Brazilian Dental Journal (2019) 30(5): 519-522
http://dx.doi.org/10.1590/0103-6440201902695

ISSN 0103-6440

What Has Changed in the Dental Prosthesis Procedures in Primary Health Care In Brazil?

Mauro Henrique Nogueira Guimarães de Abreu[1], Amanda de Lima Franca Neumann Morato[1], Angélica Maria Cupertino Lopes Marinho[1], Maria Aparecida Melo Cunha[1], Suellen da Rocha Mendes[1]

[1]Department of Community and Preventive Dentistry, School of Dentistry, UFMG - Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil

Correspondence: Mauro Henrique Nogueira Guimarães de Abreu, Avenida Antônio Carlos, 6627, 31270901 Belo Horizonte, MG, Brasil. Tel: +55-31-3409-2442. e-mail: maurohenriqueabreu@gmail.com

The study aimed to identify the changes in the provision of dental prosthetics procedures in the Brazilian primary care. Secondary data from the Brazilian "National Programme for Improving Access and Quality of Primary Care" was assessed and three similar questions related to dental prostheses execution that were answered by the same 9,698 oral health teams, in 2011/2012 and 2013/2014, were compared. There was a 4.3% increase in the number of teams that identified individuals with prosthetic needs; a 0.8% increase in the number of teams that performed impression for prosthetic purposes; and the number of teams that reported performing dental prostheses consultations increased by 0.6%. Overall, there was a small modification in the number of teams that provided dental prosthesis procedures in Brazil.

Key Words: accessibility of health services, health services evaluation, community health, primary care.

Introduction

Historically, the access to dental healthcare in Brazil by the adult and elderly population was limited and excluding. Before the creation of the Brazilian National Health System (known as 'SUS') and the inclusion of the oral health teams (OHT) on it, the access was limited to workers with social security or through the private sector (1). The predominant traditional healthcare model, focused on non-conservative practice, led to a scenario of edentulism and a high prevalence of prosthetic needs (2). The most recent Brazilian epidemiological survey in oral health showed that 68.8% of adults and 92.7% of the elderly had dental prosthesis needs (3). In light of this epidemiological scenario, prosthetic rehabilitation became a priority at the Brazilian Primary Health Care (PHC) in dentistry (4).

Therefore, from the creation of the Brazilian Oral Health Policy in 2003, besides the expansion of OHT and dental facilities throughout the country, Regional Dental Prostheses Laboratories (RDPL) were included at SUS and the confection of dental prostheses became part of the PHC, which was a great advance of the dental healthcare offered by the public sector (4). In Brazil, some proposals for evaluating the performance of health systems have been presented (5). Due to this great expansion, and with the objective of evaluating the quality of the services provided to the population and further expanding this access, the Ministry of Health launched in 2011 the "National Programme for Improving Access and Quality of Primary Care" (PMAQ-AB), which had conducted two complete cycles of evaluation, in 2011/2012 and 2013/2014 (6,7).

Provisional analysis of data obtained from the external evaluation phase of the first and second cycles of PMAQ-AB was conducted, showing that the majority of the dental teams executed preventive, restorative, endodontic and surgical dental procedures. However, concerning the procedures related to dental prostheses, although they identified people in the need, few are the OHT that reported the confection of it (6,7). In addition, evaluating data from the second cycle of PMAQ-AB, Cunha et al. showed that the distribution of teams that performed dental prostheses across the country was unequal and, the provision was almost restricted to partial and total removable prostheses (8).

Given the great demand for dental rehabilitation presented by the Brazilian population, a longitudinal study on the execution of dental prostheses at the PHC become an important strategy to evaluate changes in the healthcare model and for subsidizing the planning of the oral health teams to increase the number of rehabilitated people. Longitudinal studies have been considered the backbone of empirical research in epidemiology and health research (9,10). Despite this, there is a scarce of longitudinal studies in health services research, especially in PHC in dentistry. Thus, the aim of this study is to compare, between the two cycles of the PMAQ-AB, how the OHT have changed the provision of dental prosthetics procedures.

Material and Methods

It is a comparative study using secondary data from OHT adherents to both first and second evaluation cycles

of PMAQ-AB. The PMAQ-AB questionnaire was developed by a partnership between the Brazilian Ministry of Health and six academic institutions. The same institutions selected and trained a total of 989 interviewers that conducted the survey throughout the country. The first cycle occurred between 2011 and 2012 and health managers selected the OHT that would be evaluated; therefore the selection was non-randomized and allowed for a maximum of 50% adherence of the OHT working at that time (n=14,590). Of this total, 12,403 (response rate of 85.01%) completed the survey questions. The second cycle occurred between 2013 and 2014, when 23,251 OHT were working at SUS. For the second cycle, municipal managers indicated the OHT that could go through the evaluation, but no limit of adhesion was stipulated. A total of 19,946 OHT adhered to the programme, however 1,832 were excluded by the PMAQ-AB evaluation criteria, leaving 18,114 (77.9%) OHT evaluated.

