

Factors associated with access to dental care among refugees: A systematic review of quantitative studies

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Abstract

Objectives: To identify, appraise and synthesize the published evidence from quantitative studies on the individual and contextual-level factors determining access to dental care among refugees worldwide.

Methods: A systematic literature search was conducted until the last week of February 2022 in four electronic databases – MEDLINE, Embase, Web of Science (all databases) and APA PsycINFO – without any restrictions. Quantitative studies published in English language and meeting the a priori eligibility criteria were reviewed and data extracted. Quality assessment was conducted using the National Institutes of Health tool. The identified factors were stratified according to the framework of the Behavioural Model of Health Services Use, and the evidence related to each of these factors was summarized in tables. Narrative synthesis of the findings was conducted.

Results: The search retrieved 6776 unique records, of which 69 were deemed eligible for full-text screening and nine studies were included in the final data analysis and synthesis. The studies were rated to be of 'fair' quality at best. Self-reported previous dental visits was the most commonly used measure of access. Associations between individual-level factors and dental care access were most frequently examined (predisposing [$n = 6$], need [$n = 2$] and enabling [$n = 1$]), while the contextual-level factors were rarely examined (predisposing and enabling [$n = 1$, each]).

Conclusions: Individual-level predisposing factors, such as English language proficiency, education, health and dental literacy and acculturation and integration, were shown to be significantly associated with refugees' access. There is limited evidence to determine the effect of individual enabling and need and contextual factors.

KEYWORDS

access to dental health services, quantitative studies, refugees, systematic review

1 | INTRODUCTION

The global refugee crisis is growing, and at the end of 2020, there were 26.4 million refugees forcibly displaced from their home countries.¹ With the increasing political crisis and ongoing conflicts

around the world, it is anticipated that in 2022, there will be an additional 2.47 million individuals fleeing their home countries and seeking refuge.² Refugees are subject to a myriad of traumatic experiences in their home countries often facing war, dislocation, violence or systematic dispossession and discrimination. The process of

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seeking refuge in another country is often protracted and refugees can spend long periods in camps with poor living conditions and minimal access to health and other services.³ These experiences place people at high risk for diseases and other health issues.⁴ As a result, refugees have poor health upon arrival in the host country,⁵ which is further exacerbated by the various challenges faced during the process of resettlement.³

Extreme inequities in oral health of refugees are reported around the world.⁶ For example, the prevalence of untreated oral diseases among refugees is greater than both the general/host population and other underprivileged population groups in the host country.⁷ Dental caries, chronic gingivitis and periodontitis are the main conditions affecting refugees,⁸⁻¹¹ with dental caries being more prevalent in refugee children.¹²⁻¹⁵ Research indicates that oral diseases may increase the risk of systemic disorders like cardiovascular diseases,¹⁶ diabetes,¹⁷ pneumonia,¹⁸ stroke¹⁹ and poor pregnancy outcomes for pregnant women.²⁰ Furthermore, evidence shows that poor oral health significantly impacts on their social interaction and psychological well-being, resulting in compromised quality of life.²¹ Together, these potentially impede refugees' ability to resettle and lead an optimal course of life.

Access to dental care is important for promoting and maintaining overall health and well-being.²² However, the burden of poor access to appropriate dental care is significant among the refugee population, even in developed countries,²²⁻²⁴ regardless of the initiatives undertaken within the host countries.⁷

In a recent systematic review of qualitative studies, Paisi et al.²⁵ investigated the barriers to and facilitators for access to dental care among refugees and asylum seekers in countries with very-high human development index, including the United States of America (USA), the United Kingdom, Canada and Australia. The review was limited to qualitative studies that reported the perceptions and experiences of refugees, asylum seekers, dental professionals and other supporting groups in these countries. Findings were synthesized according to the five access dimensions proposed by Penchansky and Thomas,²⁶ which indicated factors related to the dimensions of affordability, awareness and accommodation as major barriers for these population groups.²⁵ However, as noted by the review authors, including both qualitative and quantitative studies when synthesizing the evidence related to the factors impacting dental care access would 'maximize' the potential of the findings to inform policy and practice.²⁵ Therefore, to fill this gap noted by Paisi et al.,²⁵ and to complement the findings of their review, the current review of quantitative studies was undertaken irrespective of the country or region.

