

REVIEW ARTICLE

**Patient safety climate in Primary Health Care in Brazil: an integrative review**

*Clima de Segurança do Paciente na Atenção Primária à Saúde no Brasil: revisão integrativa*

*Clima de seguridad del paciente en la Atención Primaria de Salud en Brasil: una revisión integradora*

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**ABSTRACT**

**Justification and Objectives:** although Primary Health Care plays a central role in Brazil, much of the research that assesses safety culture and climate focuses on hospitals and few studies on this subject have explored this reality, thus justifying this study. The aim was therefore to identify the patient safety climate characteristics in Primary Health Care services in Brazil. **Methods:** an integrative review study. The MEDLINE via PubMed, LILACS, CINAHL and SciELO databases were used to search for studies. **Results:** nine articles were selected which reported on the negative safety climate in Primary Health Care. The five classes generated in the dendrogram are divided into two main categories: (1) Safe healthcare in Primary Health Care; and (2) Patient safety climate assessment in Primary Health Care services. Communication, organizational learning and teamwork were cited as enhancers of safe healthcare. Community health workers had a more negative safety climate perception. Working conditions and management support were rated negatively. **Conclusion:** strengthening the safety climate in Primary Health Care services favors quality of care and safe healthcare.

**Keywords:** *Patient Safety. Organizational Culture. Primary Health Care. Brazil.*

**INTRODUCTION**

Adverse events related to healthcare are one of the main causes of deaths worldwide. However, it is known that many are avoidable situations through the implementation of strategies aimed at risk control and damage reduction.<sup>1</sup> This topic gained prominence following the publication of the document To Err is Human: Building a Safer Health Care System, which highlighted high rates of adverse events related to healthcare.<sup>2-3</sup>

In this sense, priority areas of action for patient safety were established, namely: correctly identifying patients; improve communication between healthcare professionals; improve safety in the administration of high-alert medications; ensure greater safety in surgical procedures; reduce the risk of healthcare-associated infections; and reduce the risk of pressure injuries and injuries resulting from falls.<sup>4</sup> In Brazil, actions aimed at patient safety intensified following the publication of specific regulations and the creation of the Brazilian National Patient Safety Program, aiming at qualified healthcare based on actions aimed at promoting a safety culture.<sup>5</sup>

To develop strategies to improve the safety of care provided, it is important that there is a positive safety culture in healthcare services.<sup>6</sup> Safety culture is characterized as a practice in which all workers, including managers and direct patient care workers, are responsible for their own safety, the safety of their colleagues, patients and family members; safety is a priority beyond financial and operational interests; identification, communication and resolution of safety-related problems are valued; the occurrence of accidents is the basis for organizational learning; maintaining safe health systems is achieved through the provision of resources, structure and accountability of all involved.<sup>7</sup>

Safety climate is the measurable portion of this safety culture, and can be assessed through the perceptions, behaviors and attitudes of individuals at a given time in the environment in which they are inserted.<sup>8</sup> The safety climate assessment of health services is capable of highlighting gaps and needs to improve the care provided by strengthening patient safety.<sup>8-11</sup>

It is worth noting that Primary Health Care (PHC) represents a model of change and reorganization of healthcare in Brazil,<sup>12</sup> based on disease prevention and health promotion.<sup>12-13</sup> There is a perception that PHC is relatively safe due to the low technological density used in this sector. However, the occurrence of incidents related to healthcare in primary care services is common,<sup>14-17</sup> which justifies the preparation of this study. It is worth noting that the Brazilian National Primary Care Policy (PNAB) and the Brazilian National Patient Safety Program highlight the need and importance of implementing patient safety actions within the scope of PHC.<sup>16</sup>

Therefore, this study aimed to identify the characteristics of patient safety climate in PHC services in Brazil.

## **METHODS**

This is an integrative literature review carried out between May and October 2021. The integrative review was chosen because it is a method that enables the synthesis and analysis

of published evidence on a topic, encompassing studies from different methodologies and contributing to in-depth regarding the topic studied.<sup>18</sup>

To carry out the present study, a systematization consisting of procedures organized into five chunks was followed: 1) conceptual; 2) methodological; 3) inferential; 4) theoretical; and 5) presentation. The first stage, constituted by the conceptual part of the review, encompasses topic identification and question elaboration. With regard to methodology, the steps of study survey and selection and data collection were followed. The inferential chunk comprises study assessment and data analysis, whereas the theoretical chunk brings the interpretation of findings and discussion of results. Finally, a presentation is made through a review synthesis.<sup>19</sup>

To prepare the research question, the PICO strategy for qualitative studies was used, being applied as follows: Population or Problem (PHC); Interest (Safety climate); Context (Brazil). In this way, the guiding question was defined: what are the characteristics of patient safety climate in PHC services in Brazil?