This research focused on three questions that assessed the report of dentists about the execution of dental prostheses procedures. Data were collected from face-to-face interviews at the PHC units using a structured questionnaire. The questionnaire was composed by binary questions (yes/no) that were very similar in the two surveys (Table 1). Two questions in the first cycle had three response options (yes, with documents; yes, without documents; no). The options "yes, with documents" and "yes, without documents" were combined into one category.

A total of 9,708 OHT took part in both PMAQ-AB cycles and answered the questions presented previously. There were 10 missing data in the first cycle. Therefore, a comparison of dental prostheses procedures could be carried out in this sample of 9,698 OHT. The two data sets from the first and second cycles of PMAQ-AB were merged to perform the statistical analysis. It was performed a paired comparison of the three previously described variables between the first and second cycle of PMAQ-AB, descriptively, for whole Brazil and stratified by each Brazilian geographical region (North, Northeast, Central, Southeast and South). All the analysis was performed using SPSS (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.).

Table 1. Questions related to dental prostheses execution in the two PMAQ-AB cycles, Brazil, 2011/2012 and 2013/2014

Questions	First cycle (2011-2012)	Second cycle (2013-2014)
Question 1	Does the OHT promote actions to identify people who need dental prosthesis?	Does the OHT promote actions in its territory to identify people who need dental prosthesis?
Question 2	Does the OHT perform impression for dental prostheses in the PHC facility?	Does the OHT perform anatomical and functional impression for dental prostheses?
Question 3	Does the OHT provide the dental prosthesis and follow the patients?	Does the OHT provide return visit to evaluate prostheses adjustment?

The present study was submitted and approved by the National Ethics Research Council and by the Research Ethics Committee of the Federal University of Minas Gerais (protocol number 31525514.9.0000.5149 for the first cycle of the PMAQ-AB; protocol number 02396512.8.0000.5149 for the second cycle of the PMAQ-AB). No individual informed consent was necessary.

Results

Comparing the results from the three variables of both cycles of the PMAQ-AB, considering all OHT, it is possible to identify a increase in the proportion of OHT that identified people in need of dental prostheses between the first and second cycles of PMAQ-AB There was also a increase in the anatomical and functional impression for dental prostheses between the two surveys. The return visits to evaluate the prosthesis adjustment were quite similar when comparing the two cycles of the programme . Southeast and South regions were those with highest frequency of dental prosthesis procedures, with an increase tendency of them between the two surveys. The lowest proportion of these procedures was in North region in both cycles of PMAQ-AB. There was a decrease tendency on execution of those procedures between these two surveys in North and Central regions. There was an increase tendency on provision of dental prosthesis procedures between two cycles in Northeast region (Table 2).

Discussion

It is possible to observe a small increase in the promotion of actions to identify the need for dental prostheses and anatomical and functional impression for dental prostheses. The frequency of provision dental prosthesis is still very low in Brazil.

The increase in the identification of people who needed dental prostheses is an interesting finding. The use of epidemiological surveillance methods in PHC has already been advocated (11). An important feature of epidemiological actions is the fact that it offer subsidies to health services beyond mere traditional clinical observation and intervention (11). Epidemiological indicators are important for understanding the health status of the population and contribute to public health planning. Moreover, the follow-up of the epidemiological information could be particularly useful for monitoring

the organization of health services and to enhance the quality of oral health actions.

There was a small increase in the execution of impression for dental prostheses between 2011/2012 and 2013/2014. Data from the Brazilian Ministry of Health, on the other hand, indicate a more than 50% increase in the number of prostheses between 2011 and 2014 (12). This increase in production could be covered by the same number of OHT or this production could be related to secondary oral health services Thus, it seems to be challenging for the health system to increase the number of teams that perform these procedures. The financing of prosthetic rehabilitation services was established in 2005 by the Ministry of Health. At this time, the RDPLbecame part of SUS to make possible the offer of dental prostheses at the PHC in dentistry. The RDPL are the laboratories that perform the public service of all dental prostheses: removable partial prostheses, dentures, and fixed/adhesive dental prostheses (crown and bridges). The Ministry of Health transfers a monthly fund to the municipalities and states for the production of dental prostheses, according to a production range. In a recent publication describing the challenges faced by PHC during the implementation and maintenance of the RDPL, the authors identified the lack of dental prosthetic technicians and low funding as the main barriers for the successful operation of the LRPD (13).7 The low investment by the SUS has been described by some authors and should be faced by public authorities in Brazil in order to overcome the lack of access to these procedures by the population (14,15).