This systematic review was guided by the research question: What are the factors determining access to dental care among refugees around the world? The objective was to identify, appraise and synthesize the published evidence from quantitative studies on the individual (e.g., sociodemographic, ethnicity) and contextual (e.g. neighbourhood, dental health organization) level factors determining access to dental care among refugees worldwide.

1.1 | Definitions

1.1.1 | Refugee

For the purposes of identifying refugees, the criteria outlined in the 1951 United Nations Convention Relating to the Status of Refugees have been used as a guide.²⁷ According to this, a refugee is a person who is 'outside his/her country of nationality or habitual residence; has a well-founded fear of persecution because of his/her race, religion, nationality, membership in a particular social group or political opinion and is unable or unwilling to avail himself/herself of the protection of that country, or to return there, for fear of persecution'.²⁷

1.1.2 | Access to dental care

There are multiple definitions of access to health care based on numerous conceptualisations. For this review, access was conceptualized within the Behavioural Model of Health Services Use proposed by Andersen and Davidson (here in 'the behavioural model').²⁸ According to this model, access to healthcare not only describes the ability of an individual to reach a health service but also their timely use of appropriate service to improve health-related outcomes.²⁸ Thus, in this review, access was defined as 'actual use of personal health services and everything that facilitates or impedes their use'. The use of dental services by an individual was considered to be influenced by the interrelationships between individual and contextual-level factors. Each of these levels is further disaggregated into three components – predisposing, enabling and need components²⁸; predisposing component encompasses conditions that predispose an individual's access to services, enabling component includes conditions that directly facilitate or impede access, and the conditions that the individual or dental service provider/dental health organization deem requiring treatment comprise the need component. Individual factors relate to the characteristics of the individuals impacting access (e.g. demography) and are measured at an individual level, while the contextual factors relate to the characteristics of the dental service provider or dental health system/organization and community/neighbourhood of the individual and are measured at an aggregate level (e.g. neighbourhood socioeconomic index).

The behavioural model has been validated and extensively used when examining the factors influencing access to dental care.²⁹ Also, the model is flexible in adapting to different vulnerable populations within different settings.²⁸ Moreover, the behavioural model emphasizes the role of both individual and contextual factors in influencing the dental health-related behaviour of a person. This distinction between individual and contextual factors is scarcely accounted for in other access models.³⁰ Given the circumstances of refugee resettlement in the host country, contextual factors (e.g. characteristics of the community and dental health provider/system) are regarded as having greater significance in influencing their access to healthcare services.⁷

Therefore, in this review, synthesizing the evidence within the framework of the behavioural model provides a deeper insight into the factors associated with access to dental care for the refugee population.

2 | METHODS

The systematic review protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO; CRD42021282357). The reporting was in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines.³¹

2.1 | Eligibility criteria

Studies were deemed eligible if they examined factors associated with access to dental care among refugees resettled/living in the host countries. Outcomes evaluated in the eligible studies measured any aspect of access, e.g. dental attendance, frequency of visit and time since last visit. Quantitative observational or intervention studies, including the quantitative component of mixed method studies, were eligible for inclusion. Only studies published in English language were included.

2.2 | Search and selection

The search was conducted until the last week of February 2022 in four electronic databases MEDLINE (via Ovid), Embase (via Ovid), Web of Science (all databases) and American Psychology Association PsycINFO. The search terms, including keywords, truncations and subject headings, were developed based on three key concepts identified from the research question – refugees, access to dental care and factors (detailed list in Appendix Table Appendix S1). No restrictions were applied to the date, language or region of publication. A detailed search strategies for all electronic databases are presented in Appendix Table S2.

Screening was completed in two stages – title/abstract and full text. At each of the two stages of the review process, one author (PV) conducted the screening and a second author (MM or MG) independently reviewed a random sample of 10% of the articles. Disagreements were resolved by discussion or in consultation with a third author (HC).

2.3 | Quality assessment and data extraction

Quality assessment was performed by two reviewers (PV and MM) independently and in duplicate. National Institutes of Health quality assessment tool was used to assess the methodological quality of the included observational studies.³² The tool comprise 14 items

relating to the design and implementation of a study (including methods, sources of bias, confounding, study power, strength of causality in the association between exposure and outcomes). Each item was responded with 'yes', 'no', 'cannot determine', 'not reported' or 'not applicable'. Based on the number of 'yes' responses, the overall quality of each study was judged to be 'good' (11–14), 'fair' (5–10) or 'poor' (0–4).

