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Political-Economic Awareness for Equity in Oral Health

Consciência Político-Econômica para Equidade em Saúde Bucal

Conciencia Político-Económica para la Equidad en Salud Bucal

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ABSTRACT

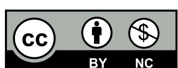
Objective: The research explored the political-economic awareness of Dentistry undergraduate students and graduates towards vulnerable populations and social inequities in dental care. **Method:** The method used was an online survey comprised of a questionnaire with 24 multiple-choice questions and 7 open-ended questions. Sociodemographic data and answers to objective questions were analyzed using descriptive statistics measuring variability, and responses to open-ended questions were compiled and coded using the content analysis method. **Results:** The questionnaire was accessed by 99 individuals, however, only 38 provided full answers. The study's sociodemographic profile is made up of recent graduate young adult women who work in the state of São Paulo. The perception of the job market is influenced by personal experiences and level of education. Respondents are aware of the social determinants of oral health, value community outreach projects, and are willing to serve vulnerable populations, expressing thus a critical attitude and commitment to community social wellness. **Conclusion:** The interrelationship between undergraduate students and those who graduated with Brazil's Unified Health System points to awareness of equal access to dental care and the need that health professional and community work in collaboration, articulating praxis to the social context. Since learning is fragmented, changes in the curriculum are necessary in order to achieve multidisciplinary and multidimensional integration in oral health promotion.

Descriptors: Dentistry Education; Health Equity; Dentistry; Professional Practice; Oral Health; Social Vulnerability.

RESUMO

***Objetivo:** Explorar a consciência político-econômica de graduandos e graduados em Odontologia quanto às populações vulneráveis e às iniquidades sociais na assistência odontológica. **Método:** A implantação foi pelo método survey on-line, com a aplicação de um questionário com 24 questões de múltipla escolha e sete questões discursivas. Os dados foram analisados pela estatística descritiva como medida de variabilidade. As respostas das questões abertas foram compiladas e codificadas pelo método de análise de conteúdo. **Resultados:** O questionário foi acessado por 99 indivíduos, obtendo-se 38 respostas integrais. O perfil sociodemográfico é constituído por mulheres, jovens adultas, recém-graduadas que trabalham no Estado de São Paulo. Compreende-se que a percepção sobre o mercado de trabalho sofre influência, dependendo das vivências pessoais e da formação acadêmica. Os respondentes conhecem os determinantes sociais de saúde bucal, valorizam projetos de extensão e se mostram dispostos a atender populações vulneráveis, manifestando criticidade e comprometimento com o bem-estar social coletivo. **Conclusão**: A inter-relação do graduando ou egresso com o Sistema Único de Saúde indica consciência sobre igualdade de acesso a cuidados odontológicos e a necessidade de colaboração entre o profissional e a comunidade, articulando a prática ao contexto social. Para integração multidisciplinar e multidimensional na promoção da saúde bucal, são necessárias mudanças na grade curricular, pois o ensino é fragmentado.*

***Descritores:** Educação em Odontologia; Equidade em Saúde; Odontologia; Prática Profissional; Saúde Bucal; Vulnerabilidade Social.*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RESUMEN

***Objetivo:** Explorar la conciencia político-económica de estudiantes de grado y egresados en Odontología respecto a las poblaciones vulnerables y a las inequidades sociales en la atención odontológica. **Método:** La implementación se realizó mediante el método survey en línea, con la aplicación de un cuestionario compuesto por 24 preguntas de opción múltiple y siete preguntas abiertas. Los datos fueron analizados mediante estadística descriptiva como medida de variabilidad. Las respuestas de las preguntas abiertas fueron compiladas y codificadas a través del método de análisis de contenido. **Resultados:** El cuestionario fue accedido por 99 individuos, obteniéndose 38 respuestas completas. El perfil sociodemográfico está constituido principalmente por mujeres, jóvenes adultas, recién egresadas que trabajan en el Estado de São Paulo. Se comprende que la percepción sobre el mercado laboral se ve influenciada por las experiencias personales y la formación académica. Los encuestados conocen los determinantes sociales de la salud bucal, valoran los proyectos de extensión y se muestran dispuestos a atender a poblaciones vulnerables, manifestando sentido crítico y compromiso con el bienestar social colectivo. **Conclusión:** La interrelación del estudiante o egresado con el Sistema Único de Salud brasileño indica conciencia sobre la igualdad en el acceso a los cuidados odontológicos y la necesidad de colaboración entre el profesional y la comunidad, articulando la práctica con el contexto social. Para una integración multidisciplinaria y multidimensional en la promoción de la salud bucal, son necesarios cambios en la malla curricular, dado que la enseñanza es fragmentada.*

***Descriptores:** Educación en Odontología; Equidad en Salud; Odontología; Práctica Profesional; Salud Bucal; Vulnerabilidad Social.*

