

Oral Health Observatory/UFPE: strategic information management and digital health actions in oral health to improve governance in SUS

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ABSTRACT

The Oral Health Observatory extension program (OSB/UFPE) aims to manage information and develop digital tools that improve the governance in oral health in the Unified Health System (SUS), through the development of research-teaching-extension. It currently shelters two projects: (1) Digital Health – development of electronic tools for the evaluation of services and health programs – and (2) Oral Health Information Management. The execution of these actions has a remote nature, in digital platforms and on-site at the Oral Health Information Management Laboratory. Aiming to improve the qualification of the actors involved, there has been seminars, courses, and events for each project, as well as the provision of technical and scientific products: research with undergraduate and post-graduate students; elaboration and dissemination of analytical newsletters for health services; development and use of digital health tools. The OSB is a collaborative support work network with multiple academic representatives (professors, undergraduates, residents, masters, and masters in the field of Public Health and Informatics) and services (city and state administrators, managers, professionals, and users of the dental services of the SUS), in which systematically coordinate to implement actions developed collectively. The operationalization of this program has promoted the integration with the service, aiming the improvement of management practices and the practice of professional in this field and has contributed to rapid and timely decision-making, guided on scientific evidence, enabling the improvement of the quality and promotion of health.

Descriptors: Health Information Management. Digital Health Strategy. Governance. Health Education.

1 INTRODUCTION

The National Oral Health Policy (PNSB), Smiling Brazil (“Brasil Sorridente”), consists of a series of measures to guarantee promotion, prevention, and recovery actions regarding the health of Brazilians of all ages, which is fundamental for the quality of life of the population. Its main goal is the reorganization of the practice and the qualification of actions and services that are offered, expanding the access through the Unified Health System (SUS)¹⁻².

The analysis of this policy, in the perspective of access and action coverage developed in the SUS Dentistry, showed that advances were reached between 2002 and 2016. A growth higher than 470% in the number of Oral Health Teams in Brazil was observed, as well as the great financial input and technological increment was evidenced, to enable these health services in the country. The analysis demonstrated that there was an amplification in the availability of these services for the primary and specialized care between 2001 and 2015. Furthermore, it was possible to determine the increase in the population coverage of the health actions from 9% to 43%³. However, between 2015 and 2017, there was a smaller increase in the number of service provision, discrete reduction in funding, progressive reduction in the outreach of production indicators for procedures in primary and specialized care⁴. Thus, despite the advances since the implementation of the PNSB, the recent years point out certain instability in the institutional field⁴, initiating a restrictive political scenario, in which challenges have been imposed in the consolidation of a care network and its consequential governance.

The execution of planning, management and evaluation actions that induce the improvement in the quality of the programs and services in the care network are essential to the operationalization of this policy. Particularly

regarding the financial inducement, studies have shown the importance of the performance evaluation models, known as Payment for Performance (P4P). The model is considered important for the providers because it aims to expand the motivation and involvement of the health professionals with the quality of work and the outreach of the established goals, for example the Quality Development Incentive⁵, as also to favor the improvement of the services, even when considering the existing contextual inequalities⁶.

A longitudinal study that assessed the three cycles of the National Program for Improving Primary Care Access and Quality (PMAQ/AB), a Brazilian governmental institutional performance evaluation program, showed that the performance of the services in more vulnerable contexts improved over time⁶, that is to say, the existing income inequalities in the provision of primary health care were eliminated during the three rounds of the PMAQ, possibly due to the program design that adjusted the financial payment to the socioeconomic inequalities. However, the evidence shown in the literature about the topic points out that there still exists the necessity of methodological improvement, given the variability of P4P evaluative models and its effect in the services⁷.

Despite the inductive advances of the evaluative P4P models, it is relevant to maintain in the political plan the importance of the confrontation about the health inequities, that should direct the implantation of the health care network with equal access and use of services⁶. The health evaluation process should start from basic premises that are intrinsic to the social and Brazilian health system context, namely: the comprehension of health as a right; the recognition that health is integral; the understanding that the information generation process must serve as action, therefore the

refinement of the decision-making process; and, lastly, the pursuit of the evaluation for the improvement in the quality of the services and health programs⁶.

