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Review Article

Patient Safety through Interprofessional Collaboration: The Role of Community Health Workers and Pharmacists in Preventing Adverse Drug Reactions During Dental Procedures

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Abstract

Background: Improving patient safety and avoiding adverse drug reactions (ADRs) during dental operations depends critically on the integration of pharmacists and community health workers (CHWs). By means of thorough medication management, this cooperative approach is crucial in meeting the complicated health demands of patients and thereby enhancing health outcomes. **Methods**: This scoping study methodically reviewed current research on how pharmacists and CHWs may help reduce ADRs in dental environments. Using a thorough search approach across many databases, with an eye on projects emphasizing interprofessional collaboration, patient education, and medication adherence, relevant studies were found.

Results: The study turned up eighteen papers illustrating different approaches used by pharmacists and CHWs. Medication reviews, enhanced patient adherence, and culturally specific education catered to many groups were among them. Results showed that CHWs improved medicine knowledge by bridging cultural differences between patients and pharmacists, hence promoting communication. Furthermore, important in medication management were pharmacists, who checked for any drug interactions and guaranteed suitable treatment changes. **Conclusions**: In conclusion, the prevention of ADRs during dental operations depends critically on the cooperation between CHWs and pharmacies. Using their different responsibilities will help these experts maximize drug usage and improve patient safety. Future studies should concentrate on creating organized training courses to improve the efficiency of this interprofessional cooperation even further and investigate the use of integrated care models in many healthcare environments.

Keywords: Adverse Drug Reactions, Pharmacists, Community Health Workers,

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1. Introduction

Under the United Nations Worldwide Children's Emergency Fund (UNICEF) and the World Health Organisation (WHO), the Alma-Ata global meeting held in 1978 demanded that primary health care help to achieve equality in health for all [1]. The conference underlined that reaching this target depends mostly on the activities of community health workers (CHWs). Serving as a connection or mediator among health/social amenities and the community, CHWs—frontline public health workers—help to enable access to services and raise the standard and diversity of service delivery [2,3]. Umbrella phrases help one identify CHWs (for instance, promotors in the Latino community, kaders in Indonesia, and rural health individuals in Thailand [4-7]. From disease prevention to enhancing the availability of health services, encouraging healthy behaviors, and providing illness-related treatment, their functions differ greatly [1, 4, 8]. Their field of expertise spans mother, infant, and child well-being to treatment of non-communicative and communicative disorders, public health safety, and psychological or reproductive wellness [4]. The Labor Standard Occupational categorization in the USA included CHWs as an occupation in the category of health professionals in 2010, therefore increasing the respect for their functions in the health system [4]. Particularly throughout the coronavirus disease (COVID-19) epidemic in 2020, CHWs have been recognized as a vital health workforce in helping patients and healthcare teams, particularly when there were severe shortages of health professionals [9,10].

Research of the efficacy of Community Health Worker (CHW) interventions in enhancing patient wellness has been progressively accumulating over the past ten years, encompassing areas such as cancer detection, availability of primary healthcare, newborn and maternal health, non-communicable diseases like diabetes and hypertension, as well as improvements in screening and disease management for malaria, tuberculosis, and HIV (human immunodeficiency virus) as well as acquired immunodeficiency disorder (AIDS), in addition to facilitating patient medication adherence [11-27].

Although the incorporation of CHWs into medical groups within hospitals or ambulatory medical facilities is growing worldwide, little is known regarding the methods used to promote this collaborative practice, the obstacles that can result from this cooperative job, and its effect on patients' health conditions [28, 29]. Most of the treatments include CHWs collaborating with nurses, physicians, nutritionists, or social service providers [29], but seldom with pharmacists.

Giving the populace immediate access to main healthcare services allows pharmacists to be very valuable members of the interprofessional team, helping to ensure improved health outcomes for individuals [30]. Pharmacists-led actions on patient outcomes—that is, giving medication evaluations, managing medication treatment, enhancing patient drug compliance and proper use of drugs, and patient counseling—have mounting proof of their efficacy [31-34]. Pharmacists promoting patients' treatment compliance and medical results must take into account their cultural background, attitudes, and degree of health literacy every day [35]. Furthermore, they have to grasp the socioeconomic determinants of the health of patients, which in the brief interactions in a local pharmacy may be somewhat difficult. Working with CHWs would greatly help pharmacists to better grasp the social and cultural traits of patients and provide focused patient assistance [36-38]. Still, little is understood regarding how pharmacists and CHWs work together to enhance patient care. Therefore, this review sought to characterize the interprofessional relationship between pharmacists and CHWs within the scope of the initiatives, products, and services carried out, the kinds of strategies pharmacists, as well as CHWs, jointly offer, and CHWs and pharmacists' particular duties inside these initiatives

and Preventing Adverse Drug Reactions During Dental Procedures.