Data pertaining to study description and design, objectives, refugee characteristics, operationalization of access-related outcomes, factors, quality assessment and key findings were extracted from the included studies. Data extraction was done by one author (PV) with a random sample of 10% reviewed by a second author (HC). Discrepancies were resolved by consensus.

2.4 | Data analysis and synthesis

The factors identified in the review were stratified according to the framework of the behavioural model, as described above. The evidence related to each factor were analysed and summarized based on the number of times each identified factor was assessed in relation to access to dental care by refugees, and the number of times each factor was significantly associated with dental care access in the identified studies. Studies that reported on both adjusted (for the effects of potential confounding variables) and unadjusted associations between the evaluated factors and the measures of dental care access were included in the data analysis. Where a study reported both adjusted and unadjusted analyses, only adjusted results were analysed; and where only unadjusted analysis were reported, unadjusted results were analysed. Narrative synthesis of the findings was conducted.

3 | RESULTS

3.1 | Search and study characteristics

The flow of studies in the screening process is shown in Figure 1. The search retrieved 6776 unique records, of which 69 were deemed eligible for full-text screening based on the analysis of titles/abstracts. Nine studies were included in the final narrative synthesis.

Appendix Table S4 reports the characteristics of included studies. All included studies used an observational design, no eligible intervention studies were identified. Most studies were published after 2010 ($n = 8$). The studies were conducted among refugees resettled in the USA ($n = 4$), Australia ($n = 1$), Canada ($n = 1$), India ($n = 1$) and Sweden ($n = 1$). One study evaluated the resettled refugee population in multiple countries, including Jordan, Lebanon, Syria, Gaza Strip and West Bank.³³ Cross-sectional ($n = 6$) and retrospective ($n = 3$) designs were used in the studies. Data were primarily collected using questionnaires or interviews. Refugee population groups sampled in four included studies originated

