#### **ORIGINAL ARTICLE /** ARTIGO ORIGINAL

# The Brazilian Oral Health Survey (SBBrasil 2010) workflow from the coordinators' perspective

O processo de trabalho da Pesquisa Nacional de Saúde Bucal (Projeto SBBRASIL 2010) na perspectiva dos coordenadores do inquérito

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ABSTRACT: Introduction: Although the workflow of population health surveys may interfere with the quality of the information produced, this aspect has not been investigated in the context of oral health. Objective: To identify the perception of the Brazilian Oral Health Survey (SBBrasil 2010 Project) coordinators regarding the survey's workflow. Methods: Data was collected using an electronic questionnaire sent to the coordinators after the national survey was completed. The variables investigated were grouped into themes spanning the various stages of the survey. *Results:* The response rate was of 75.6% (n = 161). The majority of respondents worked as municipal coordinators in the survey (82.6%), were females (68%), worked as civil servants in the public health system (65.2%), and occupied managerial positions (75.8%). The reported positive aspects of the survey were: planning, training and calibration workshops; the logistic support provided by both the health system and the survey's coordination team; the positive relationship between staff members, as well as the survey's acceptance by respondents and health professionals. The financial assistance offered for transportation during the survey and issues related to the grants received by coordinators were seen as negative aspects to be overcome. Most of the respondents reported that the research experience was useful in qualifying staff services and showed interest in participating in future oral health surveys. Conclusion: The coordinators' perception regarding their workflow in the SBBrasil 2010 Project was mainly positive. The results may contribute to the improvement of future oral health surveys.

*Keywords:* Epidemiological surveillance. Dental health services. Perception. Intention. Working conditions. Data collection.

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RESUMO: Introdução: O processo de trabalho em inquéritos nacionais de saúde pode interferir na qualidade das informações produzidas, mas esse aspecto ainda não foi investigado no campo da saúde bucal. Objetivo: Identificar a percepção dos coordenadores da Pesquisa Nacional de Saúde Bucal (Projeto SBBrasil 2010) sobre o processo de trabalho realizado. Métodos: Os dados foram coletados por meio de um questionário eletrônico enviado aos coordenadores após a realização da pesquisa. Resultados: As variáveis pesquisadas foram baseadas em eixos temáticos contemplando as diversas etapas da pesquisa. A taxa de resposta foi de 75,6% (n = 161). A maior parte dos respondentes atuou como coordenador municipal na pesquisa (82,6%), era do sexo feminino (68%), tinha vínculo efetivo no serviço público (65,2%) e atuava na gestão (75,8%). Os pontos positivos relatados foram: as oficinas de planejamento, de treinamento e calibração; o apoio logístico tanto do serviço quanto da coordenação da pesquisa; o bom relacionamento entre os membros da equipe e a aceitação da pesquisa pelos indivíduos da amostra e pelos profissionais envolvidos. O custeio para deslocamento inerente à pesquisa e as questões relacionadas à ajuda de custo recebida pelos coordenadores foram considerados pontos negativos a serem superados. A maioria relatou que a experiência na pesquisa serviu para qualificar a equipe dos serviços e manifestou interesse em participar de futuros inquéritos. Conclusão: A percepção dos coordenadores do SBBrasil 2010 sobre o processo de trabalho realizado foi predominantemente positiva. Os resultados podem contribuir para o aprimoramento de futuros inquéritos em saúde bucal.

*Palavras-chave:* Vigilância epidemiológica. Inquéritos de saúde bucal. Percepção. Intenção. Condições de trabalho. Coleta de dados.

## INTRODUCTION

Health surveillance based on national demographic data is essential to the service-planning process and enables society to monitor the fulfillment of the health principles outlined in the Constitution<sup>1</sup>.

In Brazil, this kind of information is usually obtained through national surveys for the production of primary data. Regarding oral health, four major surveys have been conducted by the Ministry of Health (MOH), the most recent in 2010<sup>2</sup>. Such studies were of great relevance as they facilitated the construction of a database on the epidemiological profile of oral health in the Brazilian population<sup>3</sup>.

