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Perceptions of tailored oral health education resources among former refugees

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Abstract

Background: Language differences and health literacy limit former refugees' access to health education messages and thus their success in achieving improvements in health behaviours.

Method: A suite of simple oral health education resources consisting of dual Arabic/English language pamphlets suited to the needs of Syrian former refugees were co-developed, and feedback was provided by nine focus groups of former refugees.

Results: Thirty-nine former refugees resettled in Dunedin, New Zealand provided their feedback. The majority of participants thought these were useful, easy to read, and worthwhile. Major themes included novelty and usefulness, clarity (language/readability) and cultural appropriateness, layout, graphics and format, alternative methods, and venues for distribution. The research confirmed the value of tailoring information to be targeted to specific populations. When treating resettled former refugees, health care providers should deliver information in a way that considers culture, language, education, and background of their clients.

Conclusion: Although the participants considered the resources developed in this study to be appropriate and helpful, further research must investigate whether a change in behaviour will result from their utilisation.

Introduction

Former refugees worldwide tend to have poorer oral health than the general population, including more untreated caries and missing teeth (Abu-Awwad et al. 2020; Barazanchi et al. 2018; Ghiabi et al. 2014; Goetz et al. 2018; Hoyvik et al. 2019; Keboa et al. 2016; Solyman and Schmidt-Westhausen 2018). They also face barriers to accessing conventional and preventive health care services, including language differences (lack of language knowledge and interpreter availability) and lack of accessible public healthcare services (long waits, inherited knowledge, and culture) (Davidson et al. 2007; Richard et al. 2019). Socio-economic status and culture are important determinants of health-related behaviours in any population (Watt 2012). Highly acculturated immigrants (those with better knowledge of the host country language, younger age at migration and longer residency in the host country) tend to have better oral health and oral self-care behaviours than those not so well acculturated (Dahlan et al. 2019). Thus, when designing and deploying health education resources, it is important to consider the needs of the most vulnerable, particularly those with language difficulties and those who are 'new' members of the population and strangers to the ways of their new country.

Language and health literacy challenges for former refugees can be severe (Jackson and Eckert 2008) and are exacerbated by low income, past traumatic experiences, mental health problems and other life priorities (Ghiabi et al. 2014). Health education interventions are intended to improve health knowledge and provide people with the knowledge and skills they need to control their own health, but refugees represent unique challenges in the design of health education interventions. Language differences mean former refugees may be unable to read and understand health education messages, which can limit their success in achieving change in health behaviours (Colledge et al. 2008). In New Zealand, speakers of other languages have the right to have effective communication, to be informed and to make informed consent through proper access to translation services to help them understand health care services offered to them (Health and Disability Commissioner 1996). Thus, tailoring information sources to language and culture seems important for migrants and other at-risk population groups (Arora et al. 2018).

Information resources that have been designed to cater to the needs of former refugees in New Zealand are limited, and there are none that have been produced in consultation with Arabic-speaking former refugees. This study aimed to develop oral health resources tailored for a defined former refugee group, and to assess the acceptability of these resources.

Methods

Oral health education pamphlets were drafted by the research team, one each on the topics of dental self-care, how to access dental care services, nutrition, smoking, and general tips for better oral health. The first document "Daily oral home care" included information about tooth brushing benefits, frequency, duration, technique, and toothpastes (Appendix 1 – *Appendices available on NZDA website*). "How do I access care?" contained information about dental services and funding available for former refugees and how to access them (Appendix 2). The third document was titled "Tooth-friendly diet". It covered food and its effect on oral health, advice on sugar replacements, and tips to control sugar intake (Appendix 3). A fourth pamphlet on "Smoking" included information about tobacco harm, the concept of passive smoking, and smoking cessation advice (Appendix 4). The last document

"Tips for better oral health" summarised key preventative information from the previous documents (Appendix 5). The messages were simple, clear, and reinforced with illustrations and explanations in both Arabic and English (for example a picture explaining the modified Bass tooth brushing technique), avoiding medical and dental jargon. Oral health-related information on cultural practices, such as sheesha smoking and sweetened traditional Syrian coffee, were included in the leaflets. The leaflets were tested for lay readability by a non-participating Arabic speaking individual.