2. CHW measures combined with medications:

By being members of the patient community, the CHWs helped to close the cultural gap between the patient and the pharmacist in most of the studies, whether they were African or Native American and Latinx CHWs, Chinese CHWs, Cambodian CHWs or CHWs embedded in a rural community in Northern Thailand [7, 38-49]. The strategies used in these studies concentrated on residence medication examination, the administration of medication, diabetes encouragement education and care, assistance with adherence to medicine, linking patients with pharmacists for varied services and information, and a program for quitting smoking [7, 38-48]. Under a university academic-community cooperation, in hospitals, or during the transition of treatment from medical facility to community members, the interventions were administered in ambulatory centers or at home [7, 38-43].

The main contribution of the CHWs in 22% of the research was either measuring patients' clinical data or attending to their socioeconomic determinants of health. The CHWs in this research did not have bridging of a cultural divide as their objective. CHWs provided blood pressure education classes or discussed socioeconomic aspects of wellness for individuals with congestive cardiac failure or chronic pulmonary obstructive disorder, people over the age of 65, or customers at a drugstore [47-50]. The interventions took place either immediately in the local pharmacy in which the CHW performed or at the point of evolution to treatment after hospitalization [53, 54]. To guarantee the intervention was given in a culturally safe atmosphere, developed trust with patients, enabled the connection among the patient as well as the pharmacist (distant or in-person), and guaranteed patient comprehension, the CHWs mainly conducted the intervention collaboratively with pharmacists in preventing adverse drug Reactions during dental procedures.

Remedies and follow-up appointments were also conducted by CHWs, primarily at the patient's residence, in the dearth of the pharmacist. These variables were for glucose as well as blood pressure surveillance, to offer diabetes self-care information, encourage compliance and self-administration, to gather the patient drug regimen, provide psychological and health services navigation encouragement, or stimulate individuals to give up smoking [7, 55-58].

To handle medication management-related problems, social as well as environmental demands, and follow-up on the patient's needs for accommodation and transportation, CHWs recorded clinical and non-clinical data [57, 58]. Pharmacists received the gathered data from CHWs to customize the intervention to the particular requirements of the patient [59-62]. CHWs linked pharmacists with patients in case of questions, therefore supporting their advice [50]. Through face-to-face visits, phone conversations, or text messages, the CHWs followed up regularly with patients [58, 59].

Two studies [48, 52] saw the CHWs housed in the community pharmacies. Along with gathering data on patients' cardiovascular risk factors, they conducted one research delivering hypertension education courses and measuring patients' blood pressure [52]. In the other research, CHWs gathered information about social variables as well as health needs, analyzed patient cases, evaluated the resources required, and, where necessary, linked the individual with a neighborhood organization [48]. The logistic elements of the intervention were also handled by CHWs who found qualified patients and hired them, arranged visits for the individual regarding the pharmacist, the main care providers, or the field team, and gave the patients educational materials [7, 50-59].

Mostly clinical, the pharmacists performed medication reviews and drug treatment administration [58-60]. They noted drug-related issues, including perhaps unsuitable drugs, drug interactions, and adverse effects, and offered medication reconciliation. On prescribed medications and adherence, they presented patient education courses [59-61]. They evaluated adherence to pills, encouraged adherence by removing adherence obstacles, and provided medication adherence tools [51-56]. Concerning the availability of drugs and patient or medication information, the pharmacists also informed the Aboriginal health professionals [54].

Pharmacists discussed therapeutic objectives and made recommendations on the treatment strategy utilizing the medical information given by the CHWs with the patient's healthcare providers—that is, mostly concerning the primary care physician [58-62]. By providing pertinent medicines and counseling, pharmacists also helped patients stop smoking [7]. Following patients' social requirements, the CHW linked them with nearby community services, and they also [48]

3. Patient, CHW, and nurse's relationship

During the intervention, the CHW served as the patient's intermediary between her and the pharmacist and nurses. Sharing pertinent information on the patient's non-clinical or clinical state, pharmacists and CHWs collaborated before, during, and after the intervention to discuss patient cases and collaboratively evaluate the prescription plan [57, 59]. Pharmacists and CHWs recommended individuals proceed to another: pharmacists known individuals to the incorporated CHWs to handle social needs, while the CHWs addressed individuals who had hypertension or who suffered from medication compliance challenges to a pharmacist as well as physician [48, 52].

