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# Pediatric Dentistry in Migrant Populations: A Systematic Review of Access, Needs, and Oral Health Outcomes

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# Abstract

International migration has increased in recent years, creating new vulnerabilities for children's oral health. This systematic review aimed to synthesize evidence published between 2015 and 2025 on oral health status, dental care utilization, and barriers and facilitators to access among migrant children and adolescents.

The review followed PRISMA 2020 guidelines. Searches were conducted in PubMed/MEDLINE, Embase, Scopus, Web of Science Core Collection, and LILACS/SciELO, in addition to gray literature sources, including reports from WHO, UNICEF, and IOM, as well as governmental and NGO publications and academic theses. Two independent reviewers screened the studies and assessed methodological quality using the Joanna Briggs Institute (JBI) tools for quantitative studies and the CASP checklist for qualitative research.

A narrative synthesis was performed. Twelve studies met the inclusion criteria. Reported dft/DMFT values ranged from 0.9 to 4.6, with more than 60% of untreated caries in several populations. Only 28–62% of migrant children had visited a dentist in the previous year, most often for pain or emergency care. Identified barriers were categorized as structural (costs and insurance coverage), sociocultural (language barriers, limited knowledge of the health system, and distrust), and administrative (legal status and documentation requirements). Facilitators included school-based preventive programs, mobile dental clinics, and the involvement of cultural mediators.

The methodological quality of the included studies was heterogeneous, and the overall certainty of evidence was considered moderate to low. Migrant children experience a substantial burden of oral disease and limited, largely reactive access to dental care. Policies aimed at improving effective coverage, strengthening community-based prevention, and promoting culturally competent dental teams are urgently needed. Future research should prioritize longitudinal designs and rigorously evaluated interventions to better inform evidence-based policy and clinical practice.


# 1. Introduction

International human mobility has experienced steady growth over recent decades. It is estimated that in 2020, there were more than 281 million international migrants, approximately 36 million of whom were under the age of 18—figures that continue to rise following the COVID-19 pandemic and recent geopolitical conflicts (1, 2).

This phenomenon transcends demographics and impacts the social determinants of health, including oral health, which has historically been deprioritized relative to other issues perceived as more urgent. However, untreated dental caries remains the most prevalent health condition globally during childhood (3). In migration contexts, it may coexist with early-stage gingivitis, oral trauma, or malocclusions that affect psychosocial well-being and school performance.

Pediatric dentistry must respond to scenarios characterized by cultural diversity, economic instability, and complex administrative procedures that condition continuity of care. Described barriers include language, lack of healthcare system knowledge, absence of documentation or coverage, stigmatization, and logistical obstacles such as transportation or incompatible schedules (4–6). Furthermore, psychosocial factors associated with the migratory process (traumatic experiences, prioritization of basic needs, fragmentation of support networks) often relegate oral health to the background. These barriers do not operate in isolation as they intersect and accumulate, creating equity gradients that are difficult to reverse without structural interventions (1,2.)

The available evidence is heterogeneous: some studies quantify caries experience and compare caries indices with native peers, while others focus on service utilization, perceived need, or the evaluation of school and community programs (7–10). However, methodological designs, healthcare contexts, and outcome measurement methods vary considerably, hindering generalizable conclusions. This fragmentation justifies a systematic review to integrate findings, identify knowledge gaps, and provide a solid foundation for clinical and public health decision-making.

From a public health perspective, dental care for vulnerable groups requires a comprehensive approach combining primary prevention (fluoridation, sealants, health education), accessible curative care, and financing policies that eliminate economic barriers (11, 12). In the case of migrant children, classic social determinants (parental education level, cariogenic diet, hygiene habits) overlap with conditions inherent to the migratory process (legal status, residential mobility, discrimination), generating a cumulative "double risk." Incorporating cultural competence frameworks and health equity approaches is essential for designing relevant and effective strategies (13, 14).

Furthermore, migration is not a homogeneous phenomenon: it includes refugees, asylum seekers, economic migrants, and unaccompanied or undocumented children. Each subgroup experiences specific vulnerabilities that may modulate both oral risk factor exposure and access to services (15). Literature suggests, for instance, that refugee children present higher levels of untreated caries and fewer preventive visits than legally established economic migrants, while those in irregular situations avoid services due to fear of administrative repercussions (16, 17). Capturing these differences is key to preventing the invisibility of particular needs under the broad label of "migrants."