In the last decades, the initiatives to institutionalize health assessment in Brazil have increased, being the National Program for Improving Access and Quality of Primary Care (PMAQ/AB) and Dental Specialty Centers (PMAQ/CEO)⁸ two evaluative examples in the PNSB context. Technical and scientific products have been developed^{9,10}.

One of the criticisms that has been made to the assessment model operationalized by the PMAQ refers to the distance between the time elapsed between research and certification, delaying any decision-making needs. Therefore, the use of electronic tools for the governance would be an alternative, leading to agility, aiming at modernizing the management, rationalizing decisions and the practices with evidence. One of the tools is the “CEO Portal”^{11,12}, associated with the management of health information using information systems and research databases.

Effectively, there is a promising scenario for the expansion of Digital Health (SD), which brings several possibilities for improving a health system, both for the implementation of health information systems and the introduction of various information and communication technologies (TIC). This enables interaction, communication, and immediate availability of information for social actors, favoring faster decision-making¹⁴.

The conception of technology is used in our daily practices as a way of product and/or equipment, in a simplistic manner, having the technology theme be incorporated as a process and the changes that can organize human relationships or help in decision-making¹⁵. In the health setting, the concept of technology embraces any intervention that can be used for

health promotion and does not only include those that directly assist with procedures or diagnosis, but also support systems, information collection, decision-making and surveillance¹⁶.

A recent integrative literature review on the topic of SD and health governance investigated eight articles, published from 2008 to 2018, identifying experiences in the assessment of health technologies in 25 countries, with shared management practice, in addition to analyzing the Federal Law Project No. 9,617/2018, which was included for proposing shared management through internet communication. The study pointed out that there is an expansion in the incorporation of technologies in health and their constant development in the national and international context. Shared health management, through the TIC, is configured as a digital health intervention that can even strengthen social participation¹⁷.

In addition to the evidence demonstrated by studies and local initiatives, it appears that the SD strategy has been established as a public policy promoted by the Ministry of Health. The Digital Health Strategy for Brazil for 2028 (ESD28), that stands out as a document that seeks to systematize and consolidate the work carried out over the last decade¹⁸, materialized in various documents and, particularly, in the National Policy on Information and Computational Health¹⁹, in the e-Health Strategy for Brazil²⁰ and in the Action, Monitoring and Evaluation Plan of Digital Health for Brazil (PAM&A 2019-2023)²¹. Technological advance in society is a fact and it is necessary to consider the use of technologies in health systems, increasing the scope of interventions in the care and management context¹⁸.

The substantial technological innovation and improvement in the productive and social health environment should be a setting that promotes integration between university and

health care network, so that depending on the context and its necessities, they may develop technical and scientific products with interdisciplinary and multi-professional nature, that are aligned to viable solutions for the transformation of these realities.

Thus, the Oral Health Observatory extension program has implemented projects to analyze/assess services and programs, manage information and develop electronic tools to improve the oral health governance in the SUS, through research, education, and extension. It is considered that this triad induces the university into developing work that is integrated to reality with higher emphasis in the application of knowledge, problematizing it for the development and performance in health according to the SUS²².

2 EXPERIENCE REPORT

The OSB experience report is of a descriptive and exploratory nature, with its respective projects and main activities developed.

The OSB has been established as an extension program of the UFPE since 2016, under the coordination of researchers from the Gest Bucal research group (CNPq). The observatory is held at the Ministry of Health Collaborator Center (Cecol/MS) in Oral Health Surveillance of the UFPE, which is part of a Collaborator Center network certified by the Ministry of Health to support health surveillance actions developed in the SUS context.

