Oral health work process: disparity between teams in Brazil, 2014*

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Abstract

Objective: To compare Modality I and Modality II Oral Health Teams (OHT) regarding work process performance and differences between Brazilian regions. **Methods:** This was a cross-sectional study with OHTs that took part in the National Program for Primary Health Care Access and Quality Improvement (2013-2014). Latent Class Analysis identified OHT subgroups according to work process (action planning, health promotion actions and comprehensive health care) performance (consolidated, developing or incipient). OHT modalities were compared, resulting in an Index of Disparity. **Results:** After evaluating 15,886 OHTs, Modality II OHTs were found to have a higher percentage of consolidated work processes in the Southeast (67.8%-94.6%) and Southern (54.8%-93.0%) regions. Disparity in the consolidated work process was greater among Modality II OHTs (6.3-26.5) compared to Modality I OHTs (3.9-18.4). **Conclusion:** Modality II OHTs have the potential for better performance regarding the work process, but with regional disparities.

Keywords: Oral Health; Public Health Dentistry; Primary Health Care; Health Evaluation; Cross-Sectional Studies.

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1

Introduction

Primary Health Care evaluation in Brazil, institutionalized by the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB), has been defined as a critical and reflective process regarding practices and procedures carried out in health services at this level of complexity.[1] The PMAQ-AB is a strategy for decision making and central action aimed at improving the quality of health actions. Organized based on team work, the program provides a financial incentive to municipalities that meet health care access and quality standards.[2,3]

> OHT composition can therefore influence use of instruments most appropriate for solving the population's health needs, reflected in differences in the work process.

The Donabedian triad – structure-process-results –[4] for evaluating the quality of health care was taken as a conceptual reference for the PMAQ-AB, for evaluating the structure and work process developed by health teams working in Primary Health Care, including oral health teams (OHT).[3] According to this theoretical model, 'work process' consists of the sum of health work actions and denotes the relationships between health service users and providers in producing health care.[4]

According to Mendes Gonçalves, based on the Marxist theory, the health work process refers to the everyday activities of health workers and should be analyzed in relation to the following components: work object, instruments, purpose and agents. The work object is comprised of health needs, and is subject to the action of the health worker (agent). Non-material instruments are tools of an intellectual nature that enable the work object to be understood.[5,6] The purpose of health work, in turn, lies in comprehensive and quality care, capable of meeting service user needs and expectations. Finally, the active presence of the agent makes the work process possible, i.e. the dynamic action between object, instruments and activity.[7]

At the service of Public Health, within the Brazilian National Health System (SUS), oral health work process agents in Primary Health Care work in teams, organized in two modalities: Type I, comprised of two health professionals – a dental surgeon and an oral health auxiliary –; and Type II, comprised of three health professionals – a dental surgeon, an oral health technician and an oral health auxiliary.[8] In both modalities, an oral health technician can take the place of an oral health auxiliary.[3] OHT actions are based on the Family Health Strategy, its definition of territory and its assigned population, and in their work OHTs should use epidemiology and planning tools, hold team meetings and adopt a multi-professional and intersectoral approach, so as to promote quality in the provision of care to health service users.[8]

Evidence suggests that OHT Modality II can lead to increased access and improvements in the quality of oral health care,[9] as well as greater availability of curative dental procedures.[2] In addition to tasks that are common to both the oral health auxiliary and the oral health technician, with regard to health promotion, epidemiological surveys, collective actions in crèches and schools, household visits and taking part in team meetings to plan actions, the oral health technician also has clinical attributions, which include biofilm removal, inserting and condensing restoration materials, with the potential to optimize the work of the dental surgeon and favor better OHT results.[9-11]

OHT composition can therefore influence use of instruments most appropriate for solving the population's health needs, reflected in differences in the work process. Comparison of the OHT modalities is part of the scope of oral health policy evaluation, as part of PMAQ-AB. Considering the territorial dimension of Brazil and evidence of regional inequalities in organizing practices and in indicators of results,[12-14] regional comparison is justified in order to reveal the different levels of oral health policy implementation in Brazil.

