability in the content validity ratings. This is important when dealing with a larger set of items and when the focus is on overall content validity rather than absolute consensus on each item (Polit & Beck, 2006). According to Shi et al. (2012), it is recommended that a scale has an I-CVI of at least 0.8, an S-CVI of at least 0.8, and a S-CVI of at least 0.9 if content validity is desired.

Figure 6
The steps in assessing content validity (Shrotryia & Dhanda, 2019)



6.13 Questionnaire Review Form

A questionnaire is considered to have excellent content validity if the items meet the Lynn (1986) criterion of a CVI of >0.8 (greater than 8) with three to five experts' agreement (Polit & Beck, 2006). As stated in section 6.12, the questionnaire's content validity was rigorously assessed using the CVI methodology. For this, a panel of three experts from the community was invited by email to present their reviews on each question and the overall questionnaire. The panel members were: one Muslim leader from the mosque, one person from academia, and one community member who knows the culture well. (see Appendix P). The questionnaire review process form was developed with and guided by my supervisors. Their guidance ensures that the review is conducted according to the study's objectives and requirements. The experts participating in the questionnaire review employed the following criteria to assess each question:

- The appropriateness of the question within its assigned category.
- This question is relevant for evaluating blood donation knowledge, attitudes, beliefs, and behaviors.
- Worded questionnaires clearly.

For each criterion, experts evaluated the clarity, relevance, and appropriateness of the questions specifically for inclusion in a questionnaire for migrant, English-speaking Muslims migrants on blood donation knowledge, attitudes, beliefs, and behaviors. They also assessed each question's relevance to the research topic and its suitability for the Muslim migrant population, to ensure they were clear, unambiguous, and easily understandable for questionnaire respondents. Additionally, the experts also assessed the relevance of each question to the domain to which it was assigned, to ensure that the questionnaire effectively captured the necessary information and aligned with the study's objectives. The review form included a dedicated space for the expert panel to express their opinions or suggestions regarding each question and the overall questionnaire. The experts were invited to comment on any questions they thought were missing from Part A or Part B of the questionnaire. They provided comments or suggestions in case they disagreed with any question.

Feedback obtained from the experts on individual questions was entered into a pre-formatted Excel spreadsheet to calculate the I-CVI, S-CVI, and S-CVI/Ave. The data was anonymous, and a second person double-checked that the data was entered accurately.

The items with a low I-CVI were reworded and sent back to experts for further feedback from experts until the questionnaire reached an acceptable S-CVI value. The questionnaire underwent continuous revisions based on the feedback from experts. The questions were reworked until the I-CVI for each question reached 0.8 or above (Lynn, 1986) ensuring that the items were deemed clear, appropriate, and relevant by the experts. However, if a question was not considered clear, relevant, or appropriate during this process, it was deleted from the questionnaire to maintain its validity and alignment with the study's objectives. Following these revisions, the questionnaire was prepared for implementation in the planned follow-up to the present study.

6.14 Experts' Feedback and Data Analysis

The experts provided a mix of positive and constructive feedback on the questionnaire, with some areas identified for further refinement and adjustment. For the draft questionnaire, after an initial review, it was determined that most of the questions were appropriate and relevant to each section. During the initial expert validity review,

concerns were raised regarding the appropriateness of questions 10.2 and 10.5 within the Knowledge section. Additionally, one expert recommended a modification to enhance the relevance of question 10.13 in the same section.

In the Attitude section, question 12.13 received lower scores, with the experts suggesting adjustments to make it more appropriate. Furthermore, one expert identified an issue regarding the relevance of question 13.1. Within the Behavior section, one expert provided recommendations for improvement in question 11.2, addressing concerns related to clarity, relevance, and appropriateness. Additionally, another expert expressed reservations about the appropriateness of question 4.2b.

The Belief section received most of the suggestions, where one expert expressed disagreement regarding the appropriateness of questions 10.8, 10.13, 12.8, 12.9, 12.13, 12.14, and 13.14. Another expert also disagreed on the relevance of questions 10.14 and 11.3. Furthermore, concerns related to clarity were identified in three questions, namely 11.3, 11.4, and 11.17.

In an overview of the expert validity results, the initial evaluation revealed that most of the questions in each section were useful and pertinent to a preliminary questionnaire. Nonetheless, a subset of questions required refinement to enhance clarity. A total of 16 questions in these sections underwent review, guided by insights from the advisory team. See Appendix Q for the detailed advisory team feedback after the first review and Appendix R for an overview of the CVI scores for the questionnaire initially presented to the experts.

To revise the questionnaire, the following actions (see Table 11, below) were taken in response to the findings and feedback described above.

Table 12
Recommended changes and actions taken

Q.no	Experts' response	Action	Change
10.2	"You have to weigh at least 50kg to donate half a liter of blood." Not clear.	The wording of the question changed to "Do you know that the donor's minimum weight limit is 50kg?"	Question modified.
10.5	We do not encourage young as 16 years old to donate blood.	Taken as an opinion	No change was made in the question.
10.8	Blood cannot be sold. It is haram (forbidden in Islam).	Taken as an opinion.	No change was made in the question.
10.13	An expert suggested changing the wording of the question.	The wording of the question changed from "Some people in New Zealand get paid to donate blood" to "Blood selling is also a practice in New Zealand."	Question modified.
11.2	It's hard to differentiate the difference between "think" and "recommend".	The wording of the question changed from "My family would recommend that I donate blood" to "My family supports my decision to donate."	Question modified.
11.3	Not appropriate. "I would be expected to donate blood by my family."	Removed.	Removed.
11.4	Not appropriate. "If I were to donate blood, my family would."	Removed.	Removed.
11.5	Same with 11.5 and 11.6 with the words "think" and "recommend".	The wording changed from "My community would recommend that I donate blood" to "My community supports my decision to donate blood."	Question modified.
11.6	It was suggested that the question be removed because it lacked clarity.	Removed.	Removed.
11.7	It was suggested that the question be removed as it was not appropriate.	Removed.	Removed.
11.9	It was suggested that the question be resolved as it lacked clarity.	Removed.	Removed.
11.17	It was suggested that the question be removed as it lacked relevance.	Removed.	Removed.

11.19	It was suggested that the question be removed as it lacked clarity.	Removed.	Removed.
12.8	Disagree with the appropriateness of the question.	The wording of the question changed from "Because cultural reasons prevented me from donating blood" to "Due to cultural considerations, I am unable to contribute to blood donation."	Question modified.
12.9	Change the wording.	The wording of the question changed from "Religious reasons prevent me from donating blood" to "Due to my religious beliefs, I cannot donate blood."	Question modified.
12.13	These last 2 questions from this row, people may not want to disclose.	The wording of the question changed from "I am not sufficiently rewarded" to "I won't donate blood because I won't be sufficiently rewarded."	Question modified.
12.14	Change the wording.	The wording of the question changed from "I feel my blood will not be appreciated" to "I hesitate to donate blood because I feel that my act of blood donation will not be much appreciated."	Question modified.

Due to disagreements among experts regarding certain sections, questions were revised in collaboration with the research supervisors. Based on the suggestions, changes were made, and revised questionnaires were sent to the experts. All of them showed agreement on the questionnaire except for one expert who proposed changes to questions 10.2, 10.5, 10.8, 10.13, and 11.2. See Appendix S for the scores for the questions following the second review by the experts.

Based on discussion with and feedback from supervisors, it was decided that questions 10.2, 10.5, and 10.8 would remain unchanged, and the following actions (see Table 12, below) were taken. The questionnaire was revised again with the supervisors and resent to the experts for their final review.

Table 13
Modified draft questionnaire – experts' second feedback

Q.no	Original question	Experts' response	Action	Change
10.2	You must weigh at least 50 kg to donate half a liter of blood.	Do you know the donor minimum weight limit is 50 kg?	After discussing with supervisors, taken as an opinion.	No change was made to the question.
10.5	People under the age of 16 are allowed to donate blood.	Do you know that people under the age of 16 are not allowed to donate blood?	Taken as opinion, after discussing with supervisors.	No change was made to the question
10.8	Blood is only given to people who can afford it.	People need to pay for blood transfusions.	After discussing with supervisors, it was decided that the original reworded question would remain in place: "People need to pay for blood transfusions."	No change was made to the question.
10.13	Payment for blood donation is also, a practice in New Zealand.	In New Zealand, some individuals receive compensation for donating blood.	The wording changed to "In New Zealand, some individuals receive compensation for donating blood."	Question modified.
11.2	My family would recommend that I donate blood.	My family supports my decision to donate blood.	The wording of the question changed to "My family endorses my choice to donate blood."	Question modified.

Table 14
Experts' final review and agreement to all questions

Section	Q. No	Original question	Modified question
Knowledge	10.2	"You have to weigh at least 50 kg to donate half a liter of blood."	Remained the same.
	10.5	"People under the age of 16 are allowed to donate blood."	No change.
Belief	10.8	"Blood is only given to people who can afford it."	"People need to pay for blood transfusions.
	10.13	"Payment for blood donation is also a practice in New Zealand."	"In New Zealand, some individuals receive compensation for donating blood."
Behavior	11.2	"My family supports my decision to donate blood."	"My family endorses my choice to donate blood."

Table 15
CVI score before and after revisions of the questionnaire

The sum of individual ICVI	CVI score	Total	Scores	Scale CVI	Scores
Sum of C-ICVI	79.333	C Total agreement	78	C Scale-CVI	0.9674
Sum of R-ICVI	79.4	R Total agreement	78	R Scale-CVI	0.9682
Sum of A-ICVI	77.7	A Total agreement	73	A Scale-CVI	0.9475
After revisions based on the experts' feedback, CVI scores changed to those given below					
Sum of C-ICVI	80	C Total agreement	80	C Scale-CVI	1.0
Sum of R-ICVI	80	R Total agreement	80	R Scale-CVI	1.0
Sum of A-ICVI	80	A Total agreement	60	A Scale-CVI	1.0

The iterative process of expert feedback and revision strengthened the clarity, relevance, and appropriateness of the questions, providing confidence that the instrument is suitable for capturing the knowledge, attitudes, beliefs, and behaviors of Muslim migrants regarding blood donation.

6.15 Chapter Summary

This chapter explained the identification, refinement, development, review, expert validation process, and calculation of the content validity index for Part A and Part B questionnaires. The questions explore the knowledge, attitudes, beliefs, and behaviors toward blood donation among Muslim migrants. A thorough literature review guided the selection and adaptation of pertinent questions related to blood donation. Several questions were chosen or modified according to the study's aims and questions. To determine content validity, an advisory team comprising three experts who are Pakistani community members was established. Their valuable feedback on the selected questions was analyzed using Polit and Beck's (2006) guidelines. In conclusion, the I-CVI for appropriateness, relevance, and clarity were all 1.00 for the final analysis, suggesting strong content validity, though further application in different contexts may be needed to confirm these results. This questionnaire had an overall S-CVI/Ave of 1.00, indicating a robust instrument. Additionally, as a result of positive feedback from the advisory team, the questionnaire was finalized.

Chapter 7: Conclusion

7.1 Introduction

This chapter summarizes the research findings across all the phases of the study, providing a comprehensive overview of how the research aims/objectives were addressed in examining the knowledge, attitudes, beliefs, and behaviors of Muslim migrants in New Zealand regarding blood donation. The findings highlight the impact of cultural, familial, and gendered beliefs on blood donation practices within this migrant group, stressing the importance of creating culturally relevant blood donation interventions that should prioritize enhancing the accessibility and availability of blood donation services for Muslim migrants residing in New Zealand.

This chapter reflects on methodology, highlighting the use of mixed methods (i.e., qualitative and quantitative) as an important strength. It also explores the theoretical implications of studying blood donation behaviors through cultural and religious lenses, including a critique of the TPB framework. Moreover, this chapter discusses the implications for policymakers, education providers, and health services to formulate such policies that accommodate the religious and cultural requirements of migrants. Policymakers are urged to collaborate with community leaders and healthcare professionals to ensure that blood donation initiatives are culturally sensitive and easily accessible.

The chapter also highlights directions for future research, proposing interventions aimed at designing educational campaigns tailored to Muslim migrants' unique cultural and religious backgrounds, dispelling misunderstandings, and fostering community involvement. Additionally, it outlines a research agenda that encourages longitudinal studies and greater participant diversity to enhance understanding and improve health services and promotion practices. These efforts are expected primarily to increase blood donation rates but also enhance social inclusion for Muslim migrants residing in New Zealand.

7.2 Original Contribution to Knowledge

This study presents novel findings and significantly contributes to the existing body of knowledge by exploring Muslim migrants’ perspectives on blood donation, focusing on

the interplay of social, cultural, and religious factors that shape donation behaviors in this group in New Zealand. Thereby filling a gap in the literature by examining a demographic often overlooked in previous research and factors specifically relevant to this migrant population. The study introduces a novel perspective on the applicability of the Theory of Planned Behavior (TPB) in a religious and cultural context. It also provides practical recommendations for culturally sensitive health promotion strategies.

The research used a sequential exploratory mixed methods design, which allowed for an in-depth understanding of the topic. The combined qualitative and quantitative methods employed reflect a robust approach aimed at tailoring the instrument specifically for its intended population, particularly in the area of blood donation, reinforcing the value of mixed-methods research in applied health services (Cresswell & Plano Clark, 2017; Ryan et al., 2019).

The TPB framework provided a structured approach to evaluating the factors influencing blood donation behaviors among Muslim migrants in New Zealand. It examined how personal beliefs (attitudes), social influences (subjective norms), and perceived ease or difficulty (perceived behavioral control) shape donation intentions, providing both alignment with and divergence from existing studies on the cognitive determinants of health behaviors (Ajzen, 2020). For example, while previous research suggests that positive attitudes and strong social support encourage blood donation, my study's findings highlight that religious concerns or cultural beliefs can sometimes take precedence.

