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Application of the Medical Office Survey on Patient Safety Culture: integrative review

Aplicação do *Medical Office Survey on Patient Safety Culture*: revisão integrativa
 Aplicación del *Medical Office Survey on Patient Safety Culture*: revisión integradora

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Abstract

Objective: To assess how the Patient Safety culture is expressed in the view of Primary Health Care professionals, based on the analysis of scientific productions in which the Medical Office Survey on Patient Culture instrument was applied.

Methods: Integrative review based on the scoping review methodology with search in online databases of the Virtual Health Library, Web of Science, PubMed®, Cumulative Index to Nursing and Allied Health Literature and Scopus using the keyword “Medical Office Survey on Patient Safety Culture”.

Results: Thirteen articles were analyzed in relation to the application of the instrument. There was a positive overall assessment of Patient Safety (32%-83%). The “teamwork” and “work pressure and pace” dimensions were seen as the best and worst scores, respectively.

Conclusion: The integrative literature review allowed the critical analysis of studies that showed the view of health professionals from different countries when evaluating dimensions of the Patient Safety culture according to the instrument applied, indicating areas considered as positive, and those demanding greater attention and appreciation. Such evidence contributes to advance the understanding of the multifaceted phenomenon investigated in different Primary Care settings.

Resumo

Objetivo: Verificar como se expressa a cultura da Segurança do Paciente na visão de profissionais da Atenção Primária à Saúde, a partir da análise de produções científicas que aplicaram o instrumento *Medical Office Survey on Patient Culture*.

Métodos: Revisão integrativa, elaborada com base na metodologia scoping review, com busca em banco de dados online da Biblioteca Virtual em Saúde, da *Web of Science*, do PubMed®, do *Cummulative Index to Nursing and Allied Health Literature* e do Scopus, utilizando a palavra-chave “*Medical Office Survey on Patient Safety Culture*”.

Resultados: Foram analisados 13 artigos quanto à aplicação do instrumento. Constatou-se avaliação geral positiva sobre Segurança do Paciente (32% a 83%). As dimensões “trabalho em equipe” e “pressão e ritmo de trabalho” foram vistas como as de melhor e pior escore, respectivamente.

Conclusão: A revisão integrativa da literatura possibilitou a análise crítica de estudos que demonstram a visão dos profissionais de saúde de diferentes países, ao avaliarem dimensões de cultura de Segurança do Paciente conforme o instrumento aplicado, indicando áreas consideradas positivas, bem como aquelas que demandam maior atenção e valorização. Tais evidências contribuem para o avanço na compreensão do multifacetado fenômeno investigado nos diversos ambientes da Atenção Primária.

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Conflicts of interest: this article is part of a Doctoral Thesis to be presented to the Postgraduate Program in Nursing (PPGenf) at the Universidade de Brasília (UnB).

Resumen

Objetivo: Verificar cómo se expresa la cultura de la Seguridad del Paciente bajo la mirada de profesionales de la Atención Primaria en Salud, a partir del análisis de producciones científicas que aplicaron el instrumento *Medical Office Survey on Patient Culture*.

Métodos: Revisión integradora, elaborada con base en la metodología scoping review y búsqueda en banco de datos en línea de la Biblioteca Virtual de Salud, de la *Web of Science*, de PubMed®, del *Cummulative Index to Nursing and Allied Health Literature* y de Scopus, utilizando la palabra clave "*Medical Office Survey on Patient Safety Culture*".

Resultados: Se analizaron 13 artículos con relación a la aplicación del instrumento. Se constató una evaluación general positiva sobre la Seguridad del Paciente (32 % a 83 %). Las dimensiones "trabajo en equipo" y "presión y ritmo de trabajo" fueron las que tuvieron mejor y peor puntuación, respectivamente.

Conclusión: La revisión integradora de la literatura posibilitó el análisis crítico de estudios que demuestran la visión de los profesionales de salud de distintos países, al evaluar las dimensiones de la cultura de la Seguridad del Paciente de acuerdo con el instrumento aplicado, indicando áreas consideradas positivas, así como las que demandan más atención y valorización. Esas evidencias contribuyen para el avance de la comprensión del multifacético fenómeno investigado en los diversos ambientes de la Atención Primaria.