Table 2. Comparison between dental prosthesis procedures between first (2011-2012) and second cycle (2013-2014) of PMAQ-AB, in Brazilian geographical regions and Brazil

Regions	Questions	First cycle (2011-2012)*	Second cycle (2013-2014)
North (N=608)	1	41.4	40.1
	2	3.6	2.6
	3	6.7	4.3
Northeast (N=3,808)	1	47.2	56.6
	2	3.6	4.7
	3	7.9	12.1
Central (N=759)	1	51.8	46.5
	2	9.1	7.1
	3	14.6	10.1
Southeast (N=2,951)	1	58.9	61.8
	2	16.2	17.0
	3	21.6	19.8
South (N=1,572)	1	53.4	54.8
	2	10.9	12.8
	3	17.7	17.4
Total - Brazil (N=9,698)	1	51.7	56.0
	2	9.0	9.8
	3	14.1	14.7

The increase in the frequency of dental appointments to evaluate dental prostheses adjustment was even more modest from 2011/2012 to 2013/2014. This finding confirms that the number of OHT performing dental prostheses in PHC has probably not increased. On the other hand, return visits to evaluate prostheses adjustment was more frequently carried out than anatomical and functional impression for dental prostheses, in both cycles. This could be explained by the fact that some people may go to other facilities, such as private practices or specialized dental care centers, for the confection and installation of their dental prostheses, but could receive visits from SUS PHC units to check their functionality.

The regional differences identified in the provision of dental prosthesis procedures revealed the inequalities in Brazil. North and northeast regions are the less developed regions and those with highest oral health needs (16,17). Likewise, south and southeast regions have the best social and oral health indicators and the highest provision of those procedures. The decrease in the frequency of reporting dental prosthesis procedures by OHT especially from North and Central regions, between the first and second cycle of PMAQ-AB are also worrisome. However, the increase in the frequency of reporting dental prosthesis procedures by OHT from Northeast region is a quite interesting and positive finding. Differences in the management of PHC services and difficulties in the access of people in deprived areas could explain these regional differences in Brazil (18). It is urgent to carried out more analytical studies to understand and surpass these inequalities.

It is important to emphasize that the PMAQ-AB collected the report of dentists about the execution of such dental procedures/oral health actions, and no complementary questions were made for the negative answers. The absence of such procedures at the PHC units can be explained by the lack of knowledge or training by the dentists, once they are not forced to perform procedures they are not able to do, even if there is an encouragement by the Ministry of Health. Furthermore, this absence can also be explained by the lack of material or structure support at the dental facilities, given the inequity observed between the Brazilian geographical regions. In both situations, it is necessary to find out ways to face the obstacles and expand the access to dental prostheses, aiming to decrease the disparities in

dental healthcare (19,20).

It should be pointed out that it was evaluated a convenience sample. Therefore, it is not possible to extrapolate our findings to all OHT in Brazil. Moreover, although the three questions were very similar in the two surveys, they were not identical. The range in the periods was also not very large. Apart from these limitations, this study evaluated a relevant number of OHT and performed, as far as we could ascertain from the literature, the first longitudinal study on the performance of dental prostheses in PHC. The Brazilian National Health System seems to require advances in the provision of dental prostheses procedures. These advances in PHC could have a positive impact in the quality of life of individuals and populations. It can be concluded that there was a small modification in the number of OHT that provided dental prostheses procedures in Brazil in the period evaluated.

Resumo

O objetivo do presente estudo foi identificar as mudanças na oferta de procedimentos de prótese dentária na atenção primária no Brasil. Dados secundários do "Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica" foram acessados. Foram avaliadas três questões semelhantes, relativas a confecção de próteses dentáriass e respondidas pelas mesmas 9.708 Equipes de Saúde Bucal do Sistema Único de Saúde, em 2011/2012 e 2013/2014 .A análise estatística foi realizada, onde as respostas dos diferentes ciclos de avaliação foram comparadas. Houve um aumento de 4,3% no número de equipes que identificavam necessidade de prótese dentária; um aumento de 0,8% no número de equipes que realizaram moldagem com finalidade protética; o número de equipes que realizavam consulta de retorno para avaliação da prótese aumentou 0,6%. De um modo geral, houve uma pequena modificação no número de equipes que ofertavam prótese dentária no Brasil.

