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Barriers and facilitators of immunisation in refugees and migrants in Australia: an east-African case study

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ABSTRACT

Background: Immunisation programs available in low and middle-income countries include fewer vaccines in comparison to Australia's National Immunisation Program. As a result, refugees and migrants may have a heightened risk of being inadequately immunised upon arrival to Australia. Several studies have suggested that East African immigrants have low vaccination coverage. As such, the aim of this study was to explore the underlying attitudes, barriers and facilitators to immunisation in east African communities in two states of Australia: New South Wales and Victoria.

Methods: A qualitative study involving 17 semi-structured, in-depth interviews were undertaken with East African refugees and migrants living in two states of Australia: New South Wales and Victoria. These refugees and migrants were from four key East African countries: Kenya, Somalia, Ethiopia and South Sudan. Thematic analysis was undertaken to analyse and interpret the results.

Results: Language barriers, low risk perception and a lack of education were the key barriers identified by participants. Facilitators mentioned included the development of resources in participants' languages and the implementation of reminder systems consistently across all GP practices. There was also a unanimous agreement amongst participants that community organisations need to play a greater role in the dissemination of information about immunisation.

Conclusions: Further research needs to be undertaken with regards to how education about immunisation is delivered and disseminated to refugee and migrant communities. Current findings also support the need to improve the health literacy of refugees and migrants by providing culturally and linguistically appropriate resources in participants' respective languages.

1. Introduction

Immunisation schedules used in developing countries generally include fewer vaccines than those provided in Australia. This variability in the respective schedules, coupled with disruptions to health infrastructure in the country of origin, can result in incomplete immunisation statuses [1]. As a result, some refugees and migrants may be under-immunised according to Australian requirements and require catch-up immunisation [2].

In most countries of eastern Africa, particularly Somalia, the introduction of immunisation programs were rapidly implemented through mass campaigns, in an attempt to increase the coverage rates across the population [3]. In a study exploring the deterrents to immunisation amongst Somali mothers in Somalia, it was found that mothers were concerned about the safety of immunisations, due to the authoritative nature and delivery of the expanded program on immunisation (EPI) in the 1980s [4]. Whilst there are improvements in vaccine coverage in some these regions today; according to coverage estimates reported by countries to the World Health Organization (WHO), there are still variations in coverage rates across countries in East Africa. For instance, in Ethiopia, DTP3 vaccination coverage in 2018 was fairly high at 95% [5]. In Kenya, coverage for the same vaccine was at 81% [5]. In Somalia and South Sudan, coverage for the DTP3 vaccine was suboptimal, with rates at 69% and 49% respectively [5].Reasons for low coverage rates in some of these countries are in part due to disruptions to health infrastructure and vaccination programs because of political instability and breaks in the cold chain. It has been postulated that the perceptions formed around immunisation from experiences in East Africa may be maintained when immigrating to a new country; the most negative perceptions being the fear of vaccines causing adverse events, and a mistrust of the healthcare system.

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In East African communities abroad, studies conducted in the UK and US have found that there are some misperceptions associated with immunisation, particularly in regards to certain vaccines [6,7]. In a survey exploring parental perceptions of Somali and non-Somali parents in Minnesota, it was found that Somali parents were more likely than non-Somali parents to refuse the MMR vaccine, due to fears that it would cause autism [7]. In a more recent study, which explored attitudes towards HPV vaccine amongst African parents in northern England, a Kenyan mother who was interviewed declined the HPV vaccine for her child on the basis that it was a means of forced contraception thus rendering African women infertile [8]. This concern originated from a rumour in Kenya which asserted that the meningitis vaccine was a means for population control [8]. Whilst these misperceptions are often informed by the country of origin, increased time spent in the host country may play a role in improving vaccine acceptability. In the aforementioned HPV vaccine study, it was observed that vaccine acceptability was highest amongst the participants who had lived in the UK the longest [8].