Pharmacists also taught CHWs, such as in drug treatment administration, treatment awareness and assessment of medication-related problems, or the dangers of smoking and strategies to assist individuals to stop smoking [7, 38, 53]. Pharmacists educated CHWs on motivating interviews, communication skills, methods of identifying medication adherence obstacles, and how to work with a pharmacist in one research aiming to identify and treat patient medication adherence hurdles [39]. Pharmacists also oversaw CHWs, e.g., those assigned for certain drug examinations conducted with participants [38]. To see regular clinical pharmacy activities and pharmacist-patient interactions, CHWs also shadowed pharmacists [63, 64].

4. Discussion

The results revealed many responsibilities that pharmacists and CHWs performed in line with the multidisciplinary cooperative services given to patients. Initially, this was done either throughout the hiring procedure, to direct patients to the actions, or throughout the assistance, to relate patients to pertinent resources, involving referring people to CHWs, pharmacists, as physicians, identification of patients, and shared recommendations happened among the CHWs as well as pharmacists. For example, the aboriginal medical professional noted individuals and referenced them for home treatment examination by a pharmacist, fitness instructors notified pharmacists of severe patient levels of glucose, or peer medical professionals directed patients to physicians and pharmacists depending on the blood pressure readings recorded [47, 50]. Pharmacists depended on this link that CHWs urged patients to visit to keep in touch with them. Should CHWs work alongside pharmacists, CHWs would find individuals in need of a CHW while pharmacists would find patients in need of their help. Pharmacists would help patients obtain CHW's services, thereby ensuring the continuity of treatment and therefore improving patient health outcomes; CHWs would function as facilitators in expanding the variety of individuals who could profit from medications, especially in preventing adverse drug Reactions during dental procedures.

Pharmacists and CHWs co-located in an identical place of employment might help to ease this referral procedure. To address socioeconomic variables of health by guiding the patient to neighborhood assets, Foster et al. developed an original paradigm wherein CHWs were placed in local drugstores, and pharmacists accompanied the individuals following the intervention [63]. By using a common medical record or a consistent referral system, which would be utilized by CHWs, chemists, and more general healthcare teams, this referral process may also be improved. Through this principal route of contact, CHWs' and pharmacists' information exchange should be better.

Second, by arranging visits and acting as a social, cultural, and medical literacy connection during the pharmacist's involvement, CHWs helped to link the patient with the pharmacist. According to a recent comprehensive evaluation [11], this navigational function enhanced primary care use for the treatment of chronic conditions. The CHW might help the patient to get assistance from the pharmacist as well as guarantee monitoring of the patient or offer the individual right back to a pharmacy when necessary.

Thirdly, using information exchange, CHWs and pharmacists worked together. Once the patient trusted the CHW, they could gather and record thorough and accurate data on the patient's self-management behavior—that which the individuals hadn't necessarily revealed to the pharmacist. While the CHW depended on the pharmacy's ability to combine the gathered data to fit the patient's requirements, the pharmacist depended on the CHW to get this information. A better understanding of the patient's demands depends on the CHW's knowledge of their cultural background; hence, the pharmacist's service is enhanced by their presence and the data gathered by the CHW.

A portion of the team effort was also the training pharmacists gave CHWs in several of the included trials. According to the research, across the measures and initiatives carried out worldwide, the manner and length of instruction and oversight of CHWs are usually varied [4, 11, 65]. Pharmacists educated and oversaw CHWs in the included studies; cross-training may also take place, and CHWs can teach pharmacists. In Australian research, for example, pharmacists taught Aboriginal health professionals a heart drugs teaching program after cultural sensitivity training by a skilled Aboriginal trainer [66]. Furthermore, pharmacy technicians may be educated either as CHWs or as pharmacy workers [67-73]. For the SafeMed initiative, for example, pharmacy technicians certified as CHWs found qualified patients and linked these individuals to the pharmacist ready to provide pharmaceutical treatment administration services [67]. To help patient medication adherence, the pharmacy technician participated in another intervention acting as a mariners and pharmacy connection [68]. Pharmacists may also be taught to be CHWs: they can enroll in courses covering CHW core skills so that they may provide individuals from nearby communities with extra services outside of their regular pharmaceutical needs [74].