With the aim of contributing to addressing and reducing disparities in oral health care, the objective of this study was to compare Oral Health Team Modality I and Modality II with regard to work process performance and thus identify differences in this care between the Brazilian regions.

Methods

This was an exploratory cross-sectional study based on secondary public data available on websites of the Health Ministry's Primary Health Care Department in relation to the second PMAQ-AB cycle conducted

in 2013-2014.[15] These data were retrieved from the program's web page (https://aps.saude.gov.br/ape/pmaq/ciclo2/), which was accessed in June 2017. The study sample was comprised of all the SUS health centers that took part in PMAQ-AB; the OHTs comprised the unit of analysis.

The program data were obtained through observation of dental surgeries at health centers and by means of interviewing one staff member of each OHT. These data corresponded to Modules V and VI of PMAQ-AB, respectively. The interviewed staff member was intended to be the dental surgeon, owing to the fact of their 'aggregating greatest knowledge of the team work process'. Other OHT members (oral health auxiliary or oral health technician) could be interviewed if the dental surgeon was not present at the time of the evaluation.[3] The observations and interviews were carried out by a team of evaluators, who had no links with the service in question, and who had been trained beforehand by teaching and research institutions.[3]

Evaluation of OHT work process performance was intended to be based on characterization of the use of work instruments for planning actions, carrying out health promotion actions and comprehensive health care. Performance was compared between OHT modalities and disparities were assessed according to the Brazilian geographical macro-regions.

Use of work instruments for action planning was estimated according to seven variables that assessed whether the OHTs actually carried out this form of planning: (i) building a periodical work agenda; (ii) definition of Primary Care targets agreed by the municipality; (iii) access to the Primary Care Information System; (iv) access to local information (demand study, epidemiological scenario); (v) analysis of issues related to biological risks and individual, family and social vulnerabilities; (vi) analysis of environmental issues on the team's territory; and (vii) challenges identified through self-evaluation. With regard to action planning, a further two variables referred to OHT monitoring and analysis of oral health indicators and information, and whether health service management provided the OHT with information which assisted with analyzing the health situation.

Use of work instruments in health promotion actions was evaluated through four variables: (i)

organization of the OHT agenda to provide oral health education activities within its territory; (ii) monitoring pregnant women through dental appointments; (iii) OHT carrying out home visits; and (iv) carrying out activities in schools/crèches.

Use of work instruments for comprehensive care was characterized by the following aspects: (i) Existence of a centralized appointments service to refer service users to dental specialties; (ii) health network having specialized appointments available; and (iii) oral cancer prevention and detection actions being carried out.

All the variables for evaluating use of work instruments were obtained from Module VI, via interviews with OHT staff. The variables are dichotomized (no or yes) and positive answers indicate use of work instruments that favor better OHT work process performance OHT.

The 'OHT Modality' variable was obtained by asking the following question, "What is the oral health team modality in this health center?" (Type I, Type II or parameterized) and was presented in Module V (health center observation). Parameterized teams are Primary Care OHTs the organization of which differs from the organization of the Family Health teams and for which an oral health auxiliary or an oral health technician is not obligatory.[3]

The 'OHT location' variable corresponded to the location of each OHT in one of the country's 27 Federative Units, including the Federal District, and enabled evaluation of their distribution over the five Brazilian geographical regions: North, Northeast, Southeast, South and Midwest. Parameterized team frequency was low (1.8%), ranging from 0.3% in the Northeast region to 8.9% in the Midwest region. As such, this Modality was excluded from the comparative analyses which only involved Type I and Type II OHTs.

The database was built by linking Modules V and VI using the variable common to both of them, namely the 'National Health Establishment Registry', used to identify each health center, in view of the absence of a variable for identifying each OHT in Module VI and the fact of OHT modality having been obtained per health center. In Module V, only one OHT per health center was recorded, while in Module VI, for the majority of health centers (90.8%), staff belonging to a single OHT were interviewed. In the case of health centers

with two or more teams, in the event of disagreement between staff answers, the option was taken to consider the most positive answer to represent the OHTs of that health center.