In Australia, there are limited studies that have explored the factors associated with immunisation acceptance in East African communities [9–11]. The most recent studies conducted in this area are now almost a decade old. One such study involved a prospective audit of a pediatric immigrant health clinic in one state of Australia. The authors found that East African immigrant children had low immunisation coverage, as 97% (132/136) of the children had either an 'incomplete or an uncertain immunisation status' for tetanus, BCG, measles, diphtheria and hepatitis B vaccines [9]. Whilst these studies have made important contributions, with the changing context of Australia's immunisation and migration policies, new research is necessary to examine the underlying issues contributing to the variations in coverage rates in the East African community. As of July 2017, catch-up immunisations have become free for refugees [12,13]. Other policies such as 'No Jab, No Pay', removed the conscientious objection exemption to immunisation requirements. This policy requires children to be fully immunised in order for their parents to be eligible to receive family assistance payments [14] and whilst this provides opportunities to improve immunisation coverage rates, evidently, this policy is centred around childhood immunisation. Adult immunisation often receives less attention and despite Australia having one of the most comprehensive immunisation programs in the world, there are still large numbers of under vaccinated adults [15]. This study builds on from previous work by examining refugee and migrants' experiences with adult immunisation in Australia, in order to inform future strategies aimed at increasing the uptake of vaccinations amongst these groups.

2. Methods

2.1. Study design

This study utilised a qualitative research approach. One-on-one, in depth semi-structured interviews (Face-to-face or via phone) were undertaken with East African refugees and migrants in New South Wales and Victoria. Ethics approval was obtained from the Human Research Ethics Advisory Committee (HREA) at the University of New South Wales (Ref: HC17835).

2.2. Participants

Interviews were conducted with refugees and migrants from four key East African countries: Kenya, Somalia, South Sudan and Ethiopia. A refugee in our study was defined as an individual ' who is owing to a well rounded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or owing to such a fear is unwilling to avail himself of that country' [16]. A migrant was defined as *the case* where the decision to migrate is taken freely by the individual, for reasons of 'personal convenience' and without intervention of an 'external compelling factor' [17].

Participants were aged 18 years and older and had been living in Australia for less than or equal to 5 years to have been eligible for this study. Recruitment was primarily undertaken in New South Wales followed by Victoria as these two states have the highest populations of East African refugees and migrants.

Participants were recruited using several approaches. Firstly, prior to recruitment, an online search was conducted to identify key organisations, which cater to refugee and migrant populations. One researcher (IA) contacted and liaised with these migrant organisations, who then provided the contact details of community members. The same researcher then disseminated information about the study to community leaders. Secondly, posters were placed at community centres and shopping areas. And thirdly, snowball sampling was used to identify further potential community members who met the inclusion criteria. Interviews began once full written consent was obtained for the face-to-face interviews and verbal consent for the phone interviews.

2.3. Data collection

An interview guide was developed by the first author (IA) and reviewed and edited by the other two authors (HS and RM) to ensure all key areas of interest were identified. We used the general term 'immunisation' so that participants could describe their experiences with immunisation here in Australia. The following topics were used to guide the interview: knowledge about immunisation (including knowledge of infectious diseases), perceptions towards immunisation and the barriers/facilitators to accessing healthcare services such as immunisation. These topics served as a general guide for the interview, and because of the semi-structured approach, this ensured flexibility and questions were adapted depending on the situation. Questions were generally open-ended to allow the participant to freely express their opinions. Prompts were used to encourage the participants to elaborate on certain points. To ensure confidentiality of the participants, participants were assigned a number and information regarding their names, age and location were omitted from the transcripts.

The semi-structured interviews were undertaken between January and December 2018. Interviews averaged around 20 min in length (range 15–25 min). All interviews were conducted by IA whether in person (n = 10) or via phone (n = 7). Interviews were conducted in English as English is one of the main languages spoken in the region. Prior to the interviews, participants were also asked to complete a face sheet, which collected demographic details (see Table 1).

