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Beyond Resettlement: Sociocultural Factors Influencing Breast and Colorectal Cancer Screening Among Afghan Refugee Women

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Abstract

Immigrants and refugees have an increased risk for developing chronic health conditions, such as breast and colorectal cancer, the longer they reside in the USA. Moreover, refugees are less even likely to use preventive health services like mammography and colonoscopy screening when compared with US-born counterparts. Focused ethnography was employed to examine sociocultural factors that influenced cancer screening behaviors among aging Afghan refugee women. We conducted 19 semi-structured interviews with Afghan women 50 and older and their family member/caregivers. Interview transcripts were inductively coded using Atlas.ti, where focused codes were sorted and reduced into categories, and we extracted meaning around groups of categories. Findings of this study revealed factors like fear of cancer, pre-migration experiences, family involvement, provider recommendation, and provider gender concordance influenced women's cancer screening behaviors. This study also found that women who have had a recent mammogram or colonoscopy described empowerment factors that helped them withstand the stressful process of screening, through encouragement and reminders from providers, support from adult family members, and finding strength through *duaas* (prayers). As refugee women continue to age in the USA, clinicians should incorporate multi-level strategies, including family-centered and faith-based approaches to promote preventive screening behaviors in this population.

Keywords Refugee women · Mammography · Colonoscopy · Breast cancer · Colorectal cancer · Sociocultural factors

Introduction

Refugees in the post-resettlement setting encounter multiple layers of disadvantage, experience increased burden of disease, and face barriers to accessing preventive health services [1, 2]. Refugees mostly originate from low- and middle-income countries that have limited resources for standardized preventive health services and treatment for cancer and other non-communicable diseases [3]. Unfamiliarity with the concept of chronic diseases such as cancer and other sociocultural factors like attitudes, values, beliefs, and religious influences is known to influence screening behaviors among ethnic minority women [4]. The relevance of sociocultural influences on health-seeking behavior is well established in medical anthropology literature. Researcher and medical anthropologist Dr. Arthur Kleinman posits that cultural explanatory models of disease are a product of social and cultural factors and feature prominently in how individuals choose to label illness, evaluate its severity, and seek care within a healthcare system [5]. Therefore, as refugee populations continue to age in the USA, healthcare professionals and policymakers alike need to better understand the divergent views they likely possess about cancer and how social and cultural factors influence cancer screening behaviors.

Afghan refugee women resettling in the USA since the 1980s are now aging and are at increased risk for developing chronic health diseases like cancer. Breast cancer (BC) and colorectal cancer (CRC) account for the most common cancers diagnosed among US women and prevail as one of the leading causes of cancer-related mortality in the USA [6]. Although the general impression is that immigrant and refugee populations in the USA have lower cancer incidences when compared with their native-born counterparts, referred to as the "healthy immigrant effect," studies of foreign-born

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populations in the USA have shown that the risk for developing cancer increases in women who move from countries with low incidence rates to countries with high rates [7–9].

A systematic review of both quantitative and qualitative studies examining factors to cancer screening shows that refugees are less likely to adhere to preventive screening, particularly from Muslim-majority countries including Afghanistan, Iraq, and Somalia [4]. For example, one study reported that rates of completion were significantly lower among Somali patients for mammography (15.38 vs. 48.52%, $p \leq 0.0001$) and CRC (38.46 vs. 73.35%, $p \leq 0.0001$) [10]. A limited number of studies have examined BC and CRC screening behaviors specifically among older Afghan women in USA. Similarly, one study found that approximately one-third of Afghan women age 40–87 never had a mammogram, while half received a mammogram over 2 years ago [11]. An ethnographic study of 196 Afghan families reported that 34% of Afghan women over the age of 34 had never had a mammography and only 42% had been screened in the previous 2 years [12]. These rates are comparably lower than past 2-year mammography screening rates observed among Black (69%) and Hispanic (61%) populations over the age of 40 in the USA [13, 14]. To the author's knowledge, no prior studies have examined CRC screening among Afghan refugees. Screening barriers included lack of knowledge about preventive healthcare and cancer screening, low English proficiency, fear of cancer, and limited access to transportation [2].