Introduction

Patient Safety is conceptualized as the reduction of the risk of damage considered unnecessary to an acceptable minimum in care, and is identified as a primordial dimension for quality in health.⁽¹⁾ Assessing the professionals' perception about the culture of Patient Safety in Care Primary Health Care also emerges as an important parameter in the identification of domains and variables that need attention through individualized situational diagnosis, enabling the development of strategies for the performance of safe care in the network.⁽²⁾

Patient Safety-associated issues are presented as a public health issue given the rise in risks and incidents that cause harm to patients.^(3,4) Much is done in an attempt to understand the causes and consequences of errors in health, especially in the hospital setting, in order to propose appropriate solutions.^(5,6) However, errors occur in the context of Primary Health Care too, and are still little discussed. Therefore, providing a culture of constructive safety by establishing shared values and safe behaviors in the daily practice of care becomes essential to improve Patient Safety in extra-hospital environments.⁽⁷⁾

The Medical Office Survey on Patient Safety Culture (MOSPSC) instrument, developed by the US Agency for Healthcare Research and Quality (AHRQ) in 2007, emphasizes issues related to Patient Safety and the quality of care provided in primary care services. The original instrument consists of 51 questions measuring 12 dimensions, including issues related to patient safety and quality, communication, the work process, learning and

training. For the treatment and analysis of the instrument's data, the AHRQ recommends the assessment of percent positive responses regarding the Patient Safety culture, in which, on average, the percentage of positive responses must reach 50% or more to indicate a positive Patient Safety culture in that setting.⁽⁸⁾

The MOSPSC instrument has been tested in more than 200 healthcare facilities across the United States and more than 4,100 surveys were completed, in which researchers examined the reliability and factor structure of the safety culture compounds so that the final items and dimensions were considered as having solid psychometric properties.⁽⁹⁾

Such instrument enables the analysis of the current status of the Patient Safety culture and stimulates awareness about it. The MOSPSC instrument helps to identify strengths and aspects in need of improvement, allows for the analysis of trends in the change in Patient Safety culture over time and comparisons within and between organizations, and assesses the cultural impact of Patient Safety initiatives and interventions.⁽⁵⁾ It is a versatile instrument that has already been translated and adapted into different languages, used in health settings in the primary care context around the world in countries such as Mexico, Spain, Brazil, Yemen, Qatar, Poland and Portugal.^(6,10-15) However, the subject requires exploring the evidence produced.

The development of a review on the subject makes it possible to know and/or recognize studies underway in Brazil and worldwide, bringing to light identified weaknesses and strengths about Patient Safety in primary care settings and, on the other hand, indicates the opportunities for further

research in the area. Therefore, it is necessary to examine the topic “safety culture” from the perspective of multidisciplinary teams (the professional’s view on the subject), then generate a body of knowledge, and consequently, provoke reflections, questions and debates that can contribute to advancements of the issue in focus for the improvement of the quality of care in Primary Health Care with a solid culture of Patient Safety in services.

The aim of this study was to assess how the Patient Safety culture is expressed in the view of Primary Health Care professionals, based on the analysis of scientific productions in which the MOSPSC instrument was applied.

Methods

This is an integrative review. It was prepared based on the scoping review methodology (scoping analysis) recommended by the Joanna Briggs Institute, and published articles that used the MOSPSC were selected. The aim of the scoping review technique is to synthesize and disseminate the state of the art in a thematic area through a rigorous and transparent method.⁽¹⁶⁾ The following steps were taken: identification of the theme; definition of the guiding question; delimitation of inclusion and exclusion criteria for studies; definition of the information to be extracted from the studies selected; evaluation of included studies and interpretation of results.⁽¹⁷⁾

The PICO strategy was applied for the development of the guiding question; with “P” corresponding to the population (perception of professionals working in Primary Health Care), “I” to intervention (application of the MOSPSC), “C” to comparison (does not apply, as this is not a comparative study) and “O” to the outcome (expression of the Patient Safety culture). Thus, the following research question emerged: When applying the MOSPSC instrument, how is the Patient Safety culture expressed in the perception of professionals working in Primary Health Care?

The online databases of the Virtual Health Library, Web of Science, PubMed®, Cumulative Index to Nursing and Allied Health Literature

(CINAHL) and Scopus were searched in January 2020, using the keyword “Medical Office Survey on Patient Safety Culture”. The search and selection processes for the studies were performed by two researchers independently. The following inclusion criteria were established: articles only, published from year 2008 (year following the creation of the instrument) in any language, and studies in which the MOSPSC was used with the general objective of initial evaluation of the Patient Safety culture in primary health care settings. The following were excluded: theses, books, dissertations; publications that did not use the MOSPSC, or that used it but with a different objective than the one mentioned above, and duplicate publications.

