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Near miss in primary care for patient health and safety: integrative review

ABSTRACT | Objective: To identify the evidence about near miss incidents in primary health care services. Method: Integrative literature review based on primary articles published in seven databases. The descriptors "near miss", "primary health care" and "safety management" were used without limitations regarding the year of publication and languages. Results: The types of near miss incidents most frequently reported were related to medication errors, ranging from 6.2% to 96%, and the prescription process was the most recurrent. Health professionals were responsible for intercepting between 66% to 83% of incidents. Conclusion: Reporting of near miss incidents should be encouraged and incorporated into management practices. Knowing the errors early and their potential for damage enables improvement actions for patient safety.
Keywords: Near miss, healthcare; Patient safety; Primary health care.

RESUMEN | Objetivo: identificar la evidencia sobre incidentes near miss en los servicios de atención primaria de salud. Método: revisión bibliográfica basada en artículos primarios publicados en siete bases de datos. Los descriptores "near miss salud", "atención primaria de salud" y "gestión de seguridad" se utilizaron sin limitaciones con respecto al año de publicación y los idiomas. Resultados: los tipos de incidentes cercanos a fallas más frecuentes se relacionaron con errores de medicación, que oscilaron entre 6.2% y 96%, y el proceso de prescripción fue el más recurrente. Los profesionales de la salud fueron responsables de interceptar entre el 66% y el 83% de los incidentes. Conclusión: Se debe alentar e incorporar a las prácticas de gestión la notificación de incidentes cercanos. Conocer los errores temprano y su potencial de daño permite acciones de mejora para la seguridad del paciente.
Palabras claves: Near miss salud; Seguridad del paciente; Atención primaria de salud.

RESUMO | Objetivo: Identificar as evidências sobre os incidentes near miss em serviços de atenção primária à saúde. Método: Revisão integrativa de literatura a partir de artigos primários publicados em sete bases de dados. Utilizou-se os descritores "near miss", "atenção primária à saúde" e "gestão da segurança" sem limitações quanto ao ano de publicação e idiomas. Resultados: Os tipos de incidentes near miss notificados com maior frequência estavam relacionados a erros de medicação, com variação entre 6,2% e 96%, e o processo de prescrição foi o mais recorrente. Os profissionais de saúde foram os responsáveis por interceptar entre 66% a 83% dos incidentes. Conclusão: A notificação de incidentes near miss deve ser incentivada e incorporada nas práticas gerenciais. Conhecer precocemente os erros e seu potencial de dano possibilita ações de melhorias para segurança do paciente.
Palavras-chaves: Near miss; Segurança do paciente; Atenção primária a saúde.

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INTRODUCTION

Health care incidents are problems investigated worldwide due to the ability to harm and mitigate patients has become a major challenge for organizations. [1] The importance of notifying adverse events is highlighted so that improvements in health institutions can be implemented.

However, the notification of both adverse events and near miss incidents, understood as almost an error due to the detection of the failure before reaching the patient, is not a focus of managers' attention and, still, this type of notification is little valued. [2] It is known that they have similar origins and it is necessary to analyze their root cause, so that preventive measures are put in place before they reach patients. [3-5]

In Brazil, mandatory reporting of incidents by all health services was instituted through Collegiate Board Resolution (RDC - Resolução de Diretoria Colegiada) No. 36/2013, with the implementation of patient safety centers. [6] Hospital institutions represent more than 90% of the health services that registered their centers at the National Health Surveillance Agency (Anvisa) and the basic health units have low adherence to perform notifications, representing 1% of the registered services. [7]

Primary health care (PHC) is the patient's entry into the health system and requires monitoring the quality and safety of the services that they provide. Knowing the consequences of adverse events and the reasons for near miss incidents can assist in the search for safe care. [8,9]

Studies on near miss incidents in PHC represent a knowledge gap and studying them can add greater value to quality due to the lack of harm to the patient and the absence of guilt or risk of litigation. [10,11]

The purpose of this study is to identify the evidence about near miss incidents in PHC services.

METHOD

Integrative review comprising the following steps: identification of the study question; identification of relevant studies; selection of studies; extraction of data of interest; organization of data and presentation of results * [12]

The study mapped investigations in PHC to answer the following question: What are the types of near miss incidents reported in PHC services? The acronym PICo was used, where the "P" (Population) included services that report near miss incidents, the "I" (Intervention) was the near miss notification and the "Co" (Context) related to PHC services .

The search was carried out in the following databases: National Library of Medicine and National Institutes of Health (PubMed), Web of Science, Latin American and Caribbean Literature in Health Sciences (LILACS), SCOPUS, Cumulative Index to Nursing and Allied Health Literature (CINAHL), EMBASE and Nursing Database (BDENF). The descriptors and their combinations were based on the controlled vocabularies DeCS (Health Sciences Descriptors) and MESH (Medical Subject Headings). The search strategy was: (Safety management OR Safety management OR security management) AND (Almost error OR Near miss OR Near miss healthcare OR Near miss salud OR Incident reporting OR Incident reporting and Incident reporting) AND (Primary care OR Primary healthcare OR Primary health care).