The National Oral Health Survey (*Pesquisa Nacional de Saúde Bucal – Projeto SBBrasil 2010*) had the following objectives: to understand the oral health conditions of the Brazilian population; to provide the Unified Health System (SUS) with useful information for planning actions at the national, state, and municipal levels<sup>3</sup>; and to maintain an electronic database on oral health surveillance<sup>2</sup>. The survey was one of the strategies for structuring the oral health surveillance initiated in 2006 as a component of the National Oral Health Policy of the Ministry of Health<sup>4.5</sup>. It was conducted in 26 state capitals, in the Federal District, and in 150 cities of different population sizes in the country. Approximately 2,000 public health professionals from all three governmental spheres worked on its implementation<sup>3</sup>. Because of its complexity, in SBBrasil 2010, activities were distributed among the various

stakeholders. Each region, state, capital, and city had a coordinator with specific functions that were defined in a technical manual<sup>6</sup>.

An operational flowchart was used to provide peer and hierarchical support among the different levels of coordination. The coordinators' extensive participation, which depending on the level may focus more on a certain stage of the survey, ranged from the project's conception and its officialization to data collection, encompassing their respective fields of professional action.

The workflow, which is understood as the way the health surveys occurred as a labor activity, is an important aspect to be explored further for the constant improvement of health surveillance strategies.

In previous studies, this matter has been investigated using operational, methodological, and/ or ethical approaches<sup>7-15</sup>. Researchers' perception on workflow has been studied only incipiently and in relation to the national academic research environment<sup>16-18</sup>. No study was found addressing the perception of researchers on the workflow of health surveys conducted by public services.

The ethical aspects of the SBBrasil 2010 project were investigated from the managerial perspective<sup>9</sup>. In an analysis on the survey's methodological aspects, the management team felt that the progress achieved surpassed the challenges<sup>8</sup>. However, it is questionable whether the results would be the same if the focus were on workflow itself. In this aspect, the perception of the participants involved in the process is of fundamental importance.

The aim of this study was to identify the perception of the SBBrasil 2010 coordinators on the survey's workflow. The results may contribute to the improvement of national oral health surveys not only with respect to their field methodology, but also to their workflow, including operational and relational aspects, working conditions, participants' satisfaction and other factors that may interfere with the data quality.

## METHODS

#### TYPE OF STUDY AND POPULATION STUDIED

A cross-sectional study was conducted using a quantitative approach, including all individuals who worked as coordinators in the SBBrasil 2010 project (n = 225), divided in the following groups: national coordinator (general coordination) (n = 1); Technical Advisory Committee (TAC) in oral health surveillance (n = 10); SBBrasil executive coordination in the Collaborating Centers on Oral Health Surveillance of the Ministry of Health (Centros Colaboradores do Ministério da Saúde em Vigilância à Saúde Bucal – CECOL) (n = 10); state coordinators (n = 30); municipal coordinators in state capitals (n = 27); and municipal coordinators in the country (n = 147).

From this total, we excluded duplicates (specifically, nine individuals who occupied a coordination position in more than one level or location) and three individuals who participated in the present study and also in the SBBrasil 2010. Thus, our sample comprised 213 individuals.

SBBrasil 2010 participants' identifications and their positions were extracted from the research report<sup>3</sup>. Their e-mail addresses were obtained from those responsible for the

Ministry of Health Collaborating Centers at the time of the survey. In some cases, state and/or municipal health departments had to be contacted.

#### ETHICAL ASPECTS

This research project was approved by the Research Ethics Committee at the *Universidade Federal de Goiás* on June 18, 2013, using the *Plataforma Brasil* (CAAE: 15926513.3.0000.5083).

#### PREPARING THE DATA COLLECTION INSTRUMENT

As no data collection instrument on the proposed subject were found in scientific research, a questionnaire was built specifically for the purposes of this research. A self-administered electronic questionnaire was sent via e-mail to the participants of the research using Survey Monkey software (version 2014). It included 63 questions that could be closed-, open- and semi-open-ended questions.