After selecting the publications, the Endnote Web reference manager was used to store and organize the studies. Then, a table containing the article reference, study location and sample characterization was prepared, and a PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart was built.⁽¹⁸⁾

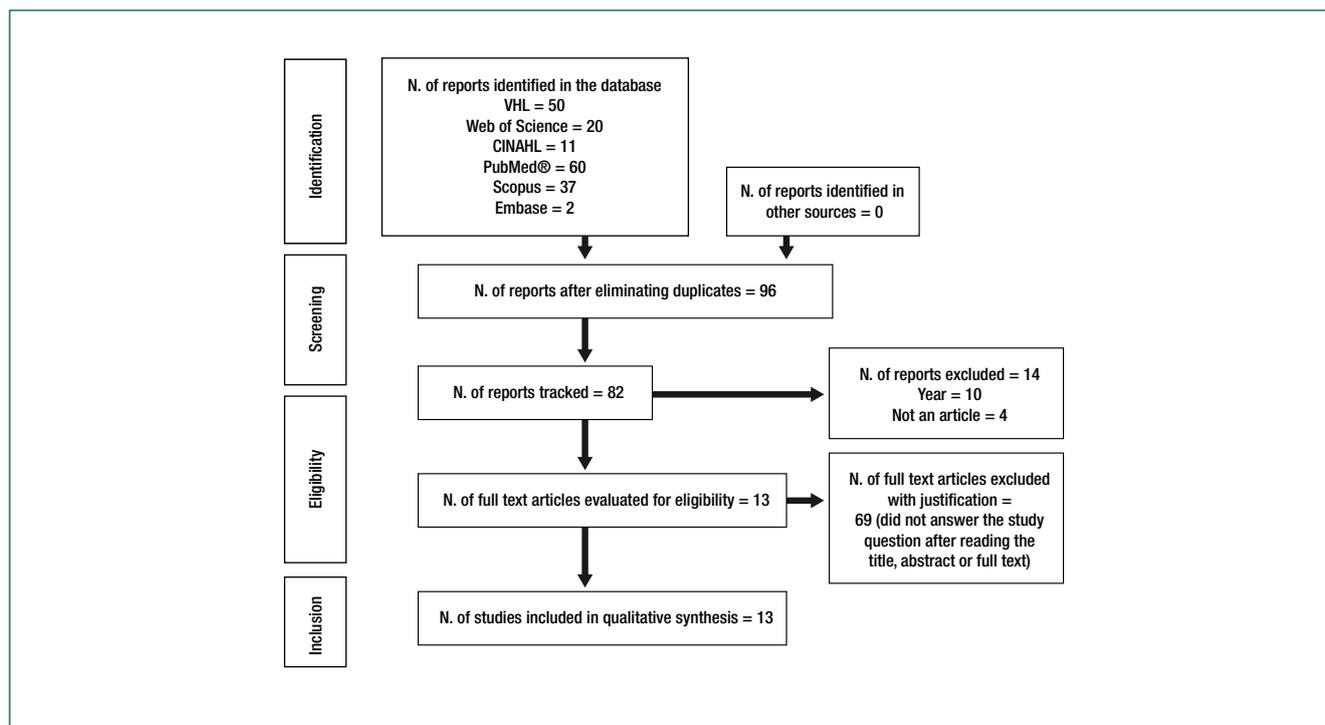
Results

Figure 1 shows the process that led to the selection of 13 articles for the integrative review. The characterization of selected studies according to variables of interest is shown in chart 1.

Chart 1. Characterization of selected studies according to variables of interest

Reference	Location	Sample
Flores-González et al. ⁽¹⁰⁾	Villahermosa	164 professionals
Astier-Peña et al. ⁽¹¹⁾	Spain	215 centers and 4,344 professionals
Webair et al. ⁽¹³⁾	Yemen	16 centers and 78 professionals
El Zoghbi et al. ⁽¹⁴⁾	Qatar	21 centers and 1,810 professionals in 2012 2,616 professionals in 2015
Raczkiwicz et al. ⁽¹⁵⁾	Poland	All health centers in Poland, 337 professionals
Hagopian et al. ⁽¹⁹⁾	Cleveland, United States	180 centers and 387 professionals
Mazurenko et al. ⁽²⁰⁾	United States	846 centers e 19,848 professionals
Hickner et al. ⁽²¹⁾	United States	-
Pohlman et al. ⁽²²⁾	United States	236 professionals
Romero et al. ⁽²³⁾	Galicia, Spain	182 professionals
Yansane et al. ⁽²⁴⁾	United States	4 dental institutions and 1,615 professionals
Macedo et al. ⁽²⁵⁾	Londrina, Brazil	513 professionals
Ramoni et al. ⁽²⁶⁾	United States	328 professionals

