

Encouraging Rare Blood Type Donations in the Bedouin Community in the South of Israel: A Strategic Plan

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Abstract

The presented study was conducted with Soroka Medical Center's Blood Bank in Beer Sheva, raising an issue regarding shortage of blood donations without Jr^a antigen, which exists in the majority of the population but is rare in some settlements in the Bedouin community in Southern Israel. At present, blood donation rate in this community is negligible. Therefore, the objective was to build a strategic plan to encourage rare blood type donation in the Bedouin community. The methodology included literature review, qualitative interviews, and a quantitative survey. Emphasis of language, religion and culture was taken in to count, as this group is a minority with distinctive characteristics. Interviews ($N=15$) were conducted with key personnel and Bedouin university students. Data gathered resulted in a survey questionnaire ($N=100$). The results showed significant lack of awareness regarding the importance of blood donations, motives, and barriers. A segmented strategic plan was built based on the findings, recommending further education on this topic, conservation of patients with non Jr^a blood type and periodic blood drives. The empirical study presented in this research paves the way for future research and implementation, yet future research should broaden the research to other medical practices and follow-up by action research.

Keywords

Bedouin Community, Blood Donation, Rare Blood Type, Jr^a Antigen.

1. Introduction

Blood transfusion serves an essential role in the management of various medical conditions such as bleeding disorders, different surgical and medical procedures, trauma resulting from accidents and variety of acute and chronic hematological treatments. Given the fact that there is no substitute for human blood, blood donors are the foundation stone for blood services, and their recruitment is especially challenging (Keten et al., 2017). Generally, blood donors are categorized into three categories: voluntary, family replacement or involuntary and paid donors. Voluntary donors are those who donate blood of their own will without receiving any compensation or rewards. Replacement donors are also unrewarded and they donate blood when their family member or friend requires the blood transfusion while the last category is paid donors, who are remunerated in the form of cash or in kind which could be considered a substitute for money (Alsaiani et al., 2018). In the last couple of years, there is a decrease in the number of eligible donors due to stricter rules and enhanced screening for transfusion-transmitted diseases (Sojka & Sojka, 2008; Townsend & Rosenbaum-Marinero, 2019). Therefore, blood centres need to find new donors

who can donate more often, need to think of ways to preserve the existing donors and provide service to all communities that make up their society (Uma, Arun, & Arumugam, 2013).

Studies found that the two most commonly reported reasons for first time blood donation were ‘influence from a friend’ (told by or accompanied a friend) and the media (media report/appeal about need or advertisement) (Sojka & Sojka, 2008). In general, additional reasons were altruism, wanting to help others and social responsibility (Gomes, Nogueira, Antão & Teixeira, 2019). On the other hand, lack of awareness and accessibility were prominent barriers, as were social norms and lack of compensation (Joshi & Meakin, 2017). Additional barriers included fear of needle prick, sterilization concerns, fear of the procedure and fear that the blood donation may result in change of physical strength (Baseer, Maha Ejaz, Noori & Faisal, 2017).

Magen David Adom (MDA) is Israel’s national EMS organization and is responsible for collecting, processing, distributing and storage of blood, plasma, and their by-products. MDA is a statutory, non-profit organization and all blood donations are given voluntarily (Hassan et al., 2020). Similar to the rest of the world, there is an almost chronic shortage in blood donations in Israel, and as of 2019, the Israeli Central Bureau of Statistics declared that only 2.4% of the population has donated in the past (Hassan et al., 2020; Merav & Lena, 2011). The Israeli population is ethnically diverse, which adds another challenge to matching blood donations to all. The main difficulty in completing this match within minority groups is dealing with problems that occur when finding red blood cells (RBC) with phenotypes that are not found in the general population (Grassineau et al., 2007).