In terms of oral health outcomes, beyond traditional caries indices, measurements of Oral Health-Related Quality of Life (OHRQoL) and dental pain are emerging as sensitive indicators in vulnerability contexts (18–20). These metrics allow for a better understanding of the functional and psychosocial impact of oral problems in migrant children, beyond lesion counts. However, their use remains limited in available studies, hindering robust comparisons and meta-analyses.

Institutional responses have ranged from school-based sealant and hygiene education programs to mobile clinics and the use of "cultural mediators" to facilitate access (21–23). Nevertheless, rigorous evaluation of these interventions is scarce, and many experiences are reported as programmatic descriptions without analysis of effectiveness or cost-effectiveness. Similarly, public universal coverage

policies for minors vary widely between countries and regions, creating a patchwork of social protection that conditions service utilization. In this context, this systematic review aims to characterize the oral health status of migrant children and adolescents identifying barriers and facilitators to care access.

## 2. Materials and Methods

## 2.1. Study Design and Protocol Registration

A systematic literature review was conducted following the recommendations of the PRISMA 2020 statement (24). The methodological protocol was prepared beforehand, archived internally and registered in PROSPERO (CRD-420261341234.)

## 2.2. Research Question Formulation

The PEO (Population–Exposure/Environment–Outcomes) model was used to structure the primary question, given the predominantly observational and public health nature of the included studies:

*What evidence exists regarding oral health status, dental service utilization, and barriers or facilitators to dental care among migrant children and adolescents residing in host countries?*

**Population (P)**

Migrant children and adolescents (0–18 years) residing in host countries.

**Exposure/Environment (E)**

International migration status and its interaction with dental care systems.

**Outcomes (O)**

Oral health indicators (dft/DMFT, gingivitis, oral trauma, OHRQoL), dental service utilization (visit frequency, coverage type), barriers and facilitators, and intervention outcomes.

## 2.3. Eligibility Criteria (Table 1.)

## 2.3.1. Inclusion Criteria

Study type: Original quantitative (cross-sectional, cohort, case-control), qualitative (interviews, focus groups), or mixed-methods studies addressing oral health or dental care access in migrant pediatric populations.

Population: Participants ≤ 18 years; for broader age ranges, data disaggregation for minors was required.

Publication period: From January 1, 2015, to June 30, 2025.

Language: Spanish, English, or Portuguese.

Geographic context: Host countries for international migrants.

Outcome variables: At least one oral health outcome (clinical or subjective) or service utilization/access metric.

## 2.3.2. Exclusion Criteria

Studies focused exclusively on adults or without disaggregated pediatric data.

Publications without primary data (letters, editorials, opinions), protocols without results, or narrative reviews.

Internal migration reports without international border crossings.

Studies with exclusively orthodontic/aesthetic measurements unrelated to public health or access.

Table 1
Eligibility Criteria Used for Study Selection in the Systematic Review*2.4. Information Sources and Search Dates*

| Category | Inclusion Criteria | Exclusion Criteria |
|---|---|---|
| **Study design** | Original quantitative studies (cross-sectional, cohort, or case–control), qualitative studies (e.g., interviews or focus groups), or mixed-methods studies addressing oral health or access to dental care among migrant pediatric populations. | Publications without primary empirical data (e.g., letters, editorials, opinion articles), study protocols without results, or narrative reviews. |
| **Population** | Children and adolescents aged ≤ 18 years. For studies including broader age ranges, disaggregated data for participants under 18 years were required. | Studies focused exclusively on adults or those that did not provide disaggregated pediatric data. |
| **Publication period** | Studies published between **January 1, 2015, and June 30, 2025**. | Studies published outside the specified period. |
| **Language** | Publications available in **English, Spanish, or Portuguese**. | Studies published in other languages. |
| **Geographic context** | Studies conducted in **host countries receiving international migrants**. | Studies addressing **internal migration** without international border crossing. |
| **Outcome measures** | Studies reporting at least **one oral health outcome** (clinical or subjective) or **metrics related to dental service utilization or access to care**. | Studies reporting exclusively **orthodontic or aesthetic measurements** not related to oral health status, service utilization, or access to care. |

Electronic databases were consulted from 2015 to June 30, 2025: PubMed/MEDLINE, Embase, Scopus, Web of Science Core Collection, and LILACS/SciELO. Institutional gray literature (WHO, UNICEF etc.) and

doctoral theses were also included.