The first phase employed FGDs as the primary data collection tool. The thematic analysis of FGDs identified seven key themes: 1. The importance of knowledge for blood donation; 2. Islamic expectations and priorities regarding blood donation; 3. Weighing up risks and benefits related to blood donation, 4. Gendered, familial, cultural, and social dynamics influencing blood donation; 5. Perceived role of blood banks: 6. Acculturation and country of origin influence blood donation behaviors; and 7. Health promotion recommendations for blood donation approaches. The themes informed the adaptation of an existing questionnaire from Polonsky's "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees questionnaire."(Polonsky et al., 2013) as it directly aligns with our specific research

objective to evaluate the knowledge, attitudes, beliefs, and behavior of the migrant population regarding blood donation (Part A). However, it became evident that certain facets of Muslim faith, culture, and gender identity were absent, necessitating the development of new questions in the questionnaire. Consequently, informed by the thematic analysis from Phase I, a discrete set of 10 questions was formulated to constitute a distinct section, denominated Part B of the questionnaire, to address these specific domains. These discussions helped inform changes to ensure the questionnaire was culturally and religiously appropriate for Muslim migrants in New Zealand, addressing the second research question.

Both Part A and Part B of the questionnaire underwent expert validity testing and CVI calculation to ensure clarity, relevance, and suitability for Muslim migrants in New Zealand. The expert evaluation and content validation involved inviting three members from the Muslim migrant community (academics and healthcare professionals). They reviewed each question and the overall questionnaire, including the additional open and closed-ended questions. They provided feedback and recommendations, which were used to amend the questionnaire, enhancing its relevance and alignment with the cultural and contextual needs of the community. This process addressed the third research question and aligned with Patton (2014), recommendation to use qualitative findings to inform the development of quantitative tools in mixed-methods research. This approach not only validated the questionnaire but also contributed to the generation of new knowledge by creating a culturally tailored tool that can provide deeper insights into the barriers to and enablers of blood donation among Muslim migrants in New Zealand, thus informing future health promotion strategies and culturally sensitive blood donation programs for Muslim migrants in New Zealand, with potential applications regionally and globally.

Additionally, this study challenges current health behavior models by demonstrating that mainstream approaches may be inadequate in accounting for the complex cultural and religious contexts influencing health decisions among migrant and ethnic minority populations. The TPB has been widely utilized in health settings to examine these influences; however, it faces constraints in its application, particularly when dealing with culturally and religiously diverse populations. For example, Liu and Han (2023) utilized

the TPB to forecast blood donation intentions among college students, acknowledging the significance of cultural norms and family relationships. However, their study did not fully demonstrate how the TPB incorporates these broader cultural dynamics. Similarly, Khuan et al. (2018), and colleagues showed that the Theory of Planned Behavior (TPB) can be greatly improved by incorporating religious aspects, as seen in their research, on healthcare workers' hand hygiene in the UAE. Further, Parash et al. (2020) identified the significant role of systemic factors, such as access and logistical challenges, in shaping health behaviors among migrants. While prior studies predominantly address individual-level factors such as norms and personal beliefs, they often overlook the broader cultural and systemic barriers impacting health behaviors.

The current study expands on previous research by addressing individual beliefs alongside integrating systemic factors, such as limited awareness of blood donation procedures, inaccessible donation logistics, and culturally specific elements, such as religious concerns about blood compatibility for Muslim migrants in New Zealand and emphasizes the need for tailoring health behavior frameworks, such as the TPB, to better account for cultural and religious contexts. This nuanced understanding provides a foundation for culturally sensitive blood donation programs, public policies, health promotion strategies, and community health workforce education aimed at increasing blood donation rates among Muslim migrants in New Zealand and other high-resource nations.

7.3 Theoretical Implications

When examining the research study results, it is crucial to connect them with the theoretical frameworks that offer diverse perspectives on blood donation behaviors, especially within Muslim migrant settings.

7.3.1 Theory of Planned Behavior (TPB)

The main theoretical underpinning for this study was the TPB, which describes how the attitudes of Muslim migrants regarding blood donation are influenced by their beliefs and willingness to donate blood. It effectively highlighted the role of positive attitudes, influenced by Islamic teachings on the sanctity of saving lives, in fostering strong intentions to donate. Additionally, the influence of religious leaders and community

expectations underscored the importance of subjective norms. However, the emphasis of TPB on individual-level determinants fails to encompass the broader impact of collective and familial dynamics that play a crucial role in shaping blood donation behavior within this specific setting.

7.4 Recommendations for improving the health workforce, blood donation policy, and blood donation promotion

This section examines the key findings from this research to form recommendations on how health services can be enhanced to encourage blood donation by Muslim migrants. The recommendations emphasize the need to modify blood donation protocols to be genuinely inclusive of the religious and cultural beliefs of Muslim migrants. To improve blood donation participation among Muslim migrants in New Zealand, it is essential to integrate cultural and religious considerations into healthcare training, blood donation policies, community engagement, promotional campaigns, and implementing effective communication strategies (including using culturally appropriate terminology), tailored explanations, and examples that align with their religious beliefs. Furthermore, the findings highlight the importance of collaboration with community leaders and organizations and creating a welcoming environment to encourage greater participation in blood donation.

7.4.1 Building a culturally competent health workforce through targeted recruitment and education

A culturally competent health workforce is fundamental to addressing the unique concerns of Muslim donors. Health policies should promote the hiring and training of health service staff, including blood donation technicians from diverse cultural backgrounds. Nurses, doctors, and other health professionals should receive comprehensive cultural competence training on diverse cultural beliefs and religions, across a variety of ethnic background populations, in ways that situate blood donation in a religious and cultural context. The incorporation of Islamic teachings, such as the belief that saving a life is equivalent to saving all of humanity (The Qur'an, 2004, 5:32), and that blood donation is a type of sadaqah (charity), can help alleviate religious concerns (Alfouzan, 2014). Various health-related terms as well as keywords in Arabic could be taught, such as siha (for health), sadaqah (for charity), and halal (permissible),

etc., which would enhance patient-provider communication and foster trust. Additionally, using respectful greetings like “As-Salam-Alaikum” (peace be upon you) can build trust with Muslim patients. Integrating these practices can improve the experience and participation of Muslim migrants in blood donation activities by fostering a respectful and inclusive environment (Attum et al., 2022; Govere & Govere, 2016). For example, financing interpreters in medical settings to help with communication in languages like Arabic, Urdu, Persian, Somali, Hindi, and Pashto can greatly increase the accessibility of healthcare for individuals with limited English. Encouraging the enrolment of students from diverse ethnicities and cultures in healthcare programs can further enhance communication and trust between healthcare providers and Muslim migrants. Employing culturally and linguistically knowledgeable staff and cultural navigators—individuals who bridge the gap between healthcare services and Muslim communities—can play a crucial role in addressing religious concerns, overcoming language barriers, and fostering trust in the blood donation process (Finotelli, 2021).

7.4.2 Proposed changes to blood donation policy

Current health practices in New Zealand primarily follow a universal approach that may not adequately address the diverse cultural backgrounds of its population, including Muslim migrants (Makin, 2019; Ministry of Health, 2018). The blood donation health policy has been criticized for lacking cultural awareness (Wood et al., 2019). Revisions to these policies should include dietary accommodations, scheduling adjustments during Ramadan, and privacy considerations for Muslim donors. Policies should also consider the cultural preferences of diverse groups, such as Muslim migrants, to guarantee fair access to healthcare services.

Dietary and halal compliance. Current blood donation policies (NZBS, 2024) in New Zealand, do not specifically address any dietary restrictions that accommodate the religious needs of Muslim donors. To create a more inclusive environment, it is recommended to revise existing policies related to post-donation refreshments, such as dates, halal biscuits, and beverages clearly labeled as halal, which would help create a more welcoming environment and encourage greater participation.

Safe donation during Ramadan. Current blood service policies (NZBS, 2024) do not adequately accommodate the needs of Muslim donors during Ramadan, when fasting from dawn until sunset is observed. To address this, policies should be updated to promote flexibility in donation hours to accommodate those who are fasting. This could include organizing mobile blood donation units with evening hours, as used in Australia (McQuilten et al., 2015) to accommodate the religious practices and work schedules of Muslim migrants in New Zealand, particularly in areas with high populations of this community, such as South Auckland, ensuring that Muslim donors can participate without compromising their religious observances (Ministry of Health, 2018).

Privacy and modesty accommodations. Privacy during the donation process is an important concern, particularly for Muslim women who may require additional modesty measures in line with their cultural and religious values. To enhance comfort and dignity, it is recommended to revise the "Donor Privacy Policy" to include gender-segregated donation spaces or privacy screens for female donors. Providing these accommodations would ensure that the donation process is respectful of Muslim women's needs, potentially increasing their participation rates (NZBS, 2024).

7.4.3 Culturally sensitive communication and community engagement in blood donation services

Synchronizing blood donation efforts with religious or cultural activities would most certainly result in higher turnout numbers. For example, there is a higher likelihood of blood donation activities taking place after Iftar is popular, as many Muslims fast during Ramadan. Phrases such as "This Ramadan, give the most precious gift – your blood" are highly effective for encouraging participation in the blood donation campaign.

An effective communication strategy includes using culturally relevant visual aids, such as brochures, posters, and videos featuring Muslim individuals engaging in blood donation. The educational materials should be available in multiple languages, including Arabic, Urdu, Persian, Somali, Hindi, and Pashto, reflecting Islamic values and cultural elements like modest dress and family involvement. Collaborating with Muslim artists and designers can further refine the cultural relevance of these resources.

Thoughtfully designed culturally resonant visual representations, such as posters, brochures, and billboards, play a pivotal role in making blood donation campaigns more engaging and inclusive for Muslim migrants. By incorporating Islamic symbols, mosque imagery, and elegant calligraphy, these visuals create a sense of familiarity and belonging, fostering trust and confidence in the donation process. Further integrating different icons like prayer hands, halal food, and dates into campaign materials strengthens the spiritual connection, aligning blood donation with Islamic values of charity and saving lives. To maximize impact, these materials should be prominently displayed in community clinics, halal grocery stores, and Islamic centers, ensuring they reach Muslim migrants in comfortable and familiar spaces.

Online promotional campaigns that use social media, WhatsApp, videos, and websites to spread awareness, engage audiences, and encourage participation are essential for sustaining long-term engagement in blood donation. Engagement can be further enhanced through recognition awards and certificates. Key updates, achievements, and upcoming donation drives can be shared via WhatsApp and Telegram groups to keep the community informed. Additionally, using explainer videos and infographics in languages such as Arabic, Urdu, Farsi, Somali, and Pashto ensures the message reaches a diverse audience. Testimonial videos from Muslim donors, community leaders, and healthcare professionals can further help address misconceptions and motivate participation. By combining both physical and digital outreach efforts, blood donation campaigns can become more inclusive, accessible, and impactful.

Involving religious leaders can help dispel myths about blood donation by addressing frequent worries from a religious standpoint. Imams and Sheikhs can lead by example by publicly donating blood and sharing their experiences through social media and community events, reinforcing that donation is both religiously permissible and beneficial to society.

Encouraging group and family-based blood donation can also help reduce hesitancy since many Muslim migrants prefer participating collectively rather than donating alone. Mobilizing **“**Community Blood Drive Days” at mosques or cultural centers can help build

a supportive atmosphere for increased engagement. The receipt of certificates of appreciation from their mosque can prove to be a strong motivating factor.

7.4.4 Culturally relevant blood donation awareness campaigns (combining the models)

Traditional health behavior models, while useful, often overlook the unique cultural and faith-based factors that shape donation attitudes within this community. To design effective campaigns, it is essential to integrate established health behavior models that address the psychological, social, and cultural factors influencing blood donation. A multi-theoretical approach can enhance the effectiveness of these campaigns:

The TTM allows interventions to be tailored to meet individuals at their readiness levels, from initial contemplation to sustained action. (The Transtheoretical Model (TTM) allows interventions to be customized based on an individual's stage of readiness for blood donation, ensuring a more effective approach to encouraging participation. For instance, individuals in the pre-contemplation stage may be unaware of the importance of blood donation or hold misconceptions about it, requiring educational efforts to raise awareness. Those in the contemplation stage may recognize the benefits but remain hesitant due to concerns or religious beliefs, making targeted discussions with religious leaders or healthcare professionals particularly valuable. In the preparation stage, individuals may be willing to donate but need logistical support, such as convenient donation locations or reassurance about safety procedures. The action stage involves actual blood donation, where reinforcement through community engagement and recognition can enhance motivation. Finally, in the maintenance stage, continued encouragement, such as acknowledging donors' contributions and fostering a sense of altruism, can help sustain long-term commitment to regular blood donation. By integrating TTM, blood donation campaigns can meet individuals where they are, address their concerns at each stage, and create culturally relevant pathways to increase donor participation and retention within the Muslim migrant community.

The HBM model addresses perceived barriers, such as concerns about purity and safety, while highlighting charitable and life-saving aspects of donation. Additionally, the TPB framework underscores the importance of shaping positive attitudes, leveraging community and religious leaders to influence subjective norms, and enhancing

perceived behavioral control through clear information and supportive logistics, such as flexible donation hours and culturally sensitive settings. Self-Determination Theory (SDT) is a psychological framework. It describes human motivation along a continuum, ranging from controlled (extrinsic) motivation to autonomous (intrinsic) motivation. Doing something because it fulfills oneself is known as intrinsic motivation.

Given the diverse and intersecting influences on health behavior among Muslim migrants, combining these frameworks with the culturally sensitive factors identified previously can create a comprehensive model to better understand and promote blood donation in these populations. This expanded framework can enhance the effectiveness of blood donation interventions, ensuring they are culturally sensitive, personally meaningful, and sustainable.

Campaigns should be developed in collaboration with Muslim community leaders, organizations like the Pakistani Society in Auckland, and respected religious figures such as Imams and Sheikhs. Utilizing culturally significant locations and events, such as local mosques, community fairs, family picnics, or cultural independence days, can increase the campaigns' relevance and appeal. Campaigns should also be delivered in accessible language and styles that resonate with the community.

7.5 Future Research

This section outlines key areas for future research, such as exploring the impact of acculturation and generational differences on blood donation behaviors among Muslim migrants and highlighting the unique barriers faced by women in this demographic. The section highlights the psychometric validation of current research tools to ensure cultural relevance and robustness, implementing culturally tailored interventions, and conducting longitudinal studies to track donation behaviors over time.