Identification of OHT subgroups with regard to performance in using work instruments for action planning, health promotion actions and comprehensive care was done through Latent Class Analysis (LCA). Three separate LCAs were performed for each group of variables observed, with the aim of identifying similar OHT subgroups according to the profile for this set of variables. LCA is a mixed model and posits the existence of an unobserved (latent) categorical variable which divides a population into mutually exclusive and complete classes. The share of individuals in each category is unknown but can be inferred by measuring a set of items.[16]

A sequence of models for the set of variables observed, containing between one and five classes, was tested in order to determine the best fit based on the minimum Bayesian Information Criterion (BIC) value. Following this, the probability of each OHT belonging to a subgroup (class) was estimated for each latent variable. Taking the maximum probability values as a parameter, OHT distribution between the classes was defined, varying between two or three in each latent variable. For the purposes of interpretation, the classes represent the difference OHT performances with regard to work process, in relation to use of work instruments. In view of this limitation, we adopted the term 'work process' and its performance was categorized as being 'consolidated, 'under development' or 'incipient', according to the gradient of highest to lowest probability of positive answers for the variables observed. LCA was performed using the Generalized Structural Equation Model (GSEM), and its 'logit' function, in view of all the variables observed being binary.

The descriptive analysis enabled OHT Type I and II work process performance in the Brazilian regions to be demonstrated. The index of disparity (ID) was used to estimate and compare the magnitude of the differences in the proportions of OHTs with consolidated work processes. The scores of this index indicate mean deviation of the proportions observed in a region, in relation to the reference proportion, in percentages, i.e. the scattering of proportions around

the reference value, which was the value found for the region with the highest proportion of consolidated work processes and the value obtained for Brazil as a whole. Pearson's chi-square test assessed differences in OHT work process performance, between both modalities, for each Brazilian region, assuming a 5% significance level.

Stata version 15.0 was used for the statistical analyses. Thematic maps were prepared to represent the percentage of Modality I and II OHTs with consolidated work processes, in each region, using the QGis® software.

The study was approved by the Federal University of Minas Gerais Research Ethics Committee on November 1st 2017 (Certificate of Submission for Ethical Approval No. 76981917.4.0000.5149). Secondary public data were used with no identification of participants. OHT participation in PMAQ-AB was voluntary and confirmed by signing a Participation Agreement.

Results

A total of 18,114 OHTs were identified in the Module VI database, with regard to work process. After grouping together data for health centers with two or more OHTs, this left 16,189 OHTs, 12 of which were excluded because of lack of information on their location. This resulted in a total of 16.177 OHTs with complete information for variables relating to work process, modality and location. 291 (1.8%) of these OHTs were parameterized teams, and once they had been excluded, a total of 15,886 (98.1%) OHTs were taken into consideration in the present analysis.

The regions with the highest number of participating OHTs were the Northeast (44.4%) and the Southeast (26.3%); OHTs were less frequent in the North and Midwest regions, accounting for 6.8% and 8.6% respectively. The majority of OHTs (86.3%) were Modality I OHTs, while the regions with greater frequency of Modality II OHTs were the Southeast (19.2%) and the South (18.3%) (Table 1). This distribution was similar to that of the OHT universe in Brazil in January 2014.[17]

With regard to action planning, the model with three performance classes – 'consolidated', 'under development' and 'incipient' – showed the best fit. With regard to the other two latent variables, the two-

class model showed the best fit and these variables were therefore named as 'consolidated' performance or performance 'under development'. Table 2 shows the frequency of work instrument use among OHTs according to work process development levels. OHTs with consolidated work processes had a high percentage of use of all work instruments for action planning, health promotion actions and comprehensive care. Percentage work instrument use was lower among teams where their use was assessed as being incipient or under development.

In Brazil as a whole, 51.2% of OHTs had consolidated action planning, while this percentage was higher in the

Northeast (55.3%) and Southeast (56.4%) regions of the country. The Northeast also had greater frequency of consolidated health promotion actions (92.3%), and was the only region to achieve a percentage higher than the national percentage (89.8%). The South (78.3%) and Southeast (77.0%) regions had the highest frequencies of teams with consolidated comprehensive care, with levels above those found for Brazil as a whole (68.8%) (Table 3).