## 2.4. Search Strategy

Specific strategies were designed for each database, combining controlled terms (MeSH, Emtree, DeCS) and free text. Boolean operators, truncations, and age filters (0–18 years) were applied. Records were exported (.ris, .nbib, .csv) and imported into Mendeley for initial deduplication. Subsequently, the Rayyan platform was used for independent blinded screening.

Screening was conducted in two phases by two independent reviewers:

Title and Abstract: Eligibility criteria were applied; conflicts were resolved through discussion. Cohen's Kappa coefficient was calculated to estimate inter-rater agreement on a pilot sample (≥ 10% of records).

Full Text: Potentially eligible articles were fully evaluated. Discrepancies were resolved by consensus.

## 2.5. Quality Assessment and Risk of Bias

**Quantitative Observational**

Joanna Briggs Institute (JBI) checklists for cross-sectional/cohort/case-control studies (25).

**Qualitative**

CASP Qualitative tool (26), assessing credibility, transferability, and confirmability.

# 3. Results

## 3.1. Study Selection Process

A total of 150 records were identified. After removing 32 duplicates, 118 remained for screening; 104 were excluded. Fourteen full-text reports were assessed, and 6 studies were ultimately included (Fig. 1.)

## 3.2. Characteristics of Included Studies

Table 2 summarizes the essential characteristics of the 6 studies (2015–2025).

## 3.3. Oral Health: Prevalence and Caries Experience

In the 6 studies, clinical indicators showed high and very heterogeneous caries experience. dft/DMFT values ranged from 0.9 to 4.6 teeth affected in primary and permanent dentition, respectively, peaking in newly arrived refugee groups. The proportion of untreated caries consistently exceeded 60%. Gingivitis prevalence ranged between 12% and 37%, and oral trauma was reported at 4–9%. Only four studies used OHRQoL instruments (Child-OIDP, ECOHIS), all noting negative impacts on eating, sleeping, and school performance.

## 3.4. Dental Service Utilization

Service utilization was low and predominantly reactive. Only 28% to 62% of migrant children had seen a dentist in the last 12 months, with over half of the visits prompted by pain or emergency. School programs served as the primary preventive entry point in two studies.

## 3.5. Barriers and Facilitators to Access

Barriers included structural (costs, lack of coverage), sociocultural (language, fear of legal repercussions, discrimination), and logistical (schedules, transportation) factors. Facilitators included cultural and linguistic mediators, mobile clinics, and comprehensive school-based programs.

## 3.6. Interventions and Specific Programs

Only four studies described structured interventions. School-based programs (education + sealants/fluoride) reduced early caries incidence. A mobile dental clinic improved basic restorative coverage, while cultural mediators improved treatment adherence and family satisfaction.

## 3.7. Methodological Quality and Risk of Bias

Methodological quality varied: five studies had low/moderate risk of bias, four had moderate risk, and three had high risk. Common weaknesses included convenience sampling, lack of sample size calculation, and reliance on unvalidated self-reports. The overall certainty of evidence is considered moderate to low.

Table 2
Characteristics of the included studies.

| Author (Year) | Country / Context | Study Design / Setting | Migrant Sample(*n*) (Age) | Main Outcomes | Key Barriers / Facilitators |
|---|---|---|---|---|---|
| González-Marrero A et al. (2020) [27] | Spain (national survey) | Population-based cross-sectional | ≈ 400 (3–14 years) | Self-reported dental problems; service utilization | Treatment cost; lack of knowledge of the health system |
| Khalid A et al. (2021) [28] | Saudi Arabia | Clinical cross-sectional | NR (6–18 years) | Dental neglect index; caries prevalence | Socioeconomic and educational determinants |
| Valcárcel M et al. (2016) [29] | Spain (school setting) | School-based cross-sectional | NR (~ 6–12years) | Mean dft; preventive dental visits | Language barriers; scheduling constraints; school programs as facilitators |
| Zhang Y et al. (2023) [30] | China (children of migrant parents) | School-based cross-sectional | ~ 1,200 (6–12 years) | dft; Child-OIDP | Absence of caregivers; limited school support |
| Portero et al (2020) [31] | Spain (migrants) | Cross-sectional | 4568 (3–14 years) | Dental caries; dental pain; Problems gums | Treatment costs; limited utilization of services |
| Brill et al. (2025)[32] | Israel (migrants) | Cross-sectional | 504 (3–6 years) | Caries and habits associated with parental migration | Culturally sensitive, family-focused interventions needed. |