Evidence that refugee and immigrant women seek preventive health services at lower rates than their non-refugee counterparts and consequently present with late-stage cancers is particularly concerning since cancer morbidity and mortality can be reduced through early detection and screening [2, 15, 16]. In this study, we focused on two cancers associated with older age among women, BC and CRC. According to the U.S. Preventive Services Task Force (USPSTF), regular BC and CRC screening is recommended for all women over the age of 50 [17]. Because cervical cancer screening among women over 65 is not recommended, it was excluded from this study [17]. In this study, we explored sociocultural factors that influence mammography and colonoscopy screening behaviors among Afghan refugee women—a high-risk group.

Methods

This study employed a focused ethnography design, an approach that interprets participants' subjective experiences of a specific phenomenon from a distinct cultural perspective [18]. In traditional ethnography, the researcher is typically unfamiliar with the cultural setting, in some cases, requiring years of field observations [19]. Focused ethnography, as a methodological adaptation of traditional ethnography, is characterized by "short-term" or absent visits, an interest in a specific research question and a researcher with insider or background knowledge of the cultural group [19]. Interest in examining cancer screening behaviors in this population stems from the primary researcher's clinical and cultural background, being female and of Afghan descent. This study was approved by the University of California, Los Angeles (UCLA), Office of Human Research Protection Program.

Sampling and Participants

Inclusion criteria for participants who: 1) identified an Afghan woman, 2) born in Afghanistan, and 3) over the age of 50 - were recruited through purposeful and snowball sampling and by word of mouth. Key informants, including an Imam (faith leader) at a San Diego mosque, announced the study during Friday prayers and evening lectures. The primary researcher was present during these events to recruit. Family members were subsequently recruited after completion of interviews with Afghan women. The interviewer asked participants "who do you rely on the most to make health-related decisions with you?" and invited their identified family member to interview. By chance, family members who were willing to interview were adult daughters. Inclusion criteria for family members were as follows: (1) over the age of 18 and (2) able to provide consent. Family members were invited to participate to gain fuller understanding of factors associated with screening behaviors. A study information sheet, available in *Dari* with contact information, was given to all participants.

Data Collection

The primary researcher, HS, trained in qualitative data collection and analysis, conducted in-person interviews with Afghan women and their family/caregivers. Separate interviews with their family members were conducted at a preferred time and location. Family members were asked about health perceptions and their perceptions of cancer screening behaviors of older Afghan women. Table 1 provides an overview of interview constructs and guiding questions. A semi-structured interview guide of open-ended questions in English was used, and a trained bi-lingual research assistant (RA) for translation during interviews was available when needed [20]. The RA was a trained medical provider and former Afghan refugee fluent in both Dari and Pashto. Nine interviews were conducted in Dari, and all interviews with family members were conducted in English. Informed consent was obtained verbally from each participant and all participants consented to be audio-recorded. Participants were provided a $20 local store gift card at the end of the interview [21].

Interviews conducted in Dari were simultaneously translated by the same RA during the interview [22]. Recorded interviews were then transcribed and de-identified into English by the primary researcher and the RA. Code names

Table 1 Interview constructs and guiding questions

Construct	Guiding questions
Preventive health beliefs*	What comes to your mind when you think about "health"?
	What do you do to stay healthy? Where did you learn about how to stay healthy?
	Who or what helps you when you have a problem with your health?
	In what ways are they helpful?
	When do you go to the doctor or health clinic?
	Are there reasons/things that make it difficult for you to seek healthcare? If so, what are they?
	How do you think your religion or culture influences your health?
	How do you think your community or neighborhood (where you live) influences your health?
	What are important health issues you think affect Afghan women?
Breast cancer screening+	What do you know about breast cancer?
	How do women get breast cancer?
	Have you ever received a mammogram?
	Think back to the first time you received a mammogram, describe what happened and how you felt
	Do you have any reasons that you decided not to get a mammogram?
	What would be the best way for Afghan women to learn (or learn more) about breast healthcare?
	What can you do to protect yourself from breast cancer?
	How do you think your religion or culture influences Afghan women to get a mammogram?
	How do you think your community or neighborhood influences Afghan women in getting a mammogram?
	If you have any questions about breast healthcare, who do you rely on for information?
	Have you heard about breast cancer screening guidelines?
Colorectal cancer screening+	What do you know about colon cancer?
	How do women get colon cancer?
	What can you do to protect yourself from colon cancer?
	Have you ever heard about colonoscopy?
	Have you ever received a colonoscopy?
	If so, what was your experience like?
	Have you heard about a fecal occult blood test (FOBT)?
	Have you had an FOBT?
	If so, what was your experience like?
	Have you heard about colon cancer screening guidelines?
	What about all the topics we discussed, what was most important or urgent to you?