In Brazil as a whole and in the Southeast and South regions, frequency of OHTs with consolidated work processes was significantly greater among Modality II teams. In the Northeast region, Modality II teams also

Table 1 – Regional distribution of Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) by modality and total number of OHTs registered in the country's geographic macro-regions, Brazil, 2013-2014

Regions	OHTs taking part in PMAQ-AB (2013/2014) n (%)				Total OHTs (2014) N (%)
	Type I	Type II	Parameterized	Total	
North	980 (89.3)	108 (9.9)	9 (0.8)	1,097 (6.8)	1,844 (7.5)
Northeast	6,736 (93.6)	439 (6.1)	24 (0.3)	7,199 (44.4)	11,116 (45.0)
Southeast	3,356 (78.8)	816 (19.2)	84 (2.0)	4,256 (26.3)	6,507 (26.4)
South	1,795 (79.4)	415 (18.3)	51 (2.3)	2,261 (14.0)	3,236 (13.1)
Midwest	1,115 (80.3)	150 (10.8)	124 (8.9)	1,389 (8.6)	1,963 (8.0)
Brazil	13,982 (86.3)	1,928 (11.9)	292 (1.8)	16,202 (100.0)	24,666 (100.0)

Table 2 – Frequency of work instrument use among Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) in action planning, in health promotion actions and in comprehensive care to health service users, where the work process was classified as incipient, being developed or consolidated, Brazil, 2013-2014

Work instruments	Action planning: incipient (N=1,476) %	Action planning: being developed (N=5,147) %	Action planning: consolidated (N=9,566) %	Total N=16,189 %
OHT plans its activities taking into consideration the compilation of a weekly, fortnightly or monthly work agenda	55.5	91.6	98.5	92.4
OHT plans its activities taking into consideration the Primary Health Care targets agreed by the municipality	31.2	76.5	99.1	85.8

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Table 2 – Frequency of work instrument use among Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) in action planning, in health promotion actions and in comprehensive care to health service users, where the work process was classified as incipient, being developed or consolidated, Brazil, 2013-2014

Work instruments	Action planning: incipient (N=1,476) %	Action planning: being developed (N=5,147) %	Action planning: consolidated (N=9,566) %	Total N=16,189 %
OHT plans its activities taking into consideration as Primary Health Care information system information	15.1	64.1	98.7	80.1
OHT plans its activities taking into consideration local information (demand study, epidemiological scenario, among others)	3.7	68.3	98.9	80,5
OHT plans its activities taking into consideration issues related to biological risks and individual, family and social vulnerabilities (violence, drugs, among others)	6.9	67.5	95.4	78,5
OHT plans its activities taking into consideration environmental issues in its territory (including access to land)	4.4	52.4	82.7	65,9
OHT plans its activities taking into consideration challenges identified through self-evaluation	10.5	53.1	91.3	71,8
OHT monitors and analyzes oral health information indicators	12.9	38.9	90.1	66,8
Health Service Management provides OHT with information that assists with analysis of the health situation	18.0	48.5	95.9	73,8
Work Instruments	Health promotion actions: being developed (N=1,654) %	Health promotion actions: consolidated (N=14,269) %		
OHT agenda organized to offer oral health education activities in its territory	35.4	97.1		90,7
OHT provides follow-up appointments with pregnant women	51.9	96.6		92,0
OHT makes home visits	13.6	85.5		78,0
ROHT carries out activities in schools/crèches	49.4	97.7		92.7
Work Instruments	Comprehensive care: being developed (N=4,939) %	Comprehensive care: consolidated (N=10,984) %		
Existence of a centralized appointments service to refer service users to dental specialties	22.5	69.4		54.8
Health network has specialized appointments available	15.9	100.0		73.8
OHT carries out oral cancer prevention and detection actions	56.6	90.8		80.1

6

Epidemiol. Serv. Saude, Brasília, 30(1):e2020353, 2021

Table 3 – Distribution of Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) with incipient work process (I), work process being developed (D) or consolidated work process (C), by modality (I or II), Brazil and geographical macro-regions, 2013-2014