Ethical approval was obtained through the University of Otago Human Ethics Committee (Health; H136/19). To evaluate the leaflets for acceptability, participants were recruited for focus group meetings between February and April 2020. Eligible participants were over 18 years of age, of Syrian nationality and had arrived in New Zealand as refugees after 2016. Invitations to participate were distributed through a community health service that provides health, social, and educational services for former refugees. Each participant was provided with information about the study and sent a consent form. Initially, 40 individuals gave their consent to participate; one individual subsequently withdrew, leaving a sample of 39 participants.

Focus group interviews were conducted during April 2020. The study commenced at a time of the COVID-19 pandemic lockdown in New Zealand and therefore the focus group interviews were conducted electronically via Zoom™. All interviews were recorded (with participants' consent) and were conducted by a native Arabic speaker (ZN).

A literature-informed semi-structured topic guide was used to help prompt discussion in the focus groups. Participants were given a draft set of the oral health resources and encouraged to give as much feedback as possible on the clarity and novelty of the information presented in the leaflets. Then they were asked if the information was tailored to their needs with respect to the language and culture. They were also asked to suggest topics they wanted to learn about and venues to distribute these leaflets. Interview recordings were transcribed verbatim, then translated into English and thematically analysed. Data were analysed, and codes were compared and agreed on by the investigators (ZN, JB, MS).

The co-designed and optimised resources from this study were later utilised in an intervention with a different group of former refugees. An evaluation of the outcomes of this intervention will be reported on separately.

Results

A total of nine focus groups were held, each with four or five participants; the interviews averaged 90 minutes each. The mean age of participants was 37 years (range 18 to 54 years) and just over half (n=22) were female (Table 1). Nearly half (n=19) had arrived as refugees in New Zealand during 2016 and the remainder arrived in 2017 (n=17) or 2018 (n=3).

About one-third of participants had some level of tertiary education, had completed schooling at secondary school or primary school education Table 2). Approximately one-third of participants were in employment, with the remainder studying, disabled, or unemployed (Table 2). Some participants did not share information on education (n=5) or employment (n=9).

Self-rated ability to communicate in English varied widely among participants, with most reporting at least a moderate amount of difficulty in speaking, listening, reading, or writing (Table 3). Only one participant reported 'no difficulty' in all four areas of communication, while one in five reported a great deal of difficulty in communicating in at least one area.

Participants were asked who they would seek advice from if they needed to discuss their oral health. Three-quarters (n=30) of participants reported they would consult a dentist, about one in twenty said they would do an internet search (n=9) or consult a doctor (n=7), while the remainder would ask a family member (n=4), pharmacist (n=2), or consult social media (n=3) or an unspecified source (n=2).

Thematic analysis of participants' perceptions on the oral health education resources revealed four broad themes:

1. Content, novelty, and usefulness;
2. Clarity (language/readability) and cultural appropriateness;
3. Layout, graphics, and format;
4. Alternative ideas for message delivery.

Table 1. Participant characteristics (N=39)

Characteristic	N [%]
Sex	
Male	17 (43.6)
Female	22 (56.4)
Education	
Did not complete high school	21 (53.9)
Completed high school education	18 (46.2)
Employment[a]	
Unemployed/disabled	6 (16.2)
Employed (part & full-time)	15 (43.8)
Student	14 (40.0)
Age[a]	
18-24 years	8 (21.1)
25-44 years	20 (54.6)
45-64 years	10 (26.3)
65+ years	0
Family size	**Mean (sd)**
Mean number of adults	2.8 (1.1)
Mean number of children	2.6 (2.0)
Total	**39 (65.0)**

[a] Employment status not given by 5 participants, age not given by 2 participants

Table 2. Participant education and employment (N=39)