The first part of the questionnaire requested data on the respondent's identity, including demographic data (gender and age); undergraduate degree; position occupied at the SBBrasil 2010; and their employment relationship with public service. The following parts of the questionnaire included variables based on thematic axes that represent the four stages of the SBBrasil 2010 workflow:

- 1. Before (respondent qualification for working in epidemiological surveys);
- 2. During the survey (operational aspects and those related to interpersonal relationships and promotion);
- 3. After (dissemination of results, financial assistance, professional experience, selfassessment of participation and the usefulness of the research); and
- 4. future projections (participation in future oral health epidemiological studies).

The questionnaire pre-test was structured in two stages. At first, the authors of the present study responded to the questionnaire and evaluated the relevance of its content. In the second step, eight professionals who had participated in SBBrasil 2010, but not as coordinators, were invited to answer the questionnaire and make suggestions. Based on the results, a new version of the questionnaire was developed and tested in two pilot studies.

The first pilot study was conducted with a group of 14 randomly selected individuals who acted as coordinators in SBBrasil 2010. In the second pilot the reproducibility of the questionnaire was also tested.

#### DATA COLLECTION

Data was collected in a period of three months. The questionnaires were sent with an invitation and message explaining the purpose of the study. Reminders were sent on a weekly basis to participants.

#### DATA ANALYSIS

Data management, tabulation, and analysis were performed using the SPSS statistical package software, version 20. Absolute frequencies and percentages were used to analyze the data.

The answers to the open-ended and semi-opened questions (those including an "other" field for collecting written answers) were categorized. These categories are described in the corresponding questions and tables. Likert scale questions were paired together in the following manner: "greatly hindered" and "slightly hindered" were considered as "hindered"; "slightly facilitated" and "greatly facilitated" as "facilitated"; "high value" and "very high value" as "high/very high value"; "very poor" and "poor" as "very poor/poor"; "very good" and "good" as "very good/good".

## RESULTS

Of the 213 coordinators invited to participate in this study, 161 responded to the questionnaire (response rate = 75.6%). Respondents' characteristics are shown in Table 1. More than half (67.7%) were female and their ages ranged from 20 to more than 60 years. The majority of participants had a Dentistry degree (90%).

Most of them occupied coordination positions in public service (75.8%). More than half (65.2%) had an effective employment relationship with the service, 24.2% of which in the form of a "contract". Most respondents worked as coordinators in inner cities (65.8%) (Table 1). 41% of the sample reported other functions besides coordination, and approximately 29% reported being able to work exclusively in the SBBrasil 2010 project.

Concerning the respondents' previous experiences, fewer than half reported having worked in epidemiological surveys (48.8%) and most of them had prior knowledge in Epidemiology (88.7%).

Coordinators' perceptions regarding planning, training, and calibration meetings are shown in Table 2. 81.1% of the respondents deemed planning meetings sufficient. For more than 80%, training and calibration workshops were good/very good. Most of the participants (85%) considered the support provided to coordinators by the research immediate coordination team as sufficient and reported receiving support from their managers in local institutions during the survey execution (96.2%).

Interpersonal relations among professionals during the research were rated "very good" or "good" (89.9%), "acceptable" (8.8%) and "very poor" or "poor" (1.3%). Few respondents reported interpersonal conflicts between themselves and their teams (9.4%) and between themselves and another member of the research coordination team (2.9%).

According to a large portion of respondents, the survey was well-received by individuals in the sample (62.3%) and by participating professionals (76.1%). More than 70% responded their team considered the research an inherent attribution of their profession, and voluntary participation was the most cited type (71.3%) (Table 3).