Modality	Action planning N (%)			Health promotion actions N (%)		Comprehensive care N (%)		Total N
	I	D	C	D	C	D	C	
Brazil								
Type I	1.714 (12.3)	5,240 (37.5)	7,008 (50.2)	1,477 (10.6)	12,485 (89.4)	4,515 (32.3)	9,447 (67.7)	13,962
Type II	184 (9.6)	616 (32.0)	1,124 (58.4)	148 (7.7)	1,776 (92.3)	440 (22.9)	1,484 (77.1)	1,924
Total	1.898 (11,9)	5,856 (36.9)	8,132 (51.2)	1,625 (10.2)	14,261 (89.8)	4.,955 (31.2)	10,931 (68.8)	15,886
p-value[a]	**p≤0.001**			**p≤0.001**		**p≤0.001**		
North								
Type I	199 (20.3)	457 (46.6)	324 (33.1)	166 (16.9)	814 (83.1)	483 (49.3)	497 (50.7)	980
Type II	28 (26.2)	43 (40.2)	36 (33.6)	19 (17.8)	88 (82.2)	55 (51.4)	52 (48.6)	107
Total	227 (20,9)	500 (46.0)	360 (33.1)	185 (17.0)	902 (83.0)	538 (49.5)	549 (50.5)	1,087
p-value[a]	**p=0.291**			**p=0.831**		**p=0.678**		
Northeast								
Type I	681 (10.1)	2.342 (34.8)	3.705 (55.1)	525 (7.8)	6.203 (92.2)	2.312 (34,.4)	4,416 (65.6)	6,278
Type II	27 (6.2)	155 (35.4)	256 (58.4)	24 (5.5)	414 (94.5)	116 (26.5)	322 (73.5)	438
Total	708 (9.9)	2.497 (34.8)	3.961 (55.3)	549 (7.7)	6,617 (92.3)	2,428 (33.9)	4,738 (66.1)	7,166
p-value[a]	**p=0,025**			**p=0,076**		**p=0,001**		
Southeast								
Type I	350 (10.4)	1.203 (35.9)	1.798 (53.7)	391 (11.7)	2.960 (88.3)	811 (24.2)	2,540 (75,8)	3,351
Type II	51 (6.3)	211 (25.9)	553 (67.8)	44 (5.4)	771 (94.6)	146 (17.9)	669 (82.1)	815
Total	401 (9.6)	1.414 (33.9)	2.351 (56.5)	435 (10.4)	3,771 (89.6)	957 (23.0)	3,209 (77.0)	4,166
p-value[a]	**p≤0.001**			**p≤0.001**		**p≤0.001**		

to be continued

Table 3 – Distribution of Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) with incipient work process (I), work process being developed (D) or consolidated work process (C), by modality (I or II), Brazil and geographical macro-regions, 2013-2014

Modality	Action planning N (%)			Health promotion actions N (%)		Comprehensive care N (%)		Total N
	I	D	C	D	C	D	C	
South								
Type I	258 (14.4)	763 (42.7)	767 (42.9)	203 (11.3)	1.585 (88.7)	428 (23,4)	1.360 (76,6)	1,788
Type II	42 (10.1)	145 (35.0)	227 (54.9)	29 (7.0)	385 (93.0)	50 (12,1)	364 (87.9)	414
Total	300 (13.6)	908 (41.2)	994 (45.2)	232 (10.6)	1,970 (89.4)	478 (21.7)	1.724 (78.3)	2,202
p-value [a]	**p≤0,001**			**p≤0,001**		**p≤0,001**		
Midwest								
Type I	226 (20.3)	475 (42.6)	414 (37.1)	192 (17.2)	923 (82.8)	481 (43.1)	634 (56.9)	1,115
Type II	36 (24.0)	62 (41.3)	52 (34.7)	32 (21.3)	118 (78.7)	73 (48.7)	77 (51.3)	150
Total	262 (20.7)	537 (42.5)	466 (36.8)	224 (17.7)	1,041 (82.3)	554 (43.8)	711 (56.2)	1,265
p-value[a]	**p=0.561**			**p=0.215**		**p=0.200**		

a) Pearson's chi-square test to compare OHT percentage performance with regard to action planning, health promotion actions and comprehensive care between team modalities, for Brazil as a whole and for each of the country's regions.