2.4. Data analysis

Interviews were recorded and transcribed verbatim. Inductive thematic analysis was conducted and this involved coding of transcripts, defining and naming subthemes and themes and then generating the analysis. This process was undertaken in consultation with HS. Transcripts were observed for internal consistency and the qualitative data analysis tool NVivo was used to handle these transcripts. After close reading of the transcripts, IA independently developed a code list, which was then reviewed and corroborated by HS. Once this process was finalised, codes were grouped into themes and analysis followed.

Table 1
Demographics of the Participants.

	Demographics of Participants	Number of Participants (n = 17)
Age	18–24	3
	25–34	8
	35–44	3
	45–54	3
Gender	Male	9
	Female	8
Parental Status	Parent	9
State	New South Wales	15
	Victoria	2
Country of Origin	Ethiopia	4
	Somalia	6
	Kenya	5
	South Sudan	2
Status	Refugee	4
	Migrant	13

3. Results

A total of nineteen East African refugees and migrants were initially contacted to participate in the study. Of those, eighteen consented to participate, seventeen were interviewed and one was lost to follow up. The demographic characteristics of the participants are presented in Table 1. The findings from the study are presented below.

There were five key themes that emerged from the interviews: (1) Opportunity for all of life immunisation; (2) Limited concerns about vaccines; (3) Personal obstacles impacting on vaccine uptake; (4) Communication and education needs; and (5) External motivators to increase vaccine uptake. Furthermore, whilst the term immunisation was used in the interviews, participants spoke about their own personal experiences and were not necessarily reflecting on getting their children vaccinated. In the limited time that they did speak about childhood immunisation, it was largely with reference to concerns over the pain associated with vaccines.

3.1. Opportunity for all of life immunisation

Participants all acknowledged the role of vaccines in preventing the spread of infectious diseases and maintaining a *"healthy community of individuals*". There was varying knowledge regarding the actual diseases covered by vaccination, with the migrant participants more likely to verbalise the diseases whilst other participants just generally spoke about vaccines protecting against 'disease'.

There was a level of appreciation towards the opportunity for adult immunisation here in Australia in comparison to their country of origin. One participant highlighted that in Africa, child immunisation is of the utmost importance with adult immunisation often being neglected:

"In Africa immunisation is largely focused on the kids and rarely adults. When I came to Australia I realized it goes all the way to Adults and coming to terms with that was a bit of a challenge…" [ID15, male, Kenya]

Another participant questioned the lack of follow up for refugee and migrant adult immunisation and acknowledged the complexities of this process:

"no one calls you to know about your immunisation, I know its hard but this also provides an opportunity to ask questions about health…nothing happened until I got pregnant" [ID17, female, South Sudan]

3.2. Limited concerns about vaccines

While some concerns were expressed about vaccines, they tended to be associated with the injection process and were often suggested in a flippant manner, with mothers stating that they were worried about the pain when their children received an injection. Others worried about the lack of effectiveness of the vaccine and this was particularly the case with the flu shot. One participant expressed that whilst they understood the importance of vaccinations, "*…I just don't know how effective they are (flu vaccine) but in some cases I know they are really effective*". This view was also mirrored in another participant who also stated that they received the flu shot during the winter but sometimes wondered about its effectiveness.

Others had a positive experience with the flu vaccine and were appreciative of it, with one participant stating that, "*…I had to take it (flu shot), since I took it- it got better at that point..yeah it gave me a positive view of vaccination and I understand that some people still get it and they get flu…*". *[ID13, male, Kenya]*