The OSB is a collaborative network between university and public health services, targeting different social actors: administrators, managers, professionals, and users of the care network. The program aims to qualify these actors for a better role in the intervention of reality, but overall, the offer of technical and scientific products for the improvement of the

health governance. It is established as technical and scientific reference for the discussion, implementation and execution of actions recognizing the importance of the public health field in the Dentistry education and the need for a connection with services and community.

The program covers the state of Pernambuco, which possesses a public service health network that provides dental services in Primary Healthcare Units, CEO, in addition to emergency dental services, dental prosthesis labs, diagnosis and therapy support services and hospitals as tertiary care.

The process of planning and replanning the OSB's activities occurs from the general coordination of a team of professors composed of the coordinator (professor linked to the Academic Area of Public Health/CCM); the deputy coordinator (professor of the Public Health Program/CAV); and a collaborator professor (Dentistry Program – Department of Clinical and Preventive Dentistry/CCS). The work team is composed of professors, undergraduate students, and master students of the Public Health and Informatics field; dental researchers (Masters that are former post-graduate students operating on the projects) of the public health services. The project's management team is composed of professors, master students and dental researchers.

In the face of the expansion of its actions/activities, the OSB shelters two considerable projects: 1. Digital Health – development of electronic tools based in evaluative programs and for the Oral Health Surveillance in the health territories – and 2. Information Management in Oral Health, which promotes the execution of courses, events, and assistance for the targeted audience (administrators, managers, professionals) resulting from the projects.

The program is linked to research affiliated

with the Ministry of Health of the 1st cycle of the PMAQ/CEO (public data) and 2nd cycle, approved by the Ethics Committee in Research of the Health Sciences Center of UFPE, under the report 2.478.524, CAAE 23458213.0.0000.5208.

It is considerable to note that the OSB maintains alliance with the Dental Public Health Residency of the city of Recife's Health Department, being a mandatory internship field for 12 1st year residents (R1) and optional internship for 2nd year residents (R2), with the implementation of a specific work plan. The program has a partnership with the State Oral Health Coordination of Pernambuco to perform the program's actions. The Regional Dentistry Council of Pernambuco supported the execution of specific research about the impact of COVID-19 on the oral health team. The program also has the support of the General Oral Health Coordination of the Ministry of Health.

The Information Management Laboratory in Oral Health/Teaching and Services Integration Centre of the Cecol/MS/UFPE has been the place to operate this program (with more than 30 computers connected to the network). Visits to the health services also occur to execute actions and interventions linked to the research, as well as the presentation of results in decision-making stages such as Health Councils and Inter-manager Health Committees. However, due to the context of social distancing caused by the new coronavirus pandemic, the activities have occurred preferably through digital platforms provided by the UFPE.

The work plan constructed for the OSB is based on the components of the teaching-research-extension tripod, directed to the scientific and technical production for each project and its activities are divided in three branches: teaching and building knowledge;

research; and extension-intervention. In all branches, there is an influence on the formation of the team's internal competence (students) and elaboration of technical and scientific products, under the supervision of the team of professors (Chart 1).

The teaching activities are executed mainly by the undergraduate students under the supervision of the team of professors, it is the basis of the theoretical-conceptual framework construction for the practice of other OSB activities.

The research executed by the students of the OSB must be capable to produce comprehension about the reality and especially about the importance of decision-making based in evidence with the goal of overcoming challenges, keeping the SUS reality as an object of investigation and intervention for change. The students are stimulated to participate in the Institutional Scientific Initiation Scholarship Program (PIBIC), which promotes a scientific emphasis to the new talents that are about to graduate; and the Institutional Technological Development and Innovation Scholarship Program (PIBITI), aims at learning the techniques and technological research methods, as well as stimulates the development of technological and creative thinking, resulting from the conditions created by the direct confrontation with the research problems. The students may have scholarships or participate as volunteers – especially through the support of the National Scientific Development Council (CNPq) and the Coordination for the Improvement of Higher Education Personnel (Capes). Furthermore, undergraduate term papers are also executed. The OSB also gathers post-graduate student research, performs Residency Term Papers and dissertations.