Note: Bold text, p-value <0.05

Table 4 – Indices of Disparity (ID) in the proportion of Oral Health Teams (OHT) participating in the National Program for Primary Health Care Access and Quality Improvement (PMAQ-AB) according to consolidated action planning, health promotion actions and comprehensive care provision to service users between the country's geographic macro-regions, Brazil, 2013-2014

Variable	IDr[a] Brazil	IDp[b] Brazil	OHT ID Type Ir	OHT ID Type Ip	ID ESB Tipo IIr	ID ESB Tipo IIp
Action planning	19.6	18.7	18.4	18.3	26,5	21.1
Health promotion actions	5.4	3.9	5.6	3.9	6,3	6.3
Comprehensive care	16.2	14.9	14.6	13.7	21.9	13.3

a) IDr: index of disparity calculated taking as its reference the region (r) with the best percentage of OHTs with consolidated work processes.

b) IDp: index of disparity calculated taking as its reference the proportion (p) of OHTs with consolidated work processes in Brazil.
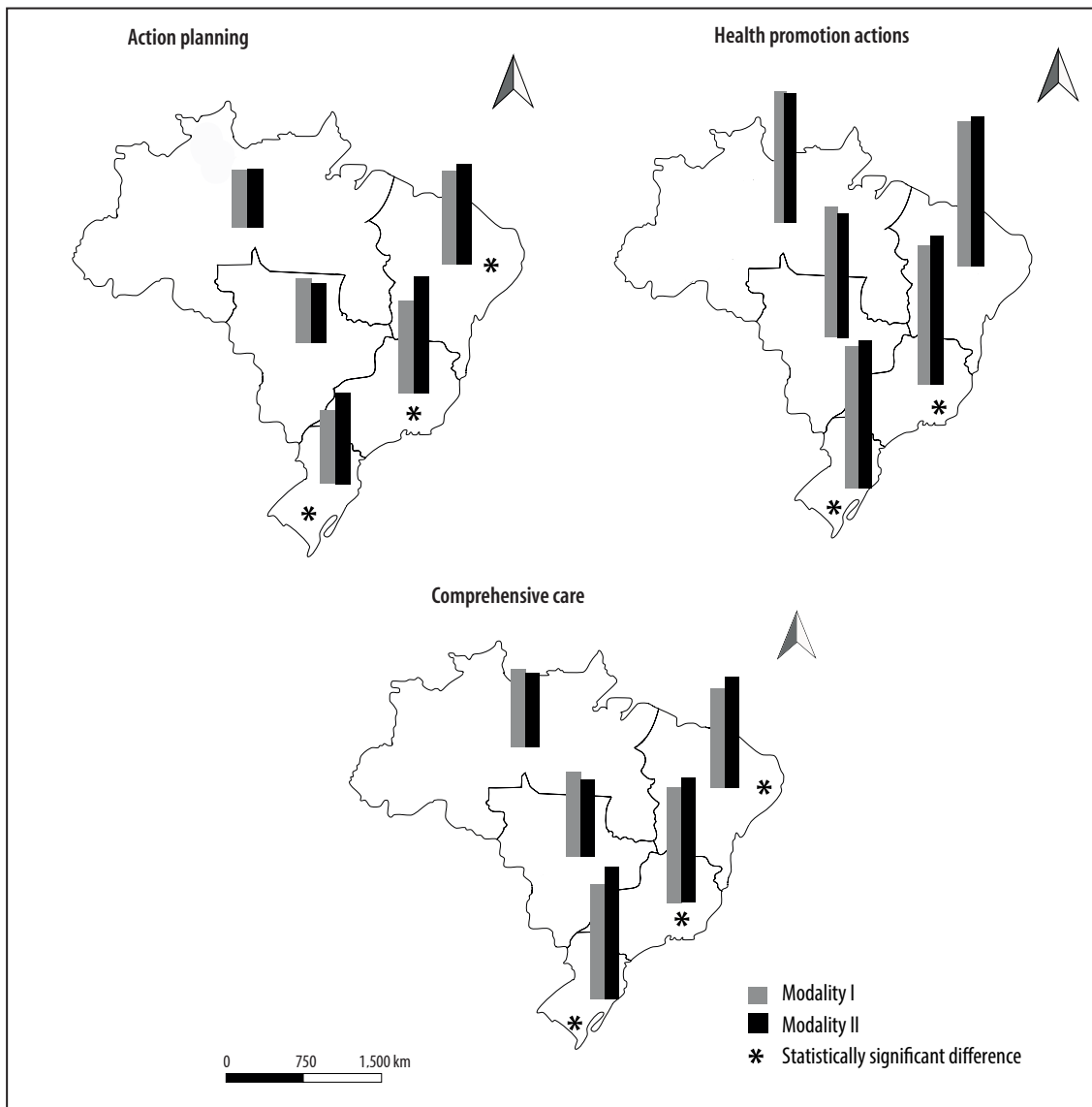
Figure 1 – Map of percentage of Oral Health Teams with consolidated work processes for the three latent variables, by modality, in the country's geographical macro-regions, Brazil, 2013-2014

