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Oral health approach in universal health coverage

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Abstract

Objective This study aimed to map how oral health is addressed within the universal health coverage (UHC).

Methods This scoping review followed the Joanna Briggs Institute methodology. Searches included the WHO Library and PubMed, Scopus, Embase, LILACS, and Cochrane databases. Quantitative and qualitative studies were included without publication date and language restrictions.

Results A total of 486 studies were retrieved, of which 292 were excluded in the title and abstract screening phase; 121 full-texts were assessed. After the removal of duplicates and unavailable documents, 50 studies were included in the review and categorized according to the level of scientific evidence.

Conclusion Few studies discussed oral health within the UHC, mostly because this coverage does not include oral health adequately. When offered, oral health packages are limited and include specific populations. Access and use of oral health services remain guided by economic factors, exposing the theoretical financial protectionism that perpetuates health inequalities.

Keywords Universal Health Care, Oral health, Health services accessibility

Introduction

Universal Health Coverage (UHC) is characterized by coverage, availability, and financing of health services for the entire population [7]. The latter might be public or private and endorses the idea of pooling of funds to finance health care, with the private capital as a prerogative [4].

UHC was first mentioned at the 58th General Conference of the World Health Organization (WHO) in 2005[1]. It results in an ambiguous term with different assumptions and interpretations adopted by national health authorities and governmental and non-governmental organizations, especially in developing countries [2]. This concept is associated with the presence of universal health systems in European countries, whereas it refers to the implementation of coverage through packages of essential oral health services or public or private health insurance in developing countries [3].

According to the WHO, UHC comprises the provision of health services to people with financial difficulties or in situations of social vulnerability (i.e., without the means to finance essential health services, including promotion, prevention, treatment, rehabilitation, and palliative care) [4]. UHC allows comprehensive access to health services and treatment of basic causes of illness and death [5]. Therefore, the UHC guarantees access to

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appropriate health services to promote quality of life for people in need [6].

UHC is monitored using population health indicators, including teenage pregnancy, infant mortality rate, average life expectancy, rate of infectious diseases, percentage of cardiovascular disease, and percentage of obese individuals [8]. On September 2019, the United Nations General Assembly issued the document entitled "Universal Health Coverage: moving together to build a healthier world", which presented the importance of promoting oral health as part of the UHC [9].

UHC is essential to health access at a global level, and its concepts of health, social determinants, and indicators have become indelible to the construction of health systems worldwide [10]. However, although UHC may reduce social inequality and improve health access to the population, financing services are complex and tend to protect the private sector [11]. Furthermore, financing services are centered on individual care and fragmented biomedical services, leading to high costs [6]. This financing characteristic ignores individual determinants that are important in health processes and do not contribute to determining essential risks, which is essential for its effectiveness [12].

Oral diseases remain a silent epidemic affecting about half of the population worldwide, predominantly those living in developing countries [13]. Dental caries, gingival diseases, and other oral diseases may influence the progression of a systemic illness; therefore, the concept of health must include oral health [14]. Reformulating public policies is needed to improve the health status of individuals and the effectiveness of healthcare systems, including the needs related to oral health [15].

Extensive scientific literature is available regarding the development of oral health in different health systems, its advances, and social determinants. However, little is known about how oral health has been included in discussions about UHC since its creation in 2005. A scoping review allows not only to identify research gaps in the existing literature but also to map action plans and health policies that are fully or partially subsidized by the UHC. Findings may also support changes in health policy guidelines and indicators proposed by the WHO.

Research dissemination and its scope are crucial for developing more specific and robust contributions to the existing literature. Moreover, research can be a guiding instrument for effective health policies targeting the public system, which may lead to efficient actions and enhance the quality of health services. In this context, we aimed to map how oral health is addressed within the literature about UHC.

Methods

Study design

This scoping review was conducted according to the Joanna Briggs Institute (JBI) methodology and guided by the main research question: what is known about oral health within UHC in the existing literature? Secondary research questions encompassed (1) which aspects related to universality and inclusion of oral health are present in UHC proposals?; (2) which oral health services are offered within the UHC, and what are the targeted groups covered by packages of essential oral health services?; and (3) what are the sources of financing for oral health within the UHC?

Searches were conducted in December 2022 in the WHO Library and PubMed, Scopus, Embase, LILACS, and Cochrane databases. Searches used pre-defined descriptors (DECS/MESH and DECS synonyms) selected with the help of a librarian. We used the following search strategy in all databases without publication date and language restriction: (("dental care" or "oral health" or "dental health services" or "dental health service" or "dental research") and ("universal health insurance" or "health insurance, universal" or "insurance, universal health" or "universal coverage" or "coverage, universal")). The search was carried out with the accumulation of terms, in order to exhaustively retrieve the maximum number of articles.

Study selection

Titles and abstracts were screened considering the review objectives and eligibility criteria. Inclusion criteria encompassed all study designs (i.e., public documents, essays, open letters, reports, and quantitative and qualitative studies) addressing oral health within the UHC. The use of mixed literature was a strategy to retrieve as much information on oral health as possible. Database searches alone would produce even less evidence. Exclusion criteria were related to unavailable documents and studies that did not address oral health in their scope or, besides discusses UHC, did not follow the WHO definition, as it would not be comparable to the others, or prior to 2005, which would not use the term universal health coverage as conceptualized by the WHO, since it precedes its creation.

