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Review Article

Necessary Competencies for Oral Health Technicians to Work in Indigenous Communities: A Questionnaire Based Study

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Abstract

Background: Ethical practice requires adapting oral health curricula to recognize spaces as unique social environments in interventions. The objective of this quantitative and qualitative study was to analyze the competencies necessary for oral health technicians to adequately perform their duties in indigenous communities.

Methodology: Fifty-nine oral health technicians, interns and graduates, responded to a structured questionnaire containing closed and open questions addressing the skills needed to work in indigenous communities. Sociodemographic profile was predominantly female (94.9%) with 49.2% over the age of 37. The majority (61%) had not yet completed their oral health technician training.

Results: The analysis revealed that 78% were not practicing in their profession and 98.3% had never worked in indigenous communities. Regarding work in indigenous communities, 74.6% disagreed that it is equivalent to other contexts. Disciplines considered indispensable were "Oral Health Prevention and Hygiene Techniques" (93.2%), followed by "Dentistry and Public Health" (59.3%) and "Biosafety and Ergonomics" (47.5%).

Conclusion: Suggestions included the addition of further courses and emphasized the need for culturally sensitive approach to working in indigenous communities. The study highlighted an need for reforms in the training of oral health technicians to ensure effective and culturally appropriate care in indigenous communities.

Keywords: Indigenous Communities; Oral Health Technician; Xingu Indigenous Territory; Health Education; Intercultural Communication; Culturally Sensitive Care

Introduction

With the aim of promoting health, particularly in the field of oral health, care practices encompassing curative, preventive and promotional aspects must confront the challenges posed by various elements that primarily constitute the social and community landscape of a specific culture [1,2]. Evidence-based practice is intrinsically linked to the adaptation of dialogue and tools to the reality of the community where a particular clinic or action is intended to be implemented [3].

In this context, it becomes imperative to understand and assimilate a variety of factors, including epidemiological, social and structural aspects that shape the community, with particular attention to the indigenous communities present in various Brazilian states [4]. The linguistic particularities, communication methods and health conceptions, often distinct from the conventional models employed in non-indigenous Brazilian society, demand an adjusted and adapted approach [5,6].

The need for curriculum adaptation for oral health technicians emerges as a sine qua non condition for ethical practice, as spaces should not be perceived merely as geographic delimitations devoid of lived experiences, but rather as complex "social spaces" composed of individuals, cultures, relationships, beliefs and structures with their own singularities, requiring consideration in investigations, especially when involving interventions aimed at "improving" local conditions [7].

In accordance with the aforementioned reasoning, a process emerges that aims at the adaptation of the curriculum for an oral health technician course intended for indigenous peoples [8]. This adjustment, supported by evidence-based practice, acknowledges that such practice, in addition to considering professional preferences and existing literature, incorporates the individual preferences of the investigated cultural group, as well as local sociocultural analysis [3,8]. Thus, it translates into an expanded conception of health that aligns with the specific and subjective reality of the local context [9].

The objective of this quantitative and qualitative study, therefore, was to analyze the necessary competencies for oral health technicians to effectively and appropriately perform their duties in indigenous communities.

Methodology

This quantitative and qualitative study was approved by the ethics committee (process # 76250123.1.0000.5419). A total of 59 oral health technicians, both trainees and graduates, who agreed to participate in the study were selected. The selection was made through direct invitation, considering the availability and interest of the volunteers, along with the signing of a consent form outlining the study's objectives and significance.

A structured questionnaire was developed to address the necessary competencies for oral health technicians working in indigenous communities, using both closed and open-ended questions. The questionnaire included multiple-choice questions and questions to assess the importance attributed to different competencies. The volunteers received the questionnaire via an online link, allowing them to complete it conveniently and anonymously. Responses were collected electronically, ensuring confidentiality.

The collected data underwent both quantitative and qualitative analysis. Quantitative analysis involved the statistical evaluation of the multiple-choice responses. Qualitative analysis comprised the review of open-ended responses, identifying emerging themes and trends through the method of collective subject discourse.

Results

The results revealed a significantly homogeneous demographic profile, with a notable predominance of females, who comprised 94.9% of the sample, while males accounted for 5.1%. Regarding age, 49.2% of the volunteers were over 37 years old. Additionally, 18.6% were between 34 and 36 years old, suggesting a heterogeneous distribution in terms of professional experience. Analyzing the data related to training as oral health technicians, it was observed that 61% of the volunteers had not yet completed their training. Among those who had graduated, the majority (23.7%) had obtained their qualification between 1 and 3 years ago, followed by 11.9% who had completed their training less than a year ago. Regarding professional practice, 78% of the volunteers were not working as oral health technicians.