Characteristics % Gender Female 109 67.7 Male 52 32.3 Age Group (years) 20 – 39 37.3 60 40 – 59 91 56.5 60 and above 10 6.2 Undergraduate degree 144 89.5 Dentistry Other areas 15 9.3 Health field, except dentistry 2 1.2 Position held in the public service or institution of higher education Coordinator/Chief 122 75.8 Dental Surgeon (clinical) 24 14.9 Health Advisor 8 5.0 2.5 Researcher/Teacher 4 2 Agent/Administrative Assistant 1.2 Municipal Secretary of Health 1 0.6 Type of employment contract in public service or institution of higher education\* 105 Employee 65.2 Commissioned 27 16.7 Contractor 39 24.2 1 0.6 No employment contract Functions performed at SBBrasil 2010\* National coordinator 1 0.6 Member of the Technical Advisory Committee 6 3.7 **Executive Board Coordinator** 13 8.1 State coordinator 20 12.4 Capital city coordinator 27 16.8 106 Inner (non-capital) city coordinator 65.8 Instructor 18 11.2 Examiner 26 16.1 Note-taker 6 3.7 3.7 Auxiliary visitor 6 Financial coordinator 0.6 1

Table 1. Demographic and professional characteristics of respondents. Coordinators of the National Oral Health Survey (SBBrasil 2010 project) (n = 161).

\*Respondents could choose more than one answer.

	n	%			
How do you evaluate the number of planning meetings organized?					
Sufficient	129	81.1			
Insufficient	29	18.2			
Excessive	1	0.6			
How do you evaluate the training workshops?					
Very good/Good	136	85.5			
Acceptable	16	10.1			
Poor	2	1.3			
I did not participate in this stage	5	3.1			
How do you rate the calibration workshops?					
Very good/Good	130	81.8			
Acceptable	18	11.3			
Poor	1	0.6			
I did not participate in this stage	10	6.3			

Table 2. Evaluation of survey planning meetings and training and calibration workshops. Coordinators of the National Oral Health Survey (SBBrasil 2010 project) (n = 159).

Table 3. Reception and recognition by the team and method of staff recruitment. Coordinators of the National Oral Health Survey (SBBrasil 2010 project).

	n	%
How was the reception of the research by the individuals selected for the sample? (	n = 159)	
Very good/Good	99	62.3
Acceptable	39	24.5
Very poor/poor	7	4.4
I did not participate in this stage	14	8.8
How was the reception of the research by the professionals involved? (n = 159)		
Very good/Good	121	76.1
Acceptable	25	15.7
Poor	8	5
l did not take part of this step	5	3.2
Did your team consider the survey as an attribute inherent to their profession? (n =	158)	
Yes	112	70.9
No	16	10.1
Partially	30	19.9
What was the form of recruitment of your on-site staff (examiners and note-takers)?	(n = 160)	
Call for volunteers	114	71.3
Compulsory call	11	6.9
Drawing lots	1	0.6
l did not work as municipal coordinator	34	21.3

Research dissemination was also evaluated in some aspects. The majority of the sample reported disseminating the survey in their work (80.3%) and community (68.2%) environment during its execution. Awareness of the survey's final report was reported by 75.8% of the coordinators.

Most of the participants (86.1%) claimed to have received financial aid from the Ministry of Health for participating in the project. When asked whether they considered the financial assistance consistent with the activities of the SBBrasil 2010 project, 23.5% responded "yes", 29.4%, "partially", and 47.1% answered negatively. Respondents reported receiving such financial assistance in three different periods: "long after the completion of the survey" (61.8%), "immediately after the conclusion of the survey" (29.4%) and "during the survey" (8.8%).

Table 4 shows the results on how workflow was influenced in the survey. Of the 17 factors studied, 13 were regarded as facilitating workflow by most respondents. The three factors most often regarded as complicating workflow were: the offered transportation assistance, team conflict, and conflict with the coordination.

Most of the sample assigned a high or very high value to their participation in the study (80.2%) and the usefulness of SBBrasil 2010 (79.6%) (Table 5). Participation in the survey was seen as contributing to professional skills, especially regarding the use of the results in public service (69.4%) and the use of its methodology in conducting further research (55.41%).

Coordinators reported perceiving professionals involved in data collection becoming qualified (through their experience in SBBrasil 2010) to work in future national (89.2%) and local (87.9%) surveys. Many respondents expressed a desire to participate in upcoming national (63.7%) and local (61.1%) surveys on oral health.