The study selection was blinded and performed in pairs (SQMS and RVSA) using the Rayyan software. A third researcher was available to resolve possible disagreements (MHRG). The full-text reading was conducted after title and abstract screening to confirm the eligibility of studies and perform data extraction.

Data extraction

Researchers individually filled electronic spreadsheets using information from Rayyan software (http://rayyan.qcri.org). Studies meeting the inclusion criteria were

classified according to year of publication, type of study, institution, title, and database of origin.

Results summary

Data were compiled in categories referring to the universality and inclusion of oral health within the UHC, types of oral health services, targeted groups covered by packages of essential services, and the sources of oral health financing within the UHC. Documents were classified according to type: political, investigative or opinion. This characterization is important as it reinforces the main type of evidence retrieved.

The evidence level of each study was performed using a standard questionnaire produced by the JBI, available at: https://jbi.global/critical-appraisal-tools. As recommended by the JBI guidelines, the studies were scored according to the presence of information regarding the items in the questionnaire, enabling the decision based on their scientific credibility. The questionnaires were transformed into forms on Google Forms platform. Each type of study had a different evaluation, and in case of disagreement, a third researcher could be called. This study is reported according to an adapted checklist of preferred reporting items for systematic reviews and meta-analyses (PRISMA).

Results

Of 486 retrieved studies, 413 remained after the removal of duplicates and exclusion of unavailable documents. After title and abstract screening, 292 articles were selected for full-text reading. A total of 50 studies were eligible for inclusion in this scoping review (Fig. 1).

The studies included in this review were conducted and published between 2006 and 2022. Regarding the type of study, 18.5% were reports, and 81.5% were scientific articles. The first study addressing UHC was published in 2006 (2.6%), whereas the highest number of studies were published in 2019 (21.0%). Studies were predominantly conducted in Asia (37.4%), followed by Europe (28.3%), America (26.5%), Africa (5.2%), and Oceania (2.6%) (Table 1) (Fig. 2). Also, 15 (50.0%) documents addressed the types of oral health services covered in the UHS [1, 13, 15–17, 22, 23, 25, 26, 28, 33, 36, 43–45, 50], 6 addressed the population groups covered by oral health services in the UHS [22, 27, 32, 34, 41], 3 addressed the financing modalities of oral health services in the UHS [29, 32, 38], and 8 generally addressed the inclusion of oral health in UHC [16, 22–25, 27, 32, 41].

Regarding the level of evidence, most included studies presented a high level of evidence (46.6%) [1, 13, 22–28, 31, 37, 38, 42, 44, 46, 48, 50], while only 40% [17, 19–21, 29, 30, 32–35, 39–41, 43, 45, 47, 49] and 13.3% [15, [16, [18] were considered moderate and low, respectively (Table 2).

The main findings were structured in Fig. 3, answering the three guiding questions of the study.

Discussion

According to the WHO, UHC implies that all people have access to health services, when and where needed, without financial constraints, including essential services (i.e., health promotion, prevention, treatment, and rehabilitation) [43]. The full state of health cannot be dissociated from the situation of oral health. The results of this review indicate that oral health is often excluded from the package of essential services offered within the UHC and from discussions about this health coverage model. When offered, oral health services are limited and do not meet the minimum health needs of the population. Furthermore, oral health services are usually offered from a limited list of procedures according to the level of complexity, which does not meet the minimum health needs of the population. As a result, direct payments or co-payments are needed from individuals, perpetuating the inequality in access and maintenance of oral problems in the population [13, 15–17, 22–25, 27, 32, 34, 41].

Most studies included in this review referred to the types of service offered without detailing which procedures were covered [1, 16, 17, 23, 25, 26, 28, 33, 36, 43–45, 50]. UHC was identified as an important strategy for improving health conditions and access and reducing health inequalities [52]. However, this concept does not seem applicable to oral health since inequalities were not reduced [13, 15, 16, 22–25, 29, 34, 42]. Another important finding is that, despite UHC, socioeconomic inequality remains a strong mediator of access and use of oral health services [25, 27, 28, 32, 37, 38].

The investigated literature exposed the absence of indicators encompassing oral health within the UHC; thus, demonstrating that proposals do not incorporate indicators and policies and revealing that oral health is marginalized concerning other health aspects [13, 15–17, 22–25, 27, 32, 34, 41] The situation is not conducive to the incorporation of oral health and increases the health gaps already existing in the territories. Nevertheless, this occurs even considering that oral health has been recognized as an important public health problem (which could benefit from common responses to non-communicable diseases) and included in the agenda for improving human health within the UHC criteria [53].

No guidance to promote, monitor, and implement policies and service packages in oral health is available within the UHC [3]. Therefore, each country has the autonomy to decide the offering of such services and organize the care network [4]. The costs of treating oral health diseases (e.g., dental caries, periodontal disease, and tooth loss) are equivalent, on average, to 4.7% of the global health expenditure, equivalent US$ 3,03 Billions of Dollars [54].