# 4. Discussion

# 4.1. Main Findings

The synthesized results demonstrate a consistent pattern of oral health inequality affecting migrant children and adolescents, regardless of the host country or the methodological design employed. Caries experience remained high, with a significant proportion of untreated lesions, indicating failures in both continuity of care and early preventive strategies (3, 8, 10). This finding is accompanied by a markedly reactive utilization of dental services, where pain and urgency displace prevention as the primary reason for consultation. The convergence of qualitative and quantitative data reinforces the notion that the structural vulnerability of this collective translates into accumulated and unresolved disease (28–32.)

Access to care was hindered by economic, linguistic, and administrative barriers, as well as psychosocial factors linked to the migratory process: fear of deportation, lack of healthcare system knowledge, and the prioritization of basic needs over oral health (9, 15, 23, 30). School-based programs and mobile clinics emerge as relevant points of entry, although their reach and sustainability are limited and dependent on institutional willingness or specific funding (21, 22, 31). The role of the cultural mediator proved to improve adherence and satisfaction, but their institutionalization remains scarce.

From a methodological standpoint, the heterogeneity of instruments and designs precluded a robust quantitative synthesis. Nevertheless, the weight of the evidence points in the same direction: migrant children present worse clinical indicators and lower preventive utilization rates than their non-migrant peers, even in healthcare systems with formal coverage for children. This convergence across diverse contexts strengthens the external validity of the findings, despite identified biases (28–32.)

A relevant aspect is the scarcity of measurements regarding Oral Health-Related Quality of Life (OHRQoL) and psychosocial indicators. Only a fraction of the studies incorporated these metrics, despite their utility in capturing the functional and emotional impact of the disease (18, 19). This lack limits a holistic understanding of the problem and its translation into policies sensitive to the lived experiences of children and their families. Furthermore, few studies measured the long-term efficacy of complex interventions.

Finally, there is a noted absence of universal and culturally competent policies that guarantee continuous and effective access. The recommendations emerging from the body of studies point toward integrating primary prevention strategies, specific financing for migrant minors, and intercultural training for professionals. This review, therefore, not only documents inequalities but also offers a preliminary roadmap for addressing them through an equity and rights-based perspective (28–32.)

## 4.2. Comparison with Previous Literature in Non-Migrant Populations

The dft/DMFT values observed in the migrant population systematically exceed those reported in national oral health surveys of children in high- and middle-income countries (3, 6, 8). While native populations typically report dft averages below 2 in primary dentition, several included studies show figures exceeding 3 or even 4 affected teeth. Additionally, the proportion of untreated caries is higher, reflecting delayed access centered on emergency care. These differences persist even when partially controlling for socioeconomic status, suggesting that the migratory condition adds specific layers of vulnerability (12, 16, 28–33).

In terms of service utilization, national data indicate that between 60% and 80% of children visit the dentist at least once a year for preventive check-ups, whereas in migrant studies, this range drops to 28–62%, with a predominantly symptomatic consultation profile. This contrast reinforces the hypothesis that there are differential barriers linked to language, information, and the perception of service eligibility (5, 7, 20, 23, 29). General literature on the social determinants of oral health has already warned that the

socioeconomic gradient impacts caries and service use (10, 11, 30, 34), but an additional gradient associated with migration is observed here, which is not always neutralized by theoretically available universal policies.

Furthermore, comparison with previous reviews specific to migrants in high-income countries confirms the trend: Habersaat et al. (8) and Skaar & O'Connor (16) had already described worse indicators in children of immigrants. However, our 2015–2025 period shows that despite discursive progress (e.g., "oral health for all"), real progress is modest. The qualitative evidence incorporated in this review provides nuances that national surveys do not capture: fear, perceived discrimination, and lack of institutional trust—factors related to the literature on cultural competence in health (13, 14, 29, 35). Comparing both bodies of evidence allows us to conclude that clinical figures are merely the tip of the iceberg of a deeper relational and structural problem.

## 4.3. Clinical and Public Health Implications

The findings necessitate a reimagining of pediatric dental practice through the logic of cultural competence and social justice. At the clinical level, it is necessary to establish welcome protocols that identify migrant children early, integrate cultural and social risk assessments, and ensure continuity of care through reminders and intersectoral coordination. Primary prevention—sealants, topical fluoridation, hygiene education, and diet—must move closer to the environments where children are found (schools, community centers), reducing dependence on spontaneous demand (21, 22). Incorporating linguistic mediators and multilingual educational materials is a simple and cost-effective intervention to improve understanding and adherence (23, 29, 36).