The recommendations of the original instrument⁽⁸⁾ for descriptive data analysis suggest the



VHL - Virtual Health Library; CINAHL - Cumulative Index to Nursing and Allied Health Literature

Figure 1. Study selection flowchart

calculation of the frequency of responses for each item and the mean for each dimension as follows: classified as strong when 75% or more of participants respond “totally agree/agree” or “most of the time/always” for positively formulated questions; and “strongly disagree/disagree” or “never/rarely” for negatively formulated questions. In turn, they are classified as weak when 50% or more of participants respond negatively, choosing “totally disagree/disagree” or “never/rarely” for positively formulated questions, or using “strongly agree/agree”, “always/most of the time” for negatively formulated questions.

Six out of the 13 articles selected for review were based on AHRQ recommendations for data analysis and treatment, and for the calculation of positive percentages, the score for each dimension is calculated using the mean value of the percentage of responses for each item. Thus, it resulted in: El Zoghbi et al.⁽¹⁴⁾ (Qatar) with 80% as a parameter for “strength” and 60% for “weakness”; Webair et al.⁽¹³⁾ (Yemen) with 75% as a parameter for “strength” and 60% for “weakness”; Mazurenko et al.⁽²⁰⁾ (USA), Romero et al.⁽²³⁾ (Galicia), Macedo et

al.⁽²⁵⁾ (Brazil) and Flores-González et al.⁽¹⁰⁾ (Mexico) with 75% as a parameter for “strength” and 50% for “weakness”. Thus, in relation to Patient Safety, the overall positive assessment (very good and excellent), when evaluated, ranged between 32% and 83% among research participants (Table 1).

Table 1. Overall positive evaluation in the analyzed articles

Reference	%
Flores-González et al. ⁽¹⁰⁾	19 and 45*
Astier-Peña et al. ⁽¹¹⁾	34†
Webair et al. ⁽¹³⁾	46
El Zoghbi et al. ⁽¹⁴⁾	43 and 62‡
Rackiewicz et al. ⁽¹⁵⁾	61 and 39§
Hagopian et al. ⁽¹⁹⁾	67
Pohlman et al. ⁽²²⁾	83
Romero et al. ⁽²³⁾	72
Yansane et al. ⁽²⁴⁾	78
Macedo et al. ⁽²⁵⁾	35
Ramoni et al. ⁽²⁶⁾	65 e 48¶

*Respectively, values for “good” and “very good”; † overall mean – “very good” and “excellent”; ‡ respectively, values for years 2012 and 2015; § Respectively, values for “very good” and “excellent”; ¶ respectively, values for medical and dental staff.

Among the 11 studies that presented the mean overall assessment of Patient Safety, seven (one Qatari, one Polish, one Galician and four North Americans)^(14,15,19,22-24,26) presented percentages of

positive responses of 50% or more, demonstrating a positive Patient Safety culture in those environments. Mazurenko et al.⁽²⁰⁾ and Hickner et al.⁽²¹⁾ presented comparisons between different professional categories on the overall assessments of Patient Safety without presenting an overall mean value. The percentages of positive and negative scores for the MOSPSC items are shown in table 2.

Table 2. Positive and negative scores of items of the Medical Office Survey on Patient Safety Culture in the analyzed articles

Reference	Items			
	Positive score	%	Negative score	%
Flores-González et al. ⁽¹⁰⁾	Teamwork	65	Work pressure and pace	29
	Patient care tracking/ followup	63	Communication and responsiveness	30
			Managing support for Patient Safety	30
Astier-Peña et al. ⁽¹¹⁾	Patient safety and quality issues	-	Work pressure and pace	-
Webair et al. ⁽¹³⁾	Teamwork	96	Work pressure and pace	57
El Zoghbi et al. ^{(14)*}	Teamwork	87	Work pressure	-
Hagopian et al. ⁽¹⁹⁾	Patient care tracking/ followup	80	Communication openness	-
Hickner et al. ⁽²¹⁾	Teamwork	-	Work pressure	-
Pohlman et al. ⁽²²⁾	Teamwork	90	-	-
Romero et al. ⁽²³⁾	Organizational learning	79	Aspects related to patient safety and quality	46
	Teamwork	75	Exchange of information with other care services	45
			Work pressure and pace	31
Yansane et al. ⁽²⁴⁾	Organizational learning	85	Work pressure and pace	-
	Teamwork	79		
Macedo et al. ⁽²⁵⁾	-	-	Leadership support	47
Ramoni et al. ⁽²⁶⁾	Teamwork	72	-	-

