

Empathy in Family Health Strategy Dentistry: Exploring Barriers and Facilities in Vulnerable Contexts

Empatia na Odontologia da Estratégia Saúde da Família: Explorando Barreiras e Facilidades em Contextos Vulneráveis

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ABSTRACT

Objective: to analyze the barriers and facilities for developing empathy among dentists from the Family Health Strategy (ESF) in vulnerable areas of Campo Grande, Mato Grosso do Sul.

Methods: 14 interviews were carried out between April and June 2024, structured by the Theoretical Domains Framework (TDF). Using Bardin's content analysis and the IRaMuTeQ® software, the responses were categorized by the "COM-B" model.

Results: capacity (understanding the concept and training), and Opportunity (infrastructure and work management) emerged as barriers. Motivation (listening, dialogue, mood regulation) was identified as facility.

Final considerations: dentists are motivated to be empathetic, but the current work process can affect the professional-user relationship.

Keywords: Empathy; Dentistry; Primary Health Care; Family Health Strategy.

RESUMO

Objetivo: analisar as barreiras e facilidades para o desenvolvimento da empatia entre cirurgiões-dentistas da Estratégia de Saúde da Família (ESF) em áreas vulneráveis de Campo Grande, Mato Grosso do Sul.

Métodos: foram realizadas 14 entrevistas entre abril e junho de 2024, estruturadas pelo *Theoretical Domains Framework* (TDF). Utilizando a análise de conteúdo de Bardin e o software IRaMuTeQ®, as respostas foram categorizadas pelo modelo "COM-B".

Resultados: a Capacidade (compreensão do conceito e treinamento), e a Oportunidade (infraestrutura e gestão do trabalho) surgiram como barreiras. A Motivação (escuta, diálogo, regulação do humor) foi identificada como facilidade.

Considerações finais: os cirurgiões-dentistas estão motivados a serem empáticos, mas o processo de trabalho atual pode afetar a relação profissional-usuário.

Descritores: Empatia; Odontologia; Atenção Primária à Saúde; Estratégia Saúde da Família

INTRODUCTION

The term empathy, Translated from the German concept of *Einfühlung*, refers to the ability to understand and share the feelings and perspectives of others, involving both cognitive and emotional dimensions. Cognitive factors include perspective-taking, that is, adopting another person's point of view, and fantasy, which is imagining oneself in the feelings of fictional characters. Emotional concerns include empathic concern, which involves compassion and care for others, and personal anguish, which is anxiety in tense interpersonal situations¹.

In clinical practice, empathy contributes to comprehensive care, being an essential skill for health professionals². For the Dental Surgeon (DC), empathy mediates a positive relationship with patients, increasing satisfaction, reducing stress, improving treatment adherence and creating a supportive environment³. This relationship is particularly important in contexts of social vulnerability, in which users of public health services face multiple barriers, such as lack of access to resources and waiting time, which can compromise the quality of care and continuity of care⁴.

In Brazil, the Family Health Strategy (FHS), a pillar of Primary Health Care (PHC), is guided by comprehensive care and the use of soft technologies that promote sensitive listening, bonding, mutual respect, autonomy, and welcoming practices⁵. In areas of social vulnerability, this approach becomes even more vital to ensure humanized care, since these populations are often at higher risk of adverse health conditions and less access to quality health services⁶.

Knowing the barriers and facilities for establishing an empathetic relationship between DCs and vulnerable users is necessary to improve clinical practice and promote more humanized care. Barriers such as work overload, lack of time and resources, and an unfavorable work environment can hinder the development of empathy, impairing the quality of care and the mental health of professionals⁷. On the other hand, the identification and strengthening of facilitators, such as qualified listening strategies, shared therapeutic planning, and the development of interpersonal skills, can enhance the ability of DCs to establish more empathetic relationships with their patients⁸.

In this sense, the Domain Theory (Theoretical Domains Framework, TDF) and the COM-B model offer a useful framework for understanding behavioral determinants⁹, and can be used in exploratory studies and in the context of PHC professionals¹⁰. The COM-B model, which identifies the interaction between Capacity, Opportunity and Motivation, can be particularly relevant to analyze the barriers and facilities in the context of empathy. Ability refers to the knowledge and skills required to practice a behavior. Opportunity refers to the external factors and the environment that enable or limit a certain attitude. Motivation involves internal and external incentives to develop a certain skill¹¹. Applying these concepts allows for a deeper understanding of the challenges and facilitators in implementing empathetic relationships between DCs and vulnerable users.

