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PHARMACIST-MANAGED PRESCRIPTION: AN OVERVIEW REVIEW ARTICLE

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ABSTRACT
Pharmacist-managed prescription renewal involves pharmacists, often under a collaborative practice agreement, independently or collaboratively with physicians, reviewing, approving, and renewing patient prescriptions to improve efficiency and patient care. This model can reduce the administrative burden on physicians, enhance medication adherence, and provide clinical benefits like identifying medication problems and recommending necessary interventions. Studies show high physician agreement with pharmacist decisions and positive impacts on workflow and patient care. To improve patient care and clinical results while reducing administrative tasks, a new chronic disease management model has been trialed. This model emphasizes the importance of inter-professional collaboration and seeks to lessen the administrative burden on primary care providers, especially physicians at healthcare facilities. Pharmacists, as vital healthcare professionals, have a significant role in the medication process, and pharmacist-led prescription renewals for chronic oral medications have surfaced as a promising intervention to enhance adherence and treatment results. The effectiveness of therapy relies on patient adherence. Grasping the factors contributing to non-adherence and pinpointing strategies to tackle this issue can lead to better healthcare outcomes. Implementing prescription renewals in community pharmacies could provide advantages for patients, healthcare practitioners, and society as a whole. By prioritizing patient welfare and fostering collaboration among healthcare providers, it is feasible to improve adherence rates and optimize patient care.

KEYWORDS: *Important Of Adherence, Non Adherence, Socioeconomic Factors,Healthcare System, Patient Related Factors*

INRODUCTION

Chronic diseases pose a major health issue in Portugal, similar to many other nations. In 2019, 41% of adults in Portugal reported having at least one chronic condition, highlighting the importance of continuous emphasis on preventive healthcare strategies and healthy lifestyle programs. According to data from the Portuguese health authority (Infarmed I.P.), around 180.3 million medication packages were distributed in Portugal in 2022. The most frequently prescribed therapeutic class was antidyslipidemics (such as statins), which held a market share of 9.1%, translating to roughly 16.5 million packages dispensed. Following this were renin-angiotensin system modifiers (like bisoprolol), which accounted for 8.3% of the market share, totaling 14,942,932 packages dispensed.

Adherence to therapy is vital for the effectiveness of treatment and can be essential for achieving successful outcomes. The World Health Organization (WHO) defines adherence as "the extent to which the patient follows medical instructions" 3. To better understand treatment adherence, it is important to comprehend how patients obtain their prescriptions and medications. In Portugal, patients can request a prescription from their attending physician via phone, e-mail, or by submitting a written request at their healthcare center. They also have the option to schedule a consultation with their healthcare provider. After the prescription is issued, patients can receive it through a text message or in paper form. They then present it at a community pharmacy, where the pharmacist dispenses the prescribed medications.

It is crucial for patients to take an active role in managing their health, and healthcare providers, including pharmacists, can improve patient awareness and offer health literacy, particularly regarding information on drug interactions, side effects, and medication management. The newly approved European Health Data Space (EHDS) will empower patients to control their health data and allow health professionals to access patients' electronic health records, thereby enhancing patient safety and healthcare efficiency. The involvement of pharmacists is essential in managing chronic medications, as it significantly influences both adherence and the proper use of medications. An umbrella review has shown that community pharmacists can enhance clinical outcomes in chronic conditions such as diabetes, dyslipidaemia, cardiovascular issues, and respiratory disorders, making a notable impact.

Consequently, this paper aims to provide insights into the existing process of renewing prescriptions for patients undergoing long-term therapies for chronic conditions. It also seeks to create a link between prescription renewal practices and adherence to therapy.

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Additionally, the paper will explore the importance of adherence, the factors that lead to non-adherence, and strategies to enhance it. By doing this, we aim to highlight the practical implications and advantages of implementing measures such as developing effective strategies to improve adherence and broaden pharmaceutical interventions.

Importance of Adherence

Medication adherence refers to the degree to which a patient's actions align with the prescribed medication regimen, which includes timing, dosage, and frequency of intake. Adherence can be a crucial factor that determines whether treatment is successful or results in negative outcomes, indicating that even the most effective therapies can fail if patients do not follow their medication instructions. Preventing disease progression, enhancing health outcomes, avoiding complications, and improving quality of life are vital for managing chronic patients. These goals not only benefit the patients but also positively influence healthcare providers. Dealing with non-adherent patients can be difficult and may lead to frustration. The impact of chronic conditions goes beyond individual patients and healthcare providers, affecting society and the sustainability of healthcare systems. Adherence also has economic implications by lowering mortality rates and reducing hospitalizations, which in turn leads to decreased healthcare expenses. It has been shown that in conditions such as diabetes, hypertension, and hypercholesterolemia, better adherence can lead to a significant decrease in medical costs. According to The International Longevity Centre-UK (ILC), non-adherence results in an annual loss of €125 billion in Europe alone. Among the studies that analyze healthcare costs, 49% (39 studies) indicated that the costs associated with non-adherence exceed those related to adherence.