	Males N (%)	Females N (%)
Education		
Primary school education only	4 (25.0)	3 (15.8)
Incomplete high school education	5 (31.3)	5 (26.3)
Completed high school education	0	3 (15.8)
Incomplete tertiary education	6 (37.5)	4 (21.1)
Graduated tertiary education	1 (6.3)	4 (21.1)
No response	1	3
Employment		
Employed – Full time	6 (40.0)	3 (15.0)
Employed – Part time	2 (13.3)	4 (20.0)
Unemployed	0	3 (15)
Studying	6 (40.0)	8 (40.0)
Disabled	1 (6.7)	2 (10.0)
No response	2	2
Total	**17**	**22**

* Numbers in brackets denote part-time employment

Table 3. Participants' self-rated ability to communicate in English

	Difficulty in communicating in English (Total N=39)					
	A great deal N (%)	Often N (%)	Sometimes N (%)	Rarely N (%)	No difficulty N (%)	No response N
Writing	6 (17.1)	9 (25.7)	12 (34.3)	4 (11.4)	4 (11.4)	4
Reading	5 (16.7)	5 (16.7)	11 (36.7)	7 (23.3)	2 (6.7)	9
Speaking	4 (12.9)	10 (32.3)	9 (29.0)	7 (22.6)	1 (3.2)	8
Listening	2 (6.1)	12 (36.4)	9 (27.3)	6 (18.2)	4 (12.1)	6

Theme one: Content, novelty, and usefulness

All participants agreed that the information was useful, understandable, and inclusive of all issues they felt should be covered. For example, *"The information is very easy for one to understand whether it is a young, or an older person"* (A127). Several commented that it was helpful to be able to access this information in a single document despite already *"knowing most of these facts" (A239)*. Many felt much of the information presented in the educational leaflets was familiar, but some information was considered to be new or unfamiliar, "*I knew that I brush then rinse and spit but while reading this, my attention was drawn to this ... that I shouldn't rinse*" (A143). Another participant said,

> *The new information regarding sugar and smoking reduction. I did not know all of this is harmful, I mean, I knew of the harm but not to this degree … And even a new piece of information cleaning the tongue along with my teeth? (A142).*

Further, those participants who reported 'knowing' this information, still felt the leaflets were motivational for them to make change as they did not typically engage in these behaviours. Even information not characterized as 'new' was motivational; some participants indicated an intention to implement changes immediately as a result of reading the leaflets. For example,

> *Like for me yesterday honestly when I saw the brochure as I was brushing my teeth, I changed my whole way. I tried to… I know it to be honest but for me, like they would say I was ignoring it but when I saw it again it was like a reminder that no I have to brush them in the right way (A122).*

Theme two: Clarity (Language/ readability) and cultural appropriateness

The majority of participants felt that having Arabic text aided their understanding of the content, for example "*Well, they are good, especially that they are in Arabic, I mean … more understandable" (A140)*. Another commented that those with limited reading could understand them, *"Even I was able to read them ha-ha. My reading is weak, and I was able to read them". (A144)*. However, one of the younger participants (18 years) who could only read basic Arabic and English found the content difficult to comprehend. Other participants commented that they understood the content, but they

believed some other members of their community might not be able to read the leaflets and would therefore have difficulty understanding them. Another participant suggested including both languages in the header, *"If you could write in English and Arabic [at the top of the leaflet] it would grab their attention better" (A128).*

Several participants commented that some of the topics included were particularly relevant to their culture and were informative. For example, several participants were unaware that sheesha (a common means of consuming tobacco products in this community group) had harmful oral health effects. In general, participants felt the educational material summarised all the information they needed to know.