INTRODUCTION

Brazil has one of the highest rates of social inequality in the world. Its severe social inequality directly impacts both general and oral health, either hindering or preventing universal access to social and financial resources and benefits.[1] In oral health, a fundamental and inseparable part of general health, it is essential to include in its curriculum contents[2] from the social determinants of health (SDOH) (e.g., social, economic, cultural, psychological, and behavioral conditions), as these indicate risk factors, health deterrents,[3] and priority groups in public health programs.[4]

The education of dentists oriented toward preparing the health professional to practice in the Brazilian Unified Health System (SUS) is supported by the National Curriculum Guidelines (DCN), and reinforces the understanding of social, cultural, and economic realities.[5] The DCN emphasizes that the undergraduate programs in Dentistry should educate professionals equipped with critical thinking, possessing competencies and skills to work at all levels of health care. They should be able to work in teams and participate in programs oriented toward the promotion, sustenance, prevention, protection, and recovery of one's health.[6] To achieve this, the Dentistry curriculum should focus on the health-disease process and population needs, seeking the integration of knowledges—bypassing a premature specialization of the student—and an emphasis on the concepts of integration, interprofessional collaboration, interdisciplinarity, and multidisciplinarity for one's academic education.[7]

The aforementioned concepts are applicable to the reality of Brazil's SUS and existing models of health care, such as in the Primary Health Care (PHC) and the Family Health Strateg*y* (FHS). Although the goal of the degree in Dentistry is to form generalist dentists, over the years there has been an increase in student interest in professional practice in the FHS.[8]

The implementation of the National Oral Health Policy (PNSB) in 2004, aimed at the individual, family, and community,[2] contributed to the betterment of oral health in an integrated manner. Aligned with SUS' principles and guidelines, it proposed new pedagogical approaches and university outreach projects. The university where this research was conducted is a case in point of such changes. The public state university, located in the Southeast region of Brazil, provides free dental services to the population and has included in its curriculum courses such as *Human Sciences* and *Community Health*. These courses promote both individual and group thinking, incorporating vulnerable populations in a critical, reflective, and investigative way regarding the health-disease process and their SDOH.[9] All of this is accomplished during undergraduate studies, in collaboration with university outreach projects involving the SUS.[10] The Oral Oncology Center and the Dental Care Center for People with Disabilities have been exemplar in implementing an undergraduate curriculum aimed at a dentistry practice for the SUS and which fully includes outreach projects pedagogically.

A curricular outreach initiative entitled *Sorriso Feliz* (tr. Happy Smile),[11], implemented among Dentistry undergraduates, has enhanced student knowledge and skills through clinical activities with children in the age group between zero and five years old from daycare centers and municipal schools. The activities of *Sorriso Feliz* raise awareness on cavity prevention among early childhood educators, parents, and community health agents. In partnership with the Brazilian government, the initiative belongs to the activities of the PHC at the level of social

support networks and is adapted to the environments and conditions of the population. Students then learn how children are encouraged to take care of their teeth, transforming the former into multiplying agents of oral hygiene practices in the latter's homes.[11]

Aware of the challenge of Dentistry undergraduate students to promote oral health according to the Brazilian reality, the research aimed to answer the following question: "What evidence of social empathy and political-economic awareness for equity in oral health care can be gathered among Dentistry undergraduate students and graduates during the period of 2015-2021?" The goal of the research was to explore the social empathy of Dentistry undergraduate students and graduates toward vulnerable populations and social inequities in dental care.

METHOD

After approval of both the Brazilian (CEP-4455.991) and Canadian (REB:2021-037) universities' Research Ethics Committees, the online research was implemented with the implicit consent of all respondents. The design used was that of the exploratory research with the online survey,[12] observing issues of probabilistic sampling and coverage biases due to unequal access to the internet and the lack of sampling frames and their benefits, such as cost reduction and errors, as well as quick and easy data collection from a widely distributed geographical sample.[12] The instrumentation used in the study comprised of an original questionnaire created by the first and third authors, later revised and improved by a dentist and three Brazilian Dentistry undergraduate students. It consisted of 24 multiple-choice questions and seven open-ended questions requiring narrative responses exploring the thoughts, attitudes, plans, and intentions of Dentistry undergraduate students regarding their social awareness in recent years. The questionnaire also inquired newly graduated professionals on their views on public/private health care of vulnerable populations and social inequities in dental care. The internal consistency of the questionnaire was not assessed by external experts, and its validity was not established, which arguably weakens both the construct's and its external validities.[12]

The population assessed comprised 250 graduates and current undergraduate students from the Faculty of Dentistry at the São Paulo State University Júlio de Mesquita Filho (UNESP), Araçatuba campus. The secretariat of the Department of Diagnosis and Surgery of the Brazilian university recruited the respondents through an email invitation, which included the link to the data collection platform. For sampling, two convenience samples were composed.[12] In the first subsample, the potential respondent should have completed their Dentistry undergraduate degree starting from the year of 2015. In the second subsample, the participant should be a student enrolled in the final year of the Dentistry undergraduate program and should have passed all courses from their previous year.