7.5.1 Validation of current research tools

This study employed a rigorous validation process through expert review to ensure the content validity of the adapted questionnaire, Parts A and B, to assess blood donation behaviors among Muslim migrants in New Zealand. A proposed postdoctoral research component of the study is exploring broader psychometric properties, such as reliability and construct validity, to enhance the robustness of the adapted questionnaire. This

approach will ensure that Polonsky's questionnaire "Understanding barriers and enablers to blood donation amongst Sub-Saharan African migrants and refugees' questionnaire" is culturally relevant and psychometrically sound for Muslim migrants in New Zealand, providing more reliable data to inform long-term and impactful interventions.

7.5.2 Co-Designing Culturally Tailored Community Outreach Initiatives for Muslim Migrants

To effectively address the unique needs of Muslim migrants, it is essential to develop community outreach initiatives in collaboration with regional cultural and religious organizations such as TANI, PANZ, and FIANZ. These partnerships can provide culturally tailored blood donation programs and educational materials that address the specific needs of Muslim migrants. Involving community members with lived experiences (In the context of Muslim migrants, this means individuals with firsthand knowledge of migration, resettlement, cultural adaptation, and accessing healthcare or social services in a new country. Their direct experiences provide valuable insights into the specific needs, concerns, and priorities of the community, making them essential contributors to the co-design process at every stage of research, ensuring that programs are relevant and effective.

Establishing advisory groups composed of religious and community leaders further strengthens the participatory nature of the approach, enabling continuous feedback and refinement to maintain cultural appropriateness and effectiveness (Zamenopoulos & Alexiou, 2018). Additionally, integrating role-playing exercises and practical scenarios—designed in collaboration with migrant communities—ensures that healthcare providers engage in meaningful, experiential learning that enhances their empathy and confidence when addressing the needs of Muslim migrants.

7.5.3 Implementation and Evaluation of Blood Donation Promotion Interventions

Future studies should prioritize the implementation and evaluation of culturally aligned blood donation promotion interventions, such as health fairs with embedded blood donation services, organized at culturally significant locations (e.g., mosques, family gatherings, or during Islamic holidays like Ramadan and Eid) to engage Muslim migrants in an accessible and familiar setting. Culturally sensitive blood donation education

programs should be incorporated into these fairs to address misconceptions and encourage participation.

To evaluate the effectiveness of culturally aligned blood donation interventions, pre- and post-test designs should be implemented in collaboration with advisory groups, including community leaders, healthcare providers, and Muslim blood donors. These evaluations should utilize both qualitative and quantitative methods to assess changes in attitudes, knowledge, and blood donation rates among community members and key stakeholders.

Another intervention could involve targeted social media campaigns led by Muslim women leaders on platforms like Facebook and Instagram. Specific strategies to increase women's involvement in blood donation include awareness campaigns that emphasize autonomy, health choices, and societal benefits of donating blood. Involving prominent Muslim women, such as community leaders, influencers, or healthcare professionals, as role models in these campaigns can inspire greater participation. Their involvement could provide relatable examples of successful women who actively support and advocate for social causes, thereby addressing gender-specific barriers and further addressing the underrepresentation of female donors.

Intervention studies should evaluate the effectiveness of these campaigns by assessing changes in attitudes, awareness, and blood donation rates among Muslim women. During the evaluation process, it is important to determine whether the campaigns' content is aligned with Muslim women's values and beliefs, as well as their willingness to participate in blood donation campaigns.

7.5.4 Longitudinal surveys and lifespan approach to blood donation behavior

Conducting longitudinal surveys and tracking blood donation behavior across different stages of migration and generations can provide a deeper understanding of effective strategies to increase donation rates. Implementation studies using validated questionnaires can help assess the impact of interventions across different life stages and genders, addressing various blood donation behaviors at once. This approach can also promote a stronger sense of community support, starting in early adulthood and continuing into older age. To ensure ongoing effectiveness, these strategies should be

continuously refined based on community feedback and research findings, adapting to the changing needs of individuals over time.

7.6 Strengths of the Research

This research is distinguished by several key strengths that significantly enhance its contribution to the field. Firstly, it represents the first study to assess the knowledge, attitudes, beliefs, and behaviors regarding blood donation among Muslim migrants in New Zealand. This focus addresses a critical gap in current literature by offering empirical evidence of a population that has been largely overlooked by research in the past. In focusing on this distinct group, the research provides distinctive and useful information to influence health care, civic donor participation, health education, and service practice, which can serve as a model for future research of this nature.

The study's methodological rigor is highlighted by using a mixed-method approach. This mixed-methods approach involved conducting focus groups with a diverse range of Muslim migrants to gather in-depth, contextual insights into their attitudes, beliefs, and experiences related to blood donation that might not have been apparent in a purely survey-based study. These qualitative findings were then used to critically evaluate, refine, and adapt an existing questionnaire, with the assistance of an expert review panel, to ensure its relevance and clarity for the target population. Additionally, the development of a new part of the questionnaire, informed directly by the themes emerging from the focus group discussions, ensured that the survey captured population-specific concerns rather than relying solely on pre-existing measures that might not fully apply.

By triangulating qualitative and quantitative methods, refining the research instrument with expert input, and ensuring diverse representation, this study achieved a more comprehensive and credible analysis of blood donation behaviors among Muslim migrants. This multi-faceted approach strengthened the findings, allowing for both broad generalizability and rich, contextualized understanding.

The study drew on social and psychological elements that impact blood donation knowledge, attitudes, beliefs, and behavior, and provides a further critique of the application of the currently widely deployed TPB framework. Furthermore, by highlighting gender and gender-specific thematic findings, this study offers valuable

insights into the barriers to and enablers of blood donation, offering recommendations that could be relevant to similar migrant populations elsewhere. Additionally, the culturally and religiously sensitive research design aims to employ methods, questions, and interpretations that are considerate and not offensive to the Muslim migrant population's beliefs and behaviors. Such sensitivity helps build trust with participants and encourages open responses, thereby enhancing the accuracy of the findings.

One of the key strengths of this study is its adherence to trustworthiness evaluation criteria. To ensure the rigor and trustworthiness of the qualitative research, the study adhered to the principles of transferability, dependability, confirmability, and credibility, set out by Lincoln and Guba (1988), as outlined in section 3.16 of the research design chapter.

Finally, the practical implications of the study are significant in its capacity to directly inform medical and health service practices' community outreach programs, public health services, education, and workforce interventions to encourage blood donations among Muslim migrants, not only making the findings more reliable but also allowing the study to yield meaningful, transferable, and impactful knowledge on blood donation by Muslim migrants in New Zealand and possibly other Muslim migrants around the world.

7.7 Limitations of the Research

The study has several inherent limitations that need to be considered when interpreting the results. One concern is the impact of social desirability bias in the focus group data, especially when discussing topics related to cultural practices; group discussion participants might have given answers they thought were socially acceptable or in line with perceived norms. Moreover, as the focus groups were conducted in English, participants, especially older adults with weak English proficiency, may not have been able to properly express their viewpoints, which could have resulted in the exclusion of significant portions of the Muslim immigrant community's beliefs.

Furthermore, the online format of the focus groups, necessitated by the COVID-19 pandemic, may have excluded certain demographics from participation, such as older individuals who might not have had access to the necessary technology or digital

literacy. Therefore, it is possible that the study might not adequately represent how factors like gender, age, and socioeconomic status influence cultural beliefs, attitudes, and behaviors related to blood donation. Additionally, due to pandemic constraints, the study involved a limited number of focus group participants. However, future research could aim for a larger and more diverse sample to enhance the generalizability of the findings, focusing on participants from various Muslim communities within New Zealand, or examining variations in blood donation attitudes and practices across different regions.

One limitation of the study was the decision not to use member checking, a method where participants review findings to ensure accuracy. This was largely due to challenges caused by COVID-19, including difficulties in maintaining contact with a transient population and the inability to return focus group transcripts for individual validation. However, to ensure accuracy, participants were allowed to clarify and confirm their perspectives during discussions, allowing for real-time verification of their views. The COVID-19 pandemic created significant barriers to accessing and engaging with the study participants, particularly heightened when working with a migrant population, where maintaining contact and organizing face-to-face meetings was already inherently complex. These challenges were compounded by the participants' unique health concerns and other personal circumstances, necessitating a flexible and adaptable research approach.

Due to the challenges posed by the COVID-19 pandemic, which further constrained the robustness of the first phase research design, and constraints related to time and budget in the PhD project, a pilot study and expert panel validation of the focus group interview guide could not be conducted which is a significant limitation, as it may have impacted the cultural relevance and accuracy of the data collected and may have limited the guide's face validity. Although the researcher made efforts to adapt the questionnaire based on expert input. Secondly, while the language and structure of questions were suitable for general migrant populations, they might not have been perfectly tailored to resonate with the cultural and religious sensitivities of Muslim migrants who recently arrived in New Zealand. Thirdly, without piloting, the modified questionnaire's uncertain internal consistency and construct validity could potentially affect the reliability of the

study's quantitative results. However, further validation and piloting are proposed as the next stage of postdoctoral study.

Further limitation was that it was not possible to identify studies focusing exclusively on Muslim migrants in Western contexts that could provide a direct comparison regarding inherited blood donation practices from countries of origin.

Additionally, the utilization of the TPB, though beneficial, has some limitations in fully explaining the complexities of blood donation behaviors among Muslim migrants. The TPB's focus on individuals and non-cultural orientation may have oversimplified the impact of religious beliefs on health behaviors (Batcup et al., 2024). The emphasis on individual decision-making within the TPB might not adequately address this aspect of health behavior.

Finally, while this study effectively examined individual-level factors, such as beliefs, attitudes, and perceived behavioral control influencing blood donation among Muslim migrants, it did not comprehensively address broader systemic influences. Factors such as public health policies, the structure and accessibility of healthcare services, the presence of community support systems, media representation of blood donation, and economic conditions can significantly shape health behaviors. Future research should explore these aspects to provide a more comprehensive understanding of the challenges Muslim migrants face in donating blood. Despite the study's cultural sensitivity, it is recommended that future investigations should also examine power dynamics between researchers and participants and their potential impact on data collection and interpretation.

7.8 Dissemination Strategy

This strategy should go beyond simply mentioning potential publication venues. This strategy should go beyond simply mentioning potential publication venues.

Community-Based Sharing

Arranging blood drives at mosques, particularly during Eid, Ramadan, and other communal or cultural occasions.

Conducting workshops with Imams, Sheikhs, and cultural organizations like FIANZ, TANI (The Asian Network Inc.), and PANZ (Pakistan Association of New Zealand).

Developing educational materials in multiple languages (Arabic, Urdu, Farsi, Somali, Hindi, Pashto) for halal grocery stores, community clinics, and cultural centers.

Healthcare & Policy Outreach

Sharing key findings with the New Zealand Blood Service (NZBS) to help make blood donation services more faith- and culture-friendly.

Providing cultural competence training for doctors and nurses to better understand the religious and cultural concerns of Muslim donors.

Sending policy briefs to the Ministry of Health to encourage more inclusive blood donation practices.

Social Media Engagement

Developing explainer videos with Muslim healthcare professionals to dispel myths.

Engage the community on WhatsApp, Telegram, Facebook, TikTok, and Instagram.

Produce visual tools—Islamic calligraphy posters, testimonial videos, and infographics—to build confidence.

Academic and Research

Publishing findings in academic journals that focus on public health, religion, and culture.

Presenting this research at conferences related to public health and Islamic ethics.

Work with universities and healthcare organizations to support ongoing research, education, and training programs for future improvements.

7.9 Summary

This dissertation presents novel insights into the blood donation behaviors of Muslim migrants in New Zealand and offers unique perspectives that have not been extensively explored in the context of this particular community. While there has been research on blood donation among migrant populations globally, this study, underpinned by the TPB, focuses on KABB, particularly among Muslim migrants in New Zealand, including their cultural, religious, and social backgrounds. In contrast to other contexts, the findings suggest Islamic teachings on the sanctity of life play a significant role in shaping positive attitudes towards blood donation. However, it also reveals some unique barriers, such as concerns about preserving religious purity, the impact of gender-specific cultural norms, the need for approval from family, and the specific access to services faced by this community, which are less pronounced in other migrant groups studied internationally.

The study's findings on the importance of encouraging women and involving families **in** the decision-making process to increase blood donation rates provide novel insights specific to the context of Muslim migrant communities within New Zealand. While global research has acknowledged the influence of familial and cultural dynamics on blood donation among migrants, this study uniquely highlights the distinct gendered roles and barriers faced by Muslim women in New Zealand, such as the cultural norm of seeking male family members' approval before donating blood. This underscores a critical area for culturally targeted blood donation intervention initiatives, where integrating family approval processes and culturally sensitive strategies could significantly enhance participation rates.

The study reconfirms the impact of language barriers and cultural sensitivities on health behaviors, echoing global findings, but with a nuanced understanding that these barriers are compounded by the distinct acculturation processes experienced uniquely by Muslim migrants in New Zealand. The inclusion of second-generation migrants in the study further highlights the dynamic nature of these behaviors suggesting that increased integration and social cohesion into New Zealand society may inform a willingness to participate in blood donation. The study employs a robust mixed-methods approach, underpinned by the TPB, integrating qualitative insights from FGDs with quantitative

data gathered through the expert validation of an adapted questionnaire. It is important to clarify that the quantitative data referenced here pertains to the feedback and validation metrics obtained from experts evaluating the questionnaire, rather than data collected directly from the community using the questionnaire itself. This approach ensured the instrument's cultural and contextual appropriateness for the Muslim migrant population.

Despite limitations, including the need for further questionnaire validation and a more comprehensive exploration of structural influences, this study offers insights that can contribute to the development of culturally sensitive strategies to encourage blood donation. The results underscore the importance of culturally tailored health promotion approaches for blood donation, which may be more effective than the generalized methods typically used in high-resource nations. These insights could be useful for policymakers and healthcare providers in New Zealand seeking to improve health equity and access to services for Muslims and other ethnic migrant groups.

The identified barriers can be addressed, and the community enabled so that the blood donation rate can be enhanced, ultimately improving New Zealand's public health outcomes. Future research should refine tools and strategies to better serve diverse migrant populations, including Muslim migrants. Effective approaches may involve the intersection of educational initiatives, digital engagement, and culturally sensitive communication to promote blood donation within these communities.