# DISCUSSÃO

The present study is the first nationwide attempt to analyze the workflow of oral health surveys from the perspective of those involved in its execution. The results indicate that coordinators had a predominantly positive perception of the SBBrasil 2010 workflow. Due to its originality and relevance, its findings should be taken into account when planning future national surveys. By enabling procedural improvement, collecting information of the highest quality may be achieved and streamlining surveillance strategy on national oral health may be favored, as important components in the National Policy of Oral Health<sup>19</sup>.

Although our intention was not an exhaustive overview of the subject, we attempted to analyze micropolitical aspects of the SBBrasil 2010 workflow from the perspective of its coordinators, as well as the use of light technology (relational aspects, satisfaction and expectations), in addition to how the technical aspects materialized (dissemination of the survey, experience gained, utility). These situations usually extend beyond the scope of technical reports, but have great potential for discussing and fostering future workflows in the field. Although a little over half of respondents had not previously worked on epidemiological surveys, they did report previous knowledge of Epidemiology. The devaluation of epidemiological knowledge and the need for training professionals involved in these types of studies have been discussed in the literature<sup>20,21</sup>. In the SBBrasil 2010, public health service

	Hindered		Neither hindered, nor facilitated		Facilitated	
	n	%	n	%	n	%
Quality of the training workshops (n = 154)	3	2	13	8.4	138	89.6
Quality of the calibration workshops ( $n = 150$ )	6	4	11	7.3	133	88.7
Team relations (n = 159)	13	8.2	5	3.1	141	88.7
Use of PDA (Personal Digital Assistant/"palmtops") to collect data (n = 158)	16	10.1	8	5.1	134	84.8
Prior knowledge of Epidemiology (n = 159)	9	5.7	22	13.8	128	80.5
Reception by participating professionals ( $n = 154$ )	24	15.6	10	6.5	120	77.9
Support offered by the research immediate coordination team (hierarchically superior) (n = 159)	15	9.4	22	13.9	122	76.7
Amount of planning meetings (n = 159)	25	15.7	8	5	126	79.3
Institutional support on computer use for research purposes (n= 150)	18	12	21	14	111	74.0
Local workplace management support (n= 159)	27	17	16	10.1	116	72.9
View of research as an attribution inherent to the profession on the part of the team (n = 158)	22	13.9	26	16.5	110	69.6
Reception of the SBBrasil 2010 project by the individuals selected to the sample (n = 145)	30	20.7	20	13.8	95	65.5
Institutional support for the telephone use for communication during the survey (n = 150)	16	10.7	32	21.3	102	68.0
Previous work in epidemiological oral health surveys (n = 160)	28	17.5	53	33.1	79	49.4
Transportation aid (car/similar) (n = 159)	61	38.4	40	25.1	58	36.5
Interpersonal conflict between respondent and his/her team (n = 15)	11	73.3	4	26.7	0	0
Interpersonal conflict between respondent and any member of the coordination team (n = 04)	4	100	0	0	0	0

Table 4. Aspects that influenced the survey workflow. Coordinators of the National Oral Health Survey (SBBrasil 2010 project).

professionals were trained and evaluated before participating in the study, which was interpreted by Andrade and Narvai<sup>21</sup> as a "demonopolisation of epidemiological action and knowledge". This strategy has been corroborated by Lansang and Denis<sup>22</sup>, who defended the use of approaches such as "learning by doing" and "hands-on learning" as methods of supplementing professional training, developing human resources, and increasing research capability in developing countries.

The coordinators who participated in this study valued their participation in the conduction of the survey and its usefulness to them. Upon their experience gained in the SBBrasil 2010 workflow, participants reported they believed field teams had increased their qualifications and expressed intentions in working in future epidemiological oral health surveys.

For some participants, the survey did not provide professional benefits, and almost 40% reported not having decided on or having no interest in participating in future local or national surveys. Despite these findings, overall, the positive aspects of the SBBrasil 2010 workflow numerically surpassed negative ones, confirming the views of the project's management team<sup>8</sup>.

	n	%			
How do you assess the value of your participation in research development?					
High/very high value	126	80.2			
Average value	29	18.5			
Little value	2	1.3			
What value would you assign to the usefulness of this type of research?					
High/very high value	125	79.6			
Average value	22	14			
Little value	8	5.1			
No value	2	1.3			
What has your participation at SBBrasil 2010 provided to your professional practice?*					
Use of survey results in public service actions	109	69.4			
Use of survey methodology for carrying out further research	87	55.41			
No benefit	16	10.2			
Improvement of knowledge and/or experience in Epidemiology	6	3.8			
Research/Academic activities	3	1.9			

Table 5. Value assigned to participation in the survey and to its usefulness and benefits. Coordinators of the National Oral Health Survey (SBBrasil 2010 project) (n = 157).