The extension actions result from establishing the interaction of the OSB with the

oral health care network in the SUS, seeking an intervention to improve the governance through the provision of technical and scientific products.

Chart 1. Description of the projects and branches of the Oral Health Observatory of the Federal University of Pernambuco.

ORAL HEALTH OBSERVATORY/UFPE		
BRANCHES	PROJECTS	
	Digital Health	Information Management
Teaching and knowledge construction	<ul style="list-style-type: none"> - Bibliographic gathering and study base construction - Scientific Literature Reviews - Participation in seminars and internal thematic workshops 	<ul style="list-style-type: none"> - Bibliographic gathering and study base construction - Scientific Literature Reviews - Participation in seminars and internal thematic workshops - Production of media content for social media
Research	<ul style="list-style-type: none"> - Development of PIBITI* projects - Construction of electronic tools (planning, development, and implementation) - Investigation of usability by users of the tools - Participation in scientific events - Scientific production of articles and academic work (undergraduate, residency and master programs) 	<ul style="list-style-type: none"> - Development of PIBIC** projects - Collection, systematization, and analysis of data from oral health services - Production of technical newsletters - Construction of service monitoring panels - Participation in scientific events - Scientific production of articles and academic work (undergraduate, residency and master programs)
Extension-intervention	<ul style="list-style-type: none"> - Implementation and dissemination of electronic tools - Evaluation of the effectiveness of the use of electronic tools - Publicizing information to guide decision-making (courses, workshops, counseling) 	<ul style="list-style-type: none"> - Publicizing technical products - Execution of events, courses, and workshops - Advising the targeted audience for decision-making, improving governance, intervening in services and advances in health

* Institutional Technological Development and Innovation Scholarship Program; ** Institutional Scientific Initiation Scholarship Program

The technical and scientific products of the OSB are developed since 2016. More than 20 technical newsletters were produced with annual normative evaluations of oral health establishments, that have been used to analyze the production of procedures, both from the perspective of the care profile and the accomplishment of goals that were set for the health establishments. It was observed that there was a reduction in the fulfillment of goals of the CEO and rearrangements in the Primary Care profile, especially after the implementation of the eSUS.

The development and implementation of the CEO Portal use, electronic tool that supports

the CEO governance in Pernambuco¹⁴ may be considered a successful experience of the OSB in the teaching-research-extension branch. A qualification of the participants was undertaken through seminars and workshops before, during and after the use of the portal, about evaluation, planning and use of technology. The research brought evaluative results with improvements on the classifications throughout time, although the challenge for people management and financing remained, with lower classifications; and good user satisfaction of the CEO was observed in the external evaluation. Still, this intervention showed a positive impact that this type of technological solution has on institutionalizing

the CEO evaluation and on the inclusion of eHealth strategies on the service management for quality improvement. The impact was investigated with the participants¹³ and subsequently by the repetition of the research in the Pernambuco capital²³. A book about the experience with the CEO Portal was published¹⁴.

More than 30 scientific initiation and technological development projects were also developed: undergraduate term papers, residency term papers, dissertations, and thesis. It is important to highlight dissertations that, through research actions, analyzed the construction process of local planning in a CEO in the city of Recife with the use of Situational Strategic Planning (PES). The absenteeism in the CEO was a problem chosen by the group (managers, professionals, and users) for the construction process of the plan, through the design of operations and actions. The intervention allowed to include the PES as a possibility for the empowerment of the team and as a contribution for the strengthening of this important strategy in the oral health care network²⁴. From this initiative, the city deepened the analysis on the absenteeism in the city, among the actions, the establishment of the regulatory dentist as an innovative strategy in the regulation of assistance flows in Dentistry.