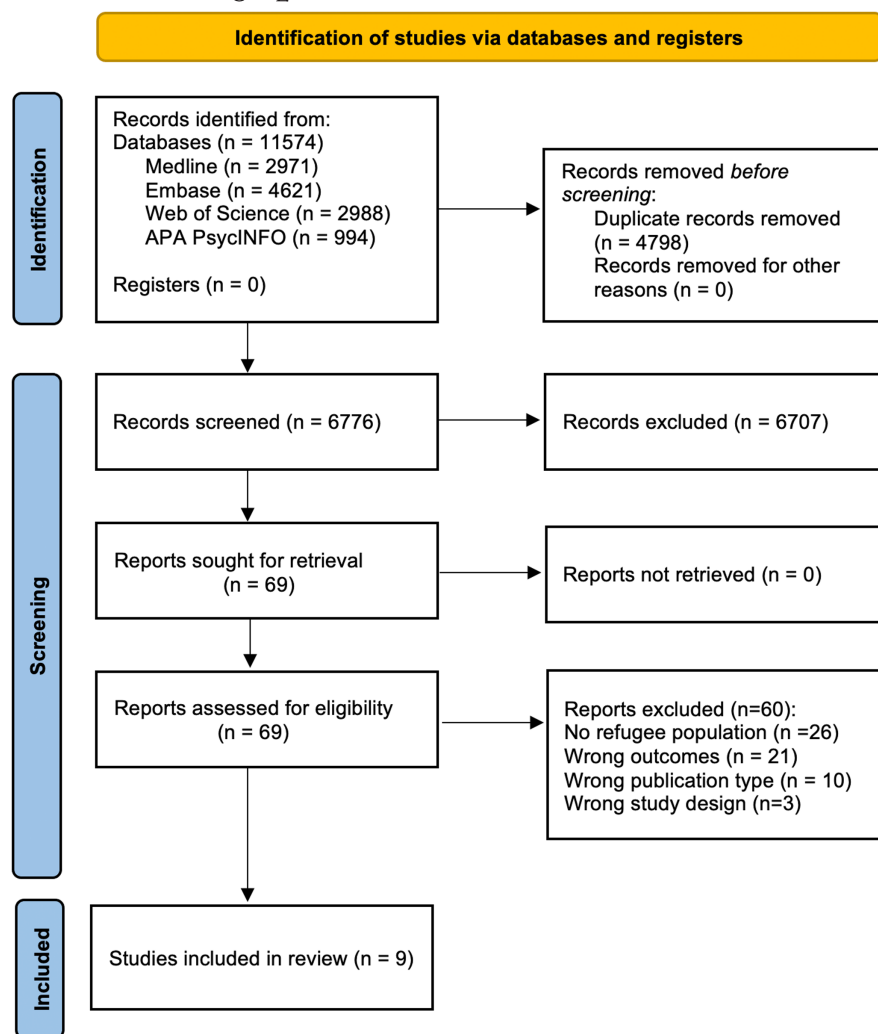


FIGURE 1 Flow diagram of study selection.

from multiple countries,^{34–37} while two included Somali refugees,^{38,39} and one each focused on Tibetan,⁴⁰ Palestinian³³ and Bhutanese and Burmese⁴¹ refugees. Four of the nine included studies focused on refugee children, while others were conducted among adult populations. One study each compared refugees with the immigrants group,³⁵ or with other refugee population groups within the same country.^{34,37,40} No study compared the factors influencing refugees' access to that of the host country's general population.

3.2 | Quality appraisal

The quality of the included studies was assessed to be 'fair' at best (studies rated as 'fair', $n = 7$; Appendix Table S4). Two studies were rated to be of 'poor' quality.^{35,36} The most common criteria that the studies failed to report on was the participation rate of the eligible participants. Other frequently poorly rated criteria were related to the study design, including sample size justification and whether the examined factors were assessed prior to the measurement of access outcome. Detailed quality assessment is presented in Appendix Table S3.

3.3 | Factors associated with refugees' access to dental care

The access measures operationalized in the included studies were use of dental services ($n = 1$), self-reported past dental visits ($n = 5$), perceived barriers to access ($n = 1$) and missed appointments ($n = 1$). One study used the rates of untreated decay as a proxy measure for access (Appendix Table S5).

Several factors related to refugees' access to dental care were considered in the included studies. Appendix Table S5 summarizes statistically significant findings from the studies that reported on multivariate analyses after adjusting for potential confounding variables. Associations between individual factors and dental care access were most frequently examined; most studies evaluated factors related to predisposing component ($n = 6$), followed by need ($n = 2$) and enabling ($n = 1$) components. Contextual factors were rarely examined; predisposing and enabling components were evaluated in one study each, no study examined need component. When adjusted for covariates, few factors showed change in their associations with access. Appendix Table S6 provides summary of evidence related to all identified factors from adjusted and unadjusted analyses.

3.4 | Individual-level factors

3.4.1 | Predisposing

Demographic factors such as age, gender and region of origin were examined in two studies.^{36,37} Greater use of dental services among refugees in Sweden was significantly associated with older age ($p < .001$).³⁷ However, significantly higher mean number of missed appointments were seen among refugee children in the adolescent age group ($p = .014$).³⁶ Females showed significantly higher rates of utilization than males ($p < .001$).³⁷ No association was found between region of origin and the number of missed appointments.³⁶

English language proficiency was evaluated in four studies, of which higher proficiency was found to be associated with greater access to dental care in three studies.^{35,38,39} Preference for English language for communication and level of education showed significant associations with increased access to dental care ($p < .001$)³⁹ and self-reported dental visits in the past 12-months (OR 1.65, $p < .01$),⁴¹ respectively. Employment and housing (such as number of rooms, ownership and type of housing) did not show any association with dental care access.⁴¹