*Results of this section will be published separately

+Interview questions for family/caregivers were asked in a similar format; questions about BC and CRC were modified to ask about their perceptions regarding what influences screening behaviors for Afghan women in their community

were used to protect participants' identity. To enhance validity, random selections of interview recordings were also assessed by a native speaker (an English-Farsi educator) for transcription accuracy to consider alternative translations of the data [20]. Slight translation discrepancies were found but did not influence data meanings or interpretation. Transcripts were then imported into Atlas.ti software to facilitate coding and analysis.

Analysis

The primary researcher conducted an inductive content analysis using Atlas.ti software to facilitate the coding process. First cycle coding employed initial and process coding [23, 24]. Second cycle coding was used to cluster similar initial codes into categories [25]. Themes that illustrate meaning were extracted from groups of categories [26]. The primary

researcher used reflexive memos as a strategy to reduce bias and enhance rigor during analysis [23]. Saturation was achieved after conducting 19 interviews, when there appeared to be a leveling of variation in participant explanations. Interviews with family members facilitated a more fuller understanding of conceptual codes deemed important in interviews with Afghan women. Communicating with the RA who also served as a cultural informant during data analysis, and debriefing codes and categories with two co-authors, increased the understanding of participants' descriptions and trustworthiness of researchers' interpretations and led to consensus on study themes. The Standards for Reporting Qualitative Research (SRQR) checklist was used to provide comprehensive reporting of this study [27].

Results

A total of 19 Afghan women and their family members participated in this study. Participant characteristics can be found in Table 2. All women were self-identified as Muslim, and most women ($n = 12$) had at least one mammogram in their past and a recent mammogram within the past 2 years ($n = 8$). Among Afghan women, 28% had a family history of BC, and 14% had a family history of CRC. Family members were adult daughters of participants ($n = 5$). The average age of family members was 36.6, and four were born in Afghanistan and then moved to the USA between the ages of 1 and 19.

Study findings revealed that factors like fear of cancer, pre-migration experiences, family involvement, provider recommendation, and provider gender concordance influenced women's cancer screening behaviors. Women who have had a recent mammogram or colonoscopy described empowerment factors that helped them withstand the stressful process of screening, through encouragement and reminders from providers, support from adult family members, and finding strength through *duaas* (prayers). The results are presented below, and a summary of the categorical findings and relevant participants' quotations can be found in Table 3.

Theme 1: Having Connotations of Cancer as a "Dangerous and Deadly Disease"

The word for cancer in Dari is *saratan* (ان). Most women believed that cancer would eventually lead to death and, therefore, was something to fear. Women avoided discussing cancer in open settings and preferred to keep their worries about cancer and the cancer screening process private. Additionally, previous healthcare experiences and hearing stories about family members with cancer diagnoses influenced women's perceptions.

Fearing Cancer Negative feelings about cancer, in general, were echoed by most women in this study. Their fears are rooted in the belief that a cancer diagnosis is essentially a death sentence. As one woman put it, "Anybody who knows if they get any kind of cancer, will get upset or depressed because they will feel like they will die. Anyone who gets cancer will die."

Keeping Worries Private Cancer was viewed as a source of shame for many participants because one's weakness is exposed: As a result, women indicated that any sort cancer-related healthcare is often hidden from friends and family. The desire to prevent worry and anxiety among their loved ones, given the uncertainties surrounding cancer in general, from getting bad news from a physician to one's impending death, was another reason why cancer-related healthcare is often kept private.

