

## Public policies on oral health and evidence-informed decision-making process: the influence of scientific evidence

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### Abstract

*Public policies in oral health are fundamental to increasing access and oral health care for populations. The use of scientific evidence for political decision-making is known to be an important factor to be considered by policymakers. This study aimed to analyze the use of scientific evidence for the decision-making process in oral health public policies. In the multiple-case study, with Brazil, Chile, and Colombia, individual*

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*semi-structured interviews were conducted with policymakers. Data analysis was performed with Maxqda® software, using pre-established coding according to the theory of the definition of what evidence is and how it is established. The use of both instrumental and political/symbolic evidence was identified from the national epidemiological survey in all countries. Conceptual use was observed in decision-making from discussion forums with technical and academic teams. In Chile, evidence, such as expert opinion and intersectoral forums with the population, was used to identify their demands and hence to propose programs/policies. Evidence-based decision-making is important for the development of public policy, however, creating and strengthening strategies are needed for the knowledge translation to make it available for the community and the decision-makers to increase the quality of public deliberation.*

**Keywords:** public policy, oral health, decision-making, Latin America

## INTRODUCTION

The promotion of oral health among populations is a cost-effective strategy to lessen the burden of oral diseases, maintain oral health and quality of life, and increase access to and availability of oral health care. Public oral health policies are still hidden in many healthcare systems because oral health is still neglected globally, it is known that poor oral health is a silent epidemic (Atun et al. 2015; Watt et al. 2019; Peres et al. 2019).

Although the nature and scope of these benefits vary from one Latin American country to the next, Brazil, Colombia, and Chile have all designated oral health as one of the benefits covered by their respective healthcare systems.

The 1991 Political Constitution in Colombia defined social security as an essential public service and a citizen's right and defined environmental health and sanitation as public services provided by the State. In 1993, the social security system was created, in which preventive and curative individual dental care became part of the health plan's content. In Chile, citizens can be affiliated with the national regime (FONASA - Fondo Nacional de Salud) or with the private regime (ISAPRES - Instituciones de Salud Previsional).

In Colombia, the oral health plan contains a wide range of dental activities and procedures (Otalvaro Castro et al. 2019). In Chile, with the creation of the national oral health plan in 1990, and subsequent gradual aggregation of oral health to the explicit guarantees of health Salud -GES) from 2005 (Ministerio de Salud. Chile 2017). Brazil adopted the universal health model at the time of the definition of its constitution (1988) and since then it has offered dental care in its Unified Health System (SUS). In 2004, the National Oral Health Policy was elaborated, which represented a great advance in guaranteeing access and comprehensiveness of care for individuals (Brasil 2004).

There are many factors in the policy decision-making process, including the use of scientific evidence, but decision-makers must be able to obtain information to translate knowledge (Duran et al. 2018). A systematic review with health policymakers (Innvær et al. 2002) concluded that timely relevance, personal contact, and summary of policy recommendations for articles are considered motivating factors for the use of

scientific evidence, and there is a lack of personal contact, lack of opportunities or research relevance, mutual distrust, power and budget disputes are seen as obstacles.

Knowing these factors, we can say that the decision-making process is complex, concerning the inclusion of scientific evidence, it is diversified in terms of the use of scientific knowledge and can be different between the actors involved. It is known that the use of scientific evidence can be considered in three types: instrumental, symbolic/political, and conceptual (Weiss 1979), but it is still difficult to understand the best way to use scientific evidence and how to turn this into practice.

Understanding how the decision-making process occurs in public oral health policies in these countries can facilitate the organization of the use of scientific evidence and stimulate the translation of knowledge for public managers. This study aimed to understand the use of scientific evidence for the decision-making process in public oral health policies.

**METHODS**

The methodology used was a case study, emphasizing qualitative analysis, it is a scientific and recommended way of researching an emerging area in which few previous studies have been carried out (Yin 2003), therefore, a qualitative approach was carried out. The research was conducted within Aug.2018 until March.2020, the interviews were conducted, in loco, with 14 key actors involved in the oral health decision-making process in the countries studied, namely: Brazil, Colombia and Chile. The interviewees were identified through key informants from each country, that had participated: at the political, academic and technical levels.

Before conducting the interview, the primary researcher spent one to two weeks going deeper into the local context with the assistance of researchers from the research group in order to fully understand how the health system and its infrastructure functioned. A semi-structured interview script was used containing a specific question about the use of evidence. The interviews were audio-recorded, the recordings were verbatim transcribed, and the transcriptions were anonymized. On average, interviews lasted 50 minutes. Data were transcribed and coded by two independent reviewers using the MAXQDA® software (VERBI 2017). The results were categorized according to the use of evidence defined by Weiss (box 5.1).