For data collection, the questionnaire was available from June to December 2021 on an online platform of the Canadian university, to which the study's principal researcher is affiliated. As per the results' analysis, descriptive statistics as a measure of variability (frequency and percentage) was applied to the sociodemographic data and responses to multiple-choice questions. The method allowed for the description, summary, and synthesis[13] of a new aspect or unexplored characteristics of the new dataset.[13] The short narrative responses to the open-ended questions were compiled by the platform and then manually coded using content analysis to identify similarities, contrasts, and semantic polarities.[14] Confirmation of the interpretation of the qualitative findings of the respondents was not possible due to the nature of the research and integrity of anonymity.

RESULTS

This section presents the study's results with descriptive statistics and the respondents' open-ended answers, allowing the exploration of the bases, justifications, and experiences of the respondents on their social awareness and political-economic consciousness for equity in oral health. The questionnaire was accessed by 99 individuals (38.4% of the estimated population), but only 38 (15.2%) gave consent and responded in full, resulting in a participation rate lower than the average of 17% in questionnaire-based surveys.[12]

Table I presents the respondents' sociodemographic profile, highlighting them as young female adults, recent graduates, and practicing their profession mostly in the state of São Paulo. Table II presents the scope of experiences of the respondents both as volunteers in oral health outreach activities which led them to choose the profession due to the expected autonomy. Table III emphasizes the respondents' ability to facilitate access to preventive and/or curative dental care. Despite their engagement and social consciousness toward caring for populations in situations of vulnerability and precariousness, the respondents report they have encountered difficulties in their attempts to

provide care. Table IV highlights the type of action and alternative approach that the dentist should adopt to correct the inequality of access to dental care. The emphasis here is on recognizing how an alliance with political and social community leaders can bring about collaboration between health professionals and the community. Table V focuses on the interrelationship between the dentist and the SUS system, aiming to promote equal access to dental care. The results indicate the goal of equal access may be achieved through possible contributions and some necessary changes, especially concerning multidisciplinary and multidimensional integration in promoting oral health.

Table I – Sociodemographic identification of undergraduate students or graduates in Dentistry. Araçatuba, São Paulo, Brazil, 2023.

Age* – N (%)		Sex* – N (%)		Academic year – N (%)		Years since graduation* – N (%)		Location of dental practice * – N (%)	
Total of responses (n=38)		Total of responses (n=38)		Total of responses (n=6)		Total of responses (n=36)		Total of responses (n=44)	
21-23 years	4 (10)	Men	9 (24)	Year 4 integral	1 (17)	Less than 1 year	3 (8)	Goiás	1 (2)
24-26 years	13 (34)	Women	29 (76)	Year 5 integral	2 (33)	Between 1 – 2 years	10 (28)	Mato Grosso do Sul	1 (2)
27-29 years	12 (31)	--		Year 6 (evening)	3 (50)	Between 2 – 3 years	6 (17)	Minas Gerais	1 (2)
30-32 years	4 (10)	--		--		Between 3 – 4 years	7 (19)	Paraná	3 (7)
33-35 years	1 (2)	--		--		Between 4 – 5 years	6 (17)	Rio Grande do Norte	1 (2)
More than 35 years	4 (10)	--		--		More than 5 years	4 (11)	Rio Grande do Sul	1 (2)
--		--		--		--		Santa Catarina	2 (4)
--		--		--		--		São Paulo	33 (75)
--		--		--		--		Tocantins	1 (2)

Note: * The number of respondents for each item varies because not everyone answered all the questions in the questionnaire.
Source: The authors

Table II – Experiences of undergraduate students and graduates in Dentistry focusing on oral health promotion. Araçatuba, São Paulo, Brazil, 2023.

Questions	Responses*	N (%)
Professional practice outlook that motivated the choice of Dentistry.	Total of responses-n=71	
	To be a self-employed professional working in one's own private practice.	25 (35)
	Take a position in public service.	13 (18)
	Pursue an academic career as a professor and/or researcher.	13 (18)
	Act in social entrepreneurship and/or commercial entrepreneurship.	12 (17)
	Provide dental services in private clinics.	08 (11)
Student experience with university extension, volunteer work or philanthropy.	Total of responses-n=7	
	Yes	06 (86)
	No	01 (14)
Student participation in a course in Social Dentistry, health promotion, and other related topics.	Total of responses-n=7	
	Yes	04 (57)
	No	03 (43)
Professional engagement in continuing education courses in the field of Social Dentistry, health promotion, and other related areas.	Total of responses-n=37	
	Continuing education	14 (38)
	Master's	12 (32)
	Certificate	08 (22)
	PhD	03 (8)

Note: * The number of respondents for each item varies, since not everyone answered all the questions in the questionnaire.
Source: The authors

Table III – Ability of undergraduate students and graduates in Dentistry to facilitate access to preventive and/or curative dental care for patient groups. Araçatuba, São Paulo, Brazil, 2023.