3.3. Personal obstacles impacting on vaccine uptake

A lack of motivation was identified as a barrier by some participants as immunisation is something that generally doesn't cross their mind "*unless they are prompted to do so*". One participant stated that, "*…the thought of just getting a vaccine because the flu can catch you or because you've never been immunised its something that doesn't cross your mind. For us immunisation was just something your parents either took you to as a child but you never got much information after it (back home). Yeah apart from those vaccines you get when you travel, yeah just thinking about 'oh I need to get this shot', it doesn't really cross your mind…" [ID4, female, Kenya].* This lack of motivation came in two forms: lack of motivation as a result of being "lazy" or a lack of motivation due to competing priorities. Whilst the majority of the participants interviewed were vaccinated, some suggested that the low vaccination status of the East African community is not due to anti-vaccine beliefs but rather may be due to conflicting priorities, as new arrivals need to balance finding employment and housing, alongside getting catch-up vaccines and as such they *"need to be motivated" [ID8, female, Somalia].*

Low risk perception was also another significant barrier expressed by participants. Some participants suggested that some migrants and refugees have lived in their countries of origin for long periods of time without being vaccinated and that *"they may come with that attitude and not even know when vaccination should be given*". However, another participant stated that this low risk perception often becomes redundant when a child of theirs gets sick and that is when the parents *"realize the importance of vaccines*".

3.4. Communication and education needs

Majority of participants expressed that language and a lack of education were significant barriers to immunisation. These participants stated that there is a *"need to be educated at the beginning (upon arrival to Australia)*" and that *"everything needs to be laid out for them the advantages, the disadvantages of vaccines" [ID7, male, Somalia].* This lack of education was largely attributed to a lack of access to health information, as some participants stated that new arrivals *"need to learn where to get the information such as the local doctor*". Lack of availability of translated resources was also an issue as some participants came from countries where English was not their primary language. This made it difficult for them to communicate their needs with their GPs and in the absence of a translator, this proved to be a challenge.

Providing education was seen as the key facilitator amongst participants as *"more information for the community was needed so they could understand" [ID11, female, Ethiopia]* and this was linked with the need for more translated resources:

"*the solution is you know providing some education and especially even you know education needs to be translated to their own language and explaining the benefits and this reduces barriers*" *[ID7, male, Somalia].* Participants suggested that providing culturally and linguistically appropriate education and resources can motivate and empower newly arrived refugees and migrants and it could help them gain a better understanding of immunisation. One participant also suggested that stakeholders shouldn't paint all ethnic communities with the same brush as, "*not all Africans are the same, we may be in blood but we are different communities so maybe they (stakeholders) need to survey and collect info about our specific needs so they can create culturally appropriate resources*" *[ID17, female, South Sudan].*

When asked about whether participants access online health information, responses varied. Some participants suggested that online health information is hard to find and would not be ideal. Others suggested that perhaps the use of social media as a tool to disseminate health information would be a great idea as " *Facebook appeals to everyone now of all ages, there are groups on Facebook that we are a part of and through these channels it will definitely (the health information) appeal to someone and they can share it with their friends*"*[ID15, male, Kenya].*

All participants reiterated that ethno-specific community organisations should play a greater role in the dissemination of health information. These organisations are a key point of contact for these refugee and migrant organisations and would be a good source of information for these individuals as "when *the migrants come someone working in a community centre is their main source*". Some participants indicated that they have monthly/weekly community meetings whereby individuals from different health departments present talks but are yet to see someone talk about immunisation: *"we get people from mental health organisations coming to our meetings and talking about it but we never get to talk about immunisation"[ID13, male, Kenya].* All participants were also in mutual agreement that individuals would feel more comfortable with someone from their community explaining and informing them about immunisation as *"if your own people talk to you, you would understand it better" [ID14, female, Kenya].*

3.5. External motivators to increase vaccine uptake

Some participants believed that the implementation of a reminder system would result in better vaccine uptake, as they were likely to forget. One participant stated, *"it would be nice to have a reminder system…to remind us to be vaccinated because we are human and sometimes we forget" [ID17, female, South Sudan].* Others mentioned that their GP already had a reminder system in place, with one participant stating that, *"the doctor…tell me next month or after 2 months you need to come and if I forget they call me and remind me" [ID11, female, South Sudan].*