It seems that in modern society, blood donations have become crucial for medical use and they are perceived as something relatively positive (Gader et al., 2011; Japar et al., 2018). But in the past, different cultures held traditional perceptions that were based on a set of beliefs that conveyed blood with symbolic meaning. Although there has been change in the conceptualization on blood, some cultures still preserve these beliefs (Charbonneau & Tran, 2013). Furthermore, religious factors have crucial influence on the public’s behaviour, stance, and can impact blood donations in the long run (Keten et al., 2017). In Islam, there are controversial views regarding blood donations (Polonsky, Renzaho & Brijnath, 2011). It is said in the Quran that the body is a vessel lent to those who believe, so they can achieve their purpose in life. Accordingly, there are those who forbid blood or organ donation, as this can be seen as religious theft of Allah’s possessions (Sharif, 2012). This said, a verse in the Quran states that ‘whoever saves one - it is as if he had saved mankind entirely’ and regards donations as lifesaving and positive (Renzaho & Polonsky, 2012).

The Bedouins in southern Israel are Muslim Arabs that settled in the Negev desert in the 5th century (Diamond et al., 2008). The Bedouin name originates from the Arabic word ‘Bada’, meaning ‘desert’. The Bedouins are tribal, and every tribe is a descendant of a common ancestor, thus all tribe members are in some way related (Shoked, 2019). Because of their nomadic lifestyle, the Bedouins are a unique cultural group in Israel and have changed rapidly and radically in the last sixty years, mostly due to displacement and urbanization (Abu-Saad & Oren, 2012). Urbanization created new opportunities and improved community life but caused extreme changes in the traditional lifestyle and weakened the tribe in the process. Despite the changes the Bedouin community has endured, it remains to preserve ancient norms and values in today’s lifestyle (Sued, 2018).

Traditional Bedouin medicine derives its power from the Islamic belief of fate. The Bedouins believe that God acts through man to heal, and that he does so with the help of doctors and healers. The Bedouins will seek help within traditional medicine and only if this will not provide, will they turn to modern medicine. The National Health Act of 1995 exposed the Bedouins to modern medicine and sped up availability and accessibility to it (Abu-Rabia, 2017). When comparing resident to health clinic ratio in some Negev settlements, high accessibility rate was found in Hura and Tel Sheva (both Bedouin settlements). Even so, blood donation rates in these settlements was close to zero, a fact that enhances the severity of the issue regarding lack of blood donations. This information was gathered from the websites of four National Health Insurance companies (HMO) and the Israeli Central Bureau of Statistics web site.

In the years 1982-1984 two unrelated Bedouin women were hospitalized in Soroka Medical Center in Beer Sheva (Southern Israel’s main hospital) and were diagnosed with Jr^a antibodies (Levene, Sela, Dvilansky, Yermiahu, & Daniels, 1986). The Jr^a antigen exists in the majority of the population and Jr^a antibodies were first reported in 1970 (Katsuragi et al., 2019). The antibody phenotype is found in Northern Europe, Bedouin, Mexican and Gypsy

populations, as well as the Japanese in Asia (Tanaka et al., 2014). In countries with large minority groups, identification and collection of rare blood types can be challenging (Grassineau et al., 2007). Identification of this rare blood type occurs only after a patient has been given a blood transfusion that contains this antigen. This can lead to development of Jr-a antibodies (alloimmunization) and to an Acute Hemolytic Transfusion Reaction (AHTR), a life-threatening reaction (Jani et al., 2014). Once side effects appear, identification of the antibodies is a complex process that requires much testing (Fung, Grossman, Hillyer, & Westhoff, 2014).

In order to take on the challenge of lack of non Jr^a blood units, the aim of this work was to build a strategic plan to encourage rare blood type donations in the Bedouin community, while taking into account motives to donate and potential barriers.

2. Methodology

The methodology in this study was divided into three main stages: introductory study, qualitative research and quantitative research.

2.1. Introductory Study and Literature Review

The goal of this stage was to learn about the background of the said issue, understand the breadth of it and where the situation lays today. After conducting a literature review, observations and interviews with key personnel took place. In addition, forms and artifact collection was added to fully record the blood supply process in Israel, target population and current state.