Data collection took place in January to May 2019 and there was one more update in August 2019. The inclusion criteria were the original articles, which investigated near miss incidents in PHC services, without limitations on year of publication and languages. Exclusion criteria were those that did not present information about near miss incidents in the results.

> The searches resulted in a total of 472 articles and eight studies met the criteria

The data collection was conducted by two researchers, independently. To select the studies, the title and summary were read, respectively. The data extracted from the articles were summarized and organized in a Microsoft Excel® spreadsheet, with the following items: Identification of author and year of study, objectives, results and conclusions.

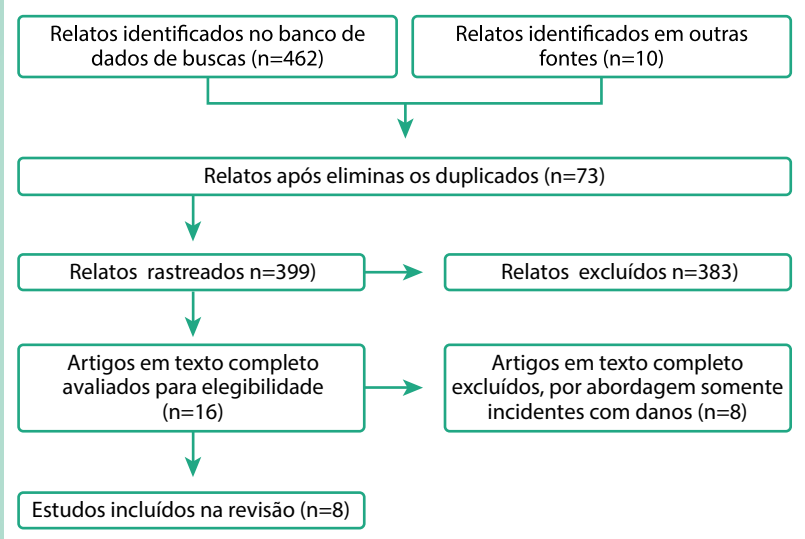
RESULTS

The searches resulted in a total of 472 articles and eight studies met the criteria, as shown in Figure 1.

Figure 2 summarizes the main characteristics of the articles included in the review, with a higher frequency of publications in 2007. [14-16]. North American publications are the majority (14,17-20) and no Brazilian studies have been identified.

It was found that four evaluated incident reporting systems and the types of incidents reported. [17,19-21] Most in-

Figure 1. Diagram of the study selection process. São Paulo, SP, Brazil, 2019. Adapted from PRISMA-ScR. [13]



vestigated the incidents in general, with a range of 0,5% to 86% of near miss notification being pointed out. [15-18,21]

Of the types of near miss incidents found, five studies pointed to medication errors, ranging from 6% to 96%, with prescription errors being the most recurrent. [15,17-19,21]

Studies that analyzed the interruption of errors in PHC services revealed that the detection was made by professional nurses, pharmacists and doctors and ranged from 66% to 83%. Patients represented 15% to 17% of the barriers that prevented the incidents. [14,18]

In view of the potential seriousness of the incidents, work overload and fragmentation of assistance were identified as contributing factors. [15,16,18]

As for the characteristics of the investigated notification systems, the majority pointed to the need for anonymity for those who register incidents. [17,19-21]

Figure 2. Summary of the eight articles on near miss incidents in primary health care. São Paulo, SP, Brazil, 2019.