This study not only bridges a critical gap in understanding blood donation behaviors among Muslim migrants in New Zealand but also challenges existing paradigms by highlighting the profound influence of gendered and familial dynamics. By integrating culturally tailored interventions that actively involve Muslim migrant women and their families, we can unlock the full potential of this community, transforming barriers into pathways for a more inclusive and responsive blood donation landscape.

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Appendices

Appendix A: Phase I – Ethics Approval Letter

Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

15 November 2021

Eleanor Holroyd
Faculty of Health and Environmental Sciences

Dear Eleanor

Re Ethics Application: **21/381 Evaluating the knowledge, attitude, beliefs, and behaviour of the Muslim migrants population towards blood donation**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 15 November 2024.

Non-Standard Conditions of Approval

1. If the focus groups are to be conducted on line please send through an amendment (EA 2) with a protocol of how these will be managed, this will also need to include how consent will be evidence.

2. Please insert the correct wording for AUT counselling services in the Information Sheet.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: Zunirah.iram@gmail.com; gael.mearns@aut.ac.nz; nick.garrett@aut.ac.nz

Appendix B: Phase I – Recruitment Advertisement

Are you a first-generation Muslim migrant aged 18 or over and residing in Auckland for between 3-7years

& Are keen to participate in research

KNOWLEDGE, ATTITUDE, BELIEFS & BEHAVIOUR REGARDING BLOOD DONATION

Research participants will be given 20$ voucher

as a token of appreciation.

For details please contact:

jhw5869@autuni.ac.nz/

Zunirah.iram@gmail.com

Appendix C: Phase I – Informed Consent Form

Informed Consent Form

Project title: Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population toward blood donation

Project Supervisor: Professor Eleanor Holroyd and Dr. Gael Mearns

Researcher: Zunirah Iram Asad

- ○ I have read and understood the information provided about this research project in the Information Sheet dated _____. The possible problems and solutions during the research process have been explained to me, and I can ask my own questions.
- ○ I understand that the identity of my fellow participants and our discussions in the focus group are confidential to the group, and I agree to keep this information confidential.
- ○ I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

Participant's signature : .....

Participant's Name : .....

Participant's Contact Details (if appropriâtes) :

……

……

……

……

Date :

Approved by the Auckland University of Technology Ethics Committee on type the date on which the final approval was granted AUTEC Reference number type the AUTEC reference number

Note: The Participant should retain a copy of this form.

Appendix D: Phase I – Participant Information Sheet

Participant Information Sheet

Date Information Sheet Produced: _____

Project Title

Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population towards blood donation.

An Invitation

My name is Zunirah Iram Asad. I am a student completing my Ph.D. in Health at Auckland University of Technology. I am interested in learning more about the knowledge, attitudes, beliefs, and behavior of Muslim migrants regarding blood donation in NZ.

I invite you to consider volunteering for the focus group discussions of this research. I am the researcher and will be a moderator in the discussion. Your participation in this research is optional. You are free to opt out at any point for any reason, without facing any consequences or disadvantages if you decide not to take part in this research project.

This study is being conducted as part of my PhD thesis. The brief version of the study will be submitted for publication to appropriate academic health journals (i.e., Qualitative Health Research). The findings of the study could also be introduced to the Muslim migrant community at community group meetings and submitted for publication in organizations' newsletters (i.e., TANI).

Participating in this research is entirely optional (your own choice). Kindly go through this Participant Information Sheet as the Informed Consent Form and then make your decision on whether to join this study.

What is the purpose of this research?

The purpose of the study is to explore:

1. What is the knowledge, attitudes, beliefs, and behavior of the Muslim migrants population regarding blood donation?
2. What is the critical information that needs to be included in a culturally relevant questionnaire that assesses the Knowledge, attitude beliefs, and behavior of the Muslim migrants population regarding the donation of blood?
3. How valid and reliable is the developed questionnaire for the population it is to be applied to?

The findings of this research may be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

You are invited to participate in this research if you are:

Adults 18 to 66 years,

Holding permanent residency or NZ citizenship.

First-generation Muslim migrants, living in NZ for 3-7 years.

Being able to read and speak English.

How do I agree to participate in this research?

My contact details are provided below. Contact me, Zunirah Asad, if you are interested in participating in this study. I will invite you to sign the consent form before the interview begins.

Your participation in this research is voluntary (it is your choice) and whether you choose to participate will neither advantage nor disadvantage you. You can withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

The data collecting period will involve a discussion in a focus group of 7-10 members. When you participate in the focus group session you'll meet with other adult members for around 90 minutes at a safe and convenient location of your choice that I'll organize for you. I will reach out to you to schedule a time if you are willing to take part in the research. We can arrange to meet at a public venue that offers some area of privacy for us to talk comfortably. The decision, on where to meet is entirely up, to you. If the COVID alert levels remain at 2 or 3 during our meeting time(s) we will shift to using online technology for our focus groups. I'll be here to help you navigate and organize online connections before the interviews take place.

Our conversation will be recorded. We'll also jot down some points to capture your story effectively. I've got a set of questions that can help steer our discussion in that direction. You're more than welcome to receive a copy of these questions from the focus group session; if not I'll bring a copy along, for you during our interview. Kindly keep in mind that these questions are simply intended to guide our conversation.

After our discussion concludes I'll have the recordings converted into text format for transcription purposes without disclosing your identity in any way, during the interview recording process. I assure you that your privacy and confidentiality will be strictly maintained throughout this research endeavor. I undertake to utilize the information for the purposes outlined in your consent form. Your data will only be accessible to me, my primary and secondary research supervisors; no external parties will have access to any details you've shared for this research project.

What are the discomforts and risks?

Discussing your experience could potentially bring up some challenges for you leading to feelings of unease or discomfort, during the interview process. The aim is to create a setting that resembles a conversation aiming to minimize any discomfort or stress that may arise from the discussion.

How will these discomforts and risks be alleviated?

I will advise and just a friendly heads up before we begin our interview. Feel free to skip any questions you're not answering; it won't impact your involvement, in the research project at all. And if any illegal behavior may arise or be disclosed during the family focus group the interview will be suspended and the researcher will contact the police and the supervisory team for direction and advice. If a participant shows signs of discomfort or psychological distress during the study inadvertently. Requires support, for their well-being concerns.

Healthline 0800 611 116, www.healthpoint.co.nz

Health Point 08005676666,

You have the option to leave the study whenever you wish to do so. If you decide to withdraw from the study at any point, in time and your data can be traced back, you will be given the option of having it deleted or permitting its use. Nevertheless, once the results are finalized it may not be feasible to delete your data.

What are the benefits?

You may benefit from thinking and talking about your experiences of accessing health and support services. The information you obtained from this study might help you experience fewer barriers to accessing health services in the future. Moreover, you will be provided with a $20 gift card in exchange for your time.

As a researcher, I can also benefit from this research project. I can have a deeper understanding of the field, improve my expertise during the research, and complete my Ph.D. qualification.

How will my privacy be protected?

Your privacy and the confidentiality of your information are of importance, to us. We ensure that your data is securely stored and kept separate from your signed consent forms and contact details for added security measures. If the information is stored electronically, it will be protected by passwords to safeguard your privacy. Access to your information will be limited to the secondary research supervisors along with myself for this research project. Rest assured that no third parties will have access, to your information.

What are the costs of participating in this research?

You won't incur any expenses except, for the time needed to participate in our focus group session and validate interview information.

What opportunity do I have to consider this invitation?

You will receive the information sheet and consent form ahead of data collection to review allowing you to ask questions and clarify any details during a session of your choice. There is no pressure for you to take part in the study after attending this meeting. You have a maximum of four weeks to review this information after receiving the information sheet; however, if you reach a decision sooner you are welcome to reach out to me at any time. Additionally, please note that whether you choose to participate or engage does not impact you positively or negatively in any manner.

Will I receive feedback on the results of this research?

Yes, if you're keen, I can send you a summary of this study around one to two pages long.

What do I do if I have concerns about this research?

If you have any concerns, about the project please inform the Project supervisor initially.
Prof. Eleanor Holroyd

eleanor.holroyd@aut.ac.nz,
(09)9219999 ext. 5298

Dr. Gael Mearns, gael.mearns@aut.ac.nz

64 9 921 9999 ext. 7108

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, *ethics@aut.ac.nz*, (+649) 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:
Zunirah Iram Asad, jhw5869@autuni.ac.nz, 0223758437

Project Supervisor Contact Details:
Professor Eleanor Holroyd: eleanor.holroyd@aut.ac.nz, (09)9219999 ext.

Approved by the Auckland University of Technology Ethics Committee on *type the date final ethics approval was granted*, AUTEC Reference number *type the reference number*.

Appendix E: Phase 1 – Socio-demographic Information

Participants' Socio-demographic Characteristics Information Sheet

Please answer the following questions before we begin the discussion :

1. Date of Birth ……

2. Gender Male ☐ Female ☐ Gender Diverse ☐

3. Marital status Single ☐ Partnered ☐ Married ☐

Separate ☐ Divorced ☐ Widowed ☐

4. Country of origin ……

5. Duration of residence in NZ ……

6. Religion – the branch of Islam? ……..

7. First language ……

8. English language ability

A) Reading Excellent ☐ Good ☐ Fair ☐ Poor ☐

B) . Speaking Excellent ☐ Good ☐ Fair ☐ Poor ☐

9. Other languages are spoken…….

10. Employment status Full-time ☐ Part-time ☐ Retired ☐

Unemployed ☐ Other ……

11. Type of employment Professional ☐ Business ☐ Unemployed ☐

12. Highest Completed Qualification No formal education ☐ Primary school ☐

College ☐ Tertiary level ☐ Please specify:

13. Household role ……

14. Household members ……

Approved by the Auckland University of Technology Ethics Committee on type the date on which the final approval was granted AUTEC Reference number type the AUTEC reference number

Note: The Participant should retain a copy of this form.

Appendix F: Phase I – Guide for conducting formal discussion during focus group discussions

Focus Group Discussion Guide : Blood Donation KABB among Muslim Migrants

1. Opening Remarks : (2-4 min)

Thank you for joining us today ! Our meeting's focus is to explore the thoughts and actions of Muslim migrants living in New Zealand by understanding their perspectives and experiences in a manner. Please remember these guidelines as you engage with us today ;
a) All individuals are encouraged to take a role in the proceedings.
b) There are no “right” or “wrong” answers.
c) Speak freely but remember not to interrupt others while they are talking.
d) Recording is, for reporting. Will be utilized for analysis.
e) Names will not be mentioned anywhere.

---

2. Introductions (5 Minutes)

FGD questions

1. What do you know about your Blood group or its significance?
2. What do you know about voluntary blood donation?
3. Why do people donate blood? Purpose of blood donation?
4. Who is ineligible for donation? Age or any illness in which blood donation should be avoided (Blood pressure, diabetes, any other)
5. What other factors should be considered while selecting a donor? Smoker, alcoholic person, drug user, person who has had surgery, pregnant woman, or person suffering from any type of infection?
6. Who should donate more often male or female and why?
7. Are there any potential health risks for blood donors?
8. Have you ever donated blood?
    a. If yes, why and whom did you donate?
    b. If not, why? (no one ever asked for blood donation, fear of needles, fear of knowing my status, no reward/remuneration, religious reason)
9. Being a Muslim, how do you see receiving a monetary reward against blood donation?
10. Would you like to become a régulas donor? If yes, why? (Probes: moral duty, religious obligation, responsibility towards the community, etc) Would you donate willingly regularly if the Muslim community has their blood collection camps?
11. Do you have to take permission from your family before blood donation?
12. What do you say about the statement “I am interested only in donating blood to known persons”?
13. Please share what your friends or family think about voluntary blood donation. Would they encourage you to donate blood or stop you?
14. Have you ever visited any blood donation centers? If yes, what was the source of information about the call for donation?

15. In your opinion what incentives can encourage people to donate blood? (Probes: if they get payments, if they are provided a certificate, if their voluntary act is acknowledged on social media if they are given a paid holiday from work?)

Appendix G: Phase II – Ethics Approval Letter

Auckland University of Technology Ethics Committee

(AUTEC)

27 July 2023

Eleanor Holroyd
Faculty of Health and Environmental Sciences
Dear Eleanor

Re: Ethics Application: **21/381 Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population toward blood donation**

Thank you for your responses to the conditions for the amendments to your ethics application.

The amendment to the recruitment and data collection protocols (including an expert panel review of the questionnaire has been approved.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online http://www.aut.ac.nz/research/researchethics

For any enquiries, please contact ethics@aut.ac.nz

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: Zunirah.iram@gmail.com; gael.mearns@aut.ac.nz

Appendix H: Phase II – Invitation Letter to Expert Panel

Auckland University of Technology
Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999
www.aut.ac.nz

Dear Esteemed Mr.

As a student, at AUT University conducting research on my topic of interest

"Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants migrants towards blood donation."

My supervisors are Professor Eleanor Holroyd

Dr. Gael Mearns

I am kindly inviting you as a member of the expert review panel of my research requesting your invaluable insights in appraising the questions and questionnaire. Your participation in this research is voluntary. You can withdraw from studying at any time.

The questionnaire consists of two parts namely A and B and you will be asked to rank the questions for clarity, relevance to the research construct, and appropriateness utilizing an expert review form that will be provided to you. Additionally, your feedback on the questions as well as any suggestions or comments will be sought.

Iterative feedback cycles will be conducted, and scores will be aggregated and averaged. With individual questions getting low scores being reworded and resubmitted to gather further input from all experts until the questionnaire attains an acceptable level of quality. The revised questionnaire will subsequently be returned to the expert reviewers for further informal evaluation.

There is no financial cost associated with your participation, aside from the time required. The estimated total time commitment for the entire process is anticipated to be approximately 90-120 minutes.

To confirm your agreement, kindly respond to this email. Here are my contact details for you to reach out to if you'd like to take part in this study; please get in touch via email to express your interest. I'll send you the consent form to sign before you can join in; a participant information sheet will also be provided with all the details. containing all information needed. Additionally, I have attached a summary of my research for your reference.

Please do not hesitate to get back to me if you have further queries.