A number of factors related to various domains of 'acculturation' and 'integration' of refugees were evaluated in three studies.^{38,39,41} Acculturation was defined in these studies as 'a process of cultural adaptation that happens when groups of people from different cultures come into continuous contact with one another.'^{38,39} and was measured using a scale that included the domains: English language proficiency, dietary preferences, entertainment and media preferences and interaction with social and religious groups. Integration was conceptualized within the integration framework of Ager and Strang⁴² and measured using the domains: education, employment, housing, social bonding and bridging, language and cultural knowledge, safety and stability and civic engagement.⁴¹ Feeling safe within the host country⁴¹ and self-identifying as a person of the host country³⁹ were not shown to be associated with access. As for the indicators of social interaction, having close friends from different ethnicity/culture showed a significant association with increased access among Somali refugees in the United States ($p = .003$).³⁹ Conversely, interacting with people, sourcing information and attending events from either the same (adjusted OR 0.62; CI 0.35–1.10) or different (OR 0.76; $p = .05$) cultural/ethnic groups, engagement with various community organizations/clubs,^{39,41} refugees' preferences for religious groups (i.e., own or other religion),³⁹ and their knowledge of the host culture⁴¹ did not show any association with their respective access outcomes. Preferences for host country's food ($p < .001$), media (i.e., English language newspapers, magazines and books) ($p < .001$) and entertainment (i.e., English language music and radio shows; $p = .001$) were associated with lower rates of untreated dental caries (as a proxy for increased access to dental care) among Somali refugees in the United States.³⁹ Two studies used an acculturation scale as a unified measure of acculturation^{38,39}; both studies found that higher acculturation levels on the acculturation scale was significantly associated with greater odds of use of

preventive dental services (adjusted OR 2.8–3.8)³⁸ or increased access ($p < .001$).³⁹ Zimmerman et al.³⁷ used a 'proxy measure' for acculturation (the length of stay in Sweden), which was shown to be directly associated with refugees' number of dental visits.

Higher functional health literacy and dental word recognition among Somali refugees were significantly associated with dental care access.³⁹ However, the fear of dental pain was not perceived as a significant barrier to access.³⁵

3.4.2 | Enabling

Hoover et al.³⁵ studied enabling factors in relation to dental care access among the parents of refugee children in Canada. Lack of money and private dental insurance, issues with transportation and conflicts between work schedule and dental appointments were not identified as significant barriers for refugees than other immigrants.

3.4.3 | Need

Two studies reported significant association between dental caries experience, as measured by the number of decayed, missing and filled teeth/surfaces (dmft, DMFT or DMFS) and previous dental visits.^{33,40} The study by Biscaglia et al.³³ found that the refugee children who had not previously visited a dentist had greater odds of higher DMFS score (Appendix Table S5). While the mean DMFT scores were significantly higher ($p = .000$) among those who had visited a dentist than those who had never visited one, in the study by Bhatt and Gaur.⁴⁰ The prevalence of caries in mixed dentition did not present a significant relationship with access.⁴⁰

3.5 | Contextual-level factors

3.5.1 | Predisposing

The urbanicity/rurality of the settlement area was not found to be associated with dental visit in the previous 6 months, among the recently arrived adult male refugees in Australia (adjusted RR 0.6, CI 0.3–1.3; regional area as reference).³⁴ There were no other studies reporting on this factor.

3.5.2 | Enabling

The type of dental service provider was shown to impact the refugees' use of dental services. Zimmerman et al.³⁷ found that the amount of consumption (as measured by the treatment time) was significantly higher among the refugees in Sweden who attended private dental services than those who attended public dental services ($p < .0001$).

4 | DISCUSSION

4.1 | Summary of evidence

This systematic review identified individual and contextual-level factors associated with access to dental care among resettled refugees. The most common factors identified were related to demography, socio-economic status, acculturation, health and dental literacy and oral health status of refugees. Overall, the findings point to paucity in the number of quantitative research studies in this area.

Among the individual-level factors identified, English language proficiency was most often associated with refugees' access to dental care. This is in agreement with previous qualitative research studies that have also shown limited English language skills as a significant barrier to access, as it presents challenges in navigating through the dental care system in the host country (i.e., countries where English is the primary language) and communicating with the dental professionals who do not speak their language.²⁵ However, it is to be noted that all four studies identified in the current review, which examined this factor, were also conducted in anglophone countries (i.e., the USA, Canada and Australia),^{34,35,38,41} and that this factor may be considered context-specific. Therefore, the findings may not be generalized to refugees in non-anglophone countries. Although not specifically noted in the included studies, the English proficiency not only indicates an individual's ability to read and communicate in English but also denotes the level of education and in turn provides a proxy measure of their socio-economic status (and therefore oral health status) in their home country. Therefore, this factor may be considered significant even among refugees resettled in non-anglophone countries. Future studies conducted in such countries must consider examining English proficiency alongside proficiency in the host country's language.