References

1. Junqueira SR, Pannuti CM, Rode SM. Oral health in Brazil – Part I: public oral health policies. Braz Oral Res 2008;22:8-17.
2. Moreira RS, Nico LS, Tomita NE. Oral health of Brazilian elderly: a systematic review of epidemiologic status and dental care access. Cad Saude Publica 2005;21:1665-1675.
3. Peres MA, Barbato PR, Reis SC, Freitas CH, Antunes JL. Tooth loss in Brazil: analysis of the 2010 Brazilian Oral Health Survey. Rev Saude Publica 2013;47:78-89.
4. Pucca GA, Costa JFR, Chagas LD, Silvestre RM. Oral health policies in Brazil. Braz Oral Res 2009;23:9-16.
5. Viavaca F, Uga MA, Porto SL, Laguardia J, Moreira RS. Avaliação de Desempenho de Sistemas de Saúde: um modelo de análise. Cien Saude Colet 2012;17:921-934.
6. Reis CMR, Matta-Machado ATG, Amaral JHL, Werneck MAF, Abreu MHNG. Describing the primary health care actions of oral health teams in Brazil. Int. J. Environ. Res. Public Health 2015;12:667-678.
7. Mendes SR, Martins RC, Matta-Machado ATGM, Mattos GCM, Gallagher JE, Abreu MHNG. Dental procedures in primary health care of the Brazilian National Health System. Int J Environ Res Public Health 2017;14:e1480.
8. Cunha MAGM, Matta-Machado ATG, Lucas SD, Abreu MHNG. Availability of dental prosthesis procedures in Brazilian primary health care. Biomed Res Int 2018;4536707.
9. German National Academy of Sciences Leopoldina. The relevance of population-based longitudinal studies for science and social policies. 2016. German National Academy of Sciences Leopoldina https://www.akademienunion.de/fileadmin/redaktion/user_upload/Publikationen/Stellungnahmen/2016_Stellungnahme_Laengsschnittstudien_EN.pdf. Accessed Jan 9, 2019.
10. Caruana EJ, Roman M, Hernández-Sánchez J, Solli P. Longitudinal studies. J Thorac Dis 2015;7:e537-540.
11. Hannaford PC, Smith BH, Elliot AM. Primary care epidemiology: its scope and purpose. Family Practice 2005;23:1-7.
12. Brasil Ministry of Health. Primary Health Care Department Brasil Sorridente. 2018. IOP Publishing PhysicsWeb. http://dab.saude.gov.br/portaldab/ape_brasil_sorridente.php?conteudo=lrpd. Accessed June 7, 2018.
13. Guimarães MRC, Pinto RS, J.H.L, Amaral JHL, Vargas AMD. Challenges related to dental prosthesis offer in the public health system. Rev Odontol Unesp 2017;46:39-44.
14. Mendes EV. 25 anos do Sistema Único de Saúde: resultados e desafios. Estud Av 2013;27:27-34.
15. Araujo CEL, Gonçalves GQ, Machado JA. Brazilian municipalities and their own expenditures on health: some associations. Cien Saude Colet 2017;22:953-963.
16. Paim J, Travassos C, Almeida C, Bahia L, Macinko J. The Brazilian health system: History, advances, and challenges. Lancet 2011;377:1778–1797.
17. Ministério da Saúde. SB Brasil 2010: Pesquisa Nacional de Saúde Bucal: Resultados Principais. Ministério da Saúde; Brasília, Brasil: 2012. (In Portuguese). http://bvsms.saude.gov.br/bvs/publicacoes/pesquisa_nacional_saude_bucal.pdf. Accessed Jan 8, 2019.
18. Mendes SR, Martins RC, Matta-Machado ATGM, Mattos GCM, Gallagher JE, Abreu MHNG. Dental Procedures in Primary Health Care of the Brazilian National Health System. Int J Environ Res Public Health 2017;14:pii:E1480.
19. Harnagea H, Couturier Y, Shrivastava R, Girard F, Lamothe L, Bedos CP, Emami E. Barriers and facilitators in the integration of oral health into primary care: a scoping review. BMJ Open 2017;7:e016078.
20. Albuquerque MV, Viana ALD, Lima LD, Ferreira MP, Fusaro ER, Iozzi FL. Regional health inequalities: changes observed in Brazil from 2000-2016. Cien Saude Colet 2017;22:1055-1064.

Received January 9, 2019
Accepted May 13, 2019