Having Limited Knowledge About Cancer The most commonly reported barrier to preventive screening was lack of

Table 2 Participant characteristics ($N = 19$)

Sample of Afghan participants ($n = 14$)	Age range	50–82 years (average = 63 years)
	Self-reported female	100%
	Married	64%
	Below high school	57%
	MediCal/Medicare	71%
	Years in the USA	14–38 years (average = 26 years)
	Unemployed	71%
Sample of family/caregivers ($n = 5$)	Age range	24–41 years (average = 34 years)
	Self-reported female	100%
	Married/divorced	60%
	College educated	100%
	Health coverage (yes)	100%
	Born in the USA	20%
	Employed	100%

Table 3 Summary of findings

Themes	Categories	In vivo quotes
Perceptions: Having connotations of a "dangerous and deadly disease"	Fearing cancer	"Everybody's scared of it, they do not want to talk about it, even if they have it [cancer], they do not say it to others that I have this problem or something like that. And, why, I do not know."—Zahra, age 60 "Anybody who knows if they get any kind of cancer, will get upset (depressed) because they will feel like they will die. Anyone who gets cancer will die."—Nilab, age 50
	Keeping worries private	"Some of them do not even tell their immediate family [when screening] because they do not want to make them upset or worried or cause them to worry, but that's real."—Madina, age 65 "They do not want to be seen as not strong or suffering, and especially with an illness that you do not have any control over is something you keep under wraps… It's why people want to keep it hidden."—Marjan (family member), age 30
	Having low knowledge of cancer	"Having family problems, having lots of pain and sorrow and lots of stress contribute to developing breast cancer in women."—Hala, age 60 "No, I do not know [what causes cancer]… Now, I am not in an age to develop breast cancer since women who bear child and breast feed develop breast cancer."—Roya, age 65 "When they [Afghan women] feel something hard in their breast, or they have pain, they [Afghan women] need to go to the doctor and treat themselves on time."—Zainab, age 55
	Remembering healthcare in Afghanistan	"Since it wasn't cured in Afghanistan, they come here with that mentality… Those days, nobody knew. When they had cancer, they would just put it in their head that they are dying."—Zahra, age 60 "It's [the U.S. is] a lot different than in Afghanistan. There, we had to get a number or a card with lots of difficulties to see doctors. Here, we can make an appointment, and the doctors listen and try to find out what is making you sick and how to treat you. Also, the quality of treatment and service is better here than there."—Safa, 60
Experiences: Engaging in screening "like sheep and fish"	Having poor/inadequate communication with providers	"The big issue was we do not understand the language. That was the big problem, our life here is about the language."—Mina, age 60 "I was OK, but I was worried every night. I was thinking about what it will be, what will happen, and everything. It makes you think about the future life, and everything" "The way the doctor told me made me comfortable to do the exam for the second time."—Zainab, age 55
	Feeling discomfort, pain and embarrassment	"I was told that they would take a tissue from my breasts for the exam. It was the worst system to do the exam, and it was the worst and bitter experience that I had since they make women lay on the table and pull women's breasts down like sheep breasts and enter a very thick needle and as if they are fishing in their breasts."—Layla, age 70 "I think it's just the modesty issue and being embarrassed, and getting a mammogram, and makes them uncomfortable and less inclined to get one… There's the whole process of taking your clothes off, so this modesty issue needs to be factored into the process of screening where women are made to feel comfortable."—Marjan (family member), age 30 "My mom's generation is very reserved; they do not like to be exposed or looked at. They do not like to even wear the gown that the doctor gives them. Our generation is very open."—Dalia (family member), age 35
	Feeling comfortable with female providers	"I've never had a male doctor, but in case of emergency, I will go to a male doctor even if it's a Pap smear or colonoscopy if its urgent."—Lina, age 60 "We do not want to go to the male doctor and talk about women's issues and illnesses and anything genital [related to private parts], it's kind of shameful and that's why we do not want to talk about it."—Amina, age 75
Motivation: Being resilient through reminders, "duaa," and support	Receiving reminders of when to screen	"Especially, the ones that come new [to the U.S.], they need that information and encouragement and reinforcement and all that stuff." - Roya, age 75 "I do not remember when to do it or to ask for it."—Nilab, age 50 "She [mom] just does not like the discomfort with it [mammogram], but she does get things in the mail that reminds her about getting that thing done."—Pari, age 25
	Relying on family support	"I am more comfortable with my sister; she is a woman, she understands, she is older than me. She has a lot of experience."—Nilab, age 50 "We're [daughters] usually the ones who help my mom go to her appointments."—Dalia (family member), age 35