Among those who were, 30.5% performed their duties in dental offices. The analysis of the volunteers' gross monthly income showed that 62.7% earned between one and two minimum wages (between R$ 1,412.00 and R$ 2,824.00), indicating a majority in an intermediate salary range. Conversely, 27.1% of the volunteers had a gross monthly income of one minimum wage (R$ 1,412.00). Regarding professional experience in indigenous communities, it was found that 98.3% of the sample had never worked in this context. The presence of only one volunteer who reported having worked in indigenous communities suggested a limited experience in this specific scenario, highlighting the need for future investigations to understand the reasons for this low participation. Table 1 shows the sociodemographic data found in this study.

Regarding the responses from the respondents specifically about the work of oral health technicians in indigenous communities and the need to adapt the curriculum for these communities, the results showed a differentiated perception among oral health technicians. The first question revealed that a significant majority, 74.6%, disagreed that the work in these different realities is equivalent, while only 25.4% considered that the practices are similar. The second question addressed the importance of the

discipline of Epidemiological Surveillance for oral health technicians working in indigenous communities. The results reflected a marked consensus, with 94.9% of the volunteers agreeing on the crucial nature of this discipline, contrasted with a minority of 5.1% who did not share this perspective.

Regarding the relevance of the discipline of Orientation in Indigenous Communities for oral health technicians, the third question showed that 91.5% of respondents considered it important, while 8.5% disagreed. The fourth question dealt with the importance of a discipline addressing health and disease concepts for oral health technicians who will work in indigenous communities. In this context, a vast majority, represented by 93.2%, endorsed the relevance of this training, contrasted with a minority of 6.8% who did not consider it important. Concerning the necessity of understanding the community's language by oral health technicians working in indigenous contexts, the fifth question revealed that 76.3% of respondents believed it to be fundamental, while 23.7% disagreed.

The sixth question addressed the understanding of customs and culture of the community as an essential element for oral health technicians working in indigenous contexts. In this aspect, a majority of 96.6% of the volunteers considered this understanding important, while only 3.4% did not share this view. Finally, the last question about the equivalence in the work approach of oral health technicians in indigenous and non-indigenous communities revealed that 76.3% of respondents did not consider this equivalence, while 23.7% believed in the similarity of these practices. These results pointed to a majority perception that the cultural and social context of indigenous communities demands specific and differentiated approaches by oral health technicians. Table 2 shows the data found.

Based on the responses obtained in the survey regarding the question "Which of the following disciplines do you consider indispensable for an oral health technician who will work in indigenous communities? (You may select more than one answer)," it was evident that the discipline considered most indispensable for oral health technicians intending to work in indigenous communities was "Oral Health Prevention and Hygiene Techniques," with a significant percentage of 93.2%. This preference highlighted the importance attributed by the volunteers to training in preventive practices and specific oral hygiene techniques, indicating the value of a proactive approach to oral health promotion. Secondly, the discipline of "Dentistry and Public Health" also received considerable support, being chosen by 59.3% of respondents. This suggested a recognition of the relevance of understanding the interaction between dentistry and broader public health contexts, indicating an integrated approach to providing dental services in indigenous communities.

The third most cited discipline was "Biosafety and Ergonomics," chosen by 47.5% of the volunteers. This result underscored the respondents' concern with safe and ergonomic practices, highlighting the importance of safety in the workplace and the recognition of the need to adapt to the specific conditions of indigenous communities. Finally, the discipline of "Office Administration" was mentioned by only 10.2% of the volunteers, indicating a lower priority attributed to this area. This suggested that, while office administration is recognized as relevant, it is not considered as important as the other disciplines mentioned for those intending to work in indigenous communities. Based on the responses obtained in the open-ended question, it was evident that there is a diversity of perspectives and valuable suggestions related to the work of oral health technicians in indigenous communities.

The main points raised by the volunteers included: 1) the inclusion of various disciplines for professionals who will work in indigenous communities, such as "educational activities," "orthodontics," "learning the local language," and "indigenous culture in Brazil"; 2) differences in working in indigenous and non-indigenous communities, mentioning the need to study and understand local customs to apply principles of equity and the importance of considering specific habits and customs of the community, emphasizing sustainability as an essential aspect; 3) the influence of language, social organization, rituals, myths, artistic expressions, housing and the relationship with the environment was also pointed out; 4) it was observed that the work approach should be adapted, considering that indigenous communities often lack the same resources available in non-indigenous communities; 5) the limitation of resources in indigenous communities was highlighted, influencing dental care in hard-to-reach areas without conventional health facilities.