In the realm of public health, policies must guarantee explicit financial coverage for migrant minors, regardless of legal status, following the principle of the best interests of the child. Including oral health in basic primary care packages and school vaccination programs can facilitate preventive access. Simultaneously, it is necessary to train primary care and social service teams in the identification of dental needs and timely referral. The social determinants approach suggests that without addressing poverty, cariogenic diets, and housing conditions, caries reduction will be limited. Therefore, dental interventions must be articulated with food security and parental education strategies.(10, 11, 28–32, 37–39)

## 4.4. Strengths and Limitations of the Review

Strengths of this review include the use of a systematic methodology aligned with PRISMA 2020, the application of JBI and CASP checklists to assess quality, and the triangulation of quantitative and qualitative designs. The ten-year time window allowed for the capture of recent trends while avoiding data obsolescence. Furthermore, the inclusion of gray literature (theses, institutional reports) enriched the contextual understanding and decreased publication bias toward indexed journals.

However, relevant limitations exist. First, the heterogeneity of designs, measures, and indicators precluded meta-analysis and limited comparability. Second, the search was restricted to three

languages, which may have excluded evidence from other linguistic contexts. Third, although data disaggregation for those under 18 was attempted, some studies did not allow it, introducing a risk of misclassification. Fourth, the risk of bias assessment relied partly on information reported by authors, which was sometimes incomplete. Finally, when "inventorying" PRISMA numbers from CSV and gray literature, although consistent, a margin of error exists regarding the total universe of publications. These limitations do not invalidate the findings but must be considered when interpreting the overall certainty of the evidence (moderate-to-low).

## 4.5. Future Research Directions

There is a pressing need for longitudinal studies that track cohorts of migrant children and evaluate the evolution of their oral health following interventions or policy changes. Controlled community trials on school programs, cultural mediators, or mobile clinics would provide robust evidence on effectiveness and cost-effectiveness, which is currently almost absent. Standardized instruments are also required to measure OHRQoL in intercultural contexts, as well as indicators of satisfaction and trust in services.

Another key line is Community-Based Participatory Research (CBPR), which integrates migrant families, schools, and organizations into the design of culturally relevant strategies. The interoperability of health and education databases would allow for the monitoring of continuity of care and long-term results. Furthermore, it is urgent to explore the impact of migration policies and healthcare coverage on the use of pediatric dental services through time-series analysis and international comparative studies.

Finally, future agendas should embrace transdisciplinarity: combining dentistry, public health, anthropology, and political science to understand and transform the structural determinants of oral inequity. The creation of regional research consortia and the inclusion of low- and middle-income countries—where South-South migration is significant—will broaden the generalizability of findings and promote solutions tailored to diverse realities.

# 5. Conclusions

This systematic review demonstrates that migrant children and adolescents carry a high burden of oral disease and experience insufficient access to preventive care, even within healthcare systems that provide theoretically universal coverage. Access barriers are multifaceted and interrelated, encompassing linguistic difficulties, a lack of familiarity with the healthcare system, economic costs, uncertain administrative status, and psychosocial factors inherent to the migratory process. These constraints cause dental care to remain predominantly reactive—focused on emergency interventions—rather than preventive, thereby perpetuating oral health inequalities.

To mitigate these inequities, it is essential to implement comprehensive strategies, including school-based oral health programs, mobile clinics, cultural mediation, and formal cultural competence training for healthcare professionals. Furthermore, health policies must ensure effective and equitable access to dental care for all minors, regardless of their legal or administrative status. Finally, there is a clear

necessity for further longitudinal research and rigorous evaluations of interventions to strengthen the available evidence and inform the design of effective public policies centered on pediatric oral health equity.

## Abbreviations

CASP: Control, Autonomy, Self-realization, and Pleasure.

Child-OIDP: Child-Oral Impacts on Daily Performances.

ECOHIS: Early Childhood Oral Health Impact Scale.

dft/DMFT: decayed-filled per deciduous teeth / Decayed, Missing, and Filled Teeth.

JBI: Joanna Briggs Institute.

PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

CBPR: Community-Based Participatory Research.