2.1.1. Observations

The first part of research included a visit to Soroka's Blood Bank laboratory and review of the blood transfusion process in the medical center. During December 2019, observations were made on a focus group that consisted of associated personnel from different organizations that were involved in the issue of rare-blood-type blood units, and specifically regarding the non Jr^a blood type in the Bedouin community. The key personnel in this group were from Soroka's Blood Bank, MDA, Clalit HMO and Tel Sheva Council. This meeting was held prior to the execution of a one-of-a-kind blood drive, that tested for the presence of the Jr^a antigen and was set for the 26th of January 2020.

2.1.2. Key Personnel Interviews

Interviews were held with key personnel from the Israeli blood service organization and from the Bedouin community, in order to understand different and diverse points of view that shed light on this issue. From December 2019 to January 2020, a telephone interview with MDA's blood services VP and frontal interviews with Soroka's Blood Bank laboratory manager were conducted. Due to Covid-19 restrictions, during the months of April-May 2020, telephone interviews were conducted with Tel Sheva's Mayor and Hura's community center manager, who oversees regional blood drives.

2.2. Qualitative Research

2.2.1. In-Depth Interviews

The purpose of these interviews was to have an in-depth discussion and to expose stance, perception, motives, and barriers regarding blood donations in the Bedouin community - in order to construct a valid questionnaire. Semi-structured interviews included questions based on information gathered beforehand from the literature review and key personnel interviews. These interviews were conducted with 11 individuals within the Bedouin community in Tel Sheva and Hura, settlements and due to Covid-19 restrictions, were held via telephone or 'Zoom'. The sampling method was 'Snowball', which is defined as any type of sample recruitment strategy, whereby all or a portion of participants who are asked to provide data, are not directly recruited by the researcher but through other persons who connect them to other persons as participants (Marcus, Weigelt, Hergert, Gurt & Gelléri, 2017). First circle were mainly research team member acquaintances, mainly through workplaces, and they referred the research team to their friends and/or family and so forth. This method is usually common in study of unseen phenomenon's, such as the rare blood type in this research.

2.3. Quantitative Research

2.3.1. Questionnaire

In order to understand the degree of impact of the motives and barriers found earlier, a questionnaire was built. The questionnaire was written in Hebrew, then translated to Arabic and reviewed by two students who speak both languages. The questionnaire was anonymous and computerized through ‘Qualtrics’ online survey software. After conducting all the interviews, a pilot questionnaire was distributed to 27 Bedouin individuals, with the purpose of testing the validity of the questionnaire and its translation level. During the pilot, translation adjustments were made prior to the distribution of the final questionnaire, which was distributed to residents of the Bedouin community in Hura, Tel Sheva and other Bedouin settlements in the Negev. The participants were selected through convenience sampling via ‘WhatsApp’ and ‘Facebook’ groups throughout the Bedouin community. The questionnaire was also distributed by key personnel within the community, such as the mayor of Tel Sheva, Hura’s community center manager and the Southern District welfare Inspector.

2.3.2. Questionnaire Analysis

Statistical analyses were done using SPSS (Statistical Package for the Social Sciences), version 26.0, and significance level was set at 0.05. Cramer’s V correlation and Spearman’s correlation were used to analyse the findings collected by the questionnaire. Chi-squared models were applied for items with nominal data types and Spearman’s correlation to test relations in numerical data types. To ensure Power of test with a confidence level of 90%, the sample required 68 participants out of a 39,600-person population in Hura and Tel Sheva. In the statistic testing, the team did not include participants that did not agree to take part in the study or those who were under 18 years of age, since they cannot donate blood.