Autor	Objetivos	Resultados	Conclusões
Chua et al. [21], 2003.	Investigar a viabilidade de um sistema de auto relato para erros de dispensação e near miss em farmácias comunitárias. Identificar os tipos de erros ou near miss presentes em farmácias comunitárias.	De um total de 51.357 itens dispensados, foram detectados 247 (0,5%) near miss. Os incidentes near miss ocorreram seis vezes mais do que erros de dispensação, indicando a importância da verificação final nas farmácias.	O auto relato anônimo de incidentes é prático e viável. Os incidentes near miss mais comum foram: a forma incorreta da medicação, medicamentos incorretos, quantidade incorreta e dosagem incorreta.
Parnes et al.[14], 2007.	Examinar como as cascatas de erros são interrompidas antes de afetarem os pacientes.	Dos 754 eventos notificados, 8% eram near miss. Médicos, enfermeiros e farmacêuticos interromperam 83% dos erros. Pacientes e familiares interromperam 15% dos erros.	Destaca a importância das pessoas na detecção e correção de erros. Reforça a necessidade de capacitação profissional para ações proativas diante de erros.
Knudsen et al.[15], 2007.	Descrever a frequência e gravidade dos erros registrados em farmácias comunitárias.	Foram notificados 1.015 eventos e 23% foram near miss. Os erros de prescrição foram os mais frequentes (96%).	Os erros de prescrição foram os mais frequentes com potencial de causar danos ao paciente. O número de erros de medicação é alto devido ao grande volume de prescrições geradas em serviços de APS na Dinamarca.
Kostopoulou e Delaney[16], 2007.	Classificar eventos com dano ou com potencial de danos a pacientes de cuidados primários.	Foram classificados 71 incidentes, sendo 70% near miss e 30% eventos adversos. Os fatores contribuintes foram a sobrecarga de trabalho e fragmentação da atividade.	Mesmo com alto índice de near miss os eventos adversos graves também foram relatados. As falhas, estavam relacionadas a danos potencialmente graves que pudessem atingir o paciente.
Kuo et.al. [18], 2008.	Descrever o tipo e a evitabilidade potencial de erros de medicação relatados em consultórios de médicos de família utilizando uma ferramenta de codificação de erro de medicação.	Dos 178 erros de medicação identificados, 40% eram near miss. As principais categorias profissionais que impediram o incidente foram: farmacêuticos (40%) e médicos (19%). Os achados mostraram que 17% dos incidentes foram relatados pelos pacientes.	Os erros de prescrição foram os mais frequentes. O uso de ferramentas eletrônicas é um bom recurso para conhecer o potencial de erros.
Kennedy et al.[17], 2008.	Implementar um sistema de notificação de erros de prescrição em consultórios de cuidados primários.	Dos 165 incidentes analisados 86% eram near miss e 12% incidentes sem danos.	Enfermeiros e funcionários de consultórios foram considerados um recurso valioso para relatar erros de prescrição. Ações permanentes para estimular e sustentar o sistema de notificação.
Crane et al.[19], 2015.	Analisar a viabilidade de relatos regulares de incidentes near miss e investigar os tipos mais frequentes.	Foram notificados 632 near miss. Os tipos mais comuns foram 47% falhas nos processos administrativos; 25% erros de arquivamento; 15% erros de lançamento de dados. Os erros relacionados ao processo de medicação foram: 7% ao processo de administração de medicamentos e 6% ao de prescrição.	A notificação anônima dos incidentes near miss foi bem sucedida em serviços de APS. Os eventos mais frequentes foram as falhas administrativas

Crane et al.[20], 2017.	Identificar as barreiras e aspectos facilitadores da implementação de um sistema de notificação de near miss.	Nenhuma barreira foi identificada para implementação do sistema de relatos de near miss. Foram identificados 34 projetos de melhorias.	A notificação anônima contribuiu para o sucesso deste recurso. Cabe à liderança manter o compromisso incentivar as notificações.

DISCUSSION

The present research confirms the knowledge gap in relation to near miss incidents, noting the scarcity of studies investigating this theme in PHC that may be related to the difficulty of understanding its concept and the priority given to incidents with damage. The definition of what really characterizes a near miss is not always understood by professionals, generating the underreporting of this type of error. [22]

Studies on near miss indicate that there is a lack of sensitivity on the part of the leadership of the services for the prevention of damage. However, the focus on damage management, that is, the events that affected the patient, stands out. [23] However, analyzing near miss incidents identifies the chance of their recurrence and the opportunity to learn from them. Study highlights that for every 600 near miss identified, 30 can become incidents without damage, 10 can become incidents with damage and one can become incident with serious injury or death. [24]

The research also revealed that the Incident Notification System (SNI - Sistema de Notificação de Incidentes) is the tool used to know the errors, emphasizing the importance of having data and that they become good information to generate actions for changing care practices. [4,25]

However, the use of SNI still presents barriers in different environments and in the aspect related to near miss incidents they are not different. The justifications for underreporting incidents refer to the increase in the overload of documents that professionals must complete and the absence of harm to the patient, perpetuating the "correct and forget" and not "fix and inform" behavior. [22]

> The medication-related near miss incidents were more present in the prescription process, pointing to the need to pay special attention to the prescribing professional.

The types of near miss were related to medication errors. These are frequent errors in health services, including PHC. The research presented a wide variation, explained by the methodological options and the objectives of the studies carried out, since the drawings, sample, data collection procedures were not uniform. [15-18,21]

The medication-related near miss incidents were more present in the prescription process, pointing to the need to pay special attention to the prescribing professional. To reduce medication errors, strategies such as educating health professionals and patients, implementing drug reconciliation and using computerized systems should be considered. [26]

Although the error resulting from administrative processes is an unusual situation, they can also reach the patient. The statement confirms the different studies on adverse events in primary care that present activities related to administrative processes as the cause of errors, such as scheduling errors, filling errors, incomplete records, among others. [22,25]

The role of professional nurses and pharmacists in identifying failures early is highlighted. They are barriers in the prevention of incidents, the first being the role of leader of the assistance team and the second, participation in the safety of the entire medication process. [27,28]

In addition, the patient is an important ally for his own safety, contributing to the detection of errors, so he must be

educated and encouraged to participate in decisions about his care. [27]

CONCLUSION

Medication errors were the most prevalent and the prescription process was considered the most fragile within the system. It was verified the importance of professionals and patients to be prepared for early detection of incidents and, thus, act as effective barriers. The notification of the near miss incident should be encouraged and incorporated into the notification practices, since knowing the errors early and their potential for damage increases the possibility of implementing improvement actions for patient safety.

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