**Table 5.1 - Definition of evidence**

Evidence type	Definition
Instrumental	Instrumental use is to use research in a specific and direct way to solve a particular problem.
Symbolic	Symbolic (or political) use refers to the use of research evidence to justify a position that has already been taken for reasons that had nothing to do with the research results.
Conceptual	Conceptual usage refers to a more indirect form of clarification, for example when research evidence provides insights that affect the way policymakers think about a problem or options for solving it.

Source: Weiss (1979, p.)(Weiss 1979)

The interviewees' statements allowed the identification of the type of scientific evidence used for political decision-making in oral health.

## RESULTS

Fourteen interviews were carried out, being Brazil (n = 3), Colombia (n = 5) and Chile (n = 6). Research subjects were categorized according to their experience in oral health policy by level, so we can observe that, at the political level, decision-makers were in charge of political decisions (eg, oral health coordinators); at the management level, positions such as Director of Oral Health were identified; at the technical level, we identified positions that worked directly at the political level, for example, Oral health advisor; the academic level included professors and researchers who were involved at the technical and/or political level. And at the level of health services, we include workers who provide clinical care directly to the community.

The use of instrumental and political/symbolic evidence was strongly identified. It was observed that the interviewees consider the use of epidemiological surveys with the support of universities as scientific evidence, and used the data obtained from epidemiological surveys to propose public health programs/policies, including obtaining funding.

It was found the use of conceptual evidence, such as the use of expert opinion and intersectoral forums with the population, to identify their demands and, consequently, propose programs/policies.

*The results that were presented in the ENSAB4 (epidemiological survey) in such a way that one could say more than an explicit restriction on the limitations of more states with the availability of resources, and I am talking about the availability of two resources from the financial point of view of the process institutional. (Interviewee Colombia 01)*

*For the formulation of (local) public policies, I had very important statistical data for epidemiological studies, which will raise the need for public policies [...] (Interviewee Colombia 03)*

*I think the first important data is that in some publications it is not even taken into account that what weighed more for the inclusion of the ESB in the ESF was objectively the data from the PNAD 1998, which said of almost 30 million Brazilians, that is, 20 % had never been to the dentist. (Interviewee Brazil 03)*

Considering the conceptual use, discussion forums with technical and academic teams analyze their data to clarify decision makers and raise awareness of the use of evidence.

*I believe that the scenario that ENSAB 4 gave us in relation to 3 (ENSAB3) showed us the imperative need to have, as a country, a strategy that really allowed us to promote adequate hygiene habits and seek specific protection strategies (Interviewee Colombia 05)*  
*there was a group from the academy (...) who prepared the document "zero hunger and mouth full of teeth", a document that was produced by these notables, in short, people with great accumulation of knowledge, and recognition (Interviewee Brazil 02)*

We found the use of conceptual evidence, such as the use of expert opinion and intersectoral forums with the population, to identify their demands and, consequently, propose programs/policies in Chile.

*There is much closer and more systematic work, through regional forums ("mesas intersectoriales regionales"), in the national oral health forum there is a person who is a representative of the universities. (Interviewee Chile 04)*

*We had to look for evidence, epidemiology demands [...] and we also started working with some local conversations... conversations that were held in hospitals, in health centers (Interviewee Chile 04)*

*The advances achieved in dentistry are due to the support of the academic sector that integrates universities, opportunistic as the opinion of experts, from the opinion of experts to a response to a manifestation of citizenship in any format. (Interviewee Chile 03)*

Chile and Colombia reported that their policy was influenced by pilot programs based on external evidence from other countries, such as information from epidemiological studies, as mentioned above.

*[...] I think that most of the construction of public policy on oral health here in Chile was built based on external evidence, from another country and adjusted to local realities. (Interviewee Chile 06)*

*[...] the referents in Colombia, for many years... Brazil is a reference in public health policies for Latin America [...] the university let's say that the model in theory [...] are incremental programs " (Interviewee Colombia 03)*

## DISCUSSION

Political decision-making is a dynamic process, related to formulation and implementation, which is based on the main and general decisions of national, political, and social interest groups (Xing 2015). The model of policy formulation stages allows us to understand that different types of that research can influence different stages of the policy process; the investigation can be used instrumentally, conceptually, or strategically in any of the stages of the process; and research is just one of the factors, among others, that may or may not influence the political process (Patiño, Lavis, and Moat 2013). We can consider as limitations of this study that the research subjects may omit or not clearly state all the facts involved or identify other types of evidence and uses for the decision-making process.