Patients' population	Responses*	N (%)
Patients vulnerable due to low economic conditions (e.g. low-income retirement, unemployment, rural worker, domestic work).	Total of responses-n=37	
	Yes, sometimes, but I managed with a lot of difficulty.	18 (49)
	Yes, I feel quite capable, since I have always succeeded doing this.	08 (22)
	Yes, many times, since I managed it with some ease.	05 (13)
	No, I never tried doing this.	05 (13)
	No, I have never been able to do this.	01 (3)
Patients living in unfavorable or risky physical environments (e.g. underprivileged communities, rural settlements, areas with toxic and industrial waste, and neighborhoods lacking health service infrastructure and basic sanitation).	Total of responses-n=36	
	Yes, sometimes, but I managed with a lot of difficulty.	16 (45)
	No, I never tried doing this.	08 (22)
	Yes, many times, since I managed it with some ease.	05 (14)
	Yes, I feel quite capable, since I have always succeeded doing this.	04 (11)
	No, I have never been able to do this.	03 (8)
Patients of ages and conditions requiring special attention (e.g., school-aged children, adolescents, pregnant women, breastfeeding women, adults, and the elderly).	Total of responses-n=38	
	Yes, I feel quite capable, since I have always succeeded doing this.	12 (31)
	Yes, sometimes, but I managed with a lot of difficulty.	11 (29)
	Yes, many times, since I managed it with some ease.	09 (24)
	No, I never tried doing this.	05 (13)
	No, I have never been able to do this.	01 (3)
Patients with clinical conditions requiring special and specialized care (e.g. those with mental and neurological disorders, AIDS, diabetes, and malignant tumors of the head and neck).	Total of responses-n=38	
	Yes, sometimes, but I managed with a lot of difficulty.	16 (42)
	Yes, many times, since I managed it with some ease.	09 (24)
	Yes, I feel quite capable, since I have always succeeded doing this.	05 (13)
	No, I never tried doing this.	04 (10)
	No, I have never been able to do this.	04 (10)
Patients in the incarcerated population.	Total of responses-n=37	
	No, I never tried doing this.	22 (59)
	Yes, sometimes, but I managed with a lot of difficulty.	06 (16)
	No, I have never been able to do this.	05 (14)
	Yes, many times, since I managed it with some ease.	02 (5)
	Yes, I feel quite capable, since I have always succeeded doing this.	02 (5)
Develop an action plan so that the aforementioned patient populations can face less inequality in access to dental care, from prevention to rehabilitation.	Total of responses-n=38	
	Yes, since I have always shown interest and done activism in this area.	19 (50)
	No, because I had few opportunities to develop my skills in this area.	14 (37)
	I do not have personal or professional aptitude in this area.	03 (8)
	No, I have never been interested in gaining aptitude in this area, as I think I don't have the talent for it.	01 (3)
	I am not interested in such skill, because I believe it is unnecessary to make one into a good dentist.	01 (3)

Note: * The number of respondents for each item varies, since not everyone answered all the questions in the questionnaire.
Source: The authors

Table IV – Action and alternative approach by the dentist to correct the inequality of access to dental care, according to undergraduate students or graduates in Dentistry. Araçatuba, São Paulo, Brazil, 2023.

Questions	Responses	N (%)_
Develop a social grassroots initiative to correct the inequality of access to dental care, from prevention to rehabilitation.	Total of responses-n=112	
	Carrying out volunteer work of activism and social awareness, and of community social development.	27 (24)
	Collaborating with organizations and community groups, working in the promotion of social rights, and providing direct care to those in need of social inclusion.	24 (21)
	Collaborating with public administrators and those responsible for the formulation of public policies.	23 (21)
	Devoting part of one's time in the dental practice to vulnerable patients.	21 (19)
	Contributing with actions in professional associations and advocacy groups (APCD, ABO), in partnership with the local government and its politicians and social leaders (e.g., presidents of associations, city councillors, state congressmen, representatives of professional councils in Medicine, Nursing, Social Work, Psychology, etc.).	17 (15)
Contribute to a broader vision of health policy that would correct the inequality of access to dental care, from prevention to rehabilitation.	Total of responses-n=105	
	Participating in the development of local preventive projects (for pregnant women, nursing mothers, schoolchildren, nutrition, etc.).	33 (31)
	Facilitating the implementation of oral health projects in the community.	26 (25)
	Taking on the role of educator in oral health actions.	24 (23)
	Getting involved in the activities of the Municipal Health Council.	22 (21)
Increase social equality and the clientele's quality of life, resulting in greater care effectiveness and better resolution of the population's oral health problems.	Total of responses-n=83	
	Partnering with community groups to expand the impact of oral health promotion actions across society's various segments.	28 (34)
	Inviting the community to get involved in suggesting and evaluating local oral health programs, especially in schools.	23 (28)
	Acting in partnership with community leaders to implement popular education projects and to demand improvements in the environmental control of soil, water, pollutants, etc.	19 (23)
	Assisting garden and orchard community projects to encourage the consumption of healthy foods.	13 (15)
Expand the dentist's role to those of educator and advocate of oral health, as a member of a multidisciplinary health team.	Total of responses- n=99	
	Involving caregivers and families of at-risk clients in training for the early identification of oral problems.	28 (28)
	Enable community health agents to educate the families they serve to identify and analyze their oral health condition.	25 (25)
	Articulating popular and technical knowledge in the preparation of educational materials.	23 (23)
	Learning pedagogical and social communication techniques.	23 (23)
Bear responsibility of civic leadership in defense of the population's interests and rights to oral health.	Total of responses- n=88	
	Mobilizing local political leadership on issues of environmental monitoring, water quality, and epidemiological monitoring of cavities and periodontal disease, integrating these themes in food and health programs for schools, health programs for pregnant women and breastfeeding mothers, for the diabetics, etc..	31 (35)
	Actively participating as a member in the Municipal Health Council meetings.	22 (25)
	Guiding undergraduate students and serving as a professional role model.	19 (22)
	Publishing in the local press on oral health awareness.	16 (18)
Establish with patients who historically lacked dental care the shared responsibility for the promotion of oral health.	Total of responses- n=122	
	Providing information to the patient using simple and clear language.	33 (27)
	Helping the patient understand the concept of risk, with the aim of increasing adherence to preventive and treatment actions.	30 (25)
	Encouraging the patient to verbalize their fears, concerns, and misunderstandings, thus promoting their autonomy.	30 (25)
	Teaching the patient simple and effective self-assessment techniques.	29 (24)