The OSB executed various workshops, seminars, courses, and advisories, including the production of content for social media: Facebook²⁵, Instagram²⁶, YouTube²⁷, and Twitter²⁸. In the collaborative network execution between the university and oral health services, it was possible to present, disseminate and discuss about the technical and scientific products made by the students and the interaction with the representatives of the social actors of the service network for the intervention.

All these productions and actions promote the execution of this program, through the

teaching-service integration, aiming at improving the oral health governance.

3 FINAL CONSIDERATIONS

Considering the theoretical milestones that substantiate the OSB practice, namely the complexity and the Paulo Freire mindset, in the sense of linking knowledge as a theoretical methodological artifact of the complexity, and linking to the context in which it is inserted, it reflects the Paulo Freire mindset of toning its own practice as an object of intervention of reality and consequent ownership of where one lives and works, and the improvement of people's quality of life through the improvement of health services and programs^{29,30}.

The education in Dentistry for the SUS and executed in it is an indispensable aspect for the professional future. The OSB program has provided the participants with activities in teaching to deepen the theoretical-conceptual aspect of relevant issues of the SUS. The problematic is better explored in the research about reality, observed in data that is available from the state of Pernambuco and Brazil, as well as in research with a primary and interventionist nature in some specific cities, such as the research in the CEO Portal. Considering the CEO Portal experiment, other research based on the use of technologies are being developed for the strengthening of the eHealth strategy in the SUS.

The OSB's mission has been to assist the oral health care network to execute evaluations, service and program planning and information management for decision-making, therefore the results observed are given back, discussed with the services for the necessary intervention. Furthermore, in the pandemic context, a media production was manufactured to disseminate applicable knowledge and research that is directed to the entire oral health team³¹.

The improvement in the service's quality,

in the last instance, makes it possible for a better impact in the population's health, with the reduction of epidemiologic indicators, overcoming oral problems and health promotion.

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RESUMO

Observatório de Saúde Bucal/UFPE: ações estratégicas de gestão da informação e de saúde digital em saúde bucal para melhoria da governança no SUS

O programa de extensão Observatório de Saúde Bucal (OSB/UFPE) objetiva a gestão da informação e desenvolvimento de ferramentas digitais para a melhoria da governança na saúde bucal no Sistema Único de Saúde (SUS), por meio do desenvolvimento de pesquisa-ensino-extensão. Atualmente, abriga dois projetos: (1) Saúde Digital – desenvolvimento de ferramentas eletrônicas para avaliação de serviços e programas de saúde – e (2) Gestão da Informação em Saúde Bucal. A execução das ações tem caráter remoto, nas plataformas digitais e presenciais no Laboratório de Gestão da Informação em Saúde Bucal. Para cada projeto, visando melhorar a qualificação dos

atores envolvidos, tem havido seminários, cursos e eventos, bem como a disponibilização de produtos técnicos e científicos: pesquisas com estudantes de graduação e pós-graduação; elaboração e divulgação de boletins analíticos de serviços de saúde; desenvolvimento e uso de ferramentas de saúde digital. O OSB constituiu-se como uma rede colaborativa de trabalho com agentes múltiplos da academia (docentes, graduandos, residentes, mestrandos e mestres da área de Saúde Coletiva e Informática) e do serviço (gestores municipais e estadual, gerentes, profissionais e usuários dos serviços odontológicos do SUS), os quais se articulam sistematicamente para implementação das ações desenvolvidas conjuntamente. A operacionalização deste programa tem promovido a integração com o serviço, visando à melhoria das práticas da gestão e da atuação de profissionais nessa área e tem contribuído para a tomada de decisão ágil e oportuna, pautada na evidência científica, possibilitando melhoria de qualidade e promoção de saúde.

Descritores: Gestão da Informação em Saúde. Estratégia de Saúde Digital. Governança. Educação em Saúde.