Table 3 (continued)

Themes	Categories	In vivo quotes
		"We were very vigilant to make sure that every time a doctor or a nurse came in, they were checking for the right wristband and doing everything correctly"—Mariam (family member), age 40
	Coping through prayer	"I was praying. I have anxiety, and when I am in such situations, I pray to Allah [God], and it helps, and it makes me relaxed."—Sara, age 65
		"As far as I know, in our religion, there is no such thing that prevents women from doing breast cancer screening. In our Holy Book [Quran], it is written that both women and men should take good care of their health. Our religion never prevents them."—Ana, age 60

Names and ages of participants have been anonymized to protect their identities

information about cancer, in terms of its etiology, knowing signs and symptoms, screening in general, and needing more awareness about the importance of screening. At the same time, some women believed that sharing information with the community to increase general knowledge about cancers affecting women and its risk factors was important. Causes and symptoms of both BC and CRC were typically attributed to physical symptoms, like a lump in the breast or stomach pain, or stress and poor diet. Despite having low knowledge of cancer, most women acknowledged the importance of receiving preventive cancer screening. A participant stated, "actually, everyone should get checked for a mammogram, especially for someone who has a mom or grandmother who has breast cancer, and they should also do a self-breast exam."

Remembering Healthcare in Afghanistan Cancer was a familiar term to all women interviewed in the study but was described as being uncommon in Afghanistan. Previous experiences with cancer, like witnessing or hearing about family and friends' prognosis, informed some women's perceptions of cancer before resettling in the USA. For example, a participant stated, "we never had cancer in Afghanistan, once we came to the U.S. - [there was] cancer." Women brought up examples of pre-migration experiences of cancer, including having had a family member diagnosed with cancer and die shortly after. Home-country experiences with the healthcare system in Afghanistan also influenced women's beliefs about the identification of cancer. For example, as one participant stated, "you only went to the doctor if you needed to" and was interpreted to be a lack of preventive orientation in the pre-migration setting.

Theme 2: Engaging in Cancer Screening "Like Sheep and Fish"

Women's healthcare experiences with cancer screening influenced their perceptions of the quality of care they receive and their decision to repeat screening. Negative healthcare experiences, such as feeling dehumanized during the screening process or having poor communication with healthcare providers due to language barriers, delay in communication or waiting for results, and receiving unclear explanations about screening findings, lead to confusion and frustration with the process of screening. Moreover, some women described their initial screening experiences as unpleasant due to pain and feeling embarrassed during the process. On the other hand, receiving prompt communication about screening results and having female providers promoted trust in their providers and, for some, encouraged repeat screening.

Having Poor/Inadequate Communication with Healthcare Providers "The religion and culture is not the problem, it's the language," stated one participant. Most women reported difficulty with the English language as a barrier to receiving information about BC and CRC as well as a barrier to receiving quality care from their healthcare providers. Some women described expecting healthcare providers to provide correct explanations and diagnosis of their screening results. A delay in receiving test results was a cause for distress for some women, while supportive and prompt communication by healthcare providers also empowered some women to repeat screening.

Feeling Discomfort, Pain, and Embarrassment Women's experiences with an initial mammogram or follow-up procedures influenced women's perceived quality of care and intention to screen again. For example, a participant stated, "although it [mammogram] was [years ago], my doctor asked me to do it again, and I said 'no, I don't want to do it again.' It was really painful for me." Discomfort and pain were less reported among women who had a previous colonoscopy. For example, one participant stated, "I don't know why I got it [colonoscopy] done, but it wasn't painful, and it wasn't pleasant as well."

Feeling Comfortable with Female Providers Feeling comfortable with a female provider was a general preference for most women seeking healthcare, regardless of the type of service

received. It was especially crucial for when women's sensitive areas are to be examined, exposed, or touched but was comprisable in emergencies. A participant stated, "Well, if the provider is going to be female, it [having a mammogram] will be good, it will make us more comfortable, if it's a man, then we won't feel comfortable." Family members described the importance of addressing their mothers' comfort level and preferences during the process of screening. One daughter stated, "She [my mom] prefers women. Actually, she's OK with a male physician if he's working with outside her body like that neurologist was just checking her head and barely touching her."