Kind Regards

Zunirah Asad

Email: jhw5869@autuni.ac.nz

Summary

Blood donation occupies a key position in the health care system of a country. Access to an adequate amount of safe blood is considered a universal human right. Hence, studies demonstrate that in low-resource countries, there is a considerable gap between demand and supply for blood. While in the Middle East, the number of active blood donors does not meet the basic threshold for blood donations. However, this situation contrasts with a high-resource nation where voluntary blood donation is the main source of donated blood

To date, most of the research conducted in high-resource countries has omitted to include or focus on culturally and linguistically diverse migrant populations' expectations regarding blood donation. The currently available measures of knowledge, attitude, beliefs, and behavior concerning blood donations are limited and not comprehensive and practical enough to measure socio-cultural beliefs and behavioral systems.

Therefore, it is of utmost importance to examine the beliefs and values of substantial migrant groups brought to a host country.

Henceforth, the current research aims to evaluate the knowledge, attitude, beliefs, and behavior around blood donation, of the Muslim migrants population.

The research outcomes expect to provide new insights into the knowledge, attitudes, beliefs, and behavior of Muslim migrants in New Zealand regarding blood donation.

Appendix I: Phase II – Consent Form for Expert Reviewer

Consent Form For Expert Reviewer

Project title: Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population toward blood donation.

Project Supervisor: Professor Eleanor Holroyd

Dr. Gael Mearns,

Researcher: Zunirah Iram Asad

○ I have carefully gone through it and understood the details presented regarding this research project, in the Information Sheet dated dd mm yy.

○ I've had a chance to pose questions and get them answered.

○ I am aware that the expert review will involve taking notes, recording audio, and transcribing them.

○ I understand that it's up, to me whether I want to participate in this expert review process. I can opt-out at any time without facing any consequences.

○ I understand that if I decide to leave the research study at any point, in time I will have the option to either request that my identifiable data be deleted or permit its use. Nonetheless, it might not be feasible to remove my information once the findings have been generated. I agree to participate in this study.

○ Could you provide me with a summary of the research findings? Please indicate your choice by selecting one; Yes○ No○

○ I would like my identity to remain confidential (please tick one): Yes○ No○

○ Since I don't require my identity to remain confidential, I would like to be acknowledged in any publications as an expert reviewer of the questionnaire (please tick one): Yes○ No○

Expert reviewer's signature* :

.....

Expert Reviewer's Name* :

.....

Expert reviewer's Contact Information (if applicable);

.....

……

……..

Date :

Approved by the Auckland University of Technology Ethics Committee on type the date on which the final approval was granted AUTEC Reference number type the AUTEC reference number

Note: The Participant should retain a copy of this form.

Appendix J: Phase II – Participant Information Sheet for Expert Reviewer

Participant Information Sheet

Date Information Sheet Produced:___10/06/2023_____

Project Title

Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population towards blood donation.

An Invitation

Hello there! I go by Zunirah Iram Asad. I am currently pursuing my PhD, in the Faculty of Health and Environmental Sciences at Auckland University of Technology as a student with an interest in learning more about the knowledge, attitudes, beliefs, and behavior of Muslim migrants regarding blood donation in NZ.

You have been invited to take part because of your expertise, either as a community leader or a health professional, in this topic. I invite you to evaluate both sections of my study instrument. In the first section (part A), I will request you to examine the already published questionnaire that I have selected, which has been granted permission for use in this study by the author and provide your expert review of the questions therein. For the second section (Part B) I will request that based on your expertise, you assess the questions formulated based on my analysis of the data collected from focus groups.

The obtained findings will be utilized to assess the questionnaire's validity for its applicability within the Muslim migrants community. The procedure employed to establish the questionnaire's validity may be published.

What is the purpose of this research?

Blood donation plays a vital and central part in the healthcare system of any given country. To date, most of the research conducted in high-resource countries has omitted to include or focus on culturally and linguistically diverse migrant populations' expectations regarding blood donation.

Globally there has been a rapid rise in immigration during the last two to three decades. Immigrant populations produce substantial populations in high-resource countries like the US, UK, Canada, Australia, and New Zealand. Muslim migrants represent approximately 1.3% of the total population of New Zealand. Given the growing numbers of such populations worldwide it is critical to comprehend the barriers and enablers and the associated cultural beliefs of these communities with respect to blood donation.

Generally, immigrants face a variety of barriers to donation, including religious values, socioeconomic and cultural concerns, mythologies related to blood donation, lack of knowledge, a paucity of trust in blood donation services, and language barriers (Makin, 2019).

Background:

The currently available published questionnaires that measure knowledge, attitude, beliefs, and behavior concerning blood donations are limited and not comprehensive or practical enough to measure, sociocultural beliefs and behavioral systems of Muslim migrants. Therefore, the selected questionnaire under review has been considered to explore the beliefs and values of Muslim migrant groups bring to a host country, concerning their engagement with new healthcare systems regarding healthcare expectations and blood donorship.

Please note that Part A of this questionnaire (taken from Polonsky's survey (Polonsky et al., 2010) is based on an existing published instrument that has been used in previous studies. For our research, we have carefully selected questions from this questionnaire that are directly relevant to our specific research objectives. To ensure the relevance of the questionnaire to our specific research objectives, we have carefully selected questions from the questionnaire that directly address our research focus. As a result, any irrelevant questions have been omitted from our analysis. That's why the questions need reviewing by experts to evaluate whether the questions and questionnaire are suitable to use in research on knowledge, attitudes, beliefs, and behavior of Muslim migrants regarding blood donation in NZ.

Your Role:

As an expert reviewer, your role is crucial in evaluating the appropriateness, clarity, and relevance of the questionnaire for our target population. We kindly request that you focus your review on both parts of the questionnaire: Part A and Part B.

Part A: This section of the questionnaire comprises questions that have been previously validated and used in the published instrument. Your feedback on the clarity and relevance of these questions will help us ensure their suitability for our research context.

Part B: The questions in this section have been developed based on the analysis of data obtained during the qualitative phase of our research. We will provide you with a draft version of Part B, which will be subjected to further editing and refinement based on your valuable insights during the review process.

As part of the expert review process, we seek your valuable input in evaluating two parts of a questionnaire instrument designed to assess the knowledge, attitudes, beliefs, and behavior of the Muslim migrants population regarding blood donation. The aim is to gather critical information that should be included in a culturally relevant questionnaire. Your expertise is instrumental in evaluating the appropriateness, clarity, and relevance of these questionnaire sections. By providing your insights, we can ensure the questionnaire effectively captures the knowledge, attitudes, beliefs, and behavior of the Muslim migrants population regarding blood donation.

Once the expert review process is complete and all feedback has been incorporated, we will finalize both parts of the questionnaire. This includes incorporating any necessary amendments to enhance clarity, relevance, and content validity. The questionnaire will then be ready for implementation in our research study.

Confidentiality and Data Handling:

Any data provided or discussed will be used solely to improve the questionnaire's content validity. All data and documents related to the review will be securely stored and accessible only to authorized personnel.

Why was I? What is the reason, for my inclusion, in this study?

You have been asked to join in this evaluation of the survey if you:

Have expertise in the research topic area/ and/ or Muslim migrants communities in NZ

Have permanent NZ residency or citizenship.

Can read and speak English.

How do I agree to participate in this research?

My contact details are provided below. Contact me, Zunirah Asad, if you are interested in participating in this study. I will invite you to sign the consent form before participating.

Your participation in this research is voluntary (it is your choice) and whether you choose to participate will neither advantage nor disadvantage you. You can withdraw at any time. If you choose to withdraw, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in the expert panel evaluation?

You will be asked to rank the questions for clarity, relevance to the research construct, and appropriateness by using an expert review form. You will also be asked to provide feedback on the questions. You will also be invited to make suggestions or comments about the questions. You will also be asked to suggest alternative questions for Part B of the questionnaire.

Feedback will be obtained on individual questions with a low content validity index (CVI), and these will be reworded and resubmitted to you getting further feedback from all experts until the questionnaire reaches an acceptable scale content validity index (S-CVI) value. The edited questionnaire will then be returned to the expert reviewers for further informal evaluation.

Through this collaborative approach, we aim to generate a robust and reliable tool that aligns with the expertise of our esteemed reviewers.

Only my primary and secondary research supervisors along with myself will have access, to the data you provide for this research project ensuring that no third parties can access the information submitted by you.

What are the discomforts and risks?
N/A.

What are the benefits?
The expert reviewers can benefit by allowing them to contribute their expertise to improve questionnaire quality and validity, enhancing their professional development. They shape the research instrument, ensuring its appropriateness and relevance. Reviewers make a meaningful impact in the field, establishing themselves as recognized authorities and enhancing their professional reputation.

As a researcher, I can also benefit from this research project. First, this process contributes to enhanced research quality by incorporating feedback and insights from expert reviewers. Their expertise helps improve the questionnaire's design, ensuring its validity and relevance to the study's objectives. Second, the review process provides validation of the research design, as expert reviewers verify its soundness and adherence to established best practices

How will my privacy be protected?
Your information will be kept confidential and secure, with measures in place to protect it; your consent forms and contact details will be stored separately. Securely maintained. If stored electronically it will be password protected for added security. Only the primary and secondary research supervisors along with myself will have access to your information for research purposes. Rest assured that no third parties will have access to your information as, per our policy.

What are the costs of participating in this research?

You won't incur any expenses apart from the time it takes.

What opportunity do I have to consider this invitation?
Time will be given to read the information sheet and consent form. There will be a chance if you want to discuss and clarify this information and this session is optional (your choice). I will be contacting you through emails to get your feedback.

Will I receive feedback on the results of this research?
Sure, if you're keenly interested, in it I can send you a summary of the study (1-2 pages) if you are interested.

What do I do if I have concerns about this research?
If you have any worries, about this project please inform the Project Supervisors away.

Professor Eleanor Holroyd: eleanor.holroyd@aut.ac.nz,

(09)9219999 ext. 5298

Dr. Gael Mearns, gael.mearns@aut.ac.nz

64 9 921 9999 ext. 7108

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, ethics@aut.ac.nz, (+649) 921 9999 ext. 6038.

Whom do I contact for further information about this research?
Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:
Zunirah Iram Asad, 0223758437

Project Supervisor Contact Details:
Professor Eleanor Holroyd: eleanor.holroyd@aut.ac.nz, (09)9219999 ext.5298

Approved by the Auckland University of Technology Ethics Committee on type the date final ethics approval was granted, AUTEC Reference number type the reference number.

Appendix K: Phase II – Expert Validity Review Form

Title of the study

Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population towards blood donation.

Tool for Expert Panel to Assess the Content Validity.

This *X*-questions survey has been developed to track the Knowledge, Attitudes, Beliefs, and Behaviors of Muslim migrants populations around blood donation using key constructs of the Theory of Planned Behavior.

We request you use the review tool below, along with the survey questionnaires to assess the questions. Your suggestions or recommendations will be highly appreciated.

Please evaluate the clarity (of the wording of the questions for a migrant English-speaking population). Additionally, assess the relevance of each question to the research topic and its appropriateness for the Muslim migrants population. If you disagree, kindly provide comments or suggestions.

Item No.	Question Domain	Clarity		Relevance		Appropriateness		Suggestions
		Agree	Disagree	Agree	Disagree	Agree	Disagree	

Any additional comments:

_____
_____
_____
_____
_____

Thank you for reviewing and providing feedback on the survey.

Reference:

Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health, 29*(5), 489-497

Appendix L: Phase II – Blood Donation Questionnaire Part A

Part A: Questions taken from Polonsky questionnaire:

Interview and Participant Details	
Participant Contact Details Given Name: _____ Family Name: _____ Tel. (Mobile): _____ Tel. (Home): _____ Address: _____ Post Code: _____	Interview Details Interviewer's name/s: _____ Date of Interview: _____ Time of Interview: _____

1.

	A. Demographic Information	
1.1.	Year you were born:_____	
1.2.	Gender:	0 Malen 0 Female2
1.3.	Were you born in Australia?	0 Yes (Go to 1.8) ☐ No2 In which country where you born? _____
1.4.	In what year did you first arrive in Australia? _____	
1.5.	Which countries did you live in before coming to Australia a) _____ b) _____ c) _____	
1.6.	In your home country, how would you describe the area you lived in prior to migration? *(Please tick one response)* 0 Large Cityt 0 Town 2 Rural area/village3 0 Refugee camp4	

1.7.	Under which visa category did you enter Australia? *(Please tick one response)* 0 Refugee and Humanitarian visas 0 Student visa2 0 Professional and skilled migration visa3 0 Employer sponsored work visa4 0 Family sponsored visa 0 Arrived as a childs 0 Other6_____
1.8.	Research has suggested that views on blood donation might vary by religion. To allow us to examine if this is true, we need to know your religion. If you do not want to answer this question please tell the interviewer you would prefer not to answer. What is your religion? *(Please tick the appropriate response)* 0 Christians 0 Musli 2 0 Traditional African3 0 No religion4 0 Other : _____ 0 Prefer not to answer

1.6 and 1.7 about the visa status in the host country and residential category in the home country are irrelevant to this study.

Since the current study focuses on exploring the views of Muslim migrants, it is understood that the respondents are Muslims. Therefore, question # 1.8 in Polonsky's survey asking about their religion is irrelevant to the study.

Now I'm going to ask some questions about Australian and African culture. This section was not related to our study, so it was irrelevant. The term 'home country culture' is used in some questions to mean the culture of the country you or your family migrated from.

B. Living in Australia

Now I'm going to ask some questions about how you feel living as a person from an African background in Australia. Also irrelevant to our study.

Now I'm going to ask some questions about blood donation. For the purposes of this study, blood donation is when a bag this size [show visual aid] is filled with blood by a trained health worker.

