

## Research Article

# Empowering Refugees and Immigrants Through Transformational Home Language Health Education

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## Abstract

This study focuses on the importance of providing health education materials that are understandable, actionable, and linguistically and culturally sustaining, and therefore transformational for refugees and immigrants. We explored refugee and immigrant patient experiences with language specific diabetes education videos by conducting four separate focus groups with speakers of Pashto, Dari, Burmese, and Spanish to understand if and how the videos align with the health literacy guidelines of understandability and actionability, and the tenets of culturally sustaining pedagogy with a focus on long-term change. In addition to cultural and linguistic findings, we note that participants felt more confident in approaching their health care provider with questions after viewing the videos, a transformational behavior to achieve greater health outcomes for themselves. This study has implications for expanding language access within and across health care systems and for the way health literacy can be integrated into adult education language learning classrooms.

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**Keywords:** health literacy, diabetes education, understandability, actionability, culturally sustaining pedagogy

This study is a formative evaluation of multilingual health literacy videos that were designed to educate about diabetes. The evaluation seeks to understand the functioning of the videos for the end users (James Bell Associates, 2018) who are multilingual refugee and immigrant patients living in Clarkston, Georgia. For this study, program functioning refers to whether “the resources needed to implement [the videos], including personnel, materials, space, time, and organizational supports” are in place (James Bell Associates, 2018, n.p.). Developed using a community-based participatory framework (CBPF) (Feinberg, O'Connor et al., 2023), these videos were designed in collaboration with multilingual physicians and community members in Clarkston, Georgia.

## Conceptual Framework

It is well documented that an individual's literacy and

numeracy skills correlate with their self-rated health outcomes (MacDonald et al., 2022; Prins & Monnat, 2019; Ronson & Rootman, 2012). For example, a report based on the recent Programme for the International Assessment of Adult Competencies (PIAAC) results reveals that “individuals with high numeracy skills are 11 percentage points more likely to report very good or excellent health compared to those with low numeracy skills” (Organization for Economic Cooperation and Development, 2024, n.p.). In fact, Prins and Monnat (2019) conclude based on previous PIAAC findings, that educational attainment is a social determinant of health:

for U.S.-born adults and immigrants, literacy and numeracy are related to health both directly and through socioeconomic resources, particularly educational attainment, employment, parental education and, in the case of immigrants, speaking English well. As such, there may be potential health benefits to helping adult learners

and immigrants who are most disadvantaged to develop their literacy and numeracy capabilities (p. 330).

In short, adult literacy and education are key components in building prosperous, healthy lives for individuals who are disadvantaged and minoritized (Prins & Monnat, 2019; Prins et al., 2015).

As a consideration for developing health education materials such as the videos our participants analyze in this study, the literature distinguishes between general literacy and health literacy (Ronson & Rootman, 2012). According to the National Assessment of Adult Literacy (2003), literacy is “the ability to use printed and written information to function in society, to achieve one’s goals, and to develop one’s knowledge and potential” (n.p.). General literacy “shapes income, employment, and other social determinants of health” (Prins & Monnat, 2019, p. 319). Health literacy, on the other hand, is “the ability [...] to read, understand, and act upon health-related information” and “the capacity of professionals and institutions to communicate effectively so that community members can make informed decisions and take appropriate actions to protect and promote their [own] health” (Tassi & Ashraf, 2008, p. 3). Therefore, health literacy can be viewed as a situated social practice (Papen, 2008), not just an individual responsibility, in which the community—individuals, health care systems, and health care practitioners—are responsible for designing and disseminating clear and accessible health education (Mooney & Prins, 2013; Prins & Monnat, 2019).

When designing health education materials for multilingual communities, the literature emphasizes the importance of using evidence-based health literacy guidelines in combination with community members’ insights in the development of materials, ensuring that materials are not only culturally and linguistically sustaining, but that they draw on community members’ funds of knowledge (Moll et al., 2001). Once patient education materials are created using health literacy guidelines, the literature recommends vetting them with community-based language/cultural brokers and then using internet-based resources for dissemination into the community (Abdullahi et al., 2023; Feinberg et al., 2016; Rao et al., 2022).

Patients need health information that is accessible,

understandable, easy to use, and presented from trustworthy sources in high quality modalities (Feinberg et al., 2023). During the COVID-19 pandemic, Feinberg et al. (2023) found that evidence-based health literacy guidelines—quality, understandability, and actionability—might support the usefulness of YouTube videos meant to disseminate health literacy information. Pertinent to the present study, Shoemaker et al. (2014) define understandability and actionability as follows:

**Understandability:** Patient education materials are understandable when consumers of diverse backgrounds and varying levels of health literacy can process and explain key messages.

**Actionability:** Patient education materials are actionable when consumers of diverse backgrounds and varying levels of health literacy can identify what they can do based on the information presented (p. 396).

Additionally, there is evidence that collaborating with community members to design and disseminate patient education materials (PEMs) is effective and transformative (Kendrick & Mutonyi, 2007; Robotin et al., 2017). The CBPF draws on community funds of knowledge (Kendrick & Mutonyi, 2007; Rumenapp et al., 2023) and has been used to develop PEMs for rare diseases (Falcão et al., 2023) and COVID-19 information (Feinberg, O’Connor et al., 2023) among other health topics. The CBPF model builds on the existing strengths and resources of the community, positioning patients and providers as co-learners in capacity building and information sharing. For example, when implementing Stop the Bleed trainings that promoted health education in basic trauma management techniques, Abdullahi et al. (2023) learned from community members that language concordant interpreters from the community and small group hands on sessions were beneficial in developing, sharing, and engaging with health information.