The migrant participants interviewed expressed the need for funded vaccines for migrants and also acknowledged that this would be difficult and could take some time, *"one thing is that vaccination should be free for all because they come here they should get this is actually human right because they should take the immunisation as its important. If migrants can't have free vaccines, we can get a discount?" [ID5, male, Ethiopia].* Despite this concern with the cost of vaccines for migrants, participants once again linked this back with the competing priorities experienced by newly arrived migrants and refugees and also the need for education, "*so I think sometimes when people realise the benefits outweigh the cost they'd be more willing to getting vaccinated themselves without a push so more education…" [ID4, female, Kenya].*

4. Discussion

This study highlighted the underlying attitudes, barriers and facilitators to immunisation in East African refugees and migrants. Our study focused on examining the underlying issues that impede vaccine uptake and accordingly, provided the refugees and migrants with an opportunity to express their preferences for the type of information that they perceive to be useful in improving their understanding of adult immunisation.

In a study exploring the immunisation status of East African adult immigrants in Australia, it was observed that most participants could not recall their immunisation status prior to their arrival in Australia [9]. Moreover, some of these participants had incomplete immunisation statuses despite multiple visits to a GP [9]. This is consistent with our study findings, which showed that there was a lack of follow up for adult immunisation. This lack of follow up is not surprising, as the Australian Immunisation Register (AIR), currently does not categorise individuals from a refugee or migrant background. This hinders the ability to monitor vaccination coverage in these groups by health providers, and consequently undermines their ability to develop specialized healthcare services and resources for these groups [18]. The incorporation of identifiers in AIR, particularly the collection of refugee and/or migrant status would allow for better monitoring and evaluation of immunisation needs of these groups [2] and subsequently, improve health outcomes. However, despite this lack of follow up for adult immunisation, many of the participants were still appreciative of the importance of adult immunisation in Australia, as it was often neglected in their home countries. It is perhaps not surprising that this is the case, given that historically in most countries, vaccination was largely focused on children [19].

Whilst Australia has one of the most comprehensive immunisation programs in the world, there are still vast numbers of under vaccinated adults [15] and it is therefore not an issue that is only limited to refugee and migrant populations. This neglect of adult immunisation is not just limited to Australia, it is observed in nations worldwide. In the Unites States, adult immunisation uptake remains low, and these poor coverage rates are also attributed to barriers at a patient, provider and health systems level [20]. Adult immunisation is equally as important as childhood immunisation and improving coverage rates will require the implementation of policies through a collaborative effort between governments, health services and service providers.

Evidence suggests that refugee and migrant populations face several barriers when accessing healthcare services [21–23]. Many of the barriers identified in our study have been similarly implicated in the literature, particularly in studies conducted with vulnerable populations. Low motivation was identified as one of the key barriers that could be contributing to the low vaccine uptake in this community. Our findings highlighted that the lack of motivation was due to the refugee or migrant's competing priorities, with many new arrivals balancing a multitude of tasks when settling in their host country. It is therefore likely that these conflicting priorities may contribute to individuals forgetting to vaccinate themselves and their children. The use of reminder systems would be beneficial, to allow for on-time vaccinations and in some circumstances, opportunistic vaccination for these groups. Several studies have explored the effectiveness of reminder systems in increasing vaccine uptake for different population groups [24–27]. In a study by Stockwell et. al (2012), the effectiveness of text message immunisation reminders were examined in a low income, urban population. From their study, it was observed that parents of

adolescents who had received recall alerts via text were significantly more likely to be immunised and attend a recall session [24]. In our study, when participants were asked about whether there was a follow up for their catch up immunisation appointments, responses varied. It is therefore apparent that reminder systems need to be implemented and applied consistently across all GP practices, to enable the efficient delivery of immunisation services to refugees and migrants. Reminders to patients have been shown to increase immunisation uptake [28–30], and its implementation across all GP practices is pivotal.