The search was carried out in the Medical Literature Analysis and Retrieval System Online (MEDLINE), Scientific Electronic Library Online (SciELO), *Literatura Latino-Americana e do Caribe em Ciências da Saúde* (LILACS) and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases. The following terms were defined to search the literature: patient safety, organizational culture, safety culture, safety climate, PHC, basic care, primary care and Brazil. The terms were associated with Boolean operators (AND and OR). The strategy employed was: "*Segurança do Paciente*" OR "Patient Safety" OR "*Seguridad del Paciente*" AND "*cultura de segurança*" OR "safety culture" OR "*cultura de seguridad*" OR "*clima de segurança*" OR "safety climate" OR "*clima de seguridad*" OR "*cultura organizacional*" OR "organizational culture" OR "*cultura organizacional*" AND "*atenção primária a saúde*" OR "primary healthcare" OR "*atención primaria de salud*" OR "*atenção básica*" OR "*atención básica*" OR "*cuidados primários*" OR "primary care") AND ("*Brasil*" OR "Brazil").

Inclusion criteria include articles available in electronic format, in full, in Portuguese, English and Spanish, with publication date from November 25, 2011. The temporal limitation is justified by the publication date of the regulation that guided regarding the good operating practice requirements for health services.<sup>5</sup> Exclusion criteria included articles that were unrelated to the study objective, research carried out in other countries, duplicate publications, articles that did not use an instrument that assesses safety climate, review articles, experience reports and research that was published in journals who did not have the peer review process.

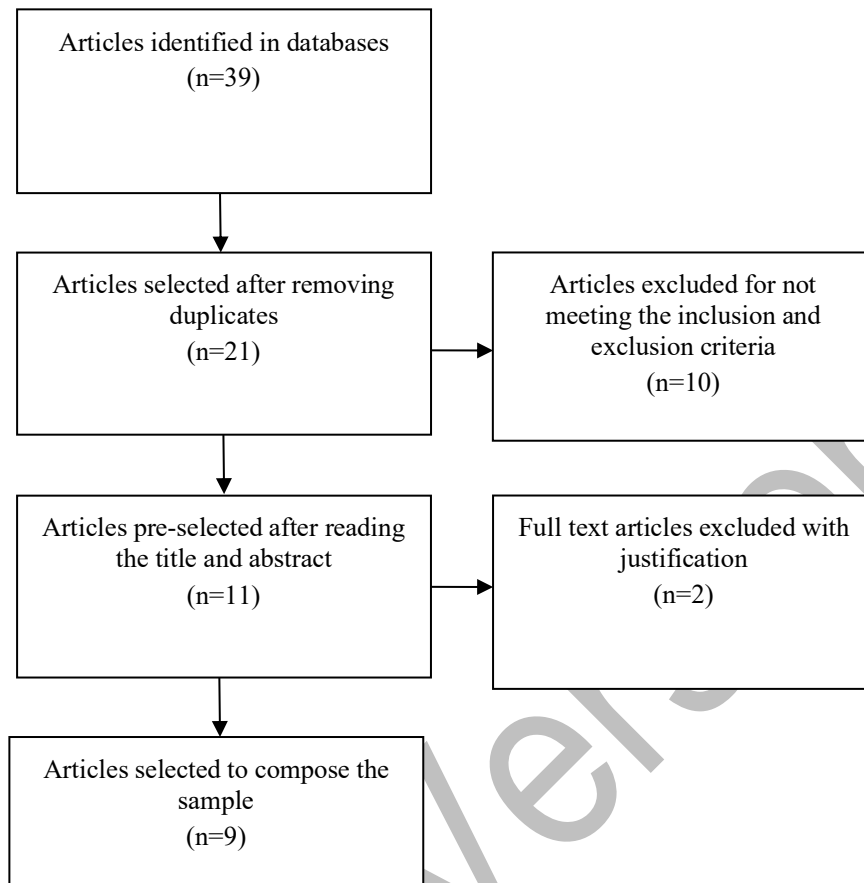
To facilitate study selection, the Rayyan tool, website and bibliographic reference management application, was used.<sup>20</sup> Database searches were saved and exported to the Rayyan tool.