The literature suggests the importance of culturally and linguistically sustaining pedagogies when developing PEMs alongside multilingual communities (McKee & Paasche-Orlow, 2012). This offers a unique opportunity for health literacy experts and bi/multilingual education researchers to work together and alongside communities to design culturally sustaining PEMs (McKee & Paasche-Orlow, 2012). Culturally sustaining pedagogy (CSP) is grounded in the following concepts: implementing asset-based pedagogies, sustaining heritage and community practices, and critical reflexivity, or analyzing the intersectional

relationships between language, culture, race, and ethnicity (Ladson-Billings, 1995, 2014; Paris, 2012; Paris & Alim, 2014). Translanguaging pedagogy, the leveraging of an individual's entire linguistic repertoire to teach a concept, is an example of CSP (García & Wei, 2014). In accordance with the principles of translanguaging, the literature on health information dissemination advocates for multilingual literature that does not privilege English or written materials only but incorporates multimodal applications through interactive books and programs (Chu et al., 2022; Feinberg, O'Connor et al., 2023; Headley et al., 2022; Khoong et al., 2019; Kusters et al., 2023; Ma et al., 2020; Mavreles et al., 2021; Robotin et al., 2017).

### Evaluation Questions

We developed formative evaluation questions specifically to understand how refugee and immigrant community members in Clarkston, Georgia, experience culturally and linguistically sustaining diabetes PEM videos. Our research questions were:

1. In what ways, if any, do the videos enhance patient education and awareness?
2. How do inputs (personnel, materials, services) contribute to video dissemination?
3. Do individuals feel more confident asking the doctor questions about diabetes after having watched the videos?

### Positionality Statement

To be attentive to critical reflexivity, it is important to us that we continually examine our own identities and biases in relation to this work. Dr. Lindsay McHolme identifies as an English/Spanish bilingual White woman with an expertise in multilingual teacher education. Dr. Iris Feinberg identifies as an English monolingual White woman with an expertise in health literacy. As part of this transformational work, we have intentionally sought to center the voices and experiences of the communities that the diabetes videos serve. The community members are seen at a free diabetes clinic; we maintain a close relationship with the clinic stakeholders and follow their recommendations for upholding community integrity and expertise. Therefore, we used home language concordant interpreters to support communication during the focus groups. Our collaborative work is a

response to a call for researchers with expertise in health literacy and bi/multilingual education to learn from one another in developing and disseminating PEMs for refugee and immigrant communities (McKee & Paasche-Orlow, 2012).

### Methodology

This study is a formative evaluation of multilingual PEM videos that were designed to educate about diabetes. The evaluation seeks to understand the delivery and end user experience of the videos for multilingual refugee and immigrant patients living in Clarkston, Georgia. The videos under evaluation are available in Burmese, Dari, Pashto, and Spanish and address the following topics:

- What is diabetes?
- Checking and managing blood sugar
- Glipizide
- Metformin

The videos were developed by health literacy experts in collaboration with community clinicians and multilingual, transnational Clarkston community members to perform an iterative review, ensuring medical accuracy and cultural appropriateness. The study was implemented at the diabetes health clinic at the Clarkston Resource and Wellness Hub in Clarkston, Georgia. This free diabetes clinic serves multilingual and transnational refugee and immigrant patients from the Clarkston community. The clinicians that work at the clinic volunteer their time and expertise to serve the multilingual refugee and immigrant patients who visit the clinic.

### Participants

Snowball sampling (Glesne, 2006) was used to recruit participants via interpreters, community leaders who spoke English and one of the following languages: Dari, Pashto, Burmese, and Spanish. The operations manager shared a flier with the interpreters, and the interpreters reached out to their language-specific networks for recruitment. Overall, 20 individuals participated in the evaluation study, five participants from each language group (Dari-Afghanistan, Pashto-Afghanistan, Burmese-Myanmar, and Spanish-Mexico). Most of the participants identified as women (80%) and ranged in age from 18 to

68 years old. Participants reported that they lived in the United States between a range of 1 month to 20 years, with 40% of the participants reporting 3 years (Table 1). Since our primary focus was to evaluate the PEMs and

not our participants’ health literacy levels, we chose not to collect data related to educational background, language proficiency, and level of experience with diabetes-related concepts.

TABLE 1: Participant Demographics

| Language | Country     | Total | Female Gender |      | Age         |         | Years in the US |         |
|----------|-------------|-------|---------------|------|-------------|---------|-----------------|---------|
|          |             | N     | N             | %    | Mean(sd)    | Range   | Mean(sd)        | Range   |
| Burmese  | Myanmar     | 5     | 5             | 100% | 36.6(5.77)  | 29 – 42 | 3.7(3.35)       | 1 - 9   |
| Dari     | Afghanistan | 5     | 4             | 80%  | 40.4(11.78) | 24 - 51 | 3(1.31)         | <1 - 3  |
| Pashto   | Afghanistan | 5     | 3             | 60%  | 38.4(18.39) | 18 - 68 | 3.8 (1.79)      | 3 - 7   |
| Spanish  | Mexico      | 5     | 4             | 80%  | 52(13.95)   | 39 - 68 | 8.83(10.32)     | <1 - 20 |

Note. N = 20, with 5 participants in each group; sd = standard deviation.