Other factors pertinent to English language proficiency found to be significantly associated with greater access, were higher education level, and higher literacy of refugees (including health and dental literacy). Together, these findings reiterate the need for educational programs (such as language training, orientation to the host country health care system) and other oral health promotion initiatives to improve the literacy of refugees, thereby improving their knowledge and appreciation of availability and appropriateness of dental care. This is critical to improve access among this population group. For example, an oral health education program delivered by the International Institute of St. Louis (Missouri, USA), targeted at improving refugees' English language skills, was shown to improve their comprehension of essential oral health-related information and their intention to access dental care.⁴³ The success of such programs also requires increased cultural competency among dental professionals and dental system literacy of community workers providing support services for refugees.^{44,45}

Other commonly examined factors were related to the various domains of acculturation of refugees, as outlined earlier. None of these domains showed an association with access, when examined

independently, suggesting that their relationship is probably mediated by other factors. Nevertheless, when overall acculturation levels were examined (based on scores calculated using an acculturation scale), higher acculturation of refugees was associated with greater access.^{38,39}

Dental caries experience (DMFT/DMFS scores) in permanent dentition was significantly associated with the previous dental visits; however, the direction of association was inconsistent in the identified studies. While one study found a positive relationship between caries prevalence and previous dental visits (i.e., lower caries prevalence among those who previously visited dentists),³³ this relationship was found to be negative in the other.⁴⁰ The negative relationship was attributed to the type of treatment received by the refugee children (frequently tooth extractions) resulting in high number of missing teeth (hence high DMFS scores).⁴⁰ Refugees frequently delay or avoid seeking dental care, or only seek dental services when there is severe pain, thereby limiting the chances for tooth conservation. Barriers such as dental anxiety, lack of knowledge related to the dental care system in the host country and oral health-related cultural attitudes of the decision-makers in the family (e.g., parents make decisions related to their children's dental care needs) have been previously noted as reasons for the delay or avoidance in seeking care.²⁵

At the contextual level, only two factors have been examined in the identified studies. The use of dental services was found to be higher among refugees attending private dental service providers in Sweden than those attending government/public dental services. This may be dependent on the dental health system of the country, for example, where the government provides subsidies for private dental services. Nevertheless, this finding is interesting, as costs associated with dental treatment was perceived as the most common access barrier among refugees, even in highly developed countries where refugees are entitled to free public dental services.²⁵ For example, in some Australian states (e.g., Victoria), refugees are entitled to free public dental services, largely negating the cost barrier. Despite, data from the state of Victoria indicate that the use of public dental services among this population group remain low.⁴⁶ This suggests that indirect costs associated with availing dental services, such as transportation costs to reach a service location, may also pose an important barrier to access. In addition to the costs, factors such as geographic location or scarce distribution of public dental services, congestion or long waiting times for treatment, and cultural and linguistic appropriateness of the public dental workforce, mediate refugees' choice of dental service providers.²⁵ Further examination of the factors associated with type of dental services used by refugees (i.e., public or private) is warranted, particularly within the contexts where these population groups are eligible for government dental services at subsidized or no cost.

This review adds new knowledge related to the factors influencing dental care access among refugees, such as caries experience and type of dental service provider, that was not presented in the previous review by Paisi et al.²⁵ However, some findings from the previous review were not confirmed in the current review. Challenges

faced during the process of resettlement such as housing, employment (and associated income/economic sufficiency) and transportation, as well as lack of dental insurance (in countries where there is no availability of or eligibility to government subsidized dental services) have been noted to hinder refugees' access to dental care.²⁵ These factors did not show a significant association with access in the studies identified in this review. There are several possible explanations for these contradictory findings. The primary reason may be attributed to the type of studies included in the two reviews. Paisi et al.²⁵ reported subjective experiences of refugees from qualitative studies, while this review identified objective measures from quantitative studies. As such, the factors highlighted in these two reviews may have been different. Other reasons relate to the differences in the characteristics of the refugee participants in the included primary studies (e.g., origin country, resettlement country, duration of stay in the host country) and the dental health system in the host country (e.g., provision of government subsidized dental services for the refugee population). For example, the duration of stay in the host country by the refugee participants included in the primary studies included in the two reviews were different. Whereas the above listed factors were indicated to influence access among newly arrived refugees in the review by Paisi et al.,²⁵ participants in the study by Alshadood et al.,⁴¹ included in this review, were 4 years past their arrival in the United States. With the increasing number of years since arrival, the circumstances of refugees related to housing, employment and income and public/private transportation have been found to significantly improve, thereby diminishing their effect on health-related outcomes.⁴⁷ Thus, the factors that impact access to dental care among newly arrived refugees may be vastly different from those associated with the refugees who have been living in that country for some time.