Data processing was carried out with the support of *Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* (IRAMUTEQ), which allows statistical analysis of texts using graphical representations, facilitating the organization and understanding of the materials studied.<sup>21</sup> The text *corpus* was constructed from the nine selected articles, including introduction, results and conclusion, adapting them to software specifications. The file was reviewed and typographical errors were corrected. Thus, the text *corpus* was processed in IRAMUTEQ, and the dendrogram generated by the program was adopted for data analysis.

The articles' level of evidence was assessed according to Agency of Healthcare Research and Quality (AHRQ) recommendations.<sup>22</sup> For data analysis, we opted for the content analysis modality.<sup>23</sup> Content analysis is structured into three phases. In the first phase, also called pre-analysis, the material is read briefly, the documents that will be analyzed are selected, the objectives are formulated and the material is prepared. Material exploration is the second phase of analysis and is characterized by material coding and categorization. The last phase is treatment of results, where interpretation of results is carried out through inference.

## RESULTS

An adapted version of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol flowchart was used to expose the steps of the search process (Figure 1).



**Figure 1.** Flowchart of the search process according to the PRISMA protocol. Juiz de Fora, MG, Brazil, 2022

After identifying and excluding duplicate studies, study titles and abstracts were read, excluding those that did not meet the inclusion and exclusion criteria and pre-selecting those that met these criteria. Subsequently, the 11 pre-selected articles were read in full and two of them were excluded, one because it was a master's thesis and the other because it did not use an instrument to assess safety climate. Finally, nine articles were selected to compose the study sample.

Selected studies were grouped in Chart 1 and characterized according to main author, journal title and year of publication, article title, research location and sample, data collection instrument used and synthesis of the main results obtained. Of the nine articles selected, eight were published in Portuguese and one in English. The year of publication ranged from 2013 to 2021. The number of research participants ranged from 51 to 513, with an average of 198 participants.

**Chart 1.** Characterization of selected studies according to main author, journal, year, location, sample, data collection instruments used and main results. Juiz de Fora, MG, Brazil, 2022

Author, journal/year	Location and sample	Data collection instrument	Main results
Paese F, Dal Sasso GTM <i>Texto Contexto Enferm</i> / 2013 <sup>24</sup>	Santa Catarina (n=96)	Safety Attitudes Questionnaire Ambulatory Version	The “patient safety” attitude proved to be most relevant to study participants. The “error” attitude was assessed as the least relevant.
Galhardi NM <i>et al. Acta Paul Enferm</i> / 2018 <sup>25</sup>	São Paulo (n=240)	Survey on Patient Safety Culture for Primary Care	Professionals presented positive perceptions regarding the dimension of service quality and patient safety climate. The “leadership support” dimension proved to be fragile, requiring improvements.
Raimondi DC <i>et al. Rev Gaúcha Enferm</i> /2019 <sup>7</sup>	Paraná (n=144)	Survey on Patient Safety Culture for Primary Care	The patient safety climate was assessed as positive by study participants.
Souza MM <i>et al. Rev Bras Enferm</i> / 2019 <sup>26</sup>	Rio Grande do Sul (n=349)	Safety Attitudes Questionnaire Ambulatory Version	Professionals’ assessment of safety climate was negative. Only the “patient safety” domain presented a positive assessment. The domains that presented the lowest means were “working conditions” and “error”.
Dal Pai S <i>et al. Rev Baiana Enferm</i> / 2020 <sup>27</sup>	Rio Grande do Sul (n=188)	Survey on Patient Safety Culture for Primary Care	The assessment of the professionals participating in the study in relation to safety climate was positive, except in the “pressure and pace of work” dimension.
Lousada LM <i>et al. BMC Family Practice</i> / 2020 <sup>28</sup>	Ceará (n=147)	Safety Attitudes Questionnaire	Patient safety climate was assessed negatively. “Job satisfaction” was the domain that obtained the best score, while “management perception” and “working conditions” were those with the lowest scores.
Macedo LL <i>et al. Trab. Educ. Saúde</i> / 2020 <sup>29</sup>	Paraná (n=513)	Survey on Patient Safety Culture for Primary Care	A negative patient safety climate assessment was identified. The most fragile dimensions according to the assessments were “work process in the health service” and “manager support”.
Vasconcelos PF <i>et al. Rev Min Enferm</i> / 2021 <sup>30</sup>	Ceará (n=55)	Safety Attitudes Questionnaire	Patient safety climate in the studied scenario was negatively assessed. All domains assessed presented values lower than those recommended; among them, three showed the need for interventions to improve patient safety climate.
Bohrer JKL <i>et al. Rev Rene</i> / 2021 <sup>31</sup>	Federal District (n=51)	Survey on Patient Safety Culture for Primary Care	No strong dimensions of safety climate were identified. The “teamwork” dimension was the one that received the best assessment.