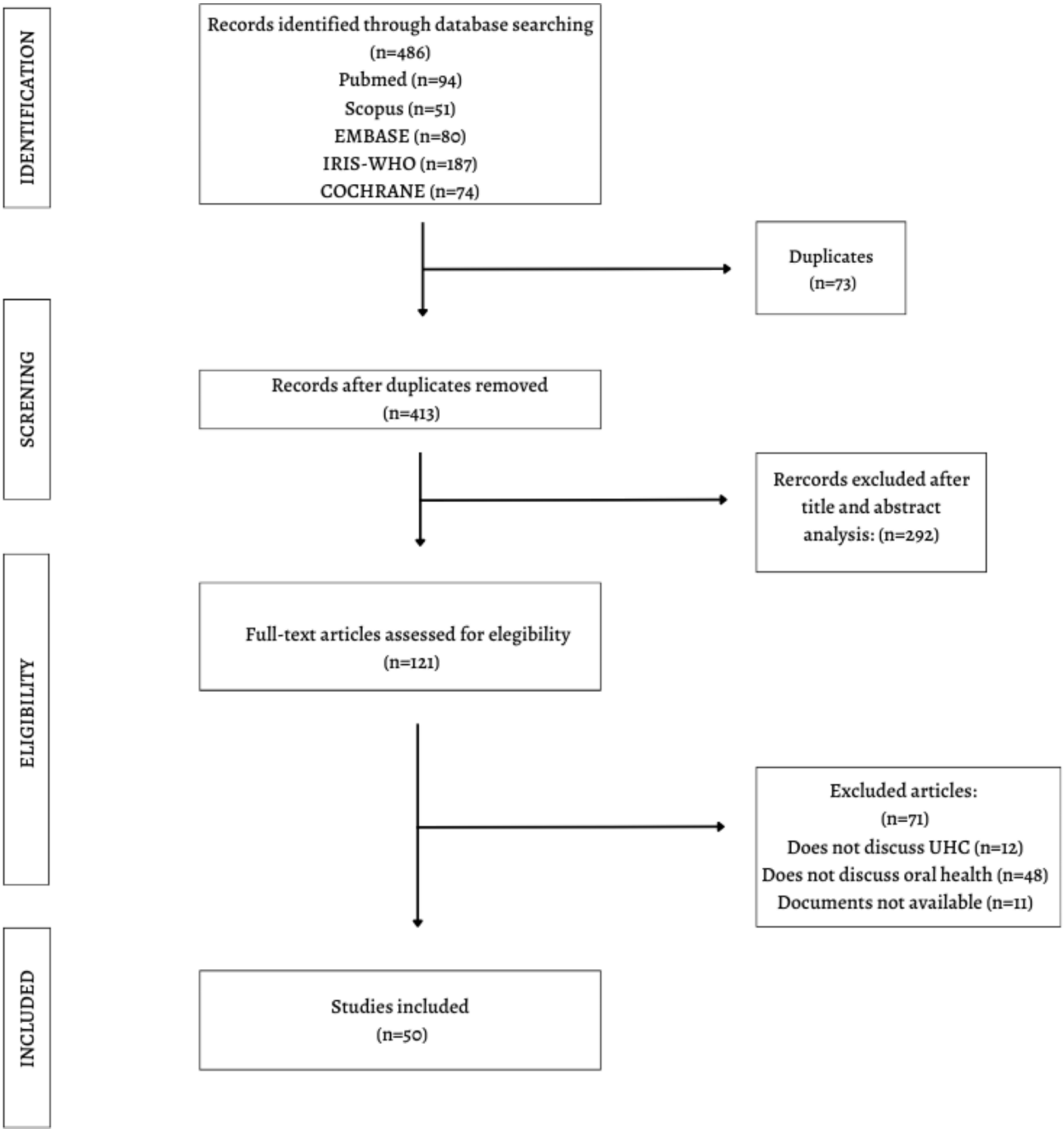


Fig. 1 Flow diagram of the selection of studies included in the review according to PRISMA-ScR

Enhanced adherence to indicators related to oral health assessment could effectively contribute to achieving the sustainable development goals proposed by the United Nations by 2030 since oral health maintenance is directly associated with aspects of the third objective (i.e., good health and well-being) [54].

When available, oral health services within the UHC were limited and mostly offered through private institutions or health insurance; thus, they were accessible by people with greater purchasing power [16, 23, 28, 55].