In view of the above, the objective of this study is to analyze the barriers and facilities for the development of empathy among FHS dentists in vulnerable areas, using the COM-B model.

METHODS

This is a descriptive, exploratory qualitative study. The study was carried out in the municipality of Campo Grande, Mato Grosso do Sul (MS), from April to June 2024.

The offer of dental care in PHC is available in the 74 Family Health Units that currently have 197 health teams and 156 oral health teams, which are composed of DCs, technicians and oral health assistants, according to information from the Municipal Health Department.

The population of this study included PHC DCs inserted in the FHS of vulnerable regions of the municipality of Campo Grande in MS, working in the neighborhoods with the highest vulnerability in the municipality, according to the social exclusion index, namely: Lageado, Los Angeles, Centro Oeste, Nova Lima, São Conrado, Caiobá, Núcleo Industrial, Veraneio, Popular, Mata do Segredo, Estrela Dalva, Centenário, Tarumã and Moreninhas¹².

Professionals from the health units were invited to participate in the research via WhatsApp® by the researcher. Those who agreed, had interviews scheduled at their workplaces to avoid inconvenience. 14 professionals inserted

in the FHS were interviewed.

The sample thus included professionals working in all related units. Professionals with less than three months of activity in the unit were considered as exclusion criteria.

The face-to-face interviews were carried out in the workplaces, conducted individually in a reserved environment. The professionals were informed about the need to record the interviews. Next, the Informed Consent Forms and authorization for voice recording were signed. The questionnaire included open and closed questions, with an average duration of 25 minutes, and collected personal data and perceptions about clinical empathy. In order to ensure the non-identification of the professionals, it was decided to assign codes to the excerpts of the announcements, identifying them only with numbers.

The semi-structured script was pre-tested with five CDs to assess clarity and length. Participants in the pilot study evaluated the entire questionnaire via Google Forms®.

O Theoretical Domains Framework (TDF), proposed by Michie et al. (2005)¹³, was used to structure the questions, identifying barriers and behavioral factors. TDF was developed from various theories of behavior, facilitating interdisciplinary communication and in-depth analysis of professional practice. It was transcribed and adapted into Brazilian Portuguese¹⁴. The final version of the TDF in Portuguese includes 14 domains,

which were used to categorize responses and identify challenges in the application of empathic skills. The answers were categorized according to the TDF domains, and the registration units were identified and grouped into categories representative of the challenges perceived by the professionals. To facilitate the understanding of the set of TDF domains, the synthetic model known as “COM-B” was used¹¹, which presents three conditions necessary for a voluntary behavior to occur: Capacity, Opportunity and Motivation according to Chart 1.

The corpus of this research consisted of the transcriptions of the interviews of the 14 dental surgeons. For the analysis, the corpus was coded using Microsoft Excel®, Microsoft Word® and Notepad. This step involved cleaning the data, removing common words (stop words) and standardizing terms to ensure lexical consistency.

First, the Thematic Analysis proposed by Bardin was used, which comprises three moments: pre-analysis; exploration of the material; Results Handling, Inference, and Interpretation¹⁵. Pre-analysis consists of the organization phase of the material to be analyzed; floating reading to have contact with the material and allow hypotheses and impressions to emerge; definition of the Corpus of analysis. The second moment is the exploration of the material through coding, decomposition or enumeration operations. The third phase is the treatment of the results obtained and interpretation.

To deepen the analysis, the data was imported into the

Chart 1

Relationship between COM-B and TDF.

Componente “COM-B”	Domínio do comportamento “TDF”
Capacidade	Conhecimento
	Habilidades
	Regulação Comportamental
Oportunidade	Influências Sociais
	Contexto Ambiental e Recursos
Motivação	Objetivos
	Papel social, profissional e identidade
	Intenção
	Crença sobre Consequências
	Otimismo
	Crenças sobre Capacidades
	Reforço
	Memória, Atenção e Processos de Decisão
	Emoção

Source: authorship.

Software Interface R known as IRaMuTeQ® (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires). O IRaMuTeQ® allowed the performance of several analytical techniques, including lexical treatment, Descending Hierarchical Classification (DHC) and Factor Analysis by Correspondence (CFA), a method that graphically represents the relationships in a two-dimensional factorial plane, whose results are useful to identify oppositions that structure the investigated content. The lexical treatment identified the frequency and distribution of words in the Corpus textual. CHD categorized the Corpus in hierarchically organized thematic classes. The CFA explored the relationships between the different categories identified in the DHC, graphically visualizing the associations between words and thematic categories. The occurrences in each class in the DHC were classified in descending order based on the values obtained in the Chi-square test (X^2), and all presented statistically significant values ($p < 0.0001$).