Notes: * The number of responses exceeds the number of respondents due to the possibility of multiple answers for each question.
**APCD- São Paulo Association of Dentists (Associação Paulista de Cirurgiões-Dentistas)
***ABO- Brazilian Association of Dentistry (Associação Brasileira de Odontologia)
Source: The authors

Table V – Interrelationship between the dentist and the Brazilian Unified Health System in promoting equal access to dental care, according to undergraduate students or graduates in Dentistry. Araçatuba, São Paulo, Brazil, 2023.

Questions	Responses	N (%)
Contributions of the dentist that sponsor a new perspective on investing more funds in the public health system to address the inequality of access to dental care, from prevention to rehabilitation.	Total of responses -n=103	
	Working alongside other healthcare professionals in an integrated manner, avoiding complications and unnecessary expenses and focusing on prevention care with children and in schools.	30 (29)
	Implementing effective preventive treatments for high-risk patients (diabetics, individuals with high blood pressure, cardiac patients, AIDS etc.).	29 (28)
	Doing quality work to avoid waste of materials and to prevent the patient's suffering.	22 (21)
	Maintaining dental documentation that demonstrates the positive economic impact of preventive care.	22 (21)
Changes in the current characteristics of the SUS system to provide equal access to dental care.	Total of responses -n=107	
	Creation of an integrated educational program involving families, teams from the Family Health Strategy, and Occupational Health teams.	32 (30)
	Implementation of an integrated oral health care system in pre-school, elementary and middle-school.	30 (28)
	Offer of dental care sensitive to local cultures and mindful of the importance of oral health by promoting oral hygiene habits and awareness of the ills of smoking and use of sugar in diet.	26 (24)
	Use of low complexity technology for the detection and resolution of simple cases.	19 (18)

Note: * The number of responses exceeds the number of respondents due to the possibility of selecting multiple answers for each question.
Source: The authors

The qualitative discursive responses provided a more comprehensive perspective for understanding social empathy and political-economic awareness for equity in oral health among the respondents. The following sections present in detail a multitude of ideas (as free translation) that permeate such awareness evinced from most of these qualitative responses. The number of respondents for each open-ended question indicates the predominant trend of existing ideas, reflecting the respondents' way of thinking.

Social determinants of oral health

Most respondents identified that Dentistry could respond more effectively to the social determinants that affect community oral health (n=37; 97%), thus contributing further toward the practice of equity in oral health care, in harmony with the FHS work (n=34; 89.4%). Educating a new generation of dentists prepared for such practice requires a curricular change in the Dentistry undergraduate studies (n=34; 89.4%), aligning it closer with the social context (n=34; 89.4%). It is a great challenge to change the traditional way of thinking to a community-centered model (n=33; 86.8%).

When asked about which SDOH influences the community's oral health the most, 37 (97%) highlighted those in the systemic, contextual, and personal dimensions. As per the systemic determinants, the respondents emphasized the most important factors: basic sanitation, the fluoridation of drinkable water, and social inequality. They also highlighted the role of promoting public policies that encourage and raise awareness on oral hygiene and safeguard the citizen's rights in public care based on the principles of equity, equality, and universality. The indicated SDOH corresponding to contextual determinants referred to four main factors: (a) the environment in which the individual lives; (b) difficulty in receiving free and quality dental care; (c) access to basic education, primary care networks, and health professionals; and (d) preventive education actions, and the promotion and education of oral health in schools, PHC units and in the community.