In Africa, with low Human Development Index (HDI) and high proportion of less developed countries, oral diseases were included in the strategy for controlling non-communicable diseases (i.e., a package of minimum specialized services) to remove people from extreme health risk situations [56]. Oral health promotion was

Table 1 Documents organized by title, author, Country/region, year, database and document type

REFERENCE	TITLE	AUTHOR	COUNTRY/Region	YEAR	SOURCE DATABASE	DOCUMENT TYPE
[6]	Universal health coverage: A unique policy opportunity for oral health	Mathur, M. R.; Williams, D. M.; Reddy, K. S.; Watt, R. G.	United Kingdom	2015	PUBMED	Investigation
[13]	Report of the informal regional WHO consultation on oral health: Mandalay, Myanmar, 24 October 2019	Organization, World Health; On Health Systems,	Myanmar	2020	IRIS-WHO	Policy
[15]	Strengthening oral health for universal health coverage	Fisher, Julian; Selikowitz, Harry Sam; Mathur, Manu; Varenne, Benoit.	United States	2018	PUBMED	Investigation
[16]	Eurohealth: community health services	European Observatory; Policies;	European continent	2018	IRIS-WHO	Policy
[17]	Strengthening NCD service delivery through UHC benefit package: technical meeting report, Geneva, Switzerland, 14–15 July 2020	Organization, World Health;	Switzerland	2020	IRIS-WHO	Policy
[18]	Can people afford to pay for health care?	Häger, Anna; Sixten, Glenngård; Sweden, Borg;	European continent	2019	IRIS-WHO	Policy
[19]	Tracking Universal Health Coverage: 2017 Global Monitoring Report	World Health Organization and the International Bank for Reconstruction and Development	Switzerland	2017	IRIS-WHO	Policy
[20]	IMPROVING HEALTH SYSTEM EFFICIENCY	Systems Governance, Health; Yip Reem Hafez, Winnie;	Switzerland	2015	IRIS-WHO	Policy
[21]	Strengthening health financing systems in the Eastern Mediterranean Region towards universal health coverage	World Health Organization, Regional Office for the Eastern Mediterranean	eastern mediterranean	2019	IRIS-WHO	Policy
[22]	Income-related inequalities in access to dental care services in Japan	Nishide, Akemi; Fujita, Misuzu; Sato, Yasunori; Nagashima, Kengo; Takahashi, Sho; Hata, Akira;	Japan	2017	PUBMED	Investigation
[23]	Providing dental insurance can positively impact oral health outcomes in Ontario	Zivkovic, Nevena; Aldossri, Musfer; Gomaa, Noha; Farmer, Julie W.; Singhal, Sonica; Quiñonez, Carlos; Ravaghi, Vahid	Canada	2020	PUBMED	Investigation
[24]	Changes in socioeconomic inequalities in the use of dental care following major healthcare reform in Chile, 2004–2009	Cornejo-Ovalle, Marco; Paraje, Guillermo; Vásquez-Lavín, Felipe; Pérez, Glòria; Palència, Laia; Borrell, Carme.	Chile	2015	PUBMED	Investigation
[25]	Ending the neglect of global oral health: time for radical action	Watt, Richard G.; Daly, Blánaid; Allison, Paul; Macpherson, Lorna M.D.; Venturelli, Renato; Listl, Stefan; Weyant, Robert J.; Mathur, Manu R.; Guarnizo-Herreño, Carol C.; Celeste, Roger Keller; Peres, Marco A.; Kearns, Cristin; Benzian, Habib.	United Kingdom	2019	PUBMED	Investigation
[26]	Inequality in oral health-care utilisation exists among older Thais despite a universal coverage policy	Somkotra, Tewarit.	thailand	2013	PUBMED	Investigation

Table 1 (continued)

REFERENCE	TITLE	AUTHOR	COUNTRY/Region	YEAR	SOURCE DATABASE	DOCUMENT TYPE
[27]	An ecological study on the association between universal health service coverage index, health expenditures, and early childhood caries	Folayan, Morenike Oluwatoyin; Tantawi, Maha El; Virtanen, Jorma I.; Feldens, Carlos Alberto; Rashwan, Maher; Kemoli, Arthur M.; Villena, Rita; Al-Batayneh, Ola B.; Amalia, Rosa; Gaffar, Balgis; Mohebbi, Simin Z.; Arheiam, Arheiam; Daryanavard, Hamideh; Vukovic, Ana; Schroth, Robert J.	Nigeria	2021	PUBMED	Investigation
[28]	Gaps in coverage and access in the European Union	Palm, Willy; Webb, Erin; Hernández-Quevedo, Cristina; Scarpetti, Giada; Lessof, Suszy; Siciliani, Luigi; van Ginneken, Ewout.	Germany	2021	PUBMED	Investigation
[29]	Inequality in dental care utilisation among Thai children: evidence from Thailand where universal coverage has been achieved	Somkotra T, Vachirarojpisan T	thailand	2009	PUBMED	Investigation
[30]	Swiss-CHA: Citizens discuss priorities for Swiss health insurance coverage	Hurst, Samia A.; Schindler, Mélinée; Goold, Susan D.; Danis, Marion.	Switzerland	2018	PUBMED	Investigation
[31]	Canadian opinions on publicly financed dental care	Quiñonez, Carlos R.; Locker, David.	Canada	2007	PUBMED	Investigation
[32]	Socioeconomic inequality in self-reported oral health status: the experience of Thailand after implementation of the universal coverage policy	Somkotra T	thailand	2011	PUBMED	Investigation
[33]	Dental health among older Israeli adults: Is this a reflection of a medical care model inadequately addressing oral health?	Sgan-Cohen, Harold; Livny, Alon; Listl, Stefan.	Israel	2015	PUBMED	Investigation
[34]	Dental care as part of universal health coverage	Zusman, Shlomo P.	Israel	2018	PUBMED	Opinion Text
[35]	Experience of socioeconomic-related inequality in dental care utilization among Thai elderly under universal coverage	Somkotra, Tewarit;	thailand	2013	PUBMED	Investigation
[36]	Leadership in global oral health	Williams, David M.; Mossey, Peter A.; Mathur, Manu R.	United Kingdom	2019	PUBMED	Investigation
[37]	Is there equity in oral healthcare utilization: Experience after achieving Universal Coverage	Somkotra, Tewarit; Detsomboonrat, Palinee.	Japan	2009	PUBMED	Investigation
[38]	Access to oral health care - an Australian perspective	Schwarz, Eli;	Australia	2006	PUBMED	Investigation
[39]	Do health systems cover the mouth? Comparing dental care coverage for older adults in eight jurisdictions	Allin, Sara; Farmer, Julie; Quiñonez, Carlos; Peckham, Allie; Marchildon, Gregory; Panteli, Dimitra; Henschke, Cornelia; Fattore, Giovanni; Lamloum, Demetrio; Holden, Alexander C.L.; Rice, Thomas.	Canada	2020	PUBMED	Investigation
[40]	Impact of public dental care spending and insurance coverage on utilization disparities among Canadian jurisdictions	Dehmoobadsharifabadi A, Singhal S, Quiñonez CR	Canada	2018	PUBMED	Investigation