The instruments used to assess patient safety climate varied between articles. Among them, two used the translated and culturally adapted version of the Safety Attitudes Questionnaire (SAQ), and five chose the translated and culturally adapted version of the Medical Office Survey on Patient Safety.<sup>32-33</sup> The SAQ-AV was adopted in two articles.<sup>34</sup>

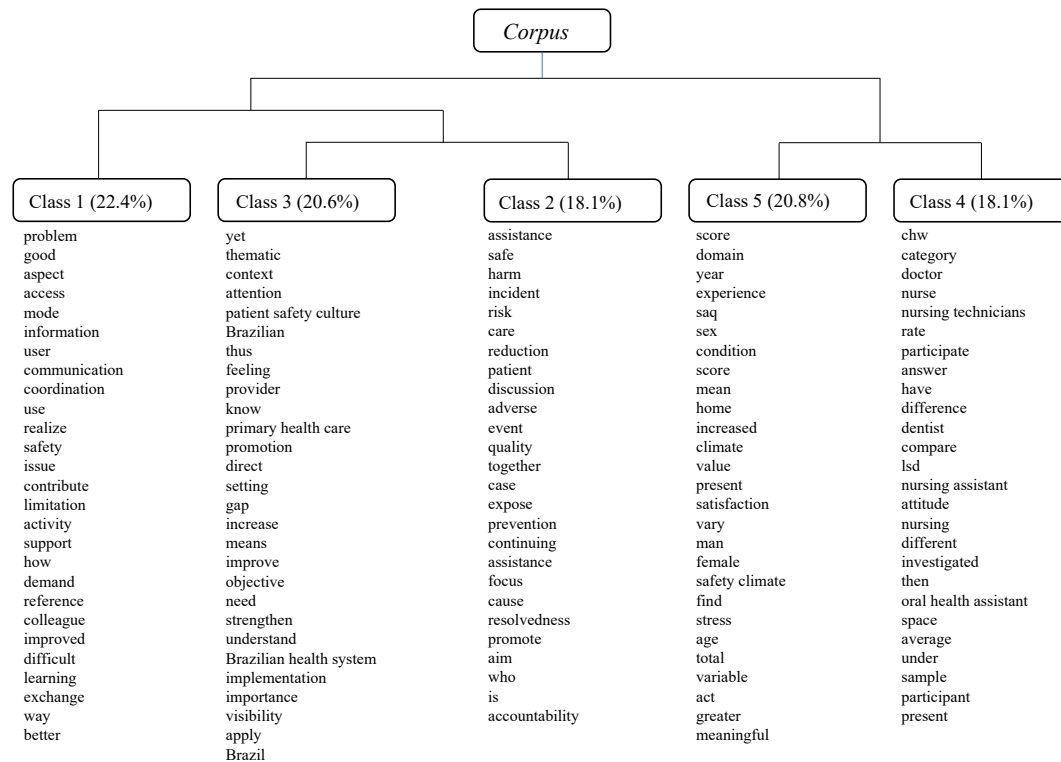
It is worth mentioning that the first study<sup>24</sup> included in the review that used the SAQ-AV informs the authors’ authorization to translate, adapt and apply the instrument in Basic Health Units. However, evidence of validity of that instrument in the Brazilian context was not

presented. The second study<sup>26</sup> included in the review that uses the SAQ-AV makes reference to the previously mentioned study<sup>24</sup>. Despite this observation, it is noteworthy that the studies were published in journals indexed in reputable health databases, with a rigorous peer review process. Therefore, it was decided to keep them in the sample selected for this investigation.

All articles included in this study had a cross-sectional design, being classified with a level of evidence equal to 6. It is noted that, despite using different terms and specifications, the instruments converge in the sense of assessing broader themes regarding safety climate, such as interpersonal relationships, covering communication and teamwork, the relationship with management and working conditions.