had better performance, except for 'health promotion actions'. In the North and Midwest, there was no statistically significant difference between the two OHT modalities (Table 3). The greatest disparity between regions, with regard to the percentage of OHTs with consolidated work processes, was found for aspects related to action planning, followed by comprehensive care, and between Modality II teams (Table 4). Figure 1 shows the frequencies of Type I and II OHTs with consolidated work processes over the Brazilian macro-regions.

Discussion

The results indicate association between OHT composition (agents) and use of work instruments, with more favorable results for Modality II OHTs, although they also highlight regional disparities in OHT performance.

Modality II frequency was low (11.9%) in relation to total OHTs. The oral health auxiliary and oral health technician professions, which were only regulated

9

Epidemiol. Serv. Saude, Brasília, 30(1):e2020353, 2021

in 2008, show potential for increasing access to oral health services;[18] although criticism exists as to the adequacy of training courses for these professions in relation to the new oral health care model.[11] Greater concentration of Modality II OHTs in the South and Southeast regions may indicate differences in investment in structure and human resources, as already seen in municipalities with higher human development indices.[14] Although decentralization imposes accountability on local public health management, federal funding is an important driving force for progress and guaranteeing the right to health and its insufficiency has stood out in the current context and in projections of future scenarios.[19] Regional distribution of health worker training centers and policies for ensuring human resources in remote areas can also act as mechanisms to induce reduction in these inequalities.[20]

Action planning revealed itself to be challenging, with lower proportions of consolidated Type I and Type II OHTs and greater disparity between the country's regions. Difficulties in using epidemiological data on risks, vulnerabilities and environmental issues, or failure to make this information available, have been a challenge for many teams. Production of health care based on service planning and organization has highlighted limited OHT protagonism in the face of the National Oral Health Policy,[21] and bringing health service management, continuing education and clinical practices closer together continues to be yet another difficulty.[22] Within this dimension, the Northern region had the largest proportion of incipient OHTs. Characterized by its huge territorial size, low demographic density and the predominance of an important ecosystem, namely the Amazon, the Northern region has undergone economic development in recent decades, but its social and health indicators have not kept pace with this progress, giving rise to criticism of the sustainability of this form of development.[23]

Action planning and comprehensive care showed the largest levels of disparity between the regions, especially in relation to the Type II OHTs, due to the difference in the percentage of OHTs with consolidated work processes in the Midwest and Northern regions, in relation to the reference percentage. This difference is even more pronounced for the Type II OHT, since the percentages of OHTs with consolidated work processes

did not differ between modalities in the North and Midwest regions, but were greater for the South, Southeast and Northeast regions. The importance of health equity policies is therefore highlighted, considering the need to address social and economic barriers so that the work process incorporates action planning and favors the achievement of comprehensive care, with the aim of reducing regional disparity.[24]