*Best scores: data of the 2015 study, as in 2012 there were no dimensions with percentages above 80%; worst scores: data from 2012 and 2015 studies were equal

The dimension “teamwork” was the best perceived and mentioned in nine out of the 13 studies evaluated,^(10,13,14,19,21-24,26) followed by the dimensions “organizational learning”^(13,14,23,24) and “tracking/monitoring of patient care”.^(10,14) On the other hand, the dimension “work pressure and pace” appeared in most studies^(10,11,13,14,19,21,23,24) and was identified as the one with the worst score in the assessment of Patient Safety. Some articles also highlighted the difference in the scores of professionals with managerial responsibilities, in which the perception is better compared to other professionals^(11,20,21,26) and leaders are 40% more likely to have a positive perception.⁽¹¹⁾ In addition, it is noteworthy that the “leadership support” parameter was indicated in three articles as one of the areas that received the worst score.^(20,22-24)

Discussion

For the treatment and analysis of the instrument data, the AHRQ recommends evaluating the percentage of positive responses regarding the Patient Safety culture. On average, the percentage of positive responses must reach 50% or more to indicate that the Patient Safety culture is positive in that environment. To calculate the positive percentages, the composite measures are evaluated in different ways, and the score for each dimension is calculated by the mean value of the percentage of responses for each item by dimension.⁽⁸⁾

Despite the relevance and the translations already performed into different languages, when seeking to assess the culture of Patient Safety in PHC, evidence of the application of the MOSPSC in Brazil are still scarce. Note that some studies in which the MOSPSC instrument was used were not found in the data search performed in databases. A study conducted in the city of Curitiba in 2017 with the aim to evaluate the Patient Safety culture from the perspective of PHC nurses pointed to a positive safety culture (73.9% “good” and 50% “very good”).⁽²⁷⁾ Another survey also conducted in the southern region of Brazil in the same year aimed at comparing the culture of Patient Safety among professional categories working in PHC. It showed an overall mean of positive responses among professional nurses (67.70%), nursing assistants/technicians (62.84%), oral health assistants/technicians (59.46%), dentists (58.06%) and physicians (51.79%). On the contrary, only Community Health Agents had an unfavorable Patient Safety culture (46.73% of positive responses).⁽²⁸⁾

Studies performed internationally, such as one from Turkey, in which a questionnaire on the culture of Patient Safety was used in the hospital context but applied to professionals working in Primary Care spaces, the positive culture of Patient Safety was identified in only 46% of professionals, a low and negative percentage.⁽²⁹⁾ In the Iranian study, a modified version of a hospital area questionnaire on Patient Safety culture was used with professionals from Basic care health centers, and a positive safety culture was identified in 57% of professionals.⁽³⁰⁾

The aim of a North American investigation was to assess the association between the safety culture and quality measures in care centers. They concluded that even though the safety theory predicts a positive association between safety culture and quality, no significant associations were found between the former and the currently accepted measures for clinical quality in Primary Care. Furthermore, safety culture is such a complex construct that measuring it accurately requires the use of qualitative methods/data such as individual interviews. Finally, it indicates that safety culture can be something so distant from the care process of actual results that the two entities are not related.⁽¹⁹⁾

The MOSPSC instrument also allows the identification of dimensions considered as “strengths” of the Patient Safety culture with a percentage of positive responses equal to or greater than 75%, and as “weaknesses” when the percentage of positive responses is lower than 50%. This way, it is possible to identify the areas that need improvement.⁽⁸⁾

As the dimension “work pressure and pace” was identified as the one with the worst score almost unanimously among the articles surveyed, we suggest working towards the reduction of this parameter by reviewing and improving processes in different areas and services.^(7,12,31)