3. Results

3.1. Background Research and Literature Review

By interviewing MDA’s blood services VP and Soroka’s Blood Bank laboratory manager, the team gathered data regarding the blood supply process in Israel. Interviews indicated that Soroka’s Blood Bank is subordinate to various organizations in a complex manner (Figure 1). MDA Blood Services are responsible by MDA law (1950) for supplying 100% of blood units and components need for hospitals and the IDF (Israeli Defence Force). Blood donations are collected by MDA Mobile Blood Units and in fixed donor rooms located at MDA stations nationwide. Every blood unit is processed into components (RBC, plasma, cryoprecipitate, and platelets). All donations are tested for blood type (ABO, Rh), detection of irregular antibodies to red cell antigens and identification of transfusion-transmitted diseases. Hospital blood banks purchase the required amount of blood units from MDA and then distribute them to the different hospital departments. Hospital blood banks can only store a limited amount of cooled blood units for up to 42 days, compared to MDA’s blood bank that can store frozen blood units for up to 10 years. From the moment a blood unit has been thawed, it is useable for up to 72 hours maximum.

It was also found that as of today, there are 18 known cases of patients with non Jr^a blood type in Israel. These known cases come from the Bedouin community, specifically from the ‘Abu Rkaiek’, ‘Abu Kaf’, and ‘ElAtrash’ families in Hura and the ‘ElAsam’ family in Tel Sheva. As of today, there is one frozen non Jr^a blood unit that was acquired in surplus exchanged between countries. This blood unit will be used only in a particular case; the need of only one blood unit. When there is a need for blood units of this blood type, occurring especially during pregnancies, designated blood donations from family members will happen.

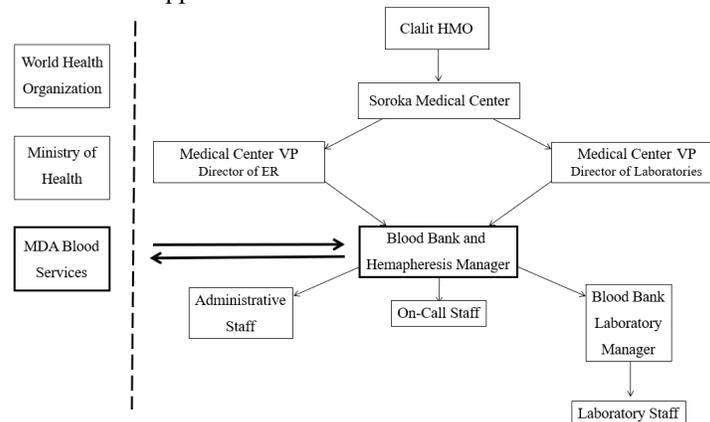


Figure 1: Organizations Involved in Soroka’s Blood Bank Supply Process

3.2. Qualitative and Quantitative Research

Table 1 shows a summary of the interviews conducted and includes demographic data and key topics that came up. The interviews included 11 participants, 2 of them male and 9 of them female. Their average age was 23.454 with a standard deviation of 4.568. 45% of participants stated that they have donated blood in the past.

Table 1: Interview summary ($N=11$)

Interviewee Number	Gender	Age	City	Previously Donated Blood	Key Topics	
					Motives	Barriers
1	Female	18	Hura	Yes	Altruism	Lack of awareness and accessibility
2	Female	23	Tel-Sheva	No	Altruism	Lack of awareness and accessibility, modesty issues
3	Female	22	Tel-Sheva	Yes	Importance of blood donations, overall health. Altruism, Islamic stance	Lack of awareness and accessibility
4	Female	35	Tel-Sheva	No	Importance of blood donations	Perceived risk and side effects, lack of awareness and accessibility, family/spouse consent
5	Male	24	Hura	Yes	Importance of blood donations	Lack of awareness
6	Female	20	Tel-Sheva	No	N/A	Perceived risk and side effects, lack of awareness, family/spouse consent
7	Male	26	Tel-Sheva	No	N/A	Perceived risk and side effects, lack of awareness and accessibility, profession of the person who is taking blood
8	Female	22	Tel-Sheva	No	Importance of blood donations, overall health	Lack of awareness, modesty issues, family/spouse consent
9	Female	25	Tel-Sheva	Yes	Importance of blood donations	Lack of awareness
10	Female	24	Hura	No	N/A	Lack of awareness
11	Female	19	Hura	Yes	Altruism	Lack of awareness

Before distributing the final questionnaire, a pilot questionnaire that included 27 individuals was distributed, 4 of the participants male and 23 of them female. Their average age was 22.085 with a standard deviation of 2.01. 85.185% of participants were students, 11.11% had a B.A and 3.703% had an M.A. All of the participants were Hura or Tel Sheva residents, and 40.74% stated that they have donated blood in the past.