REFERENCES

1. Brasil [Política Nacional Brasil Sorridente (2004)]. Diretrizes da Política Nacional de Saúde Bucal [Internet]. Brasília, DF: Ministério da Saúde. 16 p. [Cited June 10, 2021]. Available from: http://portal.saude.gov.br/portal/arquivos/pdf/politica_nacional_brasil_sorridente.pdf.
2. Brasil. Passo a Passo das Ações da Política Nacional de Saúde Bucal. Brasília, DF: Ministério da Saúde, 2016. 20 p. [Cited June 10, 2021]. Available from: http://189.28.128.100/dab/docs/portaldab/publicacoes/acoes_politica_saude_bucal.pdf.
3. Pucca Junior GA, Gabriel M, De Almeida FCS, Paludetto Junior M, De Lucena EHG, De Melo NS de. Acesso e cobertura populacional à Saúde Bucal após a implementação da Política Nacional De

- Saúde Bucal “Brasil Sorridente”. *Tempus*. 2020; 14:29-43.
4. Chaves S, Almeida A, Reis C, Rossi T, Barros S. Política de Saúde Bucal no Brasil: as transformações no período 2015-2017. *Saúde Debate*. 2018;42(2):76-91.
 5. Zermiani TC, Helena Baldani Pinto M, Gomes Ditterich R. Pagamento por desempenho na atenção primária à saúde em Curitiba-PR: incentivo ao desenvolvimento da qualidade. *Soc Cult*. 2018;21(2):98-116.
 6. Kovacs R, Maia Barreto J, da Silva E, Borghi J, Kristensen S, Costa D et al. Socioeconomic inequalities in the quality of primary care under Brazil's national pay-for-performance programme: a longitudinal study of family health teams. *Lancet Global Health*. 2021;9(3):e331-9.
 7. Kovacs R, Powell-Jackson T, Kristensen S, Singh N, Borghi J. How are pay-for-performance schemes in healthcare designed in low- and middle-income countries? Typology and systematic literature review. *BMC Health Serv Res*. 2020;20(1):291.
 8. Goes PSA, Figueiredo N. Conceitos, teorias e métodos da avaliação em saúde. In: Goes PSA, Moysés SJ. Planejamento, gestão e avaliação em saúde bucal. São Paulo: Artes Médicas, 2012. 248 p.
 9. Goes PSA, Figueiredo N, Martelli P, Luvison I, Werneck M, Ribeiro M et al. Theoretical and Methodological Aspects of the External Evaluation of the Improvement, Access and Quality of Centers for Dental Specialties Program. *Pesq Bras Odontoped Clin Integr* 2018;18(1):1-11.
 10. Figueiredo N, Goes PSA, Martelli P. Relatório do 1º Ciclo da Avaliação Externa do Programa de Melhoria do Acesso e da Qualidade dos Centros de Especialidades Odontológicas. Recife: Editora UFPE; 2016. 100 p.
 11. Figueiredo N, Goes PSA, Martelli P. Os caminhos da saúde bucal no Brasil: um olhar quali e quanti sobre os Centros de Especialidade Odontológicas (CEO) no Brasil. Recife: Editora UFPE, 2016. 268 p.
 12. Santos LX, Almeida D, Silva J, Rizental A, Goes PSA, Figueiredo N. A Web-Based Tool for Monitoring and Evaluating Health Care Services: An Analysis of Centers for Dental Specialties Webpage. *Pesq Bras Odontoped Clin Integr* 2018; 18(1):1-13.
 13. Figueiredo N, Goes PSA. O Portal CEO: um experimento em saúde digital à gestão dos Centros de Especialidades Odontológicas. Recife: Ed. UFPE, 2020. 328 p.
 14. Butler D. When Google got flu wrong. *Nature*. 2013;494(7436):155-6.
 15. Sales O, Pinto V. Tecnologias digitais de informação para a saúde: revisando os padrões de metadados com foco na interoperabilidade. *RECIIS*. 2020;013(1):208-21.
 16. Araújo WS, Loureiro JMM, Freire GHA. Bibliotecas, Usuários e Tecnologias Informativas: perspectivas e transformações. *Rev Ibero-Am Ciênc Inform*. 2016;7(2):65-77.
 17. Evangelista ALP, Barreto ICHC, Andrade LOM. Saúde Digital e Gestão Compartilhada: como podem ser associadas? *Rev Saúde Digital Tecnol Educac*. 2019;4(2):114-30.
 18. Brasil. Ministério da Saúde. Secretaria-Executiva. Departamento de Informática do SUS. Estratégia de Saúde Digital para o Brasil 2020-2028 [recurso eletrônico] / Ministério da Saúde, Secretaria-Executiva, Departamento de Informática do SUS. – Brasília: Ministério da Saúde, 2020. 128 p.
 19. Brasil. Ministério da Saúde. Portaria nº 589, de 20 de maio de 2015. Institui a Política Nacional de Informação e Informática em