Many of the participants in our study believed that a 'low-risk perception', was a barrier unique to the African population. However, this is not the case as a study conducted by Seale et. al (2016), found that travellers visiting friends and relatives (VFR) perceived themselves as being at a lower risk of acquiring diseases than non-VFR travellers [31], which is consistent with findings elsewhere [32]. Our findings highlighted that some members of the community may have a low-risk perception, due to living in Africa for long periods without any vaccinations, and subsequently, not acquiring any infections. Such a perception is not surprising, as in some countries, vaccination was largely aimed at children, with many individuals not receiving any vaccinations as an adult. However, in these circumstances they were more likely to seek preventative healthcare services in future.

Education was the key facilitator mentioned by the participants to improve vaccine uptake in their communities. Participants spoke of the need for culturally and linguistically appropriate resources to help empower new arrivals and also assist them in navigating the Australian healthcare system. A lack of such resources can impact on the way culturally and linguistically diverse communities (CALD) make an informed decision about their health [33]. There was a strong sense amongst the participants that ethno-specific community organisations would be a key avenue for the delivery of immunisation information, as such organisations are a key point of contact for refugees and migrants. Information sessions were identified as a good way to provide health information to new arrivals. This finding is consistent with an earlier study on CALD women's need for information, the same study finding that many of their participants preferred to share, and have information delivered through their own ethnic groups [34]. The shared cultural backgrounds create a mutual understanding amongst CALD communities and this can facilitate important discussions about immunisation through the delivery of culturally appropriate resources and education.

In the 2017–18 Federal budget, catch-up vaccines became free for newly arrived refugees; a measure which is likely to increase the completion of catch up immunisation schedules in refugee populations [12,13]. However, on the other side of the spectrum, the lack of funding available for catch-up immunisations in migrant communities is a significant hurdle to the equitable provision of immunisation [2]. This was a concern that resonated with many of the migrant participants, who suggested that whilst it'd be difficult to provide funding of vaccines for migrants, perhaps providing certain vaccines at a reduced cost might motivate these individuals to complete and adhere to their catch-up immunisation schedules. Many of the migrant participants had access to private health insurance in our study, which often took care of access to certain health services; however, private health insurance does not always cover vaccines in Australia. Similar issues have been raised in other countries, for instance in Canada, complexities around insurance coverage was a barrier to healthcare access for refugees [35]. Financial barriers often impede access to immunisation in migrant communities, and this has been reported extensively [21–23,36].

The study is not without limitations. Firstly, a key limitation of the study is that the interviews were conducted in English. Whilst English is a key language spoken in the East African region, it may have been a barrier for some participants, and we cannot rule out the possibility of more themes emerging if interviews were conducted in each of their respective languages. This may have also elicited a higher response rate. Secondly, the use of snowball sampling may have limited the range of opinions and responses from participants. Thirdly, interviews were conducted with a small, select group of participants and the views expressed may not be generalisable to the broader East African refugee and migrant population. Larger upscale studies would be necessary to establish whether these themes are also evident within the general population. Research focused on refugee and migrant immunisation is relatively limited here in Australia, and this is a key strength of the study. The use of in depth interviews to elicit more information from the participants is also another strength of the study.

5. Conclusion

Contrary to some evidence from countries of origin, perceptions about the value of vaccines, or concerns about vaccine safety were not important barriers to vaccine uptake in our study sample of East African refugees and migrants. However, a general lack of knowledge and awareness about adult vaccination was frequently reported. Strategies such as developing culturally appropriate resources and education, implementing reminder systems consistently across all GP practices would help to mitigate the problems identified by the refugee and migrants interviewed. It is also recommended that ethno-specific organisations play a greater role in the dissemination of immunisation information, as these organisations are a key point of contact for refugees and migrants.

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Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Dr Holly Seale has previously received funding from drug companies for investigator driven research and consulting fees to present at conferences/workshops and develop resources (bio-CSL/Sequiris, GSK and Sanofi Pasteur). She has also participated in advisory board meeting for Sanofi Pasteur. The other authors do not have anything to declare.

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