Characteristics of the questionnaire sample group are presented in Table 2. The questionnaire included 100 participants, 33 of them male and 67 of them female. Their average age was 29.07 with a standard deviation of 7.782. 84% of participants were students and/or had at B.A at the least. Participants were residents from Hura, Tel Sheva and other Bedouin settlements in the Negev (Figure 2) and 42% of participants stated that they have donated blood in the past.

Table 2: Sample characteristics by blood donation status ($N=100$)

		n (%)	
		Donors	Non-donors
Gender	Male	19 (58%)	14 (42%)
	Female	23 (34%)	44 (66%)
Age (years)	<29	17 (31%)	37 (69%)
	>=29	25 (54%)	21 (46%)
Settlement	Hura	13 (48%)	14 (52%)
	Tel-Sheva	22 (42%)	31 (58%)
	Other	7 (35%)	13 (65%)
Education	None	6 (37.5%)	10 (62.5%)
	Student	10 (30%)	23 (70%)
	B.A	18 (51%)	17 (49%)
	M.A	6 (60%)	4 (40%)
	P.h.D	2 (33%)	4 (67%)

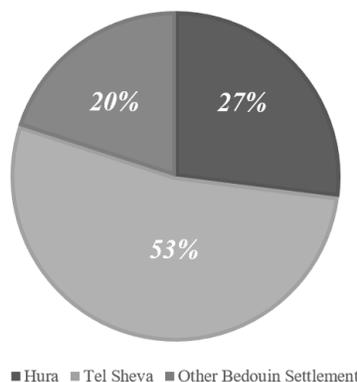


Figure 2: Questionnaire Settlement Reply Distribution

After content analysis of the interviews and statistical analysis of the questionnaire, the results were divided into themes for blood donation motives and barriers.

3.2.2. Motives

3.2.2.1. Importance

It was found in the interviews that participants acknowledge the importance of blood donations, most of them reported that they believe that a blood donation helps people and can even save lives. Likewise, 99% of participants in the questionnaire said that they acknowledge the importance of blood donations in one way or another. However, when testing the relationship between the importance of blood donations and actual blood donation, no statistical

significance was found ($r=.231, p=0.255$). This said, most interview and questionnaire participants acknowledge the importance of blood donations, but that does not mean that they will in fact donate blood, and vice versa.

3.2.2.2. Family

In the interviews, arose the need for family consent when donating blood. This approval can be from parents or a spouse (when referring to married women). Furthermore, when asked in the questionnaire about the amount of exposure to blood donations, from all the means of exposure, statistical significance was found only between actual blood donation and exposure through a family member ($r=.396, p<0.05$)(Table 3). Likewise, statistical significance was found between actual blood donation and cases where a family member had received a blood transfusion in the past ($r=.364, p<0.05$). Therefore, it is possible that family affects actual blood donation and may be a critical factor in blood donation.

3.2.2.3. Exposure

In the interviews, participants were asked if they had proposals to solving our said issue. Several proposals related to use of social media were given, specifically ‘Facebook’, ‘Instagram’, and ‘TikTok’. Additionally, statistical significance in the questionnaire was found regarding the relationship between actual blood donation and the level of exposure to information about blood donations ($r=.461, p<0.05$). When testing for correlation between importance of blood donations and different means of exposure, statistical significance was found in all media, whereas the strongest degree of correlation was found in exposure through social media ($r=.313, p<0.05$). Hence, exposure to information concerning blood donation via different forms of media, and especially social media, may have a positive impact on one’s decision to donate blood.

Table 3: Correlations between previously donated blood, importance of blood donations and media exposure measures ($N=100$)

	Internet	TV	Radio	Social Media	Friends	Billboards	Family
Importance of blood donations	0.255*	0.231*	0.214*	0.313**	0.263**	0.232*	0.215*
Previously donated blood	0.124	0.251	0.225	0.241	0.208	0.27	0.396*

Note: ‘donated blood before’ was analyzed with Cremer Correlation whereas ‘importance of blood donations’ was analyzed with Spearman Correlation.