Instruments

Two instruments were used for this formative evaluation: a questionnaire and a semi-structured interview protocol. The materials were written to give participants the opportunity to respond in multiple modes (oral, written, language of their choice) to accommodate their ability to give complete responses. Participants were not required to write in any language.

Questionnaire

The purpose of the questionnaire was two-fold: to describe the participants in the study accurately and from their perspectives and to measure attitudes and opinions about the videos in a written and/or multimodal format (Nardi, 2018). There are 11 open-ended demographic questions to allow participants to describe their own identities from their perspectives, considering name, chosen pseudonym, age, gender, race/ethnicity, home country, home language, years lived in the US, and mode of seeking health resources. Then, the questionnaire includes four multimodal Likert-scale questions that are designed to understand participants’ attitudes and opinions about the videos after watching them. The Likert scale choices are represented in writing and with emojis to allow for multilingual/multimodal meaning making and representation (García & Wei, 2014). To accommodate participants’ varying oral and written literacy and language levels, the focus group facilitator and interpreters walked the participants

through how to fill out the document and encouraged, but did not require, participants to give a written response in any language they preferred.

Semi-Structured Interview Protocol

The semi-structured interview protocol that was used during the focus group meetings was organized by the health literacy information guidelines (understandability and actionability), culturally sustaining pedagogy (asset-based language, sustaining heritage and community practices, and appropriate intersectional relationships between language, culture, race, and ethnicity), and the formative evaluation toolkit (dissemination: personnel, materials, services) (James Bell Associates, 2018). The questions under each category were guided by what we have learned from the literature about PEM design and dissemination:

1. Dissemination: Which community members are most appropriate for disseminating these videos?; Would you be willing to share these videos with family and friends? If so, with whom? If not, why?; Where should the videos be available (e.g., QR codes, URLs, brochures, etc.) for patients?; When should the videos be provided to patients (after a visit, for example)?
2. Understandability: Are there any concepts in the videos that require further education (i.e. content, word choice and style, organization, layout and design, visual aids)?

3. Actionability: What new information, if any, did you learn from the individual videos? What information is missing?
4. Cultural/Linguistic Responsiveness: In what ways, if at all, are the videos culturally and linguistically appropriate (do they include asset-based pedagogy, sustaining heritage and community practices, and consider the intersectional relationships between language, culture, race, and ethnicity)?

For the conversation to remain free flowing and as participant-directed as possible, there were four main questions and flexible sub questions and prompts that the interviewer may or may not have referenced during the interviews (Glesne, 2006).

### Focus Groups

At the beginning of each focus group, the interviewers and the interpreters discussed the plain language consent form. The participants completed the informed consent and the questionnaire verbally. Then, the group watched the videos in the common home language of the participant group, pausing to give participants time to respond with their thoughts about each video on the questionnaire. After watching and responding to the videos, the interviewer facilitated the semi-structured interview with assistance from the interpreter who often took the lead, encouraging participants to freely discuss the health literacy guidelines, culturally sustaining pedagogy framework and formative evaluation toolkit framework for dissemination. In total, the focus group meetings lasted no longer than two hours. At the end of each focus group, participants received financial compensation for participating in the study. The focus group meetings were audio recorded and translated/transcribed in English.

### Data Analysis

For triangulation, we gathered data from the questionnaires, focus group interviews, and participant observations for analysis (Glesne, 2006). The PEMAT-AV and the CSP framework were used to analyze the end user experience of the videos. The PEMAT-AV helped us to identify themes of understandability and actionability (Shoemaker et al., 2014) and the CSP framework helped us to identify themes of asset-based

pedagogy, sustaining heritage and community practices, and consider intersectional relationships (Paris & Alim, 2014). The formative evaluation toolkit framework was used to analyze the dissemination processes for the videos. During the first cycle of coding, *vivo* codes were used to note specific qualitative evaluative comments made by participants verbatim, as it aligns with grounded theory and honors participant voice (Saldaña, 2009). Then, descriptive coding was used to identify relevant topics (understandability, actionability, cultural and linguistic references) (Saldaña, 2009). Finally, coding tags were used to indicate specific actions for follow-up. The second cycle coding was developed based on evaluation coding, “the application of non-quantitative codes onto qualitative data that assign judgments about the merit and worth of programs or policy” (Rallis & Rossman, 2003, p. 492). The categories of description (participant observations that assess quality), comparison (measure against a standard or ideal), and prediction (recommendations for change) were used for evaluation coding (Rossman & Rallis, 2003).

## Findings

Our findings reveal that participants learned new information about diabetes management from these videos, felt that they will have more confidence talking to their doctor about diabetes after watching the videos, appreciated the cultural and linguistic responsiveness of the home language content, and were excited about the idea of sharing them with their communities.