Regarding personal SDOH, the following were cited: (a) lack of critical consciousness; (b) level of education; (c) socioeconomic conditions (i.e., poverty, housing, occupation, and access to hygiene items and food, especially when inadequate or based on a cariogenic diet); (d) cultural and psychological factors; (e) how much importance an individual gives to their personal health; and (f) seeking dental care only when in case of pain. It is important to note that respondents articulated the SDOH in the aforementioned dimensions in their own words, such as in the examples below:

> *Human Development Index (HDI)—the environment in which the individual is inserted, level of social education and access to education (information)—housing—socioeconomic condition—education—access to health services—food.*
> *Lack of education in health, poverty, poor nutrition, difficulty in receiving free quality dental care.*

A greater contribution from Dentistry to the practice of equity in oral health care

Other respondents (n=34; 89.4%) highlighted the need for a greater contribution from Dentistry to the practice of equity in oral health care in harmony with the FHS. The contributions mentioned were oral health literacy, humanization of dental care, and universal access to dental services through integration with the PHC network. According to the respondents, Dentistry's contribution to a more equal oral health care through oral health literacy should consist of the following: disseminating information on preventive care and including high-quality education on oral hygiene, nutrition, cavities, and their potential consequences for an individual's oral and systemic health. They also emphasized how humanizing dental care may contribute to equity in oral health when the professional creates and adapts important strategies in the care. They proposed that such necessary adjustments should consider the needs of vulnerable population groups and the general community. These should also take in consideration the client's individuality and that the health care individual should adopt a professional attitude that is welcoming, empathic, and supportive, enabling the improvement of the client's oral condition, restoring health and enhancing their self-esteem and quality of life.

Regarding universal access and integration of dental services, the respondents recommended integration with the PHC network by involving dentists in public policy discussions and social projects, including a more active participation in schools and impoverished communities through home visits. Respondents also suggested universalizing preventive integrative actions through initiatives such as the fluoridation of public water supplies. They also recommended actions that provide resources and care for vulnerable groups, ensuring holistic and integrated care and promoting equal access for all age groups. Below are examples in the respondents' own words:

> *Consider the individuality of each person and create appropriate strategies.*
> *Provide more resources and attention to those in greater need to seek equality.*

Curricular changes for the promotion of equity in oral health

Thirty-four respondents (89.4%) suggested curricular changes in the Dentistry undergraduate program to educate a new generation of dentists equipped to promote equity in oral health care. Respondents suggested the new curriculum should offer courses on health literacy, humanitarian and integrated education, as well as the implementation of optional or mandatory internships in vulnerable communities and schools, in conjunction with Basic Health Units (UBS) and FHS teams. The curriculum focused on health education should be multi and transdisciplinary,—contemplating the disciplines of Psychology, Neurolinguistics, Social and Human Sciences,—and offering courses sensitive to the cultural, professional, and SUS realities. For the implementation of a humanitarian education within an integrated curriculum, respondents cited contents that promote socio-humanitarian care, a client-centered service, interpersonal relationships, as well as curricular matter that instills self-awareness in the client and the understanding of the importance and power of the dentist as a facilitator of oral health:

> *All curricular structure, since almost all… Dentistry courses present their subjects in isolation, which is not what happens in a clinical environment.*
>
> *All courses in reality interact with each other, but many professionals graduate without any understanding of the correlation among them.*

Interrelation between practice and the social context

In proposing necessary new actions for a dental practice more integrative with the social context, 34 respondents (89.4%) pointed out the social relevance of post-secondary education institutions in inspiring future professionals to work in public systems. The integration between practice and the social context should be part of the responsibilities of the higher education system, from the start of the programs. Mandatory off-campus and extracurricular internships would incorporate social projects. Moreover, the practice of comprehensive and non-compartmentalized treatments should be adopted. Thus, more extensive exposure to and contact with social realities and cases, including demonstrations for students, would function as a real-life simulation.

The respondents also commented on the responsibilities of dentists for the oral health of the population. They would deliver care in other locations and realities (for example, among the Quilombola, i.e. communities of descendants of enslaved afro-Brazilian peoples, Indigenous peoples, and rural areas). Among their responsibilities, dentists should also immerse themselves in the social and cultural context of the community to understand its SDOH and develop effective strategies for oral health care. They should also sponsor humanitarian care with an empathetic attitude. Respondents furthermore proposed that these professionals should encourage recently graduated colleagues to follow suit and take on a social role as well. To facilitate this, public administration needs to value the profession in

the municipal, state, and federal contexts of practice, offering new job opportunities to dentists in social assistance services and providing financial and structural resources.

Challenges in changing the mindset: from the individual patient to the community

Thirty-three respondents (among 86.8%) mentioned shifting the paradigm from patient-centered to community-focused as one of the main obstacles to changing the prevalent mindset. They highlighted the following challenges in connection to this: individualism, financial factors, challenges related to professional education and experience, and a lack of familiarity with the public health model. Thus, it is believed that overcoming individualism could favor the practical incorporation of the principles of universality and comprehensiveness in dental care. Individualism hinders the understanding of the needs and reality of the collective, something crucial for a personalized treatment that encompasses the lived context and influences of the community.

Regarding the pressure exerted by financial factors, the respondents criticized the excess of greed to overcome low remuneration and achieve an immediate financial return and a professional focus on profit and social status. They also criticized the tendency among professionals to perceive the patient as a client—whose socioeconomic power would then influence the course of the prescribed treatment.