4.2 | Implications for future studies

Use of the behavioural model to stratify the identified factors revealed the critical paucity in quantitative research on the role of contextual factors with respect to the refugees' access to dental care. Contextual factors, as outlined in the behavioural model, have been shown to influence the outcomes related to dental services utilization.⁴⁸ Within the context of access to dental care of the refugee populations, the importance of social and economic resources of the neighbourhood of residence, availability of refugee support services and other community organizations and the attributes of dental health system (e.g., structure and process of service provision, attitudes of service providers and dental health promotion activities) have been emphasized.⁷ Therefore, there is a need for future studies to explore the contextual factors pertaining to this aspect.

Another important direction for future research would be to conduct longitudinal studies to examine the association between the factors, refugees' access to dental care and subsequently equitable health outcomes. The studies identified in this review primarily used cross-sectional or retrospective designs, which only measure

the effect at a given point in time. It would be critical to understand how the relationship between the factors and access changes over time, as the resettling refugee populations adapt to the host culture.²⁵ Longitudinal studies not only measure the temporal change in the effect but also aid in establishing the causality of the relationship between access and the examined factors.

4.3 | Strengths and limitations

An exhaustive search strategy was built using broad search terms to identify and retrieve all relevant studies. The search was comprehensive including four electronic databases, without any restrictions. The behavioural model was used to integrate the finding of this review, which revealed several individual and contextual factors associated with access to dental care among refugees.

Some limitations in the review process are to be noted. The search did not include grey literature sources, which is considered relevant in relation to research on refugee population, as often literature is published on non-academic platforms or is unpublished.⁴⁹ This might have resulted in missing potentially relevant literature. Similarly, the limited number of electronic databases searched might have also introduced some evidence selection bias; however, the combination of databases was carefully selected to ensure that the magnitude of bias was restricted.⁵⁰ Screening and data extraction were performed by a single calibrated reviewer, owing to resource limitations. As such, there may have been some errors introduced in the selection and abstraction process. Also, only studies published in English were included due to lack of resources available for professionally translating non-English articles to English. Considering that many refugees resettle in non-English speaking countries, there may have been some evidence from non-English language publications from these countries that may not have been included in the current review. Despite every effort to identify the relevant studies and findings that pertained to refugees (following the UNHCR's criteria for a refugee), majority of the studies did not clearly define their population, which presented challenges during the screening and extraction stages. In such instances, inclusion decision was made based on the individual study authors' determination of a refugee, i.e., whether the study authors used the term 'refugee' to describe the study population. Also, adopting a broad definition of access (according to the behavioural model) resulted in the inclusion of a spectrum of access outcome measures. The methodological decisions outlined above might have introduced some bias in the review process, and as such, these limitations must be considered when interpreting the review results and conclusion of this review.

Other limitations arose intrinsically from the characteristics of the included studies. First, there was heterogeneity among the included studies with respect to the refugee characteristics (i.e., age, gender and country of origin), methodologies employed for sample recruitment and data collection, study context (i.e., country and area of refugee resettlement, characteristics of dental services), access outcome measures and the examined factors.

This precludes comparison of the strengths of association across studies. Second, as the characteristics of dental care systems and the provision of or eligibility to dental services for this population group vary between countries, generalisability of review findings may be limited. However, efforts were taken to provide as much information possible on the contexts in the included studies to help extrapolate the findings to similar contexts. Nonetheless, the findings of this review can be useful as a primer for identifying potential factors associated with access to dental care within a given a context/country. Finally, considering that the included studies were rated to be of 'fair' quality at best, review findings require careful deliberation.

5 | CONCLUSIONS

The findings from the current review suggest that at the individual level, English language proficiency, education, health and dental literacy, and acculturation and integration significantly predispose refugees' access. However, there is limited evidence to determine the effect of individual enabling and need and contextual factors.

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CONFLICT OF INTEREST

None to declare.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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