Adherence to therapy is a vital component in preventing drug resistance, particularly with antibiotics. Sticking to the prescribed treatment plan greatly decreases the likelihood of developing drug-resistant bacterial strains. By taking medications as instructed, patients can help ensure the effectiveness of the treatment and reduce the risk of drug resistance. Proper adherence to treatment can improve communication between patients and healthcare providers. By following their prescribed therapy, patients show a commitment to their health and a readiness to work with their healthcare team. This shared commitment can strengthen the relationship between them, potentially enhancing the quality of care provided. Additionally, it may encourage collaborative decision-making between patients and healthcare providers. Regular follow-ups and open communication allow healthcare providers to gain a deeper understanding of their patients' needs, including any side effects, treatment responses, or other difficulties they may face. This collaborative strategy enables healthcare providers to customize treatment plans that cater to patients' unique needs and preferences, resulting in better treatment outcomes and greater patient satisfaction.

Non-Adherence

Numerous studies have been carried out across various countries over the years to assess the issue of non-adherence and the underlying reasons for it. While there is no single method to measure adherence universally, several questionnaires have been utilized for this purpose, including the Medication Adherence Questionnaire (MAQ), the 8-item Morisky Medication Adherence Scale (MMAS), and the Brief Medication Questionnaire. A literature review conducted in 2022 regarding the risk factors and possible interventions for medication non-adherence revealed a wide range of factors that can greatly influence patients' adherence to their prescribed treatment plans. These factors can be categorized into three main groups: socioeconomic, healthcare system, and patient-related factors. By gaining insight into the intricate relationships among these factors, healthcare providers can create interventions that tackle the root causes of non-adherence.

Socioeconomic Factors

These factors can significantly influence an individual's access to healthcare, thereby affecting their adherence to therapy. To begin with, consider the cost: although many medications are available in generic forms, there are still some that lack generic alternatives. Furthermore, even when generic options exist, numerous patients may continue to face challenges with medication costs. In certain situations, patients find themselves having to choose between affording their medication or covering other essential expenses, such as rent.

Research indicates that in Portugal, 33.3% of chronic patients had to forgo purchasing medications due to financial limitations. This underscores the necessity of tackling financial obstacles to medication adherence, as well as the importance of healthcare providers collaborating with patients to identify solutions. For instance, pharmacists can strive to locate affordable medication alternatives among all generic brands, yet this does not address the fundamental issues of poverty, illiteracy, unemployment, and insufficient social support. Living alone can also pose difficulties in managing medication. Besides the lack of social support, solitary living can lead to feelings of depression and isolation. A significant concern is the lack of someone to remind the individual to take their medication and assist them in managing their prescriptions effectively. This can lead to missed doses or incorrect usage, which may have serious repercussions on the patients' health.

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Healthcare System

Access to healthcare is crucial for individuals to obtain appropriate medical care and sustain their overall health. Sadly, numerous patients encounter challenges in accessing healthcare services, especially those residing in remote or rural regions. Limited availability of follow-up appointments or prescription medications can heighten the risk of nonadherence. Moreover, patients lacking health insurance are less inclined to seek medical care and may not receive the necessary treatment. While some professionals, such as armed forces and bank employees, benefit from social health insurance, the Portuguese health system primarily operates as a tax-based system known as a national health system (NHS).19 The NHS aims to deliver comprehensive, equitable, and reasonably priced healthcare services to all citizens and residents, irrespective of their financial situation. Unfortunately, it has certain limitations, including extended waiting times for specific specialized areas and a lack of choice in selecting their specialist or specialized care, which can contribute to non-adherence. Geographic access to hospitals in Portugal can pose a challenge for some patients. Due to the country's geography and the distribution of the population (approximately 60% in the littoral area20), there are regions where the nearest healthcare facility may be far away, particularly in rural areas21. When patients are unable to secure necessary care, they are more likely to stop or modify their treatment plan, potentially leading to adverse health outcomes. Patients who need frequent or ongoing medical care for their chronic conditions are at greater risk as they may lack access to the services they require.