Theme three: Layout, graphics and format

All participants approved of the presentation, colours and organisation of information in the documents. Participants agreed that the included illustrations and images were beneficial and that they aided in conveying the written messages, such as explaining tooth brushing technique or the oral health effects of smoking. For instance, "*There are drawings and things to make the idea clearer. The drawings were very expressive. It was all clear" (A127).* Another participant said, "*Their [the pamphlets] arrangement is very beautiful. For someone who doesn't know how to read, for example a foreigner. He sees pictures and knows the content" (A148).* Although participants thought the pictures clearly explained the written content, some suggested more pictures could be used to convey the content without having to read longer sentences, "*There is something if you would like to adjust there is a lot of writing and less photos. Because there are people that do not like to read a lot." (A138).*

Most participants did not have trouble viewing the documents and thought they were easy to access through social media, although most older participants indicated a preference for printed material. Printed paper leaflets were thought to be most useful if made available at medical centers and community venues. Participants had contrasting views on whether this would work better on paper or electronically. A participant commented,

> *On paper it would be better. It would be delivered easier. Like for an example with [my husband] if we receive a paper, he is more likely to look at it. But if it was sent as file, he will not open it. (A136)*

while another commented, *"Being online in this way is a very good thing. It is possible if they are printed on paper, this is a good thing I mean ... I mean a small notebook*" (A148).

Theme four: Alternative methods and venues for message delivery

Some participants noted that many former refugees cannot read, even their native Arabic language. Some younger participants whose education had been interrupted by the war in Syria perceived their language skills to be poorer than their older peers. Thus, participants suggested voice recordings, videos, CDs, or presentations/lectures as alternatives to written material. Nevertheless, they also acknowledged that newly-arrived refugees might not have access to computers, CD/media players or internet.

> *"When we arrived, we had people come from the dental school and they gave us these instructions verbally. If they continue to do this for new people at the learning school that would be nice because, uhh… there are people that do not read. (A146) "*

Most participants believed that the information presented in the leaflets should be made available at general medical practices and at the Mangere refugee reception facility (where refugees are first welcomed into Aotearoa New Zealand). For example, a participant stated:

> *In my opinion anything that you would want to reach the new refugees would have to be Red Cross because when we first arrived, they gave us a folder that has many things. It consisted of complete information. When you add these in the folder the families will read them and will be able to know everything (A158).*

Some believed social media to be an easily accessible means of reaching members of their community, together with English language schools where community members regularly meet, "*For example, it is possible in schools… yes… it would be really good if the children see it" (A140).* Community places such as the local mosque and other service providers such as (Ministry of Social Development—Work and Income (WINZ)) were also suggested by a few participants.

Discussion

This study provides insight on the views of Syrian former refugees resettled in New Zealand regarding the type of oral health educational material that would best suit their needs. The co-design approach taken in this study allowed participants to contribute to the development of the material leading to an optimisation of messaging and delivery strategies. Most participants were able to understand the materials and felt they reinforced their existing knowledge and spurred behaviour changes, although some information was new especially on smoking, sugar replacements, and correct brushing techniques.

Few studies have assessed participants' views on oral health educational materials. The qualitative approach used in this study enabled the collection of in-depth information from participants, identified the suitability of the resources and (in turn) empowered and encouraged them to make long-term positive changes to their oral home care, diet, and lifestyles. The findings were generated from a relatively large, age-diverse group of Syrian former refugees. Discussions were held in Arabic, enabling them to comfortably express their views.

That the study included only one geographical location and one ethnic group are limitations of the study. The sample included community members who responded to an invitation to participate issued through a community health service involved in health, social, and

educational services for former refugees. It is possible that some community members with poor literacy could not read the invitation to participate, and so did not volunteer to be part of the research. However, those who did participate mentioned there were members of their community who cannot read, and revisions were made to accommodate their needs. Another potential limitation was the risk of social desirability bias, whereby participants give answers that they think will be viewed favourably by the research team.