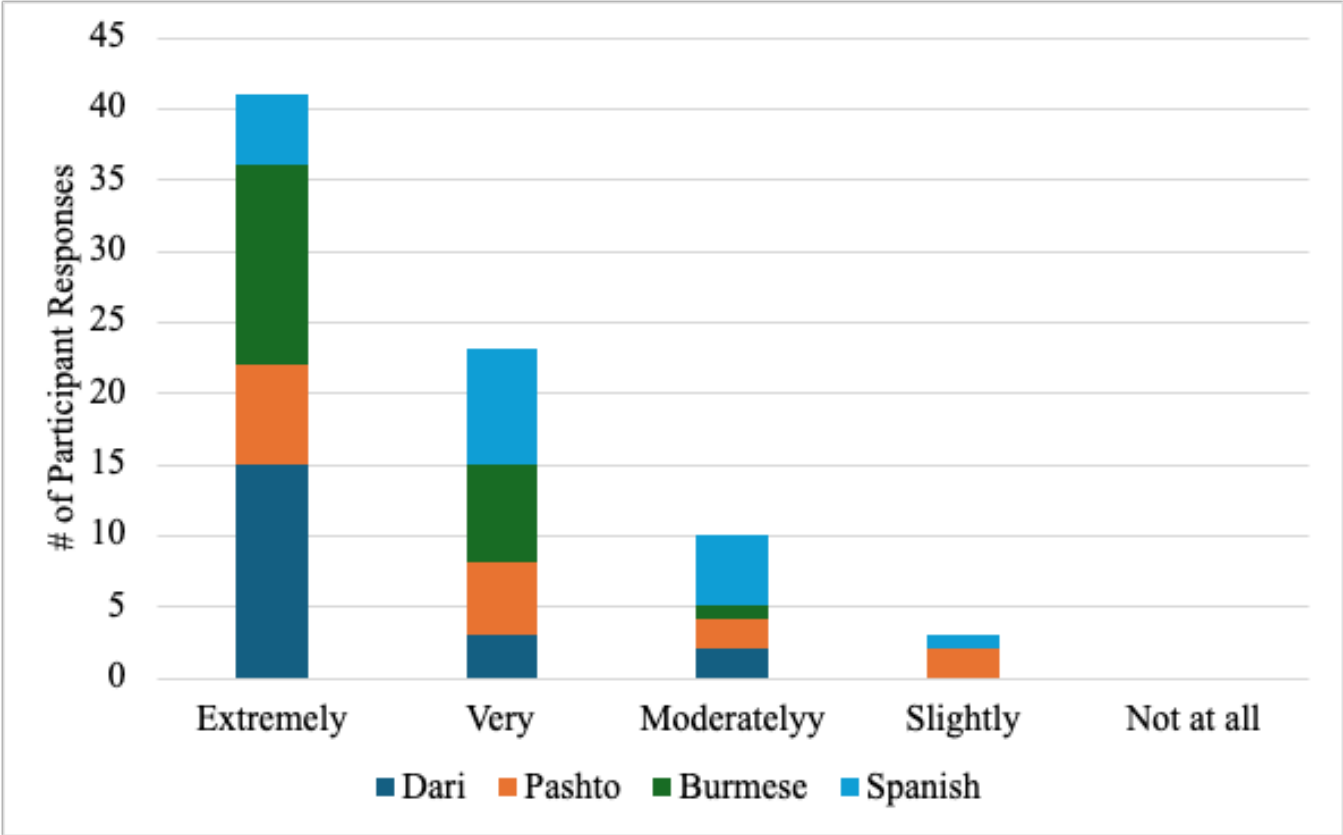
### End User Experience

#### Understandability

Participants reported that the videos were understandable and that they would be able to use the information they learned to manage diabetes and ask informed questions at the doctor’s office. Regarding overall understanding of the four videos combined, participants overwhelmingly felt that they understood the videos extremely well or very well (Table 2).



TABLE 2: How well did you understand the videos overall?



Note: Missing data from 2 participants in the Pashto group (Metformin and Glipizide videos)

To improve understandability of the videos, some participants recommended using a documentary-style video (instead of animation) that demonstrates how real people use the glucometer. An example of one of the comments that supported this is: “they’re making a video like cartoon. A documentary [is] more specific and more ideas so that people take more serious.” In any case, the participants overall wanted the videos to contain more detailed information in whatever format it was presented.

Actionability

A follow-up survey revealed that 100% of participants who responded (n=10) felt more confident speaking to their doctors about diabetes and diabetes management after watching the PEMs during the focus group. In fact, participants shared that they learned new information about diabetes that would support their ability to speak with and learn more from their health care providers about different diabetes-related topics. Typical responses included:

- Hla Hla, *Basics of Diabetes (Burmese)*: “When a person has diabetes, it can be a consequence. We have to eat healthy diet and then more exercise. And then talk to the doctors regularly.”
- Bahar, *Diabetes Symptoms (Pashto)*: “It affects our eyes, our hearts, our kidney.”
- Tatiana, *Management and Prevention (Spanish)*: “Is important for my culture before to go to the doctor, you look everywhere and drink everything to save your life before go to the doctor. I learn before you start to do something, you going and check with a doctor.”
- Kamila, *Medication Side Effects (Dari)*: “Somewhat normal and not normal side effect you can visit the doctor. Anytime they say you need to take the medicine, you always take your three meals and not skip. This is really important.”
- Nagia, *Healthy Life Style (Pashto)*: “I learned to do exercise.”

Having learned new information about diabetes from the videos, participants asked informed and detailed questions about diabetes that could be included in future PEMs or that they could discuss with their doctors. Common questions included:

*A Min, Family and Self-Management (Burmese):* “The video said diabetes can make your heart weak as well. My mother is diabetic and she has a heart problem as well. When we talk [to her], maybe we should be careful to give them bad news [in a gentle way]?”