Table 1 (continued)

REFERENCE	TITLE	AUTHOR	COUNTRY/Region	YEAR	SOURCE DATABASE	DOCUMENT TYPE
[41]	Dental expenditure and catastrophic dental expenditure in Eastern Saudi Arabia: Pattern and associated factors	AlBaty A, AlGhasham H, Al Wusaybie M, El Tantawi M.	Saudi Arabia	2019	PUBMED	Investigation
[42]	Oral health, universal health coverage, and dental research	Balaji	India	2019	PUBMED	Opinion Text
[43]	Toward mandatory health insurance in low-income countries? An analysis of claims data in Tanzania	Kathrin Durizzo ,Kenneth Harttgen, Fabrizio Tediosi,, Maitreyi Sahu, August Kuwawenaruwa, Paola Salari, and Isabel Günther	Tanzania	2022	PUBMED	Investigation
[44]	Toothless'-the absence of political priority for oral health: a case study of Ireland 1994–2021	Úna McAuliffe, Helen Whelton, Máiréad Harding, Sara Burke	Ireland	2022	PUBMED	Investigation
[45]	Universal oral health coverage - Perspectives from a developing country) (Effects of universal oral healthcare coverage in an adult population: A long-term nationwide natural experiment	Eero Raittio, Anna Liisa Suominen	Filand	2022	PUBMED	Investigation
[46]	Inequality in dental services: a scoping review on the role of access toward achieving universal health coverage in oral health	Arash Ghanbarzadegan, Madhan Balasubramanian, Liana Luzzi, David Brennan, Peivand Bastani.	Australia	2021	PUBMED	Investigation
[47]	Japan's Dental Care Facing Population Aging: How Universal Coverage Responds to the Changing Needs of the Elderly	Etsuji Okamoto	Japan	2022	PUBMED	Investigation
[48]	Did Expanded Dental Insurance Reduce Out-of-Pocket Expenditures on Dental Care among Older Adults in Korea? Interrupted Time-Series Analysis	Nam-Hee Kim, Se-Hwan Jung, Ichiro Kawachi	South Korea	2022	PUBMED	Investigation
[49]	Effects of universal oral healthcare coverage in an adult population: A long-term nationwide natural experiment)	Eero Raittio, Anna Liisa Suominen	Filand	2022	PUBMED	Investigation
[50]	India: health system review	World Health Organization. Regional Office for South-East Asia	India	2022	ÍRIS-WHO	Investigation

conceived as a package of services that provided urgent pain relief and atraumatic restorative treatments to prevent worsening oral health conditions [56]. Also, the packages of essential services included preventive activities (e.g., hygiene instructions and distribution of fluoride toothpaste) conducted in schools and communities [56]. The service is aimed primarily at children and vulnerable adults/older adults. There is no information on possible inequalities in use. [56]

A similar scenario is observed in the Asian continent, with developed countries but with a high concentration of high and medium HDI. In India, preventive activities have been encouraged as a predominant aspect of UHC performance. These practices are promoted due to the disproportionately low number of dentists per capita, with a rate of 0.006 professionals per 1,000 people in more remote areas, compared to approximately 0.06 per 1,000 people in urban areas, as well as the scarcity of available dental care facilities [50]. The severe shortage of human resources in dental care primarily stems from the fact that most professionals provide services to private insurance. In India, no specific population group is prioritized; the Fluorosis Program (which is more focused on school-aged children) emphasizes community surveillance and treatment. Services are provided to the general population, but in a very limited manner, primarily focusing on the treatment of caries and periodontal disease, which are highly prevalent in the country but exhibit significant fluctuations by district, as public health structuring depends on state governments [50].