In respect to obstacles stemming from education and professional experience, respondents emphasized the difficulty in communicating effectively with the community, which is explained by the conservative academic structure in Dentistry education and the absence of real-life professional experience in the community. In addition to other factors, lack of familiarity with the public health model was also suggested as a cause, hindering a care that extends to the patient's family and a personalized treatment sensitive to individual needs. Other hindrances mentioned were the singularity of each dentist's professional experience, including obstacles to critical consciousness and limited political education and social training, all of which may hinder one from stepping out of their "comfort zones."

Respondents indicated the following solutions to overcome these barriers: a greater involvement of professionals in lectures at community health centers and SUS establishments, the encouragement of critical thinking among students and extending to all the opportunity to care for patients in Dental Specialty Centers (CEO). Furthermore, other ideas were mentioned, such as:

> *Knowing the culture of the place where one is inserted, whether it be in the neighborhood or the municipality, by paying attention to the family's eating and hygiene habits.*
>
> *Ensuring that there is an understanding of the population's general needs, such as class consciousness. It is unlikely that people living in an elite environment have enough exposure to understand other social realities in their lived experiences.*

In comments about the dentists' aptitude to facilitate access to preventive and/or therapeutic dental care, the respondents reported finding widening access difficult for those patients facing economic hardships. This would occur mainly in private clinics that operate on a profit-based logic. They also mentioned difficulties in making dental care accessible for people living in unfavorable or at-risk physical environments, particularly due to lack of support from the municipal infrastructure, exemplified by the neglect of the Executive and Legislative branches. On the other hand, students and professionals involved in university outreach activities or initiatives promoted by non-governmental organizations would find the latter easier. They also highlighted the need for more effective dissemination of preventive programs to the population that, due to their age—e.g., school-aged children, adolescents, the elderly, pregnant women—, requires increased attention. Respondents found facilitating dental care access for patients with clinical conditions that require specialized care to be less challenging, since there are already university programs with dental care activities and projects catered to this specific public.

According to the respondents, delivering dental care for the incarcerated population could be limited to internships and voluntary services, such as in the case of dentists designated by the penitentiary system. Respondents noted, however, those would not always turn out to be successful enterprises. They also suggested the creation of an action plan to reduce inequality in access to dental care targeting specifically these population groups. Thus, although already a clinical reality in Dentistry programs and in the SUS, respondents identify a need for greater support from government entities, universities, and sponsors to help obtain more human resources and to reduce bureaucracy in the documentation of achieved results.

Fewer suggestions with concrete action plans emerged on how to build co-responsibility in promoting oral health among patients who have long been deprived of dental care. Nine respondents (27%) mentioned the need to pass information to the patient preferably through simple and clear language, while eight respondents (24%) highlighted the

importance of outreach volunteer work aimed at political awareness and social development in the community as a path to correct inequality of access to dental care. Respondents suggested mandatory internships with patients in situation of social vulnerability for undergraduate Dentistry students as a viable alternative to provide them with a closer contact with Brazil's precarious social reality. It was emphasized that since the dentist is broadly recognized as an authority in oral health, they should focus on communicating accurate information, instead of commercial self-promotion.

These findings corroborate two important results: first, the interrelationship between dentist and SUS, with the prospect of promoting equal access to dental care (see Table V). The creation of an integrated educational program with the participation of families, FHS teams, and Occupational Health teams, was the most frequent suggestion, from a total of 107 responses (n=32; 30%), aiming to modify the current SUS characteristics toward an equal-opportunity dental care. Secondly, 30 respondents out of 103 responses (29%) highlighted the importance of a multiprofessional integrated health work with the goal of preventing injuries and unnecessary expenses, as well as fomenting preventive oral care with school-aged children. The results indicated that this is the dentist's greatest contribution to a new perspective on public health budgeting, which would help correct inequality of access to dental care.

Impact of the COVID-19 pandemic on professional practice

Other questions focused specifically on the impact of the COVID-19 pandemic on professional practice. The respondents (n=21; 55.2%) discussed how the pandemic stimulated technological innovations or the development of new equipment, tools, and working methods. New biosafety protocols—which include the use of disposable equipment and instruments, the concern with the release of aerosols during treatments, and the promotion of atraumatic techniques, such as the restorative treatment—were some of the changes reported by the respondents. Respondents also reported a strong increase in the use of personal protective equipment (PPE),—such as N95 masks, safety goggles, and face shields—,as well as the widespread access to and dissemination of information for professionals and the community.