Theme 3: Being Resilient Through Reminders, *Duaa*, and Support

Women who have had a recent mammogram or colonoscopy described empowerment factors that helped them withstand the stressful process of screening, through encouragement and reminders from healthcare systems and providers, support from family, and finding strength through *duaas* (prayers).

Receiving Reminders of When to Screen Receiving recommendations and reminders through healthcare providers and health systems was an essential facilitator for mammography, colonoscopy, and FOBT screening. Most women were prompted to have a mammography screening by recommendation from their healthcare providers. A participant stated, "my doctor told me I needed one, so that's why I did." Although less reported, few women described receiving similar recommendations and reminders for colonoscopy and FOBT tests.

Relying on Family Support Women relied on family members for support in many ways: for transportation or interpretation during doctor's visits, as a source of motivation and encouragement for healthy behaviors, and were also sources of health information. Family members interviewed, who were adult daughters, also emphasized their roles as advocates for their parents in explaining health information. For a 42-year-old family member who primarily grew up in the USA, having the experience of having had the mammogram herself also helped her to promote the importance of the screening within the family. While daughters who were interviewed provided insights on their role as advocates in the healthcare setting for their mothers, others did not feel the same way.

Coping Through Prayer Most women who had had a screening recall experiences of intense fear and distress during the process. Coping through the screening process through prayer was reported by most women who underwent mammography screening. Although women did not specifically identify that religion promoted cancer screening, women identified that Islam promoted general healthy behaviors and can be a motivating factor for women to engage in screening activities.

Discussion

Our findings are among the first to articulate older Afghan refugee women's beliefs about mammography and colonoscopy screening and the perceived barriers that at times prevent them from following screening guidelines. Specifically, pre-migration experiences, interpersonal relationships with healthcare providers and family, and religious influences were the most prominent factors that affected women's perceptions about cancer screening. This study offers new insights on repeat mammogram screening and the underuse of FOBT and colonoscopy screening. This study also shows how family members, particularly adult daughters, sons, and sisters (and not just husbands), influence screening behaviors.

One of the major factors to emerge in this study pertained to how pre-migration experiences influenced the way refugee women perceived cancer and cancer screening. For example, preventive screenings and treatment were unavailable at the primary healthcare level in Afghanistan, which could explain why women were fearful of this process and diagnosis [28]. These pre-migration experiences also reinforced the notion that early detection for cancer starts with the identification of symptoms such as a lump or pain. Afghan women in this study emphasized the importance of practicing breast self-exams (BSE) to identify early-stage BC and when to schedule a doctor's appointment more than regular mammograms. Having symptom-based beliefs about cancer screening may negatively impact women's health because screening is most effective before the appearance of symptoms. In Afghanistan, where cancer screening and treatment resources were limited and unheard of, identification of late-stage diagnosis was common, which partly explains why women experience distress, believing that mammograms were confirmatory for a cancer diagnosis. Obtaining or practicing screening before the start of symptoms was not practiced widely by the women in this study. Yet, secondary prevention is an essential point for providers to educate patients, because often it is more challenging and costly to treat and cure malignancy by the time symptoms appear.

We found that women were even less aware of the recommendations for regular screening for CRC when compared with mammography screening. Additionally, participants reported that their healthcare providers did not often inform women or recommend colonoscopy which is a significant barrier to cancer screening. Less invasive methods for screening may benefit women who experience more distress and discomfort with visual exam procedures, for example, regular FOBT or stool-based screening for CRC was reportedly underused by women in this study. These findings highlight the

importance of developing culturally sensitive provider- and system-level approaches for promoting adherence to cancer screening for this population.

More importantly, women describe how limited English language proficiency compounds misunderstanding and ineffective communication with healthcare providers. "It's not the religion – it's the language" really illustrates what many participants expressed in this study, particularly regarding the need to address practical barriers to preventive screening such as language, miscommunication, and consideration for women's preferences. These barriers often led to dissatisfaction with care, which becomes a potent barrier to accessing preventive services and is supported by prior research on discordant provider and patient communication about CRC [29].