Variables	% (n)
Sex	
Men	5.1% (03)
Women	94.9% (56)
Age	
> 37 years	49.2% (29)
Between 34 and 36 years old	18.6% (11)
Between 21 and 23 years old	10.2% (06)
Oral health technician training	
Yes	61% (36)
No	39% (23)
Formation	
< 1 year	11.9% (07)
Between 1 and 3 years old	23.7% (14)
Working as an oral health technician	
Yes	22% (13)
No	78% (46)
Location of operation	
Private office	30.5% (18)
Public health	6.8% (04)
Gross Monthly Income	
1 minimum salary	27.1% (16)
Between 1 and 2 minimum salaries	62.7% (37)
> 2 minimum salaries	8.5 (05)
Acting as an oral health technician in indigenous communities	
Yes	98.3% (58)
No	1.07% (01)

Table 1: Sociodemographic aspects of the sample.

Variables	% (n)
Do you think that working as an oral health technician in indigenous communities is the same as working in non-indigenous communities?	
Yes	25.4% (15)
No	74.6% (44)
Do you believe that the discipline of Epidemiological Surveillance is crucial for oral health technicians who will work in indigenous communities?	
Yes	94.9% (56)
No	5.1% (03)
Do you believe that the subject of Environment in Indigenous Communities is important for oral health technicians who will work in indigenous communities?	
Yes	91.5% (54)
No	8.5% (05)
Do you believe that a subject on Concepts of Health and Illness is important for oral health technicians who will work in indigenous communities?	
Yes	93.2% (55)
No	6.8% (04)
Do you believe that an oral health technician who will work in indigenous communities needs to understand the community's language?	

Yes	76.3% (45)
No	23.7% (14)
Do you believe that an oral health technician who will work in indigenous communities needs to understand the customs and culture of the community?	
Yes	96.6% (57)
No	3.4% (02)
Do you believe that the way an oral health technician works in an indigenous community is the same as the way they work in a non-indigenous community?	
Yes	23.7% (14)
No	76.3% (45)

Table 2: Closed answers regarding the topic of indigenous communities.

Discussion

This scenario contrasts with the non-indigenous environment, where there is a more comprehensive apparatus for oral health services. In summary, the responses indicated the need for a holistic and culturally sensitive approach in the work of oral health technicians in indigenous communities, including specific knowledge, adaptation to local conditions and a deep understanding of the cultural and social nuances of these communities. In this context, a study reviewed the inclusion of Indigenous content in oral health curricula, analyzing 23 studies published between 2007 and 2021, primarily from Australia and New Zealand. Topics covered included culture, history and Indigenous oral health, with teaching methods such as rural placements and survey-based assessments. Challenges included a lack of student interest and limited interaction with Indigenous communities, while cultural immersion and mentorship were facilitators. The study concludes that prioritizing Indigenous perspectives and improving teaching and assessment practices is essential [10].

This study results highlighted a homogeneous demographic profile among the volunteers, with a notable predominance of women (94.9%) and a significant proportion of individuals over 37 years old (49.2%). This homogeneity may be related to the characteristics of the studied group, reflecting potential limitations of access or specific interest by women in this professional field. The older age of some volunteers suggests a diversity of experiences and professional trajectories, which can influence their approach and perspectives regarding work in indigenous communities. These findings are in line with the research literature that suggests a greater inclusion of women in dental technician courses [11].

Another relevant point concerns the training in dental health technician, where 61% of the volunteers have not yet completed the course. This finding raises questions about the accessibility of training and the possibility of obstacles preventing course completion. The concentration of volunteers with recent training (23.7% obtained their title in the last 1 to 3 years) suggests a dynamic in which newer professionals might bring updated perspectives, while those with more extended training periods can contribute with practical experiences [12].

Data related to professional activity and income indicate that a significant portion of volunteers do not practice the profession (78%), while those who do often work in private clinics (30.5%). The income analysis revealed that most volunteers are in an intermediate range, with 62.7% earning between one and two minimum wages. This scenario suggests potential economic and structural challenges that may impact the availability and motivation to work in specific contexts, such as indigenous communities [13].