This research was approved by the Research Ethics Committee, CAAE 73684/523.8.0000.8027, opinion no. 6.436.351.

RESULTS

The textual analysis revealed information about the Corpus studied, composed of 24 texts. These texts have been segmented into a total of 763 parts, which contain a vast number of 2,547 different forms. The forms, which are variations of words, had a total of 25,515 occurrences. Lexical diversity was evidenced by the number of lemmas identified, which totaled 1,647. In addition, 1,513 active forms were found, corresponding to the words that appear most frequently, and 26 supplementary forms, which are less common or contextual variations of the main words. Among the active forms, 593 had a frequency equal to or greater than three occurrences, signaling terms that have significant relevance in the context of the information analyzed. The mean number of shapes per textual segment was approximately 33.44.

CHD analysis identified the formation of four clusters distinct patterns of words, revealing thematic patterns and categories within the Corpus. The classification of textual segments was successful in 595 of the 763 segments, representing 77.98% of the total. In figure 1, the dendrogram revealed the division into two sub-corpus. In a second moment, one of the

sub-corpus it was divided into class 3, and subdivided into classes 2 and 1. O sub-corpus remained only in class 4.

Cluster 3 was considered as the “Capacity”, and represented 13.8% of the corpus. It is about understanding the conceptual aspects of the theme. The words that stood out in this class were “put”, “place”, “clinical” and “empathy”. The word “sympathy” also appeared in the class. There is some confusion regarding the concept of empathy in the dental clinic, being confused with sympathy, as shown in the excerpt below:

I'm a very closed person. So, I'm not very... empathetic. But in the sense of sympathy, perhaps (CD 06).

Empathy for me is treating others as you would like to be treated (CD 05).

I try to understand the patient, I try to give the person room to talk, I try to really talk, to have a greater interaction, even a family relationship with this patient (CD 04).

Near cluster 3, the Software operated partitions 2 and 1 which account for 31.6% and 35.5% of the Corpus respectively. These partitions were considered as “Motivation”, thus composing most of the discourses, revealing a positive tendency of DCs to be empathetic in clinical practice. Partition 2 points out how empathy is developed in practice, the words “speak”, “feel”, “ask” and “consult” reveal the practical strategies for establishing this relationship, according to the report:

We have to pay attention to the patient's context, to know how his history is. In the first consultation, listen a little more, ask. Until he got the confidence (CD 06).

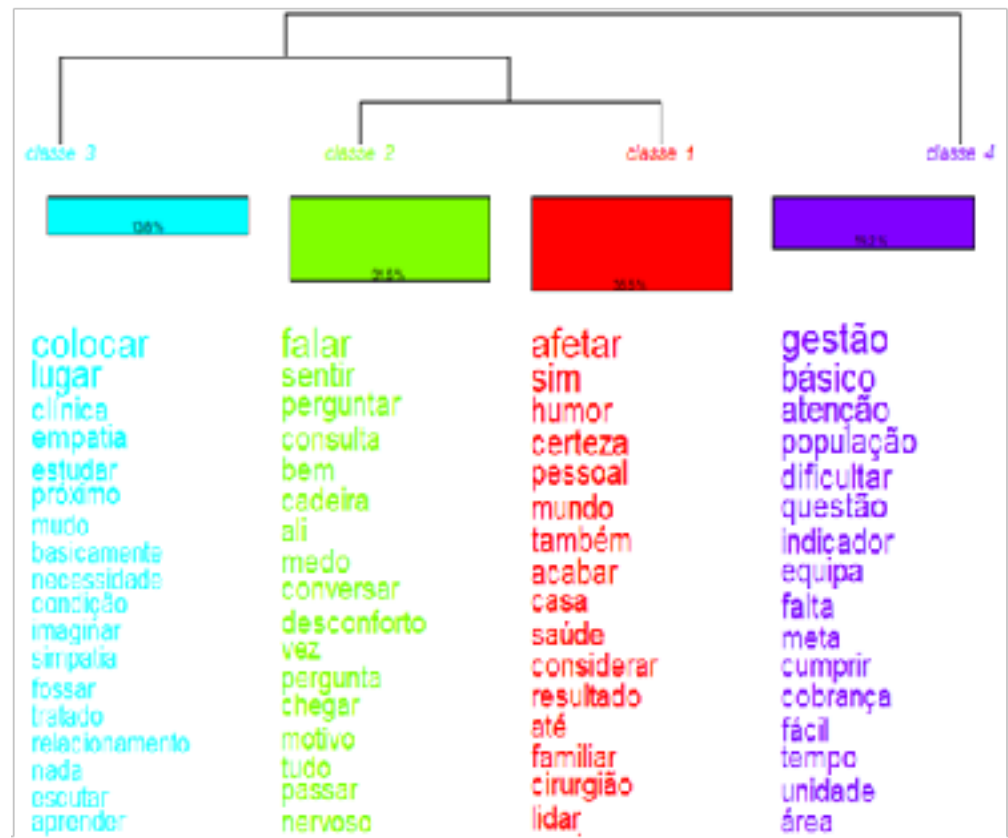
If I talk better with that patient, it will be calmer. If I am going to have a difficult surgery, it will be more relaxed if I talk to that patient (CD 02).