** $p<0.05$, ** $p<0.01$*

3.2.1. Barriers

3.2.1.1. Lack of Awareness and Publicity

In a sweeping manner, the most prominent barrier that was found throughout all interviews was lack of awareness to the shortage in blood donations. In addition, when participants were asked about possible solutions to this issue, a considerable part suggested publicity as an effective and practicable solution. Examples included propaganda on the streets, informative videos, and explanation from key figures in the Bedouin community. In his interview, even the mayor of Tel Sheva indicated that there is little publicity today, and if more of it would be done, a broader audience may be approached. Thus, information that is tailored to the specific community may increase the awareness towards blood donations.

3.2.1.2. Modesty

In the interviews, a difficulty regarding donating blood in a public place came up. As part of the donation process, donors pull up their sleeve above their elbow - for Muslim women, this is considered not modest. Additionally, the donation is collected while the donor lays down on a bed. Some of the interviewees stated that by the Islam, women are not allowed to lay on a bed when a man is nearby, which makes it difficult for Muslim women to donate blood where beds are exposed.

3.2.1.3. Religion

In the interviews and questionnaire, it was found that Islam views blood donations as relatively positive. Most of the interviewees stated that Islam encourages helping others and saving lives. Some also claimed that on the contrary to other organs, blood is not necessarily Allah's possession because it renews and restores itself. Furthermore, the mayor of Tel Sheva stated in his interview that Islam does in fact encourage blood donations, and that people are just unaware of it. Hura's community center manager said that older people would benefit from publicity through clerics (Imams) in their mosques. 89% of participants in the questionnaire replied that they believe the Islam's stance towards blood donations is positive. Hence, people may be encouraged through Islam to donate blood, while taking into account aspects regarding modesty.

3.2.1.4. Fear of Donation Procedure and Risk

Some interviewees showed their concern regarding the donation procedure and the medical risk that it contains. In one of the interviews, an individual stated that they want a doctor to do the procedure and not a paramedic, in fear that they might do more harm than good. In the questionnaire, a significant negative correlation was found between the importance of donating blood and fear of the donation procedure and possible side effects ($r=-.350, p<0.05$). Thus, fear of the procedure may affect the perceived importance of blood donations, or vice versa.

3.2.1.5. Donor Preservation System

Soroka's blood bank laboratory manager stated in one of his interviews that when a person with a rare blood type is discovered, they receive a notification letter. The letter states that the person has a rare blood type, with non Jr^a antigen, and they ask of them to donate blood whenever possible. They request that family members get tested for this blood type as well. The letter also states the risk in receiving a blood transfusion that does not match their blood type, that can lead to development of Jr-a antibodies and to an Acute Hemolytic Transfusion Reaction (AHTR).

3.2.1.6. Accessibility

Accessibility to blood drives was found to be another barrier. Interviewees replied they know that they can donate in several blood drives in Beer Sheva. That said, there are not enough blood drives in their residential area, therefore it is not accessible enough to them. They also raised the fact that they prefer to have a scheduled donation, that would take place in a designated place such as a medical clinic, in opposed to donating spontaneously. Furthermore, Soroka's blood bank laboratory manager stated that in the beginning of 2020, a one-of-a-kind blood drive was held in Tel Sheva. Out of 26 residents that came to donate blood, 2 were found to have a rare blood type - one of them type anti Jr^a and one of them anti U. This suggests of great potential within this community as to having rare blood types, that can be achieved through accessibility.