The lack of professional experience in indigenous communities, evidenced by 98.3% who have never worked in this context, points to a critical gap in the preparation of public health professionals to handle the particularities of these communities. This suggests an urgent need for revisions in training curricula, incorporating culturally sensitive approaches and providing practical experiences in these specific environments. These findings corroborate a study that suggests the need to adapt the curricular model for indigenous health [7], as its specificities require particular attention informed by the lifestyle represented by this segment of the population. The minimal presence of volunteers with experience in indigenous communities underscores the importance of future investigations to understand the reasons for this low participation and how to overcome existing barriers. The results of this study reinforce the urgency of reforms in the training of dental health technicians to ensure effective and

culturally congruent care in indigenous communities. There was a clear disagreement among volunteers regarding the equivalence of dental health technician work in indigenous communities compared to other contexts. A significant majority (74.6%) disagreed with this equivalence, suggesting that professionals perceive unique peculiarities and challenges associated with care in indigenous communities [11]. This perception may be linked to the need for curriculum adaptation, highlighted as important in the research. The lack of agreement suggests that professionals recognize the importance of a culturally sensitive approach, indicating the urgent need for curriculum reforms to effectively address these communities [14].

The results regarding specific disciplines, such as "Epidemiological Surveillance," "Orientation in Indigenous Communities," and "Concepts of Health and Disease," reflect a marked consensus among the volunteers. The high agreement on the importance of these disciplines reinforces the idea that dental health technicians recognize the need for specific competencies to work in indigenous communities [15]. These results can be interpreted as support for the hypotheses raised in the research, indicating that professionals perceive the importance of specific knowledge to address the particularities of these communities. These findings are confirmed in the literature as evidence-based practice can improve patient quality of life, guiding new care models based on the perception and worldview of the said Community [3,16].

The issues related to understanding the community's language, customs and culture also present significant results. Most volunteers agree on the importance of these aspects, suggesting that communication and cultural understanding are fundamental elements in providing dental health care in indigenous communities. The majority perception that language and culture are important highlights the complexity of these "social spaces" and the need for a culturally sensitive approach to establish an effective and respectful relationship with indigenous communities [17].

In summary, the results suggest that dental health technicians recognize the importance of adaptations in training to work in indigenous communities, demonstrating a profound understanding of the social, cultural and structural challenges associated with this specific context. The research contributes to substantiating the need for curricular reforms and highlights the urgency of developing culturally congruent competencies to promote oral health in these communities. The research results provide valuable insights into the preferences and priorities of dental health technicians regarding the disciplines considered indispensable for working in indigenous communities. The significant choice of the discipline "Oral Health Prevention and Hygiene Techniques" by 93.2% of volunteers suggests a recognition of the importance of preventive approaches in promoting oral health in these communities [18].

This may be related to the understanding that prevention is fundamental to addressing the specific conditions and epidemiological challenges of these communities, indicating an awareness of the need for appropriate health strategies. These findings are corroborated with results from another study, as they align with the need to understand the worldview and social environment to apply specific concepts of prevention and oral hygiene, especially in a predominantly curative class [7]. The significant choice of the discipline "Dentistry and Public Health" by 59.3% of respondents highlights the perceived importance of an integrated approach in providing dental services in indigenous communities. This may reflect the dental health technicians' understanding of the interconnection between oral health and broader public health factors, indicating the need for a holistic and contextualized view in attending to these communities [19]. In line with this perspective, the Dalang Project was created to address the shortage of dental graduate programs in Australia and has benefited Aboriginal communities in New South Wales by training oral health therapists, expanding access to dental care and encouraging professionals to remain in rural areas. Beyond workforce development, the initiative also distributed dental supplies and installed filtered water fountains, reinforcing the broader public health approach by positively impacting children's health and professional development [20].

The preference for "Biosafety and Ergonomics" by 47.5% of the volunteers emphasizes the concern with safe practices adapted to the specific working environment of indigenous communities. This choice suggests an awareness of the unique conditions of these communities and the importance of ensuring safety for both professionals and patients, indicating an ethical and sensitive approach to the context's particularities [21]. The suggestions from open responses, such as the inclusion of additional disciplines (like educational activities, orthodontics, learning the local language and indigenous culture in Brazil), reflect an understanding of the complexity and diversity of demands in these communities [22].

Considerations about the differences between work in indigenous and non-indigenous communities highlight the importance of an adapted approach, considering cultural, social and environmental aspects [23]. These results justify the need for reforms in the training of dental health technicians, indicating a pursuit of broader and culturally congruent competencies to promote oral health in indigenous communities.

Conclusion

In conclusion, the results of this study reveal a unanimous perception among dental health technicians that working in indigenous communities requires specific competencies and a differentiated approach. Although most volunteers are still in training, the data indicated a lack of professional experience in this context, underscoring the need for more robust preparation to meet the unique challenges of these communities. Thus, the findings pointed to the necessity of reforming the training of dental health technicians to address the cultural, social and environmental specificities of indigenous communities, aiming to provide effective and culturally congruent care.

Conflict of Interest

The authors have no conflict of interest to declare.

Human Ethics and Consent to Participate Declarations

Not Applicable

Consent To Participate

Not Applicable

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