C. Blood Donation

2. Have you ever donated blood?
   2.1. No (Go to question # 10)
   2.2. Yes, in which country did you donate blood?
      2.2.1._____

2.2.2._____

2.2.3._____

3. When was the last time you donated blood? _____ (year)
4. How many times have you previously donated?
   4.1. 1-3 times
   4.2. 4-7 times
   4.3. 8-10 times
   4.4. 10 or more

Please answer 'True' or 'False' to the following statements

5. In New Zealand

5.1. You'll get a medical exam (blood donor approval exam) before every blood donation	Yes	No
5.2. You have to weigh at least 50kg to donate half a liter of blood		
5.3. All blood donations are tested for blood-based infections, like HIV and Hepatitis		
5.4. Before every donation, your iron level is checked to see if you can donate		
5.5. People under the age of 16 are allowed to donate blood		
5.6. Most patients needing blood require donations from many people		
5.7. **6.7 and 6.8 are not relevant**		
5.8. Blood is only given to people who can afford it		
5.9. Blood has to be used within 24 hours of donation		
5.10. It takes more than 90 minutes to donate blood		
5.11. It is possible for donors to catch diseases from the needles used to collect blood		
5.12. You can donate every 2-3 months		
5.13. Some people in New Zealand get paid to donate blood		
5.14. If you or your family members donate, then you're entitled to get it free		
5.15. Within 24-48 hours after donation your blood volume is restored		

6. Now I am going to ask you about factors that you might consider if you were planning to donate blood

6.1. My donating blood in the future would be	1 Bad	2	3	4	5	6	7 Good
	1 Unrewarding	2	3	4	5	6	7 Rewarding
	1 Unpleasant	2	3	4	5	6	7 Pleasant
	1 Unsatisfying	2	3	4	5	6	7 Satisfying
6.2. My family would recommend that I donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree

6.3. My family would think that I should donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.4. If I were to donate blood my family would	1 Strongly disapprove	2	3	4	5	6	7 Strongly approve
6.5. My community would recommend that I donate blood	1 strongly agree	2	3	4	5	6	7 strongly disagree
6.6. My community would think that I should donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.7. If I were to donate blood my community would	1 Strongly disapprove	2	3	4	5	6	7 Strongly approve
6.8. My religion encourages me to donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.9. My decision to donate blood will be influenced by my religion	1 Strongly agree	2	3	4	5	6	7 Strongly agree
6.10. To what extent do you see yourself capable of giving blood in the next year?	1 Very incapable of giving blood	2	3	4	5	6	7 Very capable of giving blood
6.11. How confident are you that you will be able to give blood next year?	1 Not very confident	2	3	4	5	6	7 Very confident
6.12. If it were entirely up to me, I am confident that I would be able to give blood next year	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.13. I believe that I have the ability to give blood next year	1 I definitely do not	2	3	4	5	6	7 I definitely do
6.14. I feel a moral obligation to donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.15. I feel a personal responsibility to donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.16. It is a social obligation to donate blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.17. I intend to donate blood in the next year	1 Strongly disagree	2	3	4	5	6	7 strongly agree
6.18. I will donate blood in the next year	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
6.19. I would like to donate blood in the next year	1	2	3	4	5	6	7

	Strongly disagree						Strongly agree

a. Barriers to Blood Donation

Use the following key to help guide your answer 1 strongly disagree 2 3 4 5 6 7 strongly agree

7. I don't give blood because;

7.1. It is painful	1	2	3	4	5	6	7
7.2. I am scared of needles							
7.3. I'm not strong enough to give blood							
7.4. I don't want to find out if I have any disease							
7.5. Blood donation is bad for the health							
7.6. I don't know where the blood donation center is							
7.7. I don't know what happens to the blood after it is donated							
7.8. Cultural reasons prevented me from donating blood							
7.9. Religious reasons prevent me from donating blood							
7.10. I think blood that is being stored for later use is wasteful							
7.11. My elders do not approve of me donating blood							
7.12. My spouse does not approve of me donating blood							
7.13. I am not sufficiently rewarded							
7.14. I feel my blood will not be appreciated							

b. Promoting Blood Donation

Use the following key to help guide your answer

1 very unlikely 2 3 4 5 6 7 very likely

8. How likely are you to give blood if the following were to occur:

	1	2	3	4	5	6	7
8.1. You could find out about your health through the free exam							
8.2. You were not scared of needles							
8.3. You were healthier							
8.4. Someone from the blood service came and talked with your community about blood donation							
8.5. You could give blood together with other members of your community at the blood donation center							
8.6. You could give blood together with other members of your community at your local community center (e.g., Church, Mosque)							

8.7. You knew what happened to blood after it is donated							
8.8. You could meet someone whose life was saved through receiving blood							
8.9. You knew your blood was appreciated							
8.10. You received incentive like food when you donated blood							
8.11. Your elders approved of you donating blood							
8.12. Your spouse approved of you donating blood							
8.13. There were no religious barriers giving to you giving blood							
8.14. There were no cultural barriers to you giving blood							

Appendix M: Phase II – Part B of the Questionnaire

Questionnaire Part B

1.	How do you think people's beliefs impact their decision to donate blood?
2.	How can the community be educated about the importance of blood donation in Islam?
3.	Among Muslim migrants community members in New Zealand, which cultural and familial factors do you believe influence their blood donation decisions? Please select all that apply: a. Gender b. First or younger generation c. Access to health education d. Language proficiency e. Other _____
4.	Describe how access to health education and language proficiency influences the willingness of migrants and their children to participate in blood donation.
5.	Describe any concerns you might have about acceptance of blood from a non-Muslim donor/smoker/drug/alcohol addict.
6.	Provide answers to the following questions regarding the scenario of receiving blood. Please answer Yes or No You would be concerned about receiving blood from:

	a. non-Muslim donor _____ b. Alcohol consumer _____ c. Drug addict _____ d. Smoker _____ Others, professional donors, persons with known illness_____(please specify)
7. 8.	How can blood donation services improve accessibility for Muslim migrants? Describe strategies to incentivize Muslim donors to donate blood at a blood bank. One strategy suggested is to have separate Muslim blood banks to encourage more Muslim donors. Describe your thoughts on this suggestion.
9. 10.	Describe how healthcare providers and policymakers could promote blood donation among Muslim migrants in New Zealand, taking into account their unique beliefs and cultural practices. If applicable, please share your experiences with blood donation services in your home country and host country, briefly comparing the similarities and differences of both.

Appendix N: Phase II – Final Questionnaire, Part A (Polonsky et al.) and Part B Modified

Title of the study

Evaluating the knowledge, attitude, beliefs, and behavior of the Muslim migrants population towards blood donation.

Tool for Expert Panel to Assess the Content Validity.

This *X*-questions survey has been developed to track the Knowledge, Attitudes, Beliefs, and Behaviors of Muslim migrants populations around blood donation using key constructs of the Theory of Planned Behavior.

We request you use the review tool below, along with the survey questionnaires to assess the questions. Your suggestions or recommendations will be highly appreciated.

Please evaluate the highlighted (Red), reworded questions for clarity (of the wording of the questions for a migrant English-speaking population). Additionally, assess the relevance of each question to the research topic, its appropriateness for the Muslim migrants population and the domain to which it is assigned.

If you disagree, kindly provide comments or suggestions. Your Kind feedback will be highly appreciated.

Part A: Questions taken from the Polonsky questionnaire:									
Item #	**a. Blood Donation**	**Question Domain**	**Clarity**		**Relevance**		**Appropriateness**		**Suggestions**
7.	Have you ever donated blood?	**Behavior**	**Agree**	**Disagree**	**Agree**	**Disagree**	**Agree**	**Disagree**	
7.1.	No (Go to question # 10)	**Behavior**							
7.2.	Yes, in which country did you donate blood?	**Behavior**							
8.	When was the last time you donated blood? _____ (year)	**Behavior**							

9.	How many times have you previously donated? 1-3 times 4-7 times 8-10 times 10 or more	**Behavior**							

	Please answer 'Yes or 'No' to the following statements			**Question Domain**	**Clarity**		**Relevance**		**Appropriateness**		**Suggestions**
10.	In New Zealand				**Agree**	**Disagree**	**Agree**	**Disagree**	**Agree**	**Disagree**	
10.1.	You'll get a medical exam (blood donor approval exam) before every blood donation.	Yes	No	Knowledge							
10.2.	**Do you know that the donor's minimum weight limit is 50Kg**	Yes	No	Knowledge							
10.3.	All blood donations are tested for blood-based infections, like HIV and Hepatitis	Yes	No	Knowledge							
10.4.	Before every donation, your iron level is checked to see if you can donate.	Yes	No	Knowledge							
10.5.	**People under the age of 16 are not allowed to donate blood**	Yes	No	Knowledge							

10.6.	Most patients needing blood require donations from many people.	Yes	No	Knowledge							
10.8.	**People need to pay for blood transfusions**	Yes	No	Belief							
10.9.	Blood has to be used within 24 hours of donation.	Yes	No	Knowledge							
10.10.	It takes more than 90 minutes to donate blood	Yes	No	Knowledge							
10.11.	It is possible for donors to catch diseases from the needles used to collect blood	Yes	No	Knowledge							
10.12.	You can donate every 2-3 months	Yes	No	Knowledge							
10.13.	**Payment for blood donation is also a practice in New Zealand**	Yes	No	Belief							
10.14.	If you or your family members donate, then you're entitled to get it free	Yes		~~Belief~~							
10.15.	Within 24-48 hours after donation your blood volume is restored	Yes	No	Knowledge							

11.	Now I am going to ask you about factors that you might consider if you were planning to donate blood.								Question Domain	Clarity		Relevance		Appropriateness		Suggestions
		1	2	3	4	5	6	7		Agree	Disagree	Agree	Disagree	Agree	Disagree	
11.1.	My donating blood in the future would be.	Unrewarding						Rewarding	Belief							
		Unpleasant						Pleasant								
		Unsatisfying						Satisfying								
11.2.	**My family supports my decision to donate blood**	Strongly disagree						Strongly agree	Behavior							
11.5	**My community supports my decision to donate blood**	1 Strongly disagree	2	3	4	5	6	7 Strongly agree	elief							
11.8.	My religion encourages	1 Strongly disagree						Strongly agree	Knowledg							

	me to donate blood															
11. 10.	To what extent do you see yourself capable of giving blood in the next year?	Very incapable of giving blood						Very capable of giving blood	Attitude							
11. 11.	How confident are you that you will be able to give blood next year?	1 Not very confident						Very confident	Attitude							
11. 12.	If it were entirely up to me, I am confident that I would be able to give blood next year	1 Strongly disagree	2	3	4	5	6	7 Strongly agree	Attitude							
11. 13.	I believe that I have the ability to give blood next year								~~Belief~~							

11.14.	I feel a moral obligation to donate blood	1 Strongly disagree							Belief							
11.15	I feel a personal responsibility to donate blood	1 Strongly disagree	2						Belief/atti							
11.16	It is a social obligation to donate blood	1 Strongly disagree	2						Belief							
11.18	**I will donate blood in the next year**	1 Strongly disagree							Attitude							

a. Barriers to Blood Donation

Use the following key to help guide your answer 1 strongly disagree 2 3 4 5 6 7 strongly agree									**Question Domain**	**Clarity**		**Relevance**		**Appropriateness**		**Suggestions**
12	I don't give blood because;								**Attitude**	**Agree**	**Disagree**	**Agree**	**Disagree**	**Agree**	**Disagree**	
12.1	It is painful	1	2	3	4	5	6	7	**Attitude**							
12.2	I am scared of needles								**Attitude**							
12.3	I'm not strong								**Attitude**							

	enough to give blood															
12.4	I don't want to find out if I have any disease								**Attitude**							
12.5	Blood donation is bad for the health								**Knowledge**							
12.6	I don't know where the blood donation center is								Knowledge							
12.7	I don't know what happens to the blood after it is donated								Knowledge							
12.8	**Due to cultural considerations, I am unable to contribute to blood donation.**								Belief Behavior							Please check for rewording

12.9	**Due to religious considerations, I am unable to donate blood.**								Knowledge Belief							
12.1	I think blood that is being stored for later use is wasteful								Knowledge							
12.11	My elders do not approve of me donating blood								Attitude							
12.12	My spouse does not approve of me donating blood								Attitude							
12.13	people should be sufficiently compensate								Attitude/ Motivation							

	d or acknowledged for donating blood															
12.14	I hesitate to donate blood because I feel my blood donation will not be appreciated								Fear Belief							

b. Promoting Blood Donation																
	Use the following key to help guide your answer															
	1 very unlikely 2 3 4 5 6 7 very likely								**Question Domain**	**Clarity**		**Relevance**		**Appropriateness**		**Suggestions**
13.	How likely are you to give blood if the following were to occur:									**Agree**	**Disagree**	**Agree**	**Disagree**	**Agree**	**Disagree**	
		1	2	3	4	5	6	7								

13.1	You could find out about your health through the free exam								Attitude							
13.2	You were not scared of needles								Attitude / Behavior							
13.3	You were healthier								Attitude / Behavior Knowledge							
13.4	Someone from the blood service came and talked with your community about blood donation								Knowledge							
13.5	You could give blood together with other members of your community at the blood								Knowledge							

	donation center															
13.6	You could give blood together with other members of your community at your local community center (e.g., Church, Mosque)								Knowledge							
13.7	You knew what happened to blood after it is donated								Knowledge							
13.8	I met a person whose life was saved through receiving blood								Knowledge							
13.9	You knew your blood was appreciated								Attitude							

13.10	You received incentive like food when you donated blood								Attitude							
13.11	Your elders approved of you donating blood								Attitude							
13.12	Your spouse approved of you donating blood								Attitude/ Belief							
13.13	There were no religious barriers to you giving blood								Attitude/ Belief Knowledge							
13.14	There were no cultural barriers to you giving blood								Attitude/ Belief							

Part B : Open –Ended Questions		Question Domain	Clarity		Relevance		Appropriateness		Suggestions
			Agree	Disagree	Agree	Disagree	Agree	Disagree	
1 B	**1. The importance of Knowledge for blood donation:**								
1.1b	How do you think that people's beliefs impact their decision to donate blood?	Belief Knowledge							
1.2b	How can the community be educated about the importance of blood donation in Islam?	Knowledge							
2B	**2. Weighing up risks and benefits related to blood donation:**								
2.1b	Describe any concerns you might have about acceptance of blood from a non-Muslim donors/smoker/drug/alcohol addict.	Belief/ Behavior knowledge							.
2.2b	OR								
2.3b	Provide answers to the following questions regarding the scenario of receiving blood. Please answer Yes or No You would be concerned about receiving blood from:	Belief/ Behavior/ Knowledge/ Attitude							

	a. non-Muslim donor _____ b. Alcohol consumer _____ c. Drugs addict _____ d. Smoker _____ Others_____								
3B	**3. The perceived role of blood banks:**								
3.1b	How can blood donation services improve accessibility for Muslim migrants?	Knowledge							
3.2b	Describe strategies to incentivize Muslim donors to donate blood at a blood bank?	Belief							
3.3b	One of the strategies suggested is to have separate Muslim blood banks to help encourage more Muslim donors. Describe your thoughts around this suggestion	Belief Knowledge							
4B	**4. Influence of navigating a new society and system/Home country on Blood Donation behaviors:**								
4.1b	Describe how healthcare providers and policymakers could promote blood donation among Muslim migrants in New Zealand, taking into account their unique beliefs and cultural practices?	Knowledge							
4.2b	If applicable, please share your experiences with blood donation services in your home country and host countries, with a brief comparison of similarities and differences of both.	Knowledge/ Attitude/behavior							
5B	**Gendered and familial cultural dynamics influencing blood donation:**								

5.1b	Among Muslim migrants' community members in New Zealand, which cultural and familial factors do you believe influence their blood donation decisions? Please select all that apply: a. Gender b. First or younger generation c. Access to health education d. Language proficiency e. Other _____	Belief/ Behavior							
6B	Describe how access to health education and language proficiency influences the willingness of migrants and their children to participate in blood donation?	Knowledge/ behavior							

Any additional comments:

_____

_____

_____

Thank you for reviewing and providing feedback on the survey.