4. Discussion

In the current study, stance, perception, motives, and barriers regarding blood donations in the Bedouin community in the Negev were examined, in order to build a strategic plan to overcome the shortage of non Jr^a blood units. The main findings show that motive-wise, most participants acknowledge the importance of donating blood, but that does not necessarily indicate that they will in fact donate blood. It is also possible that family influences actual blood donation and may be a critical component in blood donations. A positive impact on one's decision to donate blood may derive with the help of exposure to information regarding blood donation via different forms of media, and especially social media. In the aspect of barriers, it was brought up that tailored information to specific community needs may increase the awareness towards blood donations. It was also found that Islam can encourage blood donation, while taking into account aspects related to modesty. Fear of the donation procedure and the perceived importance of blood donations were found to affect each other as well. Finally, the donor preservation system implemented at present consists of just a notification letter. With all of the above said, the research team came to three main conclusions.

First, after conducting a thorough review of the blood donation process, and with the results of this study, it appears that localization of donors with rare blood types is deficient. Seeing that from a small sample in the first ever designated blood drive, an individual with the non Jr^a blood type was found, indicates that the goal is indeed achievable. It should be pointed out that the results from this blood drive were obtained before the efforts to raise awareness in the Bedouin community began. There was great response from the community in the interviews, as well as in the questionnaire, given that there was full cooperation during the study, even from those who have not donated blood in the past. Thus, there is practicability in achieving our goal.

Second, it was found in the literature review that to this day, research focused on motives and barriers in the general population. There has not yet been conducted in-depth research regarding the motives and barriers in the Bedouin

community in the Negev, a unique minority group. In result, no targeted marketing has been performed to increase awareness in this community. Hence, interview results demonstrate low awareness to blood donations and to rare blood types, and interviewees said that there is a need for publicity which will in turn, raise awareness. Therefore, there is required investment in publicity and awareness enhancement that is customized for the Bedouin community in the Negev.

Finally, as stated, rare blood type donors receive notification via letter. This type of contact is not as personal as necessary - a letter does not allow for asking questions or reacting to its contents, hence this communication is one-sided. For a person without a medical background, the letter may not be explicit enough and even frightening, more so when regarding a unique and sensitive medical issue. Consequently, sending a notification letter is not an effective solution and does not result in the desired outcome, and there is to implement a better system in preserving rare blood type donors.

From the findings, rose a number of possible directions regarding the use of information channels, where each direction suits a different segment in the community, and so it was decided to act in this manner. As mentioned in the introduction, the difference between the older and younger members of the Bedouin community is due to modernization. Furthermore, exposure through media about the need for blood donations has an effect on the probability of donating blood. The questionnaire and interviews found that social media is a key platform that can influence opinions in young people. Hence, exposure to information regarding blood donations via social media may positively influence the decision to donate blood, particularly in younger members of the community.

According to the literature review, a main factor shaping the choice to donate blood is influence from a friend or family member. The questionnaire and interviews revealed similar results. Likewise was the need to receive approval from parents or a spouse before donating blood. Thus, to increase an individual's willingness to donate blood, awareness needs to be raised and the importance of donating blood should be emphasised to family members, especially to older community members such as parents. In opposed to the controversial views in Islam regarding blood donations found in the literature review, most participants in the questionnaire and interviews mentioned a positive stance and none mentioned a negative stance. Key personnel from the Bedouin community also recommended to boost publicity with the help of clerics, Imams, who can stress the importance of blood donations in the Islam as a way to encourage blood donations. Because the Negev Bedouins are conservative Muslims, modesty restrictions are to be taken into consideration.

Because adolescents have more years of donation potential, the younger generation should be furtherly educated in school to raise awareness. Thus, greater awareness in teenagers may affect the probability of donating blood when becoming of age.

5. Recommended Strategic Plan

The following operative plans are recommendations that give a detailed solution to the findings in the literature review, interviews, and questionnaire. Though every plan targets a different segment, it is not limited by that segment.

5.1. An Explanatory Program

Because it was decided to segment the community, an explanatory program is divided into; youth, young adults (aged 20-35) and middle and old age adults. Previous findings demonstrate that advertising does not achieve the requested goal in a group that does not donate, therefore this plan is explanatory and does not include only advertising (Harrington et al., 2007).