Among the studies assessed, the participating professional categories were nurses, doctors, community health workers (CHW), nursing technicians, dentists, social workers, psychologists, pharmacists, physiotherapists, speech therapists, managers, nutritionists, physical educators, occupational therapists, administrative assistants, nursing assistants, pharmacy assistants, oral health assistants, clinical pathology and laboratory service assistants and endemic disease agents.

In this study, we chose to use the Descending Hierarchical Classification (DHC), which allows the organization of words and the formation of classes based on the context relationship and association between words.<sup>21</sup> After grouping the words, a dendrogram was created showing the classes generated and the proportion of text segments that make up each class (Figure 2).



**Figure 2.** Dendrogram of the classes generated by the IRAMUTEQ software

The *corpus* classification made it possible to identify two main categories, including three classes in category 1 and two classes in category 2, namely: 1) Safe healthcare in PHC (class 1: Aspects of safe healthcare in PHC; class 2: Patient safety; and class 3: Patient safety culture in PHC); and 2) Patient safety climate assessment in PHC services (class 4: Perceptions about patient safety climate according to professional categories; and class 5: Patient safety climate assessment in PHC services). Thus, the thematic proximity between the classes allowed them to be addressed and discussed in an integrated way within each corresponding category.

In category 1, “Safe healthcare in PHC”, the main aspects for safe healthcare in PHC were highlighted, with a view to improving patient safety culture. Communication and teamwork were highlighted as enhancers for safe care. Within this category, the relevance of organizational learning stood out as an element capable of promoting positive transformations in the work environment through the sharing of information and implementation of strategies in health services. Furthermore, the non-punitive culture is characterized by a differential in promoting patient safety.

In category 2, “Patient safety climate assessment in PHC services”, PHC professionals’ perception about patient safety climate is presented. It is worth highlighting the



challenge faced in the present study related to the use of different assessment instruments. The Family Health Strategy (FHS) model was positively associated with patient safety climate and length of experience in PHC. Conversely, being a CHW, having deficiencies in management and leadership, in addition to inadequate working conditions, were related to an unfavorable safety climate perception. Safety climate in PHC was considered negative.

## DISCUSSION

Patient safety climate characteristics in PHC services in Brazil point out aspects related to safe care for users as well as the factors identified in health workers' perception.

Communication continues to be a challenge in the context of PHC. Problems and failures in communication can harm the quality and safety of the care provided. Effective communication is necessary both between professionals and between professionals and users to prevent incidents and strengthen safe healthcare.<sup>7,26,30-31</sup>

Among the challenges for effective communication in the health work process, it is possible to mention: uniprofessional action; the traditional training process; and hierarchical issue, which sometimes prevents establishing fluid communication and sharing of information. For effective communication and quality of healthcare, it is necessary for professionals to know each other's responsibilities and understand the importance of teamwork. Therefore, investing in training can be an effective strategy to strengthen relationships between the team, encourage open communication and collaborate in the work process.<sup>35-36</sup>

Teamwork was positively assessed in some of the studies analyzed.<sup>24-25,27</sup> An integrated team is better able to develop its work process effectively, having common objectives and strategies to achieve safe assistance.<sup>37-38</sup> Teamwork is crucial for the comprehensiveness of care and the quality of assistance in PHC. Interprofessional collaborative practice is based on effective communication between the team, common objectives and collectively developed goals, and shared responsibility for quality of work.<sup>35-38</sup>

Organizational learning was an aspect considered important for care safety in PHC. The assessment of organizational learning varied in the studies that assessed this element. However, they understand that learning on the job through continuing education is essential for professional updating, promotion of dialogue and exchange of knowledge to build critical thinking for work focused on safe practices.<sup>7,24-27,30-31</sup>

Organizational learning is a broad concept that is still much discussed. It is understood as a strategy to transform knowledge into action and create knowledge that is shared among the health teams of an institution.<sup>39</sup> Continuing education provides significant learning based on the

reality and demands of everyday service life, allowing workers to expand their autonomy and become leading actors in safe care for users and themselves, promoting changes in organizational culture.<sup>40</sup>

To strengthen patient safety, another point to be highlighted is learning from error to replace individual blame. In this regard, it is necessary to understand the error as a system failure and not an individual failure, leading professionals to be co-responsible for the incident that occurred and encouraging collective learning from the error.<sup>4,7,16</sup>