*Farhat, Family and Self-Management (Dari):* “We have to take healthy food. What is healthy food? How to take it?”

*Gaby, Access to Management Tools (Spanish):* “It’s very important to see how is the cost of the medicine [and glucometer]. Always ask to the insurance if they cover.”

*Bahar, Side Effects and Symptoms (Pashto):* “What is the difference between side effects and symptoms?”

*Kamila, Mental Health (Dari):* “If a person hear about that I have diabetes, is that suddenly they will know. It make them really isolated from the community. [What to do?]”

Among the many follow-up questions, participants across the focus groups were especially interested in learning more about healthy food in the United States. It is outside the scope of this project to address these questions; however, it should be noted that the community of researchers and doctors that work within this community have developed culturally and linguistically sustaining PEMs that address the topic of healthy food.

### **Cultural and Linguistic Sustainability**

The diabetes PEMs are not just relevant to community members because they are in their home languages, but their purpose is transformative, that is, to educate and empower individuals to be in control of their own health (Alim & Paris, 2017; Kusters et al., 2023). We discuss the findings in this section through the lens of culturally sustaining pedagogy (Ladson-Billings, 1995; 2014; Paris, 2012; Paris & Alim, 2017) with a specific focus on asset-based pedagogy, sustaining heritage and community practices, intersectional relationships, and linguistic representation. Asset-based pedagogy is the use of “the linguistic, literate, and other cultural practices of our communities meaningfully as assets in educational spaces” (Alim & Paris, 2017, p. 5). According to Paris and Alim (2014), sustaining heritage and community practices is not enough if we truly seek to enact asset-based pedagogy. They argue that “it is crucial that we understand the ways [...] people are enacting race, ethnicity, language, literacy, and cultural practices in both traditional and evolving ways” (Paris & Alim, 2014, p. 90). Individuals enact their own identities in multiple and fluid ways within their own communities, which emphasizes

the importance of representing intersectional identities and relationships in PEMs specifically designed for refugee and immigrant communities (Ladson-Billings, 1995, 2014; Paris, 2012; Paris & Alim, 2014).

### **Culturally Sustaining Pedagogy.**

Overall, participants were very pleased with the asset-based cultural and linguistic responsiveness of the videos. For example, one participant’s positive response was typical across focus groups:

*Said, Respectful Language and Content (Pashto):* “it’s very respectable, our language and the information is also good.”

Not only did participants overwhelmingly appreciate the cultural and linguistic responsiveness of the videos, but they recommended ways to use these videos to further transform health education within their communities.

### **Addressing Religious Observances.**

Participants who practice religious traditions that involve celebratory eating and/or fasting expressed that it was important to include how to manage diabetes during religious observances into the videos (or to create specific videos addressing them). Typical responses include:

*Hla Hla, Ramadan (Burmese):* “When I was in Indonesia during the Ramadan, we get up at three in the morning. That’s when we eat. And then afternoon pills after fasting, after dinner. That’s what they [the doctor in Indonesia] told me. But from the doctor in the US, they didn’t say, even during the Ramadan.”

*Mahib, Ramadan (Pashto):* “It is really good idea to have a video about this [Ramadan]. We like difficult to control, even the not water [fasting from water and food].”

*Gaby, Christmas and Semana Santa (Spanish):* “I think so for me it’s important for celebration. We are Hispanic and we make a lot of food, and mostly all the food is like sugar or extra protein. We show the kids how we eat on the days, like we make postres [desserts] and dessert. It’s a day of celebration, but is the day of take care of you and your family too, verdad [right]?”

Religious observances are an integral component of community cultural practices and as the participants in this study expressed, can be included in PEMs to support self-management of health conditions. This finding also has implications for doctors’ cultural responsiveness, highlighting the importance of addressing how diabetes can be managed during varying religious observances.

### ***Incorporating Layered Intersectional Representation.***

Participants recognized the racial and ethnic representation in the videos as asset-based; however, they were concerned about the lack of intersectional representation in the videos. Intersectionality is, “a way of understanding and analyzing the complexity in the world, in people, and in human experiences” with the understanding that “people’s lives and the organization of power in a given society are better understood as being shaped not by a single axis of social division, be it race or gender or class, but by many axes that work together and influence each other” (Collins & Bilge, 2016, p. 2). Participants recommended to include characters of all ages, body types, and abilities in the videos. For example, Carolina, a Spanish speaker, explained the importance of representing age diversity in the videos.

*Carolina, Age (Spanish):* “They’re [the videos] focused only on the older people. Everybody can have diabetes.”

For the most part, the videos represent older adults, and across the focus groups, participants agreed with Carolina, wanting to be able to understand how diabetes could be prevented and managed for their children. Tatiana, also a Spanish speaker, stated that it would be helpful to see different body sizes in the videos.

*Tatiana, Body Sizes (Spanish):* “[more diversity in] the characters in the body.”

Participants noticed that the characters in the videos were all one size, and they wanted to see their own body sizes represented in the videos, to demonstrate to viewers that diabetes affects people of all sizes. Finally, participants recommended including accommodations for viewers of different abilities, such as including captions and bullet points in home languages on every slide to support understanding.

*Gaby, Ability (Spanish):* “I like the video and I like to know about the letters too because like my friend, he can’t listen. He can see the caption, mi amigo [my friend] Carlos. He can’t hear, but he can read Spanish.”