The study from Yemen⁽¹³⁾ highlights that the lack of appropriate or sufficient technologies, inappropriate staff and providers to deal with the patient load and poor work pace are at the same time, justifications for the occurrence of errors and areas for improvement. A sufficient number of professionals is necessary for the proper service, demand and performance of functions. Therefore, the overload can be seen as a reflection of the lack of investments in Primary Health Care, generating reflections about important aspects for Patient Safety and workers' health.^(7,28)

In the Spanish study,⁽¹¹⁾ “communication about error” was the dimension seen more negatively by physicians. A highlighted example was that communication failures can contribute to the occurrence of many adverse events that directly affect patient safety. This is corroborated by other studies, in which communication was pointed as the most common contributing factor to the occurrence of incidents in

Primary Health Care.^(5,27,32) Consequently, research to improve the performance of teams is one of the key future actions to be taken,⁽¹⁴⁾ and the ability of health centers to respond to patients' individual preferences, needs and values is an area of concern for managers and health professionals.⁽¹⁰⁾

Establishing a safety environment is directly linked to the transformational leadership style of executive directors, in which conscientious leadership plays a fundamental role in the sustainability of any effort towards a safety culture.⁽²⁴⁾

The North American study⁽²¹⁾ suggests that the managers/administrators' practice, in particular, needs to pay more attention to staff training needs, since this was the area with one of the greatest gaps in terms of positive perception. There is a statistically significant lack of agreement among team members, depending on their backgrounds and roles. Thus, both service managers and physicians must be more open to the ideas of the team in general, about how to improve care/embrace processes and encourage the team to question and express alternative points of view.^(10,20,21)

Consequently, knowledge and the use of incident notification systems are encouraged, as well as a critical and self-learning attitude.⁽²³⁾ Even so, it is possible to identify that the learning-from-error mode needs improvement, and the adoption of communication and educational practice as strategies to fill the knowledge gap improves the interaction between leaders and professionals and combats the institution of a culture of fear.⁽²⁾

In the study conducted in Qatar, the improvements observed in Patient Safety between 2012 and 2015 were attributed to the implementation of the accreditation program, as well as to numerous workshops, campaigns and training provided by the main health care provider in the country.⁽¹⁴⁾

A limitation of this integrative review was the lack of articles related to the use of a given instrument, which may make the topic very specific, in addition to the fact that only the perception of professionals was assessed, excluding the perception of users.

This study contributes to the development of new studies that seek to assess the culture of Patient

Safety in the view of professionals who use the MOSPSC, which will help to improve the instrument that may have new adaptations and be replicable in other Primary Health Care settings. This collaborates to improve the management of risks and incidents in primary care spaces, and contributes to disseminate knowledge on the subject, since data available in the literature are still scarce.

Four methodological studies of translation and cultural adaptation of the MOSPSC instrument were found during the search in the databases, of which two in Spain, one in Brazil and one in Portugal.^(3,12,33,34) However, the process of choosing an instrument developed in a language, context and culture different from those in which it is intended to be used is only the first step in a larger process to make it reliable, valid and effective for applicability in another reality, thereby allowing the construction of a measurement tool equivalent to the original version.⁽³⁵⁾

In addition to these notes, for future studies, we draw attention to the small sample size and small diversity of professional categories as possible limitations to the development of works on the subject.^(13,23,25) The AHRQ recommends the development of studies for administration to all providers and employees of establishments offering basic health care.⁽⁸⁾

Therefore, the availability of environment questionnaires about Patient Safety adapted to different languages allows for comparisons between different countries to know/recognize the different factors affecting the safety culture. Experiences of questionnaire validation, overall results obtained and measures taken to improve safety should be shared, and further research carried out.⁽¹²⁾

Conclusion

The articles selected and analyzed in this integrative literature review gather relevant evidence for the knowledge of the subject addressed. Thus, with the critical analysis of included studies, it is possible to recognize the scientific production and know the professionals' view of the Patient Safety culture in Primary Health Care. The results show that the Patient Safety culture presented a positive overall

evaluation (very good and excellent) among survey participants in the services of countries where the instrument was applied. The “teamwork” dimension was the best seen overall, and, conversely, the “work pressure and pace” dimension appeared mostly as the one with the worst score. These indicators, by pointing out areas that demand greater attention and appreciation according to the view of professionals, contribute to advances in understanding the multifaceted phenomenon of the Patient Safety culture in different primary care environments.

Collaborations

Inácio ALR and Rodrigues MCS contributed to the project design, analysis and interpretation of data, article writing, relevant critical review of the intellectual content and approval of the final version to be published.

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