In all the Brazilian regions, health promotion actions were the aspect for which over 80% of OHTs had consolidated work processes and less disparity between regions. These results may point to reorganization of practices as proposed by the National Oral Health Policy,[21] indicating change from the cure-based model to a practice that adopts a more comprehensive concept of health and addresses social problems based on the integration of different actions, health promotion and recognition of territory.[25] Family Health Strategy principles and National Oral Health Policy principles coming closer together reveals progress with health education activities in the territory, intersectoral actions in the education network and attention paid to priority groups;[8] however, challenges still remain in relation to service user empowerment[26] and the approach restricted to families[27]. The Northeast region stood out as having the highest percentage of OHTs with consolidated health promotion actions; while in the South and Southeast regions significant difference was found between the two OHT modalities in the proportions of consolidated health promotion actions. Historically, the South and Southeast regions have been pioneer in implementing economic activities, funding actions, investing in infrastructure and in public health management models,[28,29] and these conditions may act as catalysts of service organization, favoring the work of the OHT modality comprised of three health professionals.[14]

If on the one hand the results indicate better performance of Type II OHTs in some regions, on the other hand they either suggest that the full potential of this modality has not yet manifested itself; or they reveal the persistence of impediments in its work process. As such the need exists to strengthen health regionalization with regard to action planning, service organization and structure and management of care networks, to the benefit of the work of OHTs. Although this study aimed to provide a cross-sectional excerpt of an evaluation conducted between 2013 and 2014,

the data found reflect progress and challenges which are the consequence of oral health policies in place since OHTs were incorporated in the Family Health Strategy in 2000 and driven forward by the National Oral Health Policy. Brazil has experienced restrictions in resources intended for Oral Health, in addition to the discontinuity of evaluation processes and changes in health service funding model, with negative impacts on the access and quality indicators of these services.[30] The current context and its effects need to be revealed by permanent monitoring and evaluation of service quality.

The methodology used by PMAQ-AB to evaluate teams includes voluntary participation in the program. This may result in selection bias, to the extent that teams that join the initiative may represent those with better structure and work process conditions, thus providing overestimated results. However, latent class analysis (LCA) enabled identification of OHT subgroups with similar performance with regard to work process, as well as comparison between regions and team modalities. Although representativeness was not a criteria for taking part in PMAQ-AB, the distribution and frequency of OHTs in the PMAQ-AB sample in the Brazilian regions was similar to the universe of these teams in Brazil as a whole.[17]

This study explored important aspects in relation to work process instruments and agents, although it did not cover the entire complexity of OHT work process in the context of the Brazilian regions. The population's health expectations and needs, as well as health care organization within OHT territories, were not evaluated and, as such, may affect the epidemiological profile. Despite these limitations, the study portrays OHT distribution and their performance, and indicates the need for future research concentrated more on

understanding regional factors involving health service management, structure and mechanisms influencing the quality of oral health services, capable of interfering in the performance of these teams.

In this national study, the Southeast, South and Northeast regions had the highest frequencies of OHTs with the best work process performance with regard to use of instruments for action planning, health promotion actions and comprehensive health care, and Modality II appears to contribute to this performance. In the North and Midwest regions, work process was similar between Type I and Type II OHTs and this similarity may have contributed to greater disparity between the regions. In conclusion, Modality II oral health teams have the potential to contribute to better work process performance, notwithstanding the findings being unequal between the Brazilian geographic regions.

Authors' contributions

Amorim LP and Ferreira RC contributed to the study concept and design, data analysis and interpretation, drafting and relevant critical reviewing of the intellectual content of the manuscript. Senna MIB contributed to the study concept and design, data analysis and interpretation and relevant critical reviewing of the intellectual content of the manuscript. Paula JS, Rodrigues LG and Chiari APG contributed to data analysis and interpretation and relevant critical reviewing of the intellectual content of the manuscript. All the authors have approved the final version of the manuscript and declare themselves to be responsible for all aspects thereof, including the guarantee of its accuracy and integrity..

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12

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