Reference:

Polit, D. F., & Beck, C. T. (2006). The content validity index: are you sure you know what's being reported? Critique and recommendations. *Research in nursing & health, 29*(5), 489-497

Appendix O: Phase II – Polonsky's Email Regarding Validity and Reliability

Michael Polonsky <michael.polonsky@deakin.edu.au>

Wed, May 3, 2023 at 5:18 PM

To: Zunirah Asad <zunirah.iram@gmail.com>

Dear Zunirah,

We used these measures in almost all the works on Blood donation. In the various papers, we would have reported on reliabilities, as this depends on the specific sample used. For example, in some papers we only looked at refugees another all migrants and refugees together. We ran related studies twice and thus the reliability may also have differed across samples (although it was always reliable). Each paper would identify when the sample was collected.

Does this answer your question?

Michael

From: Zunirah Asad <zunirah.iram@gmail.com>

Sent: Wednesday, May 3, 2023 2:32 PM

To: Michael Polonsky <michael.polonsky@deakin.edu.au>

Subject:

Dear Sir,

May I request the validity and reliability scores, as well as the statistical results, of the questionnaire employed in thesurvey you referenced? I have attached a copy of the questionnaire for your reference.

Also if you could please tell in which study this survey was used. I would greatly appreciate any assistance you canprovide. Thank you in advance for your help.

Kind Regards

Zunirah Asad

PhD student (New Zealand)

Zunirah Asad <zunirah.iram@gmail.com>

Mon, May 8, 2023 at 10:51 AM

To: Michael Polonsky <michael.polonsky@deakin.edu.au>

Dear Michael Polonsky,

Thank you for getting back to me so quickly. Actually, I was looking for the articles/studies on blood donation where you used this survey specifically.

because in the article, “

African culturally and linguistically diverse communities’ blood donation intentions in Australia: integrating knowledge into the theory of planned behavior”, face-to-face

interviews were conducted. And it was a qualitative study.

So, if you could reference the articles, it would become easier for me to study them for the sample size and population to whom this survey was applied. I want to use this survey for the quantitative part of the study with Muslim migrants.

Kind Regards

Zunirah Asad

PhD Student

Michael Polonsky <michael.polonsky@deakin.edu.au>

Mon, May 8, 2023 at 11:32 AM

To: Zunirah Asad <zunirah.iram@gmail.com>

Dear Zunirah,

Because of language issues we hired research assistants to administer the survey face to face with migrants.. We havepeople ask all the questions and record survey responses.

Thus the paper you refer to uses the survey I sent you and it is a quantitative study, not qualitative study. We used thisapproach for All our blood studies to date, to ensure that we could access the broadest set of respondents ,includingthose that were not fully fluent in English.

Regards,

Zunirah Asad <zunirah.iram@gmail.com>

Mon, May 8, 2023 at 11:43 AM

To: Michael Polonsky <michael.polonsky@deakin.edu.au>

Thank you. Really appreciate your support

Kind Regards

Zunirah

Appendix P: Phase II – Profile of Members of the Expert Advisory Group.

Expert	Profile
Advisory Group Member 1	A dedicated medical professional, a Muslim doctor who hails from Pakistan and has been a resident of New Zealand since 2010. With a profound understanding of the Muslim faith and the intricacies of blood donation practices within the Muslim community, his commitment to both healthcare and cultural sensitivity is evident. Presently, he serves as a Senior Medical Registrar at Wellington Hospital, bringing his expertise to the forefront of medical care.
Advisory Group Member 2	A dedicated Muslim social worker who has been actively volunteering blood donations for the past 11 years. Having been a consistent blood donor for the past 14 years, he has made nearly 40 donations. His commitment to giving back extends beyond blood donation, as he has been actively involved in social work since 2010. Over the years, he has assumed various roles within charitable organizations and even served a brief tenure on the board of Zayed College for Girls. Widely known within the community, he currently holds a position on the executive board of the Council for Christians and Muslims. His extensive involvement in both charitable and educational spheres reflect his dedication to making a positive impact on the lives of others.
Advisory Group Member 3	A Muslim Postdoctoral Fellow in Horticulture, possessing a diverse educational background that includes a degree in Information Technology and a polytechnic diploma. Has a deep understanding of Islam and the Muslim faith, as well as its influence on the attitudes and practices of Muslims, with a longstanding commitment to blood donation.

Appendix Q: Phase II – Advisory Team Feedback After the First Review

Q#	Domain	Clarity					Relevance					Appropriateness					
	Knowledge	Q-C	I-C	F-C	Cn Agreement	C-I -CVI	Q-R	I-R	F-R	Rn Agreement	R-I -CVI	Q-A	F-A	I-A	An Agreement	A-I -CVI	A-UA
10.1.		2	2	2	3	1	2	2	2	3	1	2	2	1	2	1	1
10.2.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	0.7	0
10.3.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.4.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.5.		2	2	2	3	1	2	2	2	3	1	1	2	2	2	0.7	0
10.6.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.8		2	2	2	3	1	2	2	2	3	1	1	2	2	2	0.7	0
10.9.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.10.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.11.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.12.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
10.13		2	2	2	3	1	2	1	2	2	0.7	2	2	2	3	1	1
11.8		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.8		2	2	2	3	1	2	2	2	3	1	2	2	1	2	0.7	0
12.6		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.7		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.1		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
13.5		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1

13.6		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
13.7		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
13.8		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
1.2b		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
3.1b		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
4.1b		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1.0	0
6B		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1

Attitude																	
Q#	Domain	Clarity					Relevance					Appropriateness					
11.1	Attitude	2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
11.11		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
11.12		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
11.18		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.1		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.2		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.3		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.4		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.11		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.12		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
12.13		2	2	2	3	1	2	2	2	3	1	2	2	1	2	0.7	0
13.1		2	2	2	3	1	2	1	2	2	1	2	2	2	3	1	1
13.2		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
13.3		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1
13.9		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1

13.1		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
13.11		2	2	2	3	1	2	2	2	3	1	2	2	1	2	1	1	
13.12		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
2.1b		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
2.3b																		
3.3b		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	

Behavior																		
		Q-C	I-C	F-C	C n Agreement	C-I - CVI	Q-R	I-R	F-R	R n Agreement	R-I - CVI	Q-A	F-A	I-A	A n Agreement	A-I - CVI	A-UA	
7.1.	Behavior	2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
7.2.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
8.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
9.		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
11.2		2	1	2	2	0.7	2	1	2	2	0.7	2	2	1	2	0.7	0	
4.2b		2	2	2	3	1	2	2	2	3	1	2	2	1	2	0.7	0	

Belief																		
10.8.	Belief	2	2	2	3	1	2	2	2	3	1	1	2	2	2	0.7	0	
10.13.		2	2	2	3	1	2	2	2	3	1	2	2	1	2	0.7	0	
10.14.		2	2	2	3	1	2	1	2	2	0.7	2	2	2	3	1	1	
11.1		2	2	2	3	1	2	2	2	3	1	2	2	1	2	1	1	
11.3		2	1	2	2	0.7	2	1	2	2	0.7	2	2	2	3	1	1	
11.4		2	2	2	3	1	2	2	2	3	1	2	2	2	3	1	1	
11.5		2	1	2	2	0.7	2	2	2	3	1	2	2	2	3	1	1	

11.13		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
11.14		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
11.15		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
11.16		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
12.8		2	2	2	3		1	2	2	2	3		1	1	2	2	2		0.7	0
12.9		2	2	2	3		1	2	2	2	3		1	1	2	2	2		0.7	0
12.14		2	2	2	3		1	2	2	2	3		1	2	2	1	2		0.7	0
13.4		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
13.13		2	1	2	2		0.7	2	2	2	3		1	2	2	2	3		1	1
13.14		2	2	2	3		1	2	2	2	3		1	2	2	1	2		0.7	0
1.1b		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
3.2b		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1
5.1b		2	2	2	3		1	2	2	2	3		1	2	2	2	3		1	1

Appendix R: Phase II – Overview of the CVI Scores for the Questionnaire Presented to Experts Initially

Individual CVI	Scores	Total	Scores	Scale CVI	Scores
Sum of C-ICVI	79.333	C Total agreement	78	C Scale-CVI	0.9674
Sum of R-ICVI	79.4	R Total agreement	78	R Scale-CVI	0.9682
Sum of A-ICVI	77.7	A Total agreement	73	A Scale-CVI	0.9475

Appendix S: Phase II – Scores for the Questions Following the Second Review by the Experts

Q#	Domain	Initial Scores		Revised Score		Initial Scores		Revised Score		Initial Scores	
		C n Agreement	C-I - CVI	C n Agreement	C-I - CVI	R n Agreement	R-I - CVI	Rn Agreement	R-I - CVI	An Agreement	A - C
10.5.	Knowledge	3	1	3	1	3	1	3	1	2	0
12.5		3	1	3	1	3	1	3	1	2	0
4.1b		3	1	3	1	3	1	3	1	2	0
12.13	Attitude	3	1	3	1	3	1	3	1	2	0
13.1		3	1	3	1	2	0.7	3	1	3	1
13.11		3	1	3	1	3	1	3	1	2	0
4.2b	Behavior	3	1	3	1	3	1	3	1	2	0
10.8.	Belief	3	1	3	1	3	1	3	1	2	0
10.13.		3	1	3	1	3	1	3	1	2	0
11.2		2	0.7	2	0.7	2	0.7	2	0.7	2	0
11.5		2	0.7	3	1	3	1	3	1	3	1
12.8		3	1	3	1	3	1	3	1	2	0
12.9		3	1	3	1	3	1	3	1	2	0
12.14		3	1	3	1	3	1	3	1	2	0
13.13		2	0.7	3	1	3	1	3	1	3	1
13.14		3	1	3	1	3	1	3	1	2	0

[3] Reworded Question is sent to experts for 2nd review

Appendix T Approved Ethics Amendments

Sr. No	Comment	Amendments
1	Clarification about where and how the data will be stored?	The recordings and electronic data will be protected according to AUTEC's data storage matrix by a password while a locked drawer in the primary supervisor's office will be used to store the written documents and transcripts. Consent forms will be stored in secondary supervisor's office. A complete data management plan is attached with ethical application. **See appendix E for details**.
2	Provision of an assurance that participants will be provided with the Focus Group questions when they receive the Participant Information Sheet.	This has been added throughout and highlighted in red.
3	Removal of the reference to interviews from public-facing documents.	Removed throughout, highlighted in red.
4	Removal of the reference to koha from public-facing documents.	Removed.
5	**Amendment of the Participant Information Sheet**	
1	Inclusion of the verbatim wording for counselling from AUT Health Counselling and Wellbeing which can be found on the Research Ethics website at http://aut.ac.nz/researchethics	Included and highlighted in red.
2	Clarification about where focus groups will be taking place.	Focus groups will be conducted at AUT classrooms in Auckland and community centers. In the case of COVID-19 Alert levels restriction (2-3) at the time of our session, then online technology will be used for our focus groups.
3	Inclusion of more information in the 'how I was identified' section.	Participants will be identified through TANI and other community groups through this message: You are invited to participate in this research if you are: First-generation Muslim migrants, living in NZ for 3-7 years. Adults 18 to 66 years, Holding permanent residency or NZ citizenship. Being able to read and speak English and An eligible blood donor.
4	Removal of the duplicate paragraph about participant withdrawal.	Removed.

5	Removal of the references to older Chinese migrants.	Removed.
6	Inclusion of clearer advice about the purpose of the whole study	This has now been added to the information sheet and highlighted in red.
7	Removal of the reference to illegal behavior.	Removed.

to Michael

Appendix U: Phase II – Polonsky's Email Regarding Use of Questionnaire

Dear Sir,

Thank you for your kind support. I just wanted to ask if I can use your survey questionnaire according to my study.

I mean not changing it grossly, but to change some words and drop some questions if needed?

Kind Regards

Zunirah Asad

PhD student

AUT

<michael.polonsky@deakin.edu.au> Jun 21, 2023, 3:34 PM

to me

Michael Polonsky

Dear Zunirah,

OF COURSE. Knowledge development is about sharing ideas and preventing people reinventing the wheel. As long as you cite the original published work, feel free to use items, measure or constructs, as well as adapt them as you need to for your focus.

All the best with your work!

Michael

3 of 6

in:sent michael.polonsky@deakin.edu.au

Appendix V: Polonsky's Original Questionnaire

For use of Deakin office staff member only:

Participant number _____

Understanding Barriers and Enablers to Blood Donation amongst Sub-Saharan African Migrants and Refugees: Questionnaire

Thank you for agreeing to participate in this research, which is designed to assist the Australian Red Cross in better understanding how migrants from Sub-Saharan Africa view blood donation Participation in this study is voluntary and you are under no obliga to participate and a decision not to participate will not in any way affect your future relationship with the Blood Service or Deakin University.