It is known that research can influence the development of public health policies, although still in a limited way, data can be used instrumentally to inform political decisions, symbolically to justify or refute positions, and conceptually to clarify or influence the definition of the agenda (Haynes et al. 2011). The academy had a role in inducing oral health policies in the countries, however, this role should not be passive, requiring the involvement and active participation of academics in the elaboration of the policy. In their study, Haynes et.al. (2011) (Haynes et al. 2011) identified that despite knowing that they have this role as illuminators, researchers sought more active participation to facilitate the use of research in multiple ways, including the participation of policymakers in research development. To facilitate the relationship between researchers and decision-makers, it is necessary to create spaces for dialogue and a permanent relationship with the established work rules.

We could observe that both countries considered that information derived from epidemiological studies and opinion experts and discussion round tables were used as a way of using evidence for the formulation of oral health policy, decision-makers must have access to information clearly and concisely. In this regard, it is possible to increase the use of an evidence-based approach and public deliberation becomes more widely adopted, the problems associated with translating evidence into policy and practice will be reduced, although the use of research-derived evidence may be a key feature of most policy models, it is not certain that scientific evidence will carry as much of a burden in "real world" policymaking environments as other types of evidence (Carter 2010; Brownson, Chiqui, and Stamatakis 2009). The search for evidence

information in meetings, public opinion, and epidemiological data was also identified in a British study, where this was the second most cited source by decision-makers, as well as in our study (Oliver and de Vocht 2017).

A study carried out with policymakers reported that scientific studies are not clearly available for managers to make their decisions and without a focus on policies and their applicability (Apollonio and Bero 2017). A systematic review identified barriers to the use of evidence in the decision-making process, such as decision makers' perceptions of research evidence, the gap between researchers and decision-makers and practical constraints (Orton et al. 2011). Despite the existence of research and scientific studies, we identified that policymakers still make use of evidence considered weak from a scientific point of view (Tomlin and Borgetto 2011), such as discussions and primary articles, we must highlight that the lack of consensus on what constitutes valid evidence is one of the main challenges in the decision informed by evidence.

In order to make it possible to use evidence in political decisions, it is necessary for academia and managers to actively participate in this process, some powerful tools are informative summaries and political dialogues (Lavis et al. 2010), as they can propose measures and recommendations for the defined problem and can increase awareness of the importance of a specific problem and the desirability of addressing it with evidence-based actions (Felt, Carrasco, and Vives-Cases 2018). In this way, policymakers will be able to identify the best option for local policy development, avoiding the use of policies based on other countries with different local realities and, therefore, with different proposals for confrontation. In Chile, since the last decade, efforts have been made so that health interventions that are part of health care programs are evidence-based, a process that still needs to be improved (Herrera et al. 2017).

We can see that, on the one hand, ENSAB was a factor that influenced oral health policies in Colombia, but it was an important challenge for epidemiological studies, as it revealed the tensions and hegemonies that exist so much in the sciences that support knowledge in health. as well as the political interests of different actors, these tensions explain the advances and limitations that health interventions have presented and the challenges they face to guarantee the fundamental right to health (Pardo Romero, Hernández Flórez, and Maldonado Maldonado 2019).

There are still few National Oral Health Surveys in Latin America, the WHO guidelines advise that they be carried out every 5 years, another point is the fact that some studies adopt indicators different from those recommended by the WHO, making the studies incomparable between countries. It is necessary to carry out national studies to evaluate policies and verify their effectiveness in planning improvements (Duran et al. 2018).

Oral diseases are a global public health problem, and there is an urgent need to address oral diseases as a global health priority (Peres et al. 2019), which is why it is so important that oral health policies are developed considering the use of quality scientific evidence and viable by health systems.

## CONCLUSION

The use of evidence was considered for decision-making in public oral health policies, the instrumental use was reported most of the time, and the conceptual use (opinion),

both serving as symbolic evidence (justifying the decision-making/interest in investing in health oral). Evidence-based decision-making is important for the development of public policies, however, it is necessary to create and strengthen knowledge translation strategies to make it available to the community and decision-makers to improve the understanding of reality and increase the quality of public deliberation on social issues and the implementation of solutions.

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#### **Funding**

This study was financed by International Association Dental Research (IADR) Regional Development Program Funding (2018) and LAOHA (Latin American Oral Health Association).

#### **Conflict of Interest**

The authors declare that they do not have any conflict of interest.