\*Respondents could choose more than one answer.

Some aspects evaluated in a study by Noronha et al.<sup>17</sup> on the national health research environment were similar to those found in this study. Researchers, policy makers, and scientific knowledge users praised access to scientific information, similar to the coordinators' positive impression of the access granted to the national SBBrasil 2010 report. Researcher training was also considered "very good/good" by most respondents in this study. Researchers' payment and financial transparency were among the issues assessed as "poor", which could be observed in the questionnaire and the perception of inconsistency in receiving financial assistance. Noronha et al.<sup>18</sup> have justified this obstacle by highlighting its relationship to the great political unwillingness in negotiations of the research and technological development budget in the legislative branch.

The prevalence of coordinators already working in the public health system shows good potential, as these professionals represent human resources for the service itself. They are already trained and qualified to work in the next series of epidemiological surveys in oral health. This would not be the case if temporary workers had filled the roles of coordinators since higher employee turnover is expected for temporary contracts.

Although more than half of coordinators reported exercising no more than one function during SBBrasil 2010, the vast majority declared an inability to dedicate themselves exclusively to the research since it was in addition to their regular work activities. In the survey's technical manual, there was no restriction on the exercise of more than one activity in the research, nor was the professional obligated to assume a coordinating position exclusively. The manual only stated municipal or state coordinators could also work as instructors at the calibration workshops, and that the state or city governments should release the coordinator from their regular duty in order to attend the survey activities<sup>6</sup>. On the other hand, the report for the SBBrasil 2003 edition stated that participants had been released from their routine activities to conduct survey activities<sup>23</sup>.

It is noteworthy that over 70% of coordinators reported that their team considered the survey as an assignment inherent to their profession. However, a considerable number (47.1%) showed dissatisfaction with the amount of financial assistance received. The SBBrasil 2010, in addition to previous national oral health surveys, relied on public health (SUS) professionals for their staff, who were regularly employed and paid according to their position. Despite many respondents considering the survey a part of their regular work, this contradiction could be based on the following assumptions: workers' dissatisfaction regarding their wages; an expectation of receiving additional payment; a comparison between the financial assistance given by SBBrasil 2010 and wages offered by other projects/public call notices, designed with other sources of financing and different operational logic; the greater value given to clinical activities at the expense of collective ones<sup>21</sup>; the lack of a regular routine during epidemiological studies, reinforced by the high frequency at which they are conducted; and the fact that research is predominantly conducted by universities and specialized institutes.

The time elapsed between the workflow developed in 2010 and the year of this study (2014) may lead to a memory bias on the part of participants; it might be the case that they no longer remember events exactly as they took place. Specifically, fading affect bias could

have detached respondents from negative aspects, making coordinators describe the process more positively than they would have if questioned immediately after the research was finished when the memories and feelings were more evident.

Another limitation of this present study is due to the sample being restricted to coordinators. Future studies including other workers involved in the survey, such as calibration instructors, examiners, and note takers, and using qualitative approaches can better clarify the perception of the various participants involved in the project.

Many aspects of the workflow of oral health surveys still need further study and will be refined as they are discussed<sup>7</sup> by both its organizers and the professionals working on its implementation. In addition to contributing to increasing expertise in the field<sup>12</sup>, similar studies may also improve and strengthen oral health surveillance in the country.

## CONCLUSION

Coordinators' perceptions regarding the SBBrasil 2010 workflow were predominantly positive.

The aspects analyzed were mostly seen by coordinators as facilitating their activity. However, aspects related to financial assistance, such as the delay observed in payment, indicate a need to review strategies and require mechanisms for improving future oral health surveys.

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