Thailand, another Asian country, with a different scenario, had the largest population reach for oral health

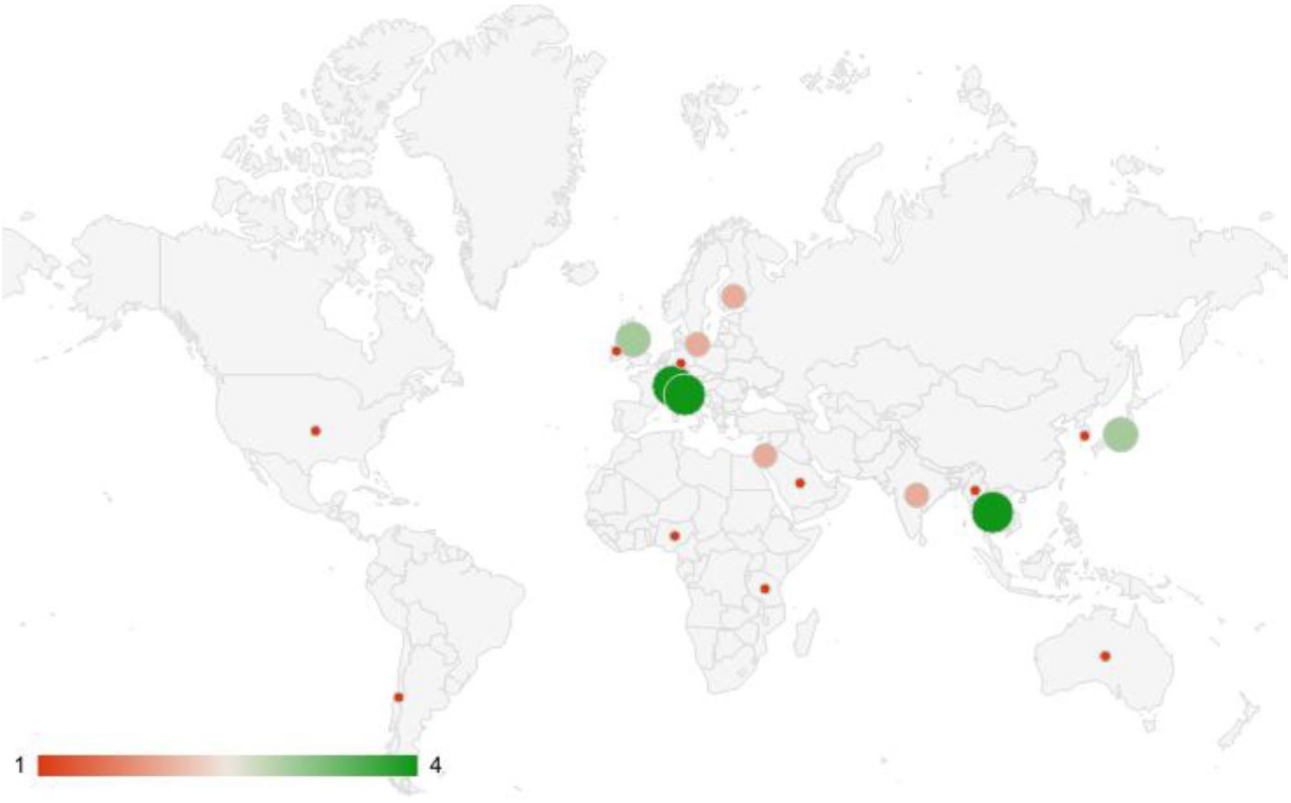


Fig. 2 World map with quantitative dispersion of data according to territory

actions within the UHC (i.e., 98% of the population). However, marked inequalities were found when investigating the self-reported oral health and socioeconomic statuses of young people and adults aged 15 to 75[32]. Furthermore, access to services is unequal for children depending on income. Low-income children often use public services and show difficulties in continuing treatment [29]. Despite greater coverage, these findings expose gaps in the UHC effectiveness for all ages and may indicate a concentration of oral health services favoring the wealthiest.

In Ontario, Canada, a region with a high HDI in North America, the implementation of essential public health services, including medical and dental care, is partially funded by the UHC, covering all stages of life [39]. Data from 2014 for the same country reveal a significant increase in the proportion of patients receiving dental care (rising from 56.6% in 2013 to 79.4% in 2014) [23]. However, despite this increased access, the uptake among low-income groups only increased by 4.3% over the same period. This phenomenon occurs because the percentage of co-payment for services depends on the type of treatment rather than the individual socioeconomic characteristics of the patients. Thus, despite the increased population coverage, financing becomes a limiting factor to oral health access [23]. It was possible to observe dental services offered at different levels. From preventive exams, restorations, scaling, and extractions, to endodontics, this package is minimal given the population's need [39].