### ***Contending with the Transnational Experience.***

Transnational settings “involve people, resources, and interactions that transcend nation-state borders and space/time boundaries” (Canagarajah, 2020, p. 559). Many of the refugee and immigrant participants in this study participate in transnational settings where they contend with their

layered identities within and across borders and space/time boundaries, meaning they maintain a relationship with their home countries, cultures, and languages while also engaging in the receiving countries’ cultural and linguistic practices. Gaby’s story, a common sentiment shared across the focus groups, illuminates the importance of explicitly teaching about making healthy choices in American grocery stores and restaurants, as the choices might be very different from home country options:

*Gaby, American Food (Spanish):* “When I come to this country, I can see how the bread is very sugar. I’m working on Dunkin Donuts and I was very surprising how the sugar is covered of the glaze because we have Mexican pan dulce [sweet bread], verdad [right]? It’s sweet, but not like glazed, so when you come [to the United States], you feel excited because you have all these many, many options. You need to take care of how the way you eat because this is the way when we come here. We are starting to begin doing fat and sugar and diabetes. Sometimes we don’t know about how would this much sugar and some small portion.

Another example of transnational experience comes from Tatiana, also a Spanish speaker who explained that in Mexico, commercials for drugs (like Metformin and Glipizide) do not list side effects,

*Tatiana, Side Effects (Spanish):* “We drink medicine with this going for prescription for the doctors. The difference on Mexico, they no let you know all these things, the side effects. Mexico no let you know but I know that this another just give you the medicine and you want to drink. Whatever happened to you, it your problem.”

### ***Linguistically Sustaining Pedagogy.***

Participants agree that these home language videos are necessary and useful for diabetes education within their communities. For the most part, participants said that the language used in the videos was appropriate and respectful. Participants appreciated the everyday language used in the videos.

*Farhat, Understandable Language (Dari):* “the language itself, like the way they explain, like perfect.”

*Mahib, Understandable Language (Pashto):* “understandable, especially for common people, not like a high level of language.”

### ***Language for Communicating with Doctors.***

Participants recommended including key vocabulary such as ‘diabetes’, ‘blood sugar’, and ‘glucometer’ in English as well as the home language to help individuals feel more comfortable speaking about diabetes with their doctors.



Across all of the focus groups, participants preferred that key words should be communicated orally, verbally, and printed in the home language and in English. Chu et al. (2022) concur, advocating for language preferences and health literacy to ensure accessibility.

*Farhat, English Language Support (Dari):* “It could mention English words too because people are living in this country, and this native language is English. Make people exposed to the language. They will hear about ‘diabetes’ and they need to know what’s that.”

### **Considerations for Multimodal Components.**

In bi/multilingual education, we know that “successful multilingual interactions have always been aided by multimodalities – gestures, objects, visual cues, touch, tone, sounds and other modes of communication besides words” (García & Wei, 2014, p. 28). Participants in this study explained how the multimodal illustrations in the videos supported their understanding. The following is a typical response:

*Said, Illustrations Can Support Learning (Pashto):* “I learned [about healthy food] from the picture.”

However, the participants’ worries about the severity of side effects were primarily brought on by the multimodal components of the video, which speaks to the power of images to communicate a message. Participants explained that if these images are used, the video should be shown to patients at a clinic and discussed with the doctor to clarify any questions about the safety of the medication. Typical responses include:

*Gaby, Illustrations Can Instill Fear (Spanish):* “It’s good to talking about worries when you drink [Metformin], but they [need to] show something good for your body, so if you show different face.”

*Carolina, Illustrations Can Instill Fear (Spanish):* “If you feel like that, maybe you say, ‘Oh no, better I don’t drink the medicine. I feel it’s not safe for me.’”

In the PEMs, the characters look like they are in a lot of pain as they experience the side effects of Metformin and Glipizide and many participants said these images would deter them from taking these medicines to manage their diabetes. Being aware of the transnational experience and consistently creating opportunities for transnational individuals to ask questions and express concerns can help identify ways to create more patient-centered and asset-based PEMs.

### **Dissemination**

Before viewing the series of videos, participants responded to a multiple-choice question on the participant survey that asked the following question: *Where do you go to find information about your health (check all that apply)?* The results of the survey revealed that participants would overwhelmingly prefer to receive health information from their doctors, then family members and community leaders.

Many of the focus group discussions centered around the importance of community and collective education. There was an interest in holding community forums led by doctors—similar to the focus groups conducted for the study—to watch the videos and ask questions. The following is a typical response:

*Said, Community (Pashto):* “If we have gathering of communities, like watch videos, same program like this focus group. That today we are five and it’s like next day we are ten, more people will get knowledge and then they will share with their friends.”