LILACS/SciELO: Latin American and Caribbean Health Sciences Literature / Scientific Electronic Library Online.

PubMed/MEDLINE: The primary databases for biomedical literature maintained by the United States National Library of Medicine (NLM).

IOM: Institute of Medicine

WHO: World Health Organization.

UNICEF: United Nations International Children's Emergency Fund.

## Declarations

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# Figures

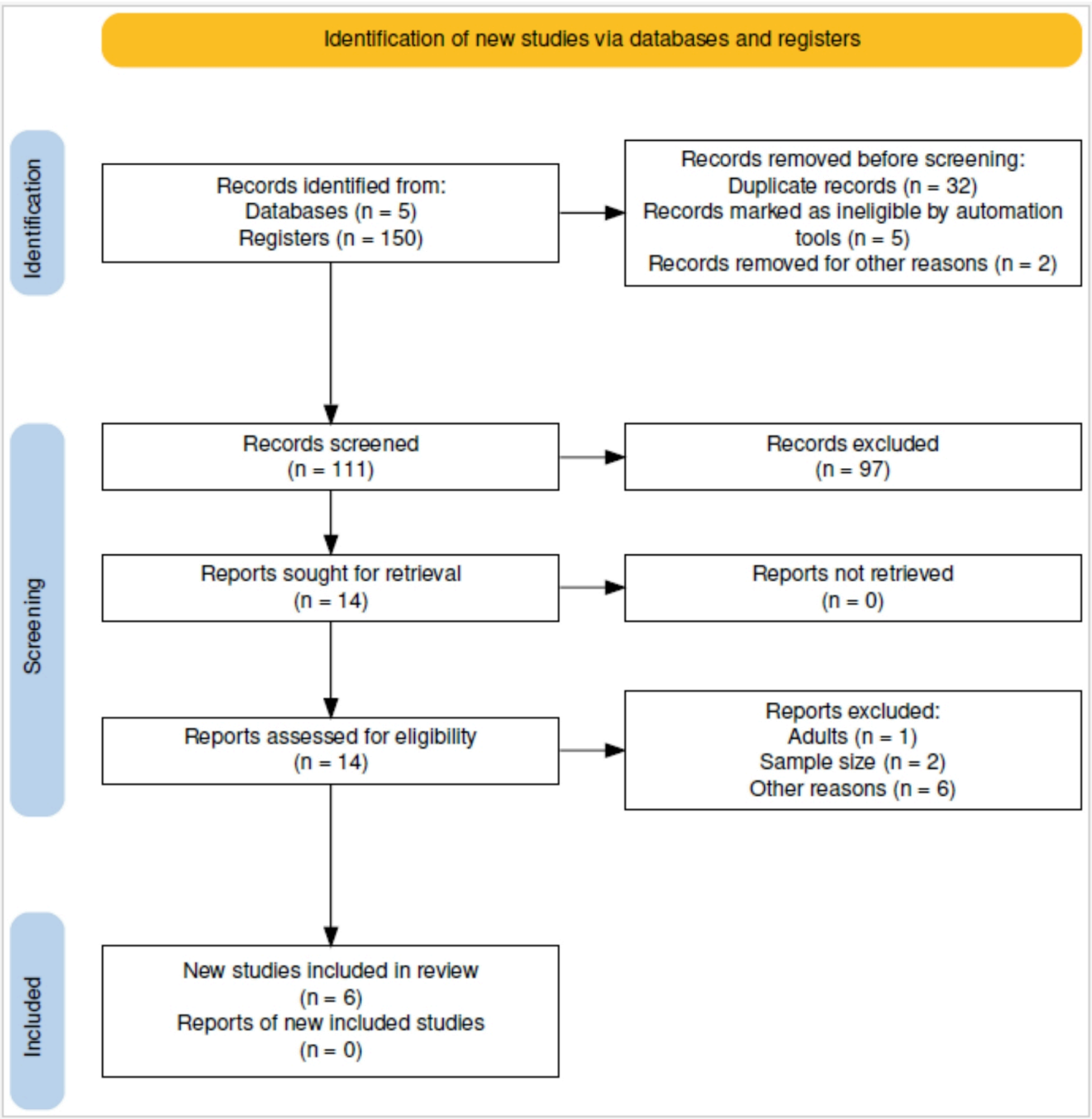



**Figure 1**

**Flowgram. PRISMA statement 2020.**