So, I believe that the importance is for us to put ourselves in our place and feel welcomed during the service, not to be despised (CD 11).

In partition 1, the consequences of the empathy of care of vulnerable people are observed. The words “affect”, “mood”, “health” and “result” materialize the importance of empathic ability, as noted below:

The way you will treat your patient depends a lot on your mood, we can have several situations happening in private, but we cannot let this

Figure 1
Dendrogram by class and words with greater chi-square (2) provided by the IRaMuTeQ® software, 2024.



Source: authorship.

influence the way I will treat the other. I always try to have a smile (CD 12).

I think that in clinical performance, bad mood or anxiety hinder the procedure and the clinical management of the patient (CD 03).

If you're going to make a grumpy previous resin, it's not going well, right? So I think that mood can affect it, yes (CD 09).

Cluster 4 was considered as "Opportunity" and revealed the barriers that participants face in the face of the theme. This class represented 19.2% of the Corpus. Here the words "management", "attention", "population", "indicator", "goal", "demand", "time", suggest issues related to the work process that are barriers to the construction of an empathetic relationship between professional and user, as shown in the transcriptions below:

The lack of adequate infrastructure, such as common rooms that do not offer privacy, can inhibit both professionals and patients, making

empathetic care difficult (CD 01).

What makes it most difficult to be empathetic is the goal, because it is the number that we have to meet and then we will do everything more mechanically (CD 02).

The issue of having to multitask, the clinical part, the part that you are attending in the chair, then you have PSE, there are educational activities, there are many activities that sometimes do not give you time, do not give you the necessary conditions (CD 04).

Management for me is what makes it most difficult. Especially this overvaluation of numbers (CD 10).

Figure 2 allows us to identify, in the factorial plan, the words that differentiate and characterize each class and to observe their intersections. It is noted that the class "Capacity", represented in sky blue and the "Motivation" represented by the classes in green and red are on opposite planes, with some words in common, pointing to a distance between concepts and



DISCUSSION

TDF has been used to identify barriers and facilitators to the absorption of evidence in practice and to guide the choice of intervention components by professionals¹⁶. By articulating different theories about the factors that impact the behavior of professionals, the TDF allows us to visualize more clearly what has prevented or contributed to the use of clinical empathy in PHC¹¹.

In relation to the Capacity set, which covers the knowledge, ability and behavioral regulation domains, there is a certain lack of knowledge in relation to the term clinical empathy and lack of training, which corresponds to possible barriers. For Kobayashi et al. (2021)¹⁸ Increased empathy in oral health professionals can occur through specific training. This provides better levels of

empathy, and collaborates with better oral care outcomes for the patient.

It is worth describing that current studies elucidate the presence of empathy through the relationship with mirror neurons. These project information from the environment into the individual's interior and help contextualize their reactions, allowing them to put themselves in the interlocutor's shoes. Mirror neurons are defined as a cognitive system that enables the understanding of the biological bases in the face of human abilities related to interpersonal relationships, specifically language and empathy. In addition, imitation enables learning by adapting behavior to specific contexts. In other words, an individual's mirror neurons encode sensory information, which allows for reciprocity, through the ability to understand other people's actions.¹⁹ Thus, neuroscience explains empathy as a behavior intrinsic to human beings, which can be improved with observation and training.

In fact, there are reports in the literature about empathy being a trainable skill. Training programs show that improving empathic skills not only has a positive effect on professional ethical behavior toward patients, but also helps improve professional well-being²⁰. There is a lot of discussion in the literature about whether it is possible to teach empathy. Most point out that there is this possibility of learning, as long as there are directed educational attitudes²¹. The importance of investing in training is perceived, through continuing education, as it enables changes in the way of thinking and doing health, resulting in a more humanized and comprehensive care for users, in accordance with the principles of the SUS²².