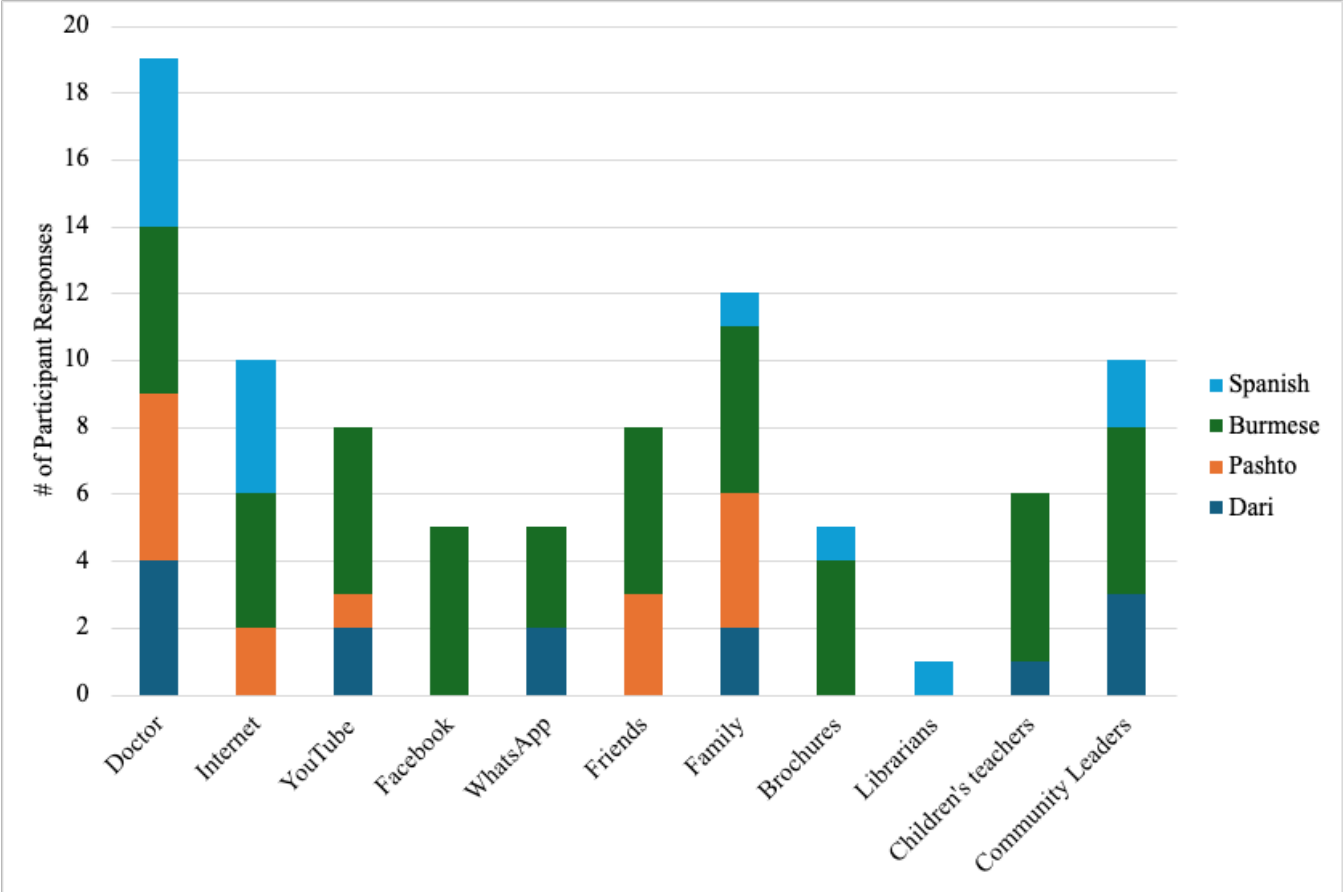
Participants recommended sharing the videos online, specifically on YouTube, Facebook, and in WhatsApp threads led by community leaders. They also recommended tagging the videos with searchable keywords in English and in home languages to make them easier to find. Other ideas included: playing the videos in clinic waiting rooms, places of worship, public transportation, community centers, and community forums. It was suggested that home language brochures with QR codes could be distributed in these places as well.

Participants felt that the videos could be disseminated anytime, but that during or after a visit to the clinic would be the most effective. Since the Metformin and Glipizide videos are more specific to individual patients, participants recommended that they be distributed only after a diagnosis with support from the doctor.

### **Discussion**

This study investigated the understandability, actionability, and culturally and linguistically sustaining components of home language specific PEMs for diabetes education. While earlier studies have explored the impact of PEMs, they have not explicitly addressed how health educators and bi/multilingual teacher educators can work together to develop patient-centered materials.

TABLE 3: Preferred Video Dissemination Sources



We found that the home language diabetes PEMs under evaluation were understandable and actionable, in that participants said they learned new information about diabetes and would be able to use that information to advocate for and manage their own health better than before they watched the videos. Our findings also revealed that participants felt respected and valued by the videos, particularly because the videos centered and represented their home languages and cultures. In the following section, we echo a call for researchers in the fields of health literacy and adult multilingual education to collaborate in the development and dissemination of health literacy materials for refugee and immigrant communities (McKee & Paasche-Orlow, 2012).

**Expanding Language Access Across Health Care Systems**

This study has implications for expanding language access for refugees and immigrants within and across health care

systems. For health information to be understandable and actionable, PEMs must be developed alongside multilingual communities, drawing from their cultural and linguistic funds of knowledge (Feinberg, O'Connor et al., 2023). Working with, not just for multilingual communities requires deep community collaborations toward developing intercultural competence and health literacy within and across the health care system (Mavreles et al., 2021). Therefore, effective PEMs designed for transformational health education should be developed from the ground up, centering health concerns from the community (Freire, 2018; Rumenapp et al., 2023). The PEMs in this study were developed by and for the community, which was apparent in the positive ways participants reacted to the linguistic and cultural responsiveness of the videos. Participants were eager to invite family and community members to learn from the videos, suggesting appropriate ways to disseminate the videos in community forums.