5.1.1. Youth Triennial Program

Here 10th to 12th grade students will be targeted. This age group was chosen because teenagers of this age have adaptable thinking and still do not hold firm and decisive opinions. Hence, the ability to influence them is large and may persist over time (Hauser, Iannaccone, Walitza, Brandeis, & Brem, 2015). Secondly, this time frame poses a great opportunity as they are approaching the legal age that allows donations.

The program includes three stages over the course of three years. 10th graders will receive professional information about the medical procedure, it's risks, and the overall blood donation process, from the moment of the donation until the moment a patient receives a blood transfusion. 11th graders will listen to a first-hand lecture from a person that had a lifesaving blood transfusion. The purpose of this is to generate an emotional relation to the subject and to stress the fact that blood donations save lives. Towards the end of their school year, seniors in the 12th grade will have a class benefit with an award-winning student video contest for encouraging blood donations, and a school blood drive that will allow students to donate blood for the first time.

5.1.2. Young Adult Program (Ages 20-35)

Findings conclusively showed that exposure to information about blood donations on social media may positively influence the choice to donate blood, particularly applicable to those using social media for long periods. The first element used here will be an informative video starring an influencer from the Bedouin community, since influencers can engage young individuals to action (Giles & Maltby, 2004). Another suggestion is to promote this issue using sponsored ads on social media that target young Bedouin individuals. These advertisements will include information about rare blood types, specifically anti Jr^a, and the importance of designated blood donations. By clicking the ad, one will be directed to MDA's website, where they can obtain information about blood drive locations.

5.1.3. Middle and Old Age Programs (Ages 35+)

Findings recommended publicity through clerics, as this sector is generally conservative. Because fear of the donation procedure and its risks were found to be potential barriers, it is recommended to include a medic to lessen those concerns. Imams in the Bedouin community hold seasonal lectures in Mosques, and this platform can incorporate content regarding the Islamic view on blood donations. In the designated blood drives that will be broken down in the next plan, inclusion of a medic or doctor is suggested.

5.2. Identification Plan

It is suggested that designated blood drives are to be held, on account of the potential of rare blood type donors found during the January 2020 blood drive. Designated blood drives allow planned testing for presence of different antigens, as this requires authorized genetic testing. Because donating blood is permitted once every three months, these blood drives should be carried out quarterly and the donor carers should be within the community or speak Arabic at the least. The blood drive should be divided by gender, when the donor carers gender matches the donor's gender.

5.3. Preservation Plan

Recommendations to change the current preservation system include allowing for a two-sided conversation via notification by telephone. The donor will be given an explanation regarding their rare blood type and its meanings. The discussion is to be in Arabic and conducted by a source that is familiar with the said issue that can answer possible questions.

6. Conclusion

In the current study, stance, perception, motives, and barriers regarding blood donations in the Bedouin community in the Negev were examined, in order to build a strategic plan to overcome the shortage of non Jr^a blood units. This study was the first to examine the issue of rare blood types in the Bedouin community in the Negev, a unique cultural group. This is an altruistic matter, in which all the organizations involved are prepared to give a hand to step towards advancement. The operative recommendations wish to help raise awareness to blood donations and to rare blood types, help identify new rare blood type donors and preserve current donors.

The study had several limitations. First, the questionnaire sample was relatively small ($N=100$) and because the sampling methods were 'Convenience' and 'Snowball', the sample included mostly young, educated women. Hence, the findings may not be generalized to the whole Bedouin community. Secondly, the findings are based on self-reported answers from the interviews and questionnaire. Third, social desirability bias may have influenced the findings, since such an altruistic issue may cause individuals to answer as they believe is expected of them. Finally, the language of the research instruments could have possibly limited the study. The interviews were conducted in Hebrew, whilst the mother tongue of interviewees was Arabic. Furthermore, the questionnaire was originally written in Hebrew and later translated to Arabic. Future research should add more knowledge and focus on non-educated sectors of the Bedouin community. Furthermore, it should also be conducted on a larger number of donors, with additional rare blood types that were not researched in this study, in order to gain more detailed knowledge about this issue in our setting.

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