- Saúde (PNIIS) [Internet]. Brasília, DF: MS, 2015. [Cited June 10, 2021]. Available from: http://bvsmms.saude.gov.br/bvs/saudelegis/gm/2015/prt0589_20_05_2015.html.
20. Brasil. Ministério da Saúde. Comitê Gestor da Estratégia e-Saúde. Estratégia e-Saúde para o Brasil [Internet]. Brasília, DF: MS, 2017. [Cited June 10, 2021]. Available from: <https://www.conasems.org.br/wp-content/uploads/2019/02/Estrategia-e-saude-para-o-Brasil.pdf>.
21. Brasil. Ministério da Saúde. Departamento de Informática do SUS. Plano de ação, monitoramento e avaliação da estratégia de Saúde Digital para o Brasil 2019-2023 [Internet]. Brasília, DF: MS, 2020. [Cited June 10, 2021]. Available from: <https://saudedigital.saude.gov.br/wp-content/uploads/2020/04/PAMA-Saude-digital.pdf>.
22. Borato A, Pereira MVS, Bordin D, Martins ADS, Fadel CB. Valoração das práticas de ensino, pesquisa e extensão entre concluintes de Odontologia. *Rev Abeno*. 2018;18:103-15.
23. Almeida DR de S; Santos LX; Figueiredo N. Portal CEO: avaliação da efetividade de uma ferramenta webbased para gestão de Centros de Especialidades Odontológicas frente à tomada de decisão. *Rev Saúde Digital Tecnol Educ*. 2021; 6(1): 1-20.
24. Paz, RC. Análise do processo de construção de um planejamento local em um Centro de Especialidades Odontológicas. 2019. Dissertação de Mestrado. Saúde Coletiva, Universidade Federal de Pernambuco.
25. Observatório de Saúde Bucal UFPE. Facebook [Internet]. 2021. [Cited June 10, 2021]. Available from: <https://www.facebook.com/ObservatoriodeSaudeBucalUFPE>.
26. Observatório de Saúde Bucal UFPE [Internet]. Instagram.com. 2021 [Cited June 10, 2021]. Available from: <https://www.instagram.com/observatoriodeSaudeBucalUFPE>.
27. Observatório de Saúde Bucal UFPE [Internet]. Youtube.com. 2021. [Cited June 10, 2021]. Available from: https://www.youtube.com/channel/UCGaWbA62H2mGECx_lcEox_g.
28. Observatório de Saúde Bucal UFPE [Internet]. Twitter.com. 2021. [Cited June 10, 2021]. Available from: <https://twitter.com/osbufpe>.
29. Freire, P. Pedagogia da autonomia: saberes necessários a prática educativa. São Paulo: Editora Paz e Terra, 2004. 148 p.
30. Morin, Edgar. Religação dos saberes. São Paulo: Editora Bertrand Brasil, 2001. 584p.
31. Gaspar GS, Figueiredo N, Lucena EHG, Ceissler CAS, Cavalcanti RP, Goes PSA. characterization of dental surgeons of Pernambuco State in the COVID-19 pandemic context: preliminary data. *Pesqui Bras Odontopediatria Clín Integr*. 2020; 20(suppl 1):e0133.

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