For health information to be transformational, it must lead people to achieve better health outcomes for themselves and their families. Critical health literacy creates opportunities for people to apply information they have learned into action in any health context (Abel & Benkert, 2022). Providing home language health education videos using health literacy and cultural/linguistic guidelines may be a conduit for people to reflect and act in their lives. Our study found that all participants felt more empowered to ask their health care providers questions after viewing the videos, thereby improving their actions toward improving their own health outcomes and removing health disparities and inequities.

This study confirmed that to promote equity in the health care system, PEMs should be accessible in the community's home languages, and should not privilege English (Chu et al., 2022; Kusters et al., 2023; Ma et al., 2020; Robotin et al., 2017). That said, participants suggested that it might be helpful for the PEMs to highlight key words in English that may be useful in speaking with doctors and advocating for their own health. As we conducted this study, we learned the importance of building relationships with language concordant interpreters from the community who can bridge any linguistic and cultural barriers (Abdullahi et al., 2023). Not only did the interpreters who supported this study recruit participants, but they helped us improve the linguistic and cultural representations in the videos. Finally, we learned that inclusive, culturally responsive multimedia and images should be used to support communication about health literacy (Robotin et al., 2017; Headley et al., 2022). Our findings revealed that the multimodal semiotics in the videos were helpful for building understanding but could be improved upon by incorporating diverse intersectional representation—age, body size, and ability in addition to race and ethnicity. As we continue to take direction from the communities with whom we work, we hope to expand health literacy awareness in refugee and immigrant communities.

### Health Literacy and the Adult Education Classroom

The findings of this study have the potential to inform the way health literacy is integrated into adult education classrooms designed for multilingual language learners (MLLs). Adult education curriculum for MLLs in the

United States is often focused on learning English skills that are deemed necessary for navigating everyday life. A typical “health” unit may focus on the basic skills and English vocabulary needed for everyday health care. For example, vocabulary and learning objectives might include “parts of the body” and “read medicine labels” (Jenkins & Johnson, 2017, p. viii). As adult education instructors get to know their adult MLL students’ journeys, language practices, and traditions of literacy (España & Herrera, 2020), an opportunity is created for health education curriculum content that is customized to the learners’ needs and interests. For example, an instructor may learn that their adult MLL students are interested in learning how to navigate speaking to their doctors after a diabetes diagnosis. Providing home language content developed by health literacy experts to both teach new information and activate funds of knowledge can act as a jumping off point for teaching the English language skills necessary for requesting a language concordant interpreter or speaking directly to the doctor.

The home language PEMs analyzed in this study offer multiple opportunities for adult education teachers to use translanguaging pedagogy (García & Wei, 2014) to promote health education with MLL students. Translanguaging pedagogy draws on learners’ cultural and linguistic funds of knowledge, including multimodal representations, gestures, etc., with the goal of communicating fluidly across various circumstances. The fact that the PEMs deliver content in multiple languages makes it possible for teachers to use translanguaging pedagogy to deepen content and linguistic knowledge. For example, when students learn about diabetes in their home language first, students build their background knowledge related to the content and then teachers can more easily “differentiate among students’ levels and adapt” language instruction to students’ needs (García & Wei, 2014, p. 121). This type of collaboration with health literacy experts and PEMs would ensure that every student is receiving and accessing the same depth of content instruction, in this case related to diabetes, to better advocate for themselves and their own health.

### Limitations

If this study were to be duplicated, we recommend gathering more information related to participants’ demographic profiles, particularly highest level of education and in what language/country. Given the data

collected about the participants, we were limited in what we could explain scientifically. As we conducted the focus group interviews, we noticed that some individuals had a strong understanding of diabetes while others were learning about the disease for the first time. It may be of use to study whether and how an individual's level of education in any language could be a contributing factor to their ability to learn from PEMs such as the one used for this study. In future iterations of this study, we would recommend collecting information about participants' educational background, literacy levels in all languages spoken, and level of experience with health concepts.

### Directions for Future Research

The findings of this study make it clear that home language PEMs are beneficial for refugee and immigrant communities. Future research should examine the components of effective home language PEMs that explain strategies for how an individual can advocate for their own and their family's health at the doctor. Participants in this study learned about diabetes from these home language videos and developed questions to ask at the doctor; however, going to the doctor in the US may (or may not) be a completely different experience from what individuals have experienced in their home countries. Developing PEMs that explain the importance of asking

the doctor questions, such as how to manage diabetes during religious observances, could be a next step in supporting patient autonomy and empowerment.

### Conclusion

Freire (2018) suggests that the only way to achieve liberation for all is to continually work toward true solidarity with the oppressed, asserting that "the pursuit of full humanity, [...], cannot be carried out in isolation or individualism, but only in fellowship and solidarity" (p. 85). Thus, this study was made possible by years of building trust within the refugee and immigrant communities in Clarkston, Georgia, across Atlanta-area universities, and within the free diabetes clinic where this study took place. The deep community trust that had already been built before conducting this project was palpable, as the site coordinator was able to identify willing and passionate language concordant interpreters from the community (Abdullahi et al., 2023). Because of the community-based interpreters and the videos that were developed alongside the community (Kendrick & Mutonyi, 2007; Rumenapp et al., 2023), participants saw themselves, their languages, their cultures, and their communities in the videos. Building relationships with community-wide partners, like the ones that are connected to this clinic, is necessary for enacting transformational health education.

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