I will start the interview by collecting your contact and personal de so that we will know how to contact you. I will also collect some demographic information about you and about your reasons for migration.

Interview and Participant Details	
Participant Contact Details	Interview Details
Given Name: " _____	Interviewer's name/s: _____
Family Name: _____	Date of interview: _____
Tel. (Mobile): _____	Time of interview: _____
Tel. (Home): _____	
Address: _____	
_____	
Postcode _____	

e

A. Demographic Information

1.1. Year you were born:_____

1.2. Gender: 0 Malen 0 Female2

1.3. Were you born in Australia: 0 Yes (Go to 1.8)
☐ No2In which country were you born? _____

1.4. In what year did you first arrive in Australia? _____

1.5. Which countries did you live in before coming to Australia

a) _____

b) _____

c) _____

1.6. In your home country, how would you describe the area you lived in prior to migration? *(Please tick one response)*

0 Large Cityt 0 Town 2 ☐ Rural area/village3

0 Refugee camp4

1.7. Under which visa category did you enter Australia? *(Please tick one response)*

0 Refugee and Humanitarian visas 0 Student visa2 0 Professional and skilled migration visa3

0 Employer sponsored work visa4 0 Family sponsored visa 0 Arrived as a childs

0 Other6_____

1.8. Research has suggested that views on blood donation might vary by religion. To allow us to examine if this is true, we need to know your religion. If you do not want to answer this question please tell the interviewer you would prefer not to answer.

What is your religion? *(Please tick the appropriate response)*

0 Christians 0 Musli 2 0 Traditional African3

0 No religion4 0 Other : _____ 0 Prefer not to answer

1.9. What is your highest level of education?

0 Completed primary schools 0 Completed secondary school 2 0 Completed TAFE or vocational course3

0 Completed undergraduate studies in university4 0 Completed postgraduate studies in university 5 0 Others _____

1.10. Please describe your level of employment?

0 Not employed 0 Employed full-time2 0 Employed part-time 3

0 Employed as a casual worker 4 0 Others: _____

Now I m going to ask some questions about Australian and African culture. The term 'home country culture' is used in some questions to mean the culture of the country you or your family migrated from.

B. Living in Australia

2. Use the following key to help guide your answers:

1 Strongly disagree 2 3 4 5 6 7 Strongly agree

2.1.	I often participate in my *home country cultural* traditions.	1	2	3	4	5	6	7
2.2.	I often participate in Australian cultural traditions.	1	2	3	4	5	6	7
2.3.	If I were single I would be willing to marry a person from my home country culture.			3	4	5	6	7
2.4.	If I were single I would be willing to marry an Australian person.		2	3	4	5	6	7
2.5.	I enjoy social activities with people from the same home country culture as myself.		2	3	4	5	6	7
2.6.	I enjoy social activities with Australian people.	1	2	3	4	5	6	7
2.7.	I am comfortable working with people of the same home country culture as myself.	1	2	3	4	5	6	7
2.8.	I am comfortable working with I Australian people.		2	3	4	5	6	7
2.9.	I enjoy entertainment (e.g., movies, music) from my *home country culture.*	1	2	3	4	5	6	7

2.10.	I enjoy Australian entertainment (e.g., movies, music).	1	2	3	4	5	6	7
2.11.	I often behave in ways that are typical of my *home country culture.*		2	3	4	5	6	7
2.12.	I often behave in ways that are Australian.'	1	2	3	4	S	6	7
2.13.	It is important for me to maintain or develop the practices of my *home country culture.*	1	2	3	4	5	6	7
2.14.	It is important for me to maintain or develop Australian cultural practices.	1	2	3	4	5	6	7
2.15.	I believe in the values of my home country *culture.*	1	2	3	4	5	6	7
2.16.	I believe in Australian values.	1	2	3	4	5	6	7
2.17.	I enjoy the jokes and humour of my *home country culture.*	I	2	3	4	5	6	7
2.18.	I enjoy Australian jokes and humour.	1	2	3	4	5	6	7
2.19.	I am interested in having friends from my *home country culture.*	1	2	3	4	5	6	7
2.20.	I am interested in having Australian friends.	1	2	3	4	5	6	7

Now I'm going to ask some questions about how you feel living as a person from an African background in Australia.

3.	**Use the following key to help guide your answers:** 1 2 3 4 5 6 7							
	Strongly disagree							Strongly agree
4.	I am discriminated against by my teachers/employer because I have an African background		2	3	4	5	6	7
4.1.	I am discriminated against by people outside school/work because I have an African background	1	2	3	4	5	6	7
4.2.	I am discriminated against by my fellow students/work colleagues because I have an African background.	1	2	3	4	5	6	7
4.3.	I feel that others behave in an unfair or negative way toward me because of my African background	1	2	3	4	5	6	7
4.4.	I feel that I am not wanted in Australian society.	1	2	3	4	5	6	7
4.5.	I don't feel accepted by other Australians.	1	2	3	4	5	6	7
4.6.	I feel that other Australians have something against me.		2	3	4	5	6	

4.7.	It is very easy for me to make friends with people from non-African backgrounds		2	3	4	5	6	7
4.8.	It is very easy for me to participate in group activities (hobbies, sport) with people from non-African backgrounds		2	3	4	5	6	7
4.9.	It is very easy for me to talk with people from non-African backgrounds in my break at work/school	1	2	3	4	5	6	7
4.10.	I am teased at work/school because of my African background	1	2	3	4	5	6	7
4.11.	I am called names at work/school because of my African background	1	2	3	4	5	6	7
4.12.	As a person with an African background, I feel discriminated against	1	2	3	4	5	6	7
4.13.	People of African background are teased at work/school because of their African background	1	2	3	4	5	6	7
4.14.	People of African background are called names at work/school because of their African background	1	2	3	4	5	6	7
4.15.	People with an African background are discriminated against		2	3	4	5	6	7

Now I'm going to ask some questions about blood donation. For the purposes of this study, blood donation is when a bag this size [show visual aid] is filled with blood by a trained health worker.

C. Blood Donation

5.1 Have you ever donated blood?

IZI Not (Go to question 6.1)

0 Yes2 In which countries did you donate blood?

a) _____

b) _____

c) _____

5.2 When was the last time you donated? _____*(Year)*

5.3 How many times have you previously donated blood

0 1-3 timest 0 4-7 times2 0 8-10 times3

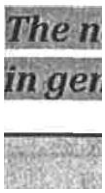
IZI 10 or more times4

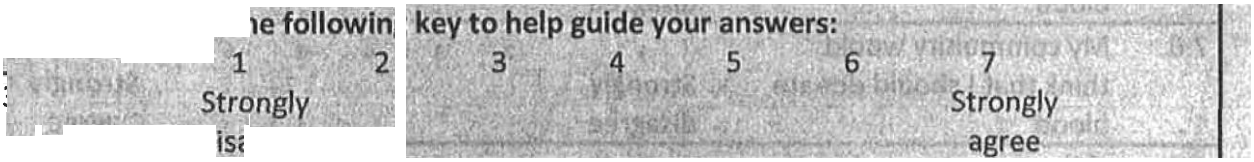
Please answer 'True' or 'False' to the following statements.

6.	*In Australia...*	True	False
6.1.	You'll get a medical exam (blood donor approval exam) before every blood donation		☐
6.2.	You have to weigh at least 50 kg to donate half a litre of blood		☐
6.3.	All blood donations are tested for blood based infections, like HIV and Hepatitis	☐	☐
6.4.	Before every donation, your iron level is checked to see if you can donate	☐	☐
6.5.	People under the age of 16 are allowed to donate blood	☐	☐
6.6.	Most patients needing blood require donations from many people	☐	☐
6.7.	If there is a shortage in donor blood in one country, this can be easily imported from another country		☐
6.8.	Australia exports a large amount of blood to other countries	☐	☐
6.9.	Blood is only given to people who can afford to buy it	☐	☐
6.10.	Blood has to be used within 24 hours of donation	☐	☐
6.11.	It takes more than 90 minutes to donate blood	☐	☐
6.12.	It is possible for donors to catch diseases from the needles used to collect blood		☐
6.13.	You can donate blood every 2-3 months	☐	☐
6.14.	Some people in Australia get paid to donate blood	☐	☐
6.15.	If you or your family members donate blood then you're entitled to get it for free	☐	☐
6.16.	Within 24-48 hours after donation your blood volume is restored	☐	☐

7.1.	**My donating blood in the future would be**	**1** Bad	2	3	4	5	6	7 Good
		1 Unrewarding	2	3	4	5	6	7 Rewarding
		1 Unpleasant	2	3	4	5	6	7 Pleasant
		1 Unsatisfying	2	3	4	5	6	7 Satisfying
7.2.	My family would recommend that I donate blood	z Strongly disagree	2	3	4	5	6	7 Strongly agree
7.3.	My family would think that I should donate blood	Strongly disagree	2	3	4	5	6	7 Strongly agree
7.4.	If I were to donate blood my family would	Strongly disapprove	2	3	4	5	6	7 Strongly approve
7.5.	My community would recommend that I donate blood	Strongly disagree	2	3	4	5	6	7 Strongly agree
7.6.	My community would think that I should donate blood	Strongly disagree	2	3	4	5	6	7 Strongly agree
7.7.	If I were to donate blood my community would	Strongly disapprove	2	3	4	5	6	7 Strongly approve
7.8.	To what extent do you see yourself as capable of giving blood in the next year?	Very incapable of giving blood	2	3	4	5	6	7 Very capable of giving blood
7.9.	How confident are you that you will be able to give blood in the next year?	Not very confident	2	3	4	5	6	7 Very confident
7.10.	If it were entirely up to me, I am confident that I would be able to give blood in the next year	Strongly disagree	2	3	4	5	6	7 Strongly agree

7.11.	I believe I have the ability to give blood in the next year	t Definitely do not	2	3	4	S	6	7 Definitely do
7.12.	I feel a moral obligation to give blood	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
7.13.	I feel a personal responsibility to give blood	t Strongly disagree	2	3	4	S	6	7 Strongly agree
7.14.	It is a social obligation to give blood	t Strongly disagree	2	3	4	5	6	7 Strongly agree
7.15.	I intend to donate blood in the next year	1 Strongly disagree	2	3	4	5	6	7 Strongly agree
7.16.	I will donate blood in the next year	Strongly disagree	2	3	4	5	6	7 Strongly agree
7.17.	I woul:d like to donate blood in the next year	Strongly disagree	2	3	4	5	6	7 Strongly agree





	You'd better be cautious when dealing with healthcare organisations.		2	3	4	5	6 7
3.2	Patients have sometimes been deceived or mislead by healthcare organisations.	1		3	4	5	6 7
3.3	When healthcare organisations make mistakes they usually cover it up.	1	2	3	4	5	6 7
3.4	Healthcare organizations have sometimes done harmful experiments on patients without their knowledge.	1		3	4	5	6 7
3.5	Healthcare organisations don't always keep your information totally private.	1	2	3	4	5	6 7
3.6	Sometimes I wonder if healthcare organisations really know what they are doing.	1	2	3	4	5	6 7

3.7	Mistakes are common in healthcare organizations.	1 2 3 4 5 6 7

D. Barriers to Blood Donation

8. Use the following key to help guide your answers:

1 Strongly disagree — 2 — 3 — 4 — 5 — 6 — 7 Strongly agree

	I don't give blood because:	
8.1.	It is painful	1 2 3 4 5 6 7
8.2.	I am scared of needles	1 2 3 4 5 6 7
8.3.	I'm not strong enough to give blood	1 2 3 4 5 6 7
8.4.	I don't want to find out if I have any disease	1 2 3 4 5 6 7
8.5.	Blood donation is bad for my health	1 2 3 4 5 6 7
8.6.	I don't know where the blood donation centre is	1 2 3 4 5 6 7
8.7.	I don't know what happens to the blood after it is donated	1 2 3 4 5 6 7
8.8.	Cultural reasons prevent me from giving blood	1 2 3 4 5 6 7
8.9.	Religious reasons prevent me from giving blood	1 2 3 4 5 6 7
8.10.	I think blood that is being stored for later use is wasteful	1 2 3 4 5 6 7
8.11.	My elders do not approve of me donating blood	1 2 3 4 5 6 7
8.12.	My spouse does not approve of me donating blood	1 2 3 4 5 6 7
8.13.	I am not sufficiently rewarded	1 2 3 4 5 6 7
8.14.	I feel my blood will not be appreciated	1 2 3 4 5 6 7

	moting Blood Donation	
9.	**Use the following key to help guide your answers:** 1 (Very unlikely) 2 3 4 5 6 7 (Very likely)	
	How likely are you to give blood if the following were to occur:	
9.1.	You could find out about your health through a free exam	3 4 5 6 7
9.2.	You were not scared of needles	1 2 3 4 5 6 7
9.3.	You were healthier	1 2 3 4 S 6 7
9.4.	Someone from the blood service came and talked with your community about blood donation	1 2 3 4 5 6 7
9.5.	You could give blood together with other members of your community at the blood donation centre	1 2 3 4 5 6 7
9.6.	You could give blood together with other members of your community at your local community centre (e.g. Church; Mosque)	1 2 3 4 S 6 7
9.7.	You knew what happened to blood after it is donated	2 3 4 5 6 7
9.8.	You could meet someone whose life was saved through receiving blood	2 3 4 5 6 7
9.9.	You knew your blood was appreciated	1 2 3 4 5 6 7
9.10.	You received incentives like food when you donated blood	
9.11.	Your elders approved of you donating blood	1 2 3 4 5 6 7
9.12.	Your spouse approved of you donating blood	1 2 3 4 S 6 7
9.13.	There were no religious barriers to you giving blood	1 2 3 4 5 6 7
9.14.	There were no cultural barriers to you giving blood	1 2 3 4 5 6 7

Blood study - Deakin University & ARCBS

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Friend/ Family Member/ Ne”ighbour/ Colleague’ “1 “ “ “

Health Centre/Community Centre/ Migrant Resource Centre/Education Centre/ Church/ Shop/Restaurant

(please specify the name) _____

Other (please specify the name) _____

F. Future Participation

Would you be happy for us to contact you for more information about Part 2 of this study?

O Noo

O Yesi

Thank you for participating

11 | age