In addition, during the pandemic there was a large availability of free online courses, educational actions, and remote services. Regarding the viability of dental practice for vulnerable populations throughout the pandemic, 15 respondents (39.4%) reflected that it was viable and reasonable, when the requirement of vaccination and respect for biosafety protocols were followed. The adaptation of dental practice throughout the health crisis was ensured by the improvement in the quality of PPE and the low cost of such equipment, along with the increased oversight of its use by regulating bodies of the profession. Below are comments on the viability of adapting the practice to the pandemic reality:

> *In some populations it is reasonably easier, but in others, such as with the Indigenous populations, it is more difficult, because it is easier for us to carry the infection than to be infected, depending on how closed off the community is.*
>
> *Of utmost importance, prevention must be continued and applied in the best way, even with vaccines, including encouragement for the continued use of masks, hand hygiene, and food sanitation.*

DISCUSSION

The results corroborate the recent criticism that the Dentistry degree in its current format is incompatible with the SUS fundamental principles due to its focus on the private health market and neglect of the job market's realities and the population's social needs.[15] It is known that the perception of the job market, as well as one's professional identity, is influenced by academic and personal experiences.[15] In this context, there is a greater likelihood that dentists would identify with and work in the FHS and PHC if they took part in curricular internships in community public health programs.[8]

The respondents revealed a willingness to serve vulnerable populations, valuing the principle of social transformation of reality as advocated by the DCN.[16] They also stated, however, that they face difficulties when working within the SUS system, highlighting the private market would more likely offer a greater sense of professional accomplishment and gratification. It was cited that the main reasons for seeking employment in the public sector are financial stability, labor benefits, and the inconsistency of public service in consolidating technical skills for recent graduates.[15]

The respondents' academic education has broadened their view about the social world in concrete ways, leading to a greater ability to meet the needs of different populations.[10] Even among respondents with little experience in the SUS system, some knowledge about the SDOH was identified, with a greater influence on community oral health, despite a narrow and fragmented perspective. Respondents recognized the value of preventive actions and oral health promotion,

highlighting a growing social commitment and critical perspective in regard to the application of theoretical-practical content acquired during their undergraduate education to promote services and solve problems faced by different populations.[17]

The evidence indicates that the necessary applicability of such content toward a broad health management and care and for an education of lasting results[18] has distanced itself from the social reality. This in turn suggests student exposure to a fragmented, decontextualized, and profit-making curriculum,[5] with disparities between the DCN and the taught contents.[6] Dentists who participated in outreach activities (as was the case with the university outreach Happy Smile Project) during their undergraduate studies have a multidisciplinary profile and a better understanding of the SUS system. Moreover, they effectively participate in community care, promote teamwork, and are participants of a collective oral health.[10]

It becomes relevant to highlight that the undergraduate respondents perceive the SUS as a space for learning and integration of teaching-service and extracurricular activities, even though these are undervalued in the current undergraduate curriculum.[19] This perception can become an important tool for overcoming traditional curricula, allowing for the exchange of knowledge between the university, SUS, health professionals, and the community,[17] and enabling thus critical thinking in the training of the dentist based on health promotion and collaborative work, from the perspectives of interprofessional, interdisciplinary and intersectoral teamwork.[5]

It is important to emphasize that the students' perceptions relate to the implementation and future revision/ update of the DCN, aiming for an integrated curriculum that educates future professionals who can take part in oral health teams, in the FHA and PHC. Thus, the contingency and unpredictability of dental practice can optimize actions for future changes, as exemplified in the dental clinical routine during and after the COVID-19 pandemic. The respondents highlighted their adaptability to such changes in practice, in the internships, community and care activities. A new awareness of biosafety and the need for innovations in teaching and practice led to the adoption of new habits of use of personal protective equipment and cleaning standards. They led also to the acquisition of new technologies and changes in dental care routine, the reorganization of appointments, the performance of minimally invasive procedures, and development of telecommunication.[20]

The COVID-19 emergency exacerbated the social vulnerability of population groups which are dependent on dental care for their well-being. Therefore, it is recommended that future research focuses on strategies to reduce the gap between theory and practice in the education of dentistry undergraduates and in how they can contribute to the oral health of vulnerable populations through the improvement of public service in the PHC.

One of the main methodological limitations of this study pertains the respondent's lack of familiarity with the virtual platform and its navigation system, which likely prevented responses from prospective participants, who, after clicking to approve consent for participation, were unable to access the questionnaire, resulting in the loss of nearly 85% of potential respondents.

CONCLUSION

Graduating students in the last years of Dentistry and alumni are influenced by their perception of the job market, which derives from their personal experiences and undergraduate education. This group is knowledgeable about SDOH that most impact oral health, attributing great importance to the preventive care of cavities through outreach initiatives and internships. Despite the difficulties encountered, they expressed a willingness to meet the needs of vulnerable populations, demonstrating a growing social commitment and critical awareness of the health issues impacting both individual and community. The research proposes a reflection over a fragmented Dentistry education and the need to incorporate into the curriculum the concepts of multiprofessionalism, interdisciplinarity, and transdisciplinarity for a more humanitarian, integrated, and responsive practice to the community clientele.

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AUTHORS' CONTRIBUTION

Margareth Santos Zanchetta, Wilson Galhego-Garcia, and Alessandra Marcondes Aranega contributed to the conception and design of the study, the acquisition, analysis, and interpretation of data, and drafting of the manuscript. Vitória Lopes Pizzolato contributed to the analysis and interpretation of data and drafting of the manuscript.

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