Another important factor was the opinion of Canadian users regarding the health system, stating that the services they would like to see more covered are dental services and that they should be accessed through public means in private facilities, agreeing with the co-payment system. However, it was not questioned whether this model would be proportional to income or the type of procedure [31].

A temporal analysis conducted in Finland has revealed evidence of improved oral health in groups covered by Universal Health Coverage (UHC). Over time, these covered groups have exhibited lower rates of tooth loss and cavities, although these improved conditions were strongly determined by income. The service extends to all citizens born after the year 1956. [49].

When tracking gaps in oral health services in Europe using governmental data, results indicate the unavailability of orthodontic treatment and rehabilitation with implants [28]. This finding corroborates the discussions of this review since the needs considered not important by users (e.g., implants) are not linked to the risk of death or urgent needs causing pain or infections; thus,

Table 2 Documents organized by study type and level of evidence according to the Joanna Briggs Institute

DOCUMENT	TYPE	LEVEL OF EVIDENCE	SCORE
1	Sectional Study	High	6/8
13	Policy	High	5/6
15	Policy	Low	2/6
16	Policy	Low	2/6
17	Sectional Study	Moderate	5/8
18	Policy	Low	2/6
19	Case Series	Moderate	6/10
20	Case Series	Moderate	7/10
21	Policy	Moderate	3/6
22	Sectional Study	High	6/8
23	Policy	High	5/6
24	Policy	High	5/6
25	Sectional Study	High	7/8
26	Sectional Study	High	8/8
27	Sectional Study	High	9/10
28	Sectional Study	High	6/8
29	Sectional Study	Moderate	5/8
30	Sectional Study	Moderate	5/8
31	Policy	High	5/6
32	Sectional Study	Moderate	5/8
33	Sectional Study	Moderate	5/8
34	Opinion Text	Moderate	4/6
35	Sectional Study	Moderate	5/8
36	Policy	High	5/6
37	Sectional Study	High	6/8
38	Policy	High	5/6
39	Sectional Study	Moderate	4/8
40	Sectional Study	Moderate	5/8
41	Sectional Study	Moderate	6/8
42	Opinion Text	High	6/6
43	Sectional Study	Moderate	6/8
44	Sectional Study	High	7/8
45	Sectional Study	Moderate	6/8
46	Sectional Study	High	7/8
47	Sectional Study	Moderate	5/8
48	Sectional Study	High	7/8
49	Sectional Study	Moderate	6/8
50	System review	High	8/9

indicating that oral health services must be expanded beyond emergency oral treatments.

Different studies discussed the idea of minimum health coverage [13, 15, 16, 22–25, 27, 34, 39, 40, 42], but few clarified which services were included under this coverage [39, 40]. When describing the services offered in Canada, Italy, France, and Germany, studies reported exams, x-rays, scaling, fillings, tooth extractions, and root canal treatments [39, 40]. France and Germany were the only countries reporting crowns and bridges; none of the regions reported the availability of aesthetic treatments [39]. Other studies reported limited packages, which is probably the most prevalent scenario [38]. The analysis of oral health services offered in Canada, England, Sweden, and the United States identified only the provision of x-rays and extractions [40].

When available, the approaches to oral health within UHC appear to be vague. The packages of essential services should offer services able to restore quality of life, reduce the risk context, and contribute to autonomy in the individual health processes. Restricted access to imaging tests, for example, does not assist in reaching these goals [38, 40]. The restriction in the availability of healthcare services is directly correlated with the relinquishment of health care. Economic constraints are one of the most significant factors in the continuity of dental treatments, resulting in adverse impacts on an individual's health [57].

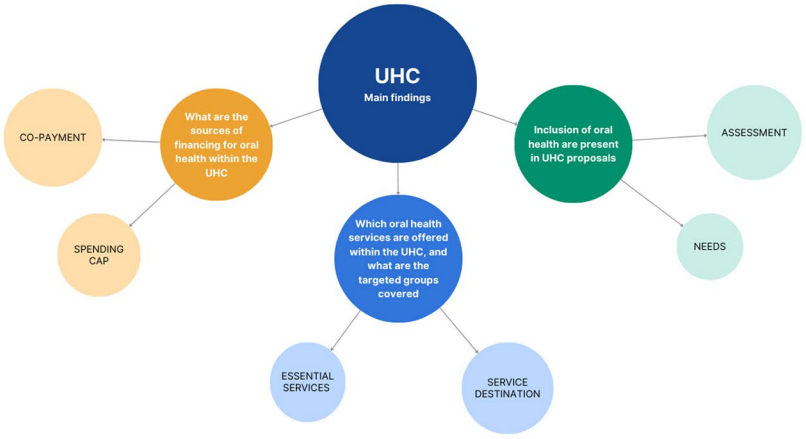
Only one study included in this review addressed user satisfaction [30]. In Switzerland, a high-income country with universal health insurance, people were asked about the health services offered to determine public priorities. Participants identified dentistry as the category that should have greater coverage to improve individual quality of life, demonstrating that the current coverage was perceived as inefficient [30].