This study also found that women's preference for female providers was perceived to be an act of agency, rather than a cultural requirement for accessing healthcare. Women also reported that although their religion allows women to be seen by male providers, they are more comfortable being seen by female providers, but preference was often associated with modesty and embarrassment. Negotiable beliefs about women's preference for female providers have been identified in previous research in BC screening in Afghan and Arab immigrant women [11, 30]. Prior research has also found that having a female primary care provider was associated with increased screening among immigrants from Muslim-majority countries [15]. However, our findings contrast with research among Muslim immigrant women that identify embarrassment as a barrier to BC screening and research that find a higher level of modesty is associated with higher odds of delaying seeking healthcare [31, 32]. Mixed findings suggest the need for further research in conceptualizing modesty and embarrassment and its influence on preventive health behaviors among Muslim immigrant and refugee women.

Families have a significant influence on Muslim women's health behaviors, and this effect is particularly relevant for Afghan women. Family is the most important social unit in Afghan culture. The husband's influence on Afghan women's health has been documented in few studies, while the influence of other family members on health in general has not been widely studied [33–35]. Afghanistan is a Muslim-majority country with a traditionally patriarchal culture, where an estimated 99% of Afghans identify as Muslim, and women rely on men as family gatekeepers for input on decision making [36]. In our study, interviews with family members, primarily daughters, provided insights on their role in advocating for their mothers while encouraging preventive healthcare behaviors. These findings help re-consider family dynamics and the potential for receiving support from the second-generation Afghan family members as an influencing factor to preventive screening.

This study provides new insights into empowerment factors for repeat screening. Most women described both internal and external strengths, drawing on their religious beliefs and support from their families and healthcare providers. From the women who experienced follow-up procedures after an initial mammogram, having health system reminders for screening, family support, and making "duaa" [praying] promoted the use of continued screening and coping with anxiety and distress through the procedure until receiving results. While much attention is placed on the vulnerabilities of refugee women and emphasis placed on cultural barriers, we highlight resilience factors to repeat screening.

This study also informs future direction for research and implications for healthcare providers. Women reported limited awareness regarding periodic CRC screening which suggests the importance for providers to explain the risk of CRC and recommend annual FOBT and regular sigmoidoscopy or colonoscopy screening. Health system reminders, timeliness of follow-up results, and family support are important facilitators of repeat mammogram screening. Providers need to improve how they inform women about the importance of mammograms and the limitations of BSE. Providers should consider cultural and pre-migration influences on teaching immigrant and refugee women about the concept of secondary prevention; emphasize the difference between prevention, screening, and diagnosis; inquire about patient preferences for provider gender; and provide educational brochures available in Dari and Pashto to improve patient-provider communication strategies. In the community setting, cancer screening interventions should consider collaborative health initiatives with refugee-serving or faith-based organizations to provide cancer education for women as well as their family members.

Limitations

This study focused on a specific cohort of older adult Afghan women who have resided in the USA for over 10 years with many respondents reporting a history of previous mammography screening. Prior research before 2016 identified less adherence to mammography screening. The Affordable Care Act expansion of coverage regarding preventive screening may have explained why this sample of women did not identify financial barriers to screening or had previous mammography screening. Although women identified family members as influencing their health, the primary researcher only interviewed adult daughters due to their openness to talk; perceptions of husbands or male relatives were not included in this study. To analyze the extent to which study findings could be transferred to other local realities, it is important to consider that participants in this investigation were older refugee women selected through purposive and snowball sampling. It is possible that only women who were comfortable talking about cancer were more willing to participate in this study, while

others who were unfamiliar or had not had prior screening were less willing to participate.

Conclusion

Findings from this study suggest that sociocultural factors occur at multiple levels to influence Afghan women's cancer screening behaviors and should be considered when designing and implementing screening interventions for this population. Beliefs about cancer in general and screening for cancer as a preventive measure were influenced by pre-migration experiences, interpersonal relationships with healthcare providers and family, and religious beliefs that promote healthy behaviors. This study offers new insights on repeat mammogram screening and the underuse of FOBT and colonoscopy screening in this at-risk population of refugee women. This study also identifies how family members—not just husbands—may influence screening behaviors positively through advocacy. These findings inform future directions for limited research on preventive health behaviors of aging refugees and highlight the need for collaborative family-centered, community-based interventions with faith-based institutions.

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