Poor oral health and inability to access health services are associated with low health literacy (Berkman et al. 2004). Written health information is not the most effective way to convey health messages and improve literacy (Schubbe et al. 2018). However, tailored, printed lay-text materials can be an effective teaching material. Involving the target populations in co-designing and developing materials destined for them is important to meet their expectations (Coulter and Ellins 2007). A participatory/ collaborative approach that respected the input of participants with regard to modifications, preferences and mode of distribution helps tailor information provided to the community's need and enhances the outcomes of interventions (Jagosh et al. 2012). This co-design approach has been used with success in other oral health promotion interventions to communicate oral health advice in vulnerable communities (Rodriguez et al. 2019; Scott et al. 2020). In the context of the current literature, our study confirms the findings of previous research, that tailoring information to language and culture is beneficial (Arora et al. 2018). The study adds more detail about preferences of types of medium and places that can reach most former refugee communities (Arora et al. 2018; Berkman et al. 2004; Coulter and Ellins 2007; Jagosh et al. 2012; Rodriguez et al. 2019; Schubbe et al. 2018; Scott et al. 2020).

Simple text with clear pictures can be more effective than text alone, especially for lower literacy populations (Houts et al. 2006; Schubbe et al. 2018) and are preferred (Hockley and Bancroft 2011). The participants found the photos and illustrations to be helpful in understanding health messages, especially tooth brushing technique. Some photos provided cultural context or showed examples of available sugar replacements (Hockley and Bancroft 2011; Houts et al. 2006; Schubbe et al. 2018). Furthermore, utilising a combination of formats can help cater to needs specific to minority or vulnerable populations (Howard et al. 2006). Video recordings can be effective in educating patients (Friedman et al. 2011; Jackson and Eckert 2008; Jeste et al. 2008) and producing sustained positive self-care behaviour changes (Gunaratnam et al. 2013). Our participants suggested using alternative formats such as video or voice recordings to reach those who cannot read. It was not possible to produce original high-quality education video material for this study owing to New Zealand's SARS-CoV-2 lockdown in 2020 and the timing constraints (Friedman et al. 2011; Gunaratnam et al. 2013; Howard et al. 2006; Jackson and Eckert 2008; Jeste et al. 2008).

The participants acknowledged that despite 'knowing' about healthy oral self-care behaviours they frequently did not apply that knowledge, but that reading the educational resources helped spur them to make change. This emphasises the need for motivation and demonstration of desired behaviours as very effective methods in patient education (Friedman et al. 2011). Most participants agreed on the importance of delivering the information materials to newly resettled refugees as early as possible in their resettlement journey. This might be helpful in reducing confusion prior to the first clinical visit; a new patient information brochure is of great use to patients (Friedman et al. 2011).

When delivering information, clinicians need to re-think the use of traditional methods of delivery to non-English speaking former refugees and consider linguistically- and culturally-appropriate formats. For the information to be genuine and applicable in life, it needs to be comprehensible, clearly illustrated, and deliverable (whether online or printed). Thus, more investigations are needed to explore alternative options, such as videos or more graphics, that can be used in clinical and non-clinical situations with those who have low literacy. More information about practices and policies for this invisible population is needed. The focus groups highlighted the importance of early exposure to information about available services.

For future research, it would be useful to employ graphics to convey the content better with less text, and attention needs to be paid to the reading age of the text to ensure its readability. This study was designed for Arabic speaking individuals; translated versions may be made for other ethnic groups. Thus, it is likely that our findings may be transferable to other Arabic speaking former refugee/migrant communities. A video or recording that can be easily distributed through communities might also be helpful. Further research is needed to evaluate the effectiveness of these forms of resources in clinics, and other locations and communities. Moreover, participatory-based approaches, where individuals are encouraged to be proactive in taking control of their own health, might aid in promoting greater patient- or client-centred outcomes, compared with interventions based on a 'one size fits all' approach.

These bi-lingual oral health education leaflets were well-accepted and found useful by former refugees and considered to be suitable to their culture. Future work need to focus on producing more interactive resources might be more attractive to most people especially children and those who have limited literacy.

Ethical Approval

University of Otago Human Ethics Committee (Health; H136/19).

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All authors contributed into the conception or design of the work, the critical revision of the article, and final approval of the version to be published. The primary author conducted the focus groups, data collection and drafting of the article. ZN, JB and MS contributed to data analysis and interpretation. The authors declare no conflict of interest.