Other coverage arrangements (e.g., service package and funding) can also vary across studies [30–32, 38, 40]. Greater coverage is commonly linked to co-payments and varies depending on the service provided: oral health stands out for high costs and low reimbursements [19]. The co-payment systems observed in this review showed variations in adherence depending on income or situation of social vulnerability [1, 13, 25, 26, 47]. We observed great adherence to co-payment systems compared to services financed by the user [30]. In Japan, even under a co-payment system, an improvement in overall oral health was observed as the package of services was expanded to include home visits and complex oral rehabilitation, indicating the effectiveness of this model in some contexts [47].

Globally, oral health services and medical products are responsible for the highest expenditures of the wealthiest quintiles, highlighting the limitation of coverage. Consequently, the poorest are the most affected, lacking health support in case of need or compromising their income when access is available [55].

Although the co-payment systems observed varied depending on the financial situation, this dynamic alone did not guarantee financial protectionism [1, 13, 25, 26, 58]. Studies did not report the maximum percentage of coverage based on income or annual spending limit per family [21]. Without targeted and specialized financial protectionism of the co-payment, the scenario leads to catastrophic health expenditures by those in need.

We observed that low public-private investments within the UHC are associated with the provision of



Essential services	Assessment	Co-payment
-Restricted dental service packages	-Impact of the service offered	- It is usually restricted to groups: elderly, people with a private plan, workers, former workers or public servants
-Focus on prevention activities	-Ideal essential oral health model: integrated services and basic oral hygiene package.	-Does not apply to all procedures, most rehabilitators are not covered
-It basically includes diagnoses, extractions and restorative treatments, not concomitant ones. Incompatible with essential needs.	-Through possible indicators: coverage, financial protection and quality of service.	-Public services are more restricted for patients and professionals
Service destination	**Needs**	**Spending cap**
-When available, prioritization criteria include: school children and high-risk groups	-Importance of including oral health in the scenario	-Does not reduce financial risk
-In general: there is no prioritization, the service increases access but with social determination	-Importance of formulating an oral health policy	-No annual limit for dental care co-payments

Fig. 3 Theoretical flowchart of the main findings of the study structured into three main dimensions

limited service packages worldwide, leading to payment via co-payment, health insurance, or direct financing [1, 13, 25, 59]. Although gaps are observed in developing policies for decreasing oral health costs, increased investment in oral health could decrease the severity of oral diseases [25]. The absence of indicators to examine access to oral health services contributes to this gap, hindering the analysis of UHC on oral health.

The number of retrieved articles is an important data that reinforces the authorities' indifference to oral health. It is a mistake to exclude the oral health condition from the individual´s general health context. He ignores risk conditions to health and quality of life.

In a general overview, each territory must think about the most functional strategy for installing and progressing the UHC to oral services, according to its health needs. However, it is essential that services are not restricted to preventive activities without rehabilitative ones, and that this coverage is planned to facilitate the provision of services and not make them more difficult. Another critical point is to prioritize services to those most in need, through a socio-demographic study for the health units to establish spending cap that condition adequate proportions of co-payment.

This scoping review has some limitations. The discussion about UHC is relatively recent and theoretically controversial. UHC is an ambiguous term that has different interpretations by health authorities and organizations. In European countries, universality refers to the public coverage of national health systems. In contrast, in developing countries, it refers to the coverage of basic services or health insurance to allow the creation of universal public health systems. The UHC is structured upon unclear assumptions and strategies and uses similar concepts and terms to address universal health systems; therefore, it is difficult to distinguish between the UHC and universal health systems [3]. This review included empirical studies and opinion texts with high evidence levels assessed by specific instruments.

A strong point of this review is the comprehensive search, which included the WHO Library and ensured the retrieval of guiding policies and actions at global and regional levels. Most included studies were classified as high evidence level, considering specific instruments used for each type of study.

Our results demonstrate the need for more studies on oral health services in the context of UHC. Gaps observed in the current literature included advances in oral health, details about the services offered in different countries, and sources of financing for these services. The absence of standardized oral health coverage encourages different scenarios related to financing, organization, and the offer of health services. Further research is needed to improve the understanding of all oral health dimensions within the UHC.

Conclusion

The UHC does not appear to adequately contemplate oral health, which may impact the universality of care. Despite being structured upon protectionist theories, the UHC does not seem to prioritize low-income populations, which leads to the perpetuation of inequalities in access to oral health services. Also, the UHC encompasses a limited range of services, which may allow diagnosis but may be insufficient to remove the individual from the disease situation.

Incorporating oral health within the UHC, developing guidelines for access and use of comprehensive services based on equity, and enhancing the response to health needs at all healthcare levels are needed. Adherence to specific oral health indicators would also contribute to better monitoring and development of oral health within the UHC.

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Author contributions
MHRG and SQMS contributed to conceptualization, formal analysis, investigation of the study, and writing of the manuscript (review and editing); RVSA contributed to formal analysis and writing the initial draft; and AGR contributed to writing of the manuscript (review and editing).

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Data availability
Data is provided within the manuscript through table i with title, author, country and year of publication. Sincerely.

Declarations

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Not applicable.

Consent for publication
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The authors declare no competing interests.

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