Such is the importance of empathy as an interpersonal skill that in recent years its curricularization in health education and dentistry has been discussed. A American Dental Education Association (ADEA) indicates that applying appropriate interpersonal and communication skills is an important competency in dental education²³. Understanding the biological basis of empathy helps students understand how they work and stimulates their learning and performance²².

In the results of this study, it is observed that how in the professionals' statements, the desire and motivation to search for new forms and more effective strategies to provide care, on which correspond to the facilities for the establishment of empathic behavior. In this sense, anamnesis seems to be fundamental to establish a relationship of trust and empathy with the patient, allowing the professional to better understand the needs and expectations of the individual and thus be able to provide quality and personalized care²⁴.

The professionals reported as a strategy of the empathic relationship the dialogue instituted by questions that consider the reality and needs of the patient. By understanding patients' concerns and fears, professionals can tailor their approach to communication and provide appropriate emotional support²⁵.

Achieving a strong professional-user relationship is largely explained by the way verbal and non-verbal communication is carried out. Communication skills have been described as the most important for a positive experience in health contexts, and the development of empathic skills is fundamental²⁶.

Research on empathy among trained dentists shows significant differences compared to those who are in the early stages of training. In clinical practice, dentists often deal with patients' anxiety, pain, and discomfort, which can impact their ability to be empathetic. This scenario highlights the importance of humor and emotional intelligence to maintain an effective interaction²⁷. Studies suggest that promoting the well-being of professionals is important, indicating a positive correlation between empathy and emotional intelligence. This emphasizes the motivation to seek a healthy balance between personal and professional life²⁷⁻²⁸.

Other barriers identified by DCs to achieving a more appropriate approach to the individual include the lack of privacy and an appropriate environment, rigid goals, and limited time for care, in addition to the high demand and insufficient infrastructure of the health system. This seems to compromise the opportunity to establish empathic behavior.

In fact, PHC still faces difficulties, with regard to the environmental context and resources, involving scarcity of inputs and adequate physical spaces, work overload due to lack of professionals, and emphasis on productivity and procedures²⁹. Another study highlighted that SUS professionals who are dissatisfied with the work process, point out as causes the precarious working conditions, difficulty in interpersonal relationships with the work and management team, and working in poor areas with a high rate of violence³⁰.

Ordinance No. 2,436 of the Ministry of Health, which reformulated the National Primary Care Policy (PNAB) in 2017, provides for the non-mandatory nature of oral health in the FHS³¹. The literature pointed to this as one of the reasons for the dismantling of health and lack of dimensioning of the workforce in PHC, with the risk of possible setbacks, lack of care for a significant part of the population and loss of quality of services⁶⁻²⁹.

In general, despite the facilitating aspects mentioned by the DCs for the establishment of the empathic relationship, important barriers were identified that point to the need for improvements to ensure a differentiated behavior of the professional. These improvements are based on the urgency of restructuring primary care with regard to the resizing of oral health teams, reforms of health units, and a management model centered on the user and quality, which go beyond the evaluation and monitoring of quantitative indicators.

While this analysis offers an in-depth look at participants' experiences and perspectives, it may not reflect the full diversity of contexts and practices of dentists in different regions. The subjective nature of qualitative analysis can also introduce biases in the interpretation of data, affecting the validity of the results. Therefore, when applying the study's conclusions, it is important to consider these limitations and recognize that the findings may be more context-specific to the participants than broadly generalizable.

Finally, it is necessary to conduct further studies in this area to obtain a more comprehensive understanding of the empathy of dental professionals and its implications in dental care, considering different contexts.

CONCLUSION

The main challenges for the development of empathic behavior, according to the DCs' perception,

include understanding the concept of empathy and adequately training this skill. In addition, the opportunity to manifest this relationship is hampered by the infrastructure of the work environment and the prioritization of service management, which focuses mainly on quantitative monitoring and evaluation.

On the other hand, the motivation of the DCs to establish an empathetic relationship with users from vulnerable areas was identified as a facilitator, made possible by active listening and dialogue during dental consultations, and regulation of their own mood.

It is concluded that the professionals demonstrate a willingness to offer empathetic care to users. However, it is necessary to promote continuing education activities in health focused on interpersonal skills, in addition to discussing patient-centered management oriented to the quality of work, in order to improve the professional-user relationship.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Ortega ACBM, Nascimento DDG and Cunha IP contributed to conceptualization, methodology, formal analysis, investigation, and writing – original draft preparation.

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