Working on the FHS team and having five to 12 years of work were significant factors for a positive safety culture.<sup>26</sup> FHS is based on comprehensive care, developed by a multidisciplinary team and aimed at the population in a defined territory. Professional performance in the FHS team can contribute to creating bonds with users and professional satisfaction.<sup>12</sup> Likewise, longer service time promotes greater job satisfaction, contributing to safe and quality care.<sup>6</sup>

Safety climate assessment between professional categories varied between studies. Three of the selected articles<sup>7,24,29</sup> indicated that there was a weaker safety climate perception among CHW. The dimensions negatively assessed by these professionals were linked to teamwork and communication, health unit management and working conditions. This finding can be justified by CHW's work being developed in the health unit, but mainly in the community in which it is located,<sup>7</sup> which can create a distance in relation to other team members.

Perception and support from management were one of the most negatively assessed aspects in studies.<sup>7,24-25,28-30</sup> Sometimes, the relationship with management is ineffective, which can harm teamwork and, consequently, patient safety. The role of coordinator in PHC requires tools such as leadership, a necessary aspect for improving work processes and changes in health services.<sup>16</sup> The fragility of interaction with management can influence attitudes related to patient safety. Thus, it is important that management is open to dialogue and supports the daily work of professionals, in order to promote communication about safety and jointly develop actions aimed at improving safety climate.<sup>38</sup>

Unfavorable working conditions can impact patient safety.<sup>24,26-29</sup> The factors cited by professionals are work overload, professional exhaustion, absence of a manager in the unit, scarce resources, lack of inputs and fragile work relationships. These factors influence the provision of services and the quality of care provided, in addition to contributing to professional dissatisfaction.<sup>4</sup>

Most studies<sup>26,28-31</sup> showed that the patient safety climate was assessed as negative. Knowing the safety climate in PHC is important to identify both the strengths and weaknesses of the service in relation to patient safety and, thus, seek strategies to improve the conditions assessed.<sup>14,16</sup> The results of the institutional assessment can support the development of an action plan to be worked on together with the team, management and users of health services.

Limitations of this study include limited databases and the inclusion of studies published in only three languages. The choice of databases and languages is justified due to the chosen scenario being Brazil. In this way, the databases and languages include the main vehicles of studies produced in the Brazilian context. Furthermore, the use of different instruments for measuring the patient safety climate in the selected studies did not allow the development of comparisons between studies. As a weakness, the level of evidence of studies included is highlighted. Methodological rigor and assessment of studies by independent reviewers were the strategies adopted to promote greater robustness to the study and mitigate the limitations highlighted. The lack of evidence of validity of SAQ-AV in studies that used this instrument may signal weakness in the results of both studies (Paese F, Dal Sasso GTM, 2013<sup>24</sup> and Souza MM, Ongaro JD, Lanes TC *et al.*, 2019<sup>26</sup>), which may impact the conclusions of this review. In this regard, the importance of cross-cultural adaptation studies of foreign measuring instruments to adapt to the Brazilian context and research scenarios stands out.

In addition to the issues highlighted, it is worth highlighting that strategies are recommended to improve safety climate in PHC, such as: implementation of continuing education in health services with a focus on learning through error; holding periodic team meetings to improve interaction and promote discussions and exchange of knowledge; use of protocols and checklists; improvement of working conditions; and management support to improve the work process.<sup>7,24-27,29,31</sup>

## CONCLUSION

Safety climate in PHC was negative in most of the studies analyzed. Communication, organizational learning and teamwork were cited as enhancing safe healthcare. Having five to 12 years of work and working on the FHS team were significant aspects of a positive safety culture. CHW presented a worse assessment of safety climate when compared to other PHC workers. Management support and working conditions were the dimensions that presented the worst assessments.

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**Larissa Brandão Monte Mor** contributed to bibliographical research, writing the abstract, introduction, methodology, discussion, interpretation and description of results, preparation of tables, conclusions, review and statistics. **Beatriz Francisco Farah** contributed to writing the abstract, review and statistics. **Izabela Palitot da Silva** contributed to writing the abstract, review and statistics. **Camila Ribeiro Araujo** contributed to writing the abstract, review and statistics. **André Luiz Silva Alvim** contributed to writing the abstract, methodology, interpretation of results, conclusions, review and statistics. **Luciane Ribeiro de Faria**

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All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.

Layout Version