Fourthly, after particular training, CHWs might help pharmacists and cooperate to provide treatments. Pharmacists have clinical knowledge; the CHWs know and promote the person they are treating. Individuals may be inclined to participate in their treatment when the CHW and pharmacist offer the intervention as they will better grasp what is being stated. Medication adherence was the most often mentioned main result of the examined research; Segal et al. suggested cooperation among pharmacists as well as CHWs to increase adherence to pills in minority groups [75]. The CHW gathers data on any medication adherence issues the patient may have and reports back to the pharmacist, who will evaluate and create an action plan. She closes the interaction gap between the individual and the pharmacist. After that, the CHW will check in on development and apply the pharmacist's advice to the patient [75].

5. Conclusion

The interprofessional cooperation among pharmacists and CHWs was categorized into three areas: shared collaborative referrals and interprofessional support by the CHW to establish the connection with the pharmacist, allowing the pharmacist to communicate with the individual while assisting; data sharing among the CHW as well as the pharmacist to customize the treatment to the patient's requirements; and an interprofessional partnership in which the intervention was delivered jointly by the CHW and the pharmacist. By addressing the cultural gap between pharmacists and individuals, spotting patients' socioeconomic variables of health, and customizing treatments to the patient's requirements, CHWs and pharmacists may collaborate powerfully. Using this interprofessional cooperation, the pharmaceutical services provided might be enhanced and optimized, thus influencing the health results.

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سلامة المرضى من خلال التعاون بين المهنيين الصحيين: دور العاملين في الصحة المجتمعية والصيادلة في منع التفاعلات الدوائية الضارة أثناء الإجراءات السنية

الملخص

الخلفية :تعتمد تحسين السلامة المرضية وتجنب ردود الفعل السلبية للأدوية (ADRs) خلال العمليات السنية بشكل حاسم على كيفية دمج الصيادلة وعمال الصحة المجتمعية .(CHWs) من خلال إدارة الأدوية الشاملة، فإن هذا النهج التعاوني يعد حيويًا لتلبية الاحتياجات الصحية المعقدة للمرضى وبالتالي تعزيز نتائج الصحة.

الطرق :استعرضت هذه الدراسة الاستكشافية بشكل منهجي مجموعة الأبحاث الحالية حول كيفية مساعدة الصيادلة و CHWsفي تقليل ADRs في البيئات السنية. باستخدام نهج بحث شامل عبر العديد من قواعد البيانات، مع التركيز على المشاريع التي تؤكد على التعاون بين المهنيين، وتعليم المرضى، والامتثال للأدوية، تم العثور على دراسات ذات صلة.

النتائج :أسفرت الدراسة عن ثمانية عشر ورقة بحثية توضح طرقًا مختلفة استخدمها الصيادلة و .CHWsشملت هذه الطرق مراجعات الأدوية، وزيادة التزام المرضى، والتعليم الثقافي المحدد الذي يلبي احتياجات العديد من المجموعات. أظهرت النتائج أن CHWs حسنت من معرفة الأدوية من خلال سد الفجوات الثقافية بين المرضى والصيادلة، مما يعزز التواصل. علاوة على ذلك، كان للصيادلة دور مهم في إدارة الأدوية، حيث تحققوا من أي تفاعلات دوائية وضمان التغييرات المناسبة في العلاج.

الاستنتاجات :في الختام، تعتمد الوقاية من ADRs خلال العمليات السنية بشكل حاسم على التعاون بين CHWs والصيادلة. من خلال الاستفادة من مسؤولياتهم المختلفة، سيتمكن هؤلاء المتخصصون من تحسين استخدام الأدوية وزيادة سلامة المرضى. يجب أن تركز الدراسات المستقبلية على تطوير دورات تدريبية منظمة لتحسين فعالية هذا التعاون بين المهنيين واستكشاف استخدام نماذج الرعاية المتكاملة في العديد من البيئات الصحية.

الكلمات المفتاحية :طب الأسنان، ردود الفعل السلبية للأدوية، الصيادلة، عمال الصحة المجتمعية، التعاون بين المهنيين