The quality of care delivered is a crucial factor. In an overwhelmed healthcare system, clinicians may have restricted time and resources to offer personalized attention to each patient, leading to insufficient evaluation of their medication adherence behaviours. When patients feel they are receiving high-quality, customized treatment that meets their needs, their chances of following the therapy improve. Effective communication between healthcare providers and patients could be essential for achieving successful therapeutic outcomes. By actively listening to patients' concerns and taking the time to clarify the rationale behind their treatment plan, healthcare providers can assist patients in understanding the significance of adhering to their prescribed treatment. This not only improves patients' comprehension but also boosts their likelihood of sticking to their treatment plan, ultimately resulting in better health outcomes.

Patient-related Factors

The apprehension surrounding adverse drug events (ADE) can play a crucial role in therapy non-adherence.24 An ADE is characterized as "an injury resulting from medical intervention associated with a drug."25 When patients are apprehensive about ADEs, they may hesitate to adhere to their prescribed medication regimen, which can negatively impact their health outcomes. This phenomenon is particularly evident in individuals who have previously encountered ADEs. Additionally, patients may express concerns regarding the long-term implications of medication usage. A study involving hypertensive patients revealed that adverse effects are a significant factor contributing to nonadherence to antihypertensive medications.

Adverse Drug Events (ADEs) are occasionally associated with misinformation, which can be affected by a patient's health literacy. Individuals with higher health literacy tend to possess better knowledge about medications, whereas those with inadequate or low health literacy may struggle to grasp their treatment plans, including the correct dosages and timing for their medications. Additionally, they might have limited access to resources that could assist them in addressing their inquiries. Therefore, low health literacy can result in a misunderstanding of the benefits and risks associated with their medications, leading to unwarranted fear or hesitation in taking the prescribed drugs. In this context, healthcare professionals can play a crucial role by educating patients and clarifying treatment plans. Pharmacists, while dispensing medications, and nurses during caregiving, can offer precise and comprehensible information regarding the use of medications and medical devices. Research has indicated that patients with asthma and chronic pulmonary diseases, who utilize inhalation devices daily, often lack knowledge of the correct techniques due to insufficient education. A cross-sectional study carried out in hospitals in Saudi Arabia uncovered that a significant percentage of participants did not use their inhalers correctly. The findings revealed that 45% of participants exhibited improper usage of their asthma devices. This underscores the potential consequences of low health literacy, as patients may not fully understand how to effectively use their medical devices or accurately take their prescribed medications. Pharmacists, being highly trained and readily available health professionals, can enhance patient health literacy and help alleviate the financial strain caused by unnecessary ADEs.

Ways to Enhance Medication Adherence

Patient education is crucial, and pharmacy professionals are ideally positioned to encourage medication adherence, given their daily practice and practical experience. It is vital to offer clear information regarding the risks and benefits of treatment, as well as the repercussions of non-adherence, in a manner that is easy to understand. When patients are well-informed about their treatment, they are more inclined to adhere to the treatment plan, take an active role in their healthcare, and feel assured in managing their condition.29 By fostering a trusting relationship between patients and health professionals, they will be more willing to share their concerns, which can enhance communication.30 Additionally, it is essential to simplify the regimen, particularly for elderly patients. According to "Medication Non-Adherence Among Elderly Patients Newly Discharged and Receiving Polypharmacy", a notable percentage of patients

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over 65 years old did not comprehend the purpose of their prescribed drugs at the time of hospital discharge.31 If the treatment plan is straightforward to follow and understand, adherence will likely improve. Simplifying the regimen may involve various strategies, such as reducing the number of medications and their frequency, using, for example, extended-release formulations or combinations of drugs that are already available.

Address any concerns and ensure positive health outcomes. Utilizing reminders is a straightforward yet powerful approach to enhance adherence to therapy. Technology has advanced significantly over the years, and the development of healthcare applications is transforming the delivery of services. There are now numerous innovative methods available to remind individuals to take their medication, ranging from calendar alerts to smart medication dispensers; the possibilities are limitless. Beginning with mobile applications, which have the potential to transform healthcare, studies have shown that these apps help prevent forgetfulness and incorrect medication administration, thereby enhancing patient safety. These applications, which provide convenience and customization, can send alerts, enable users to track symptoms, monitor vital signs, record medications, and log lifestyle factors that affect their health condition. They also help manage medication schedules and offer information regarding dosages and side effects. Furthermore, many of these apps can monitor when medications are taken, allowing caregivers to oversee adherence and avert possible health issues.

Access to Medication

Portugal is part of the list of European countries where the use of International Non-proprietary Name (INN) for prescriptions is mandatory, alongside Greece, Romania, Estonia, Latvia, and Lithuania, since January 2013. In Portugal, only physicians are authorized to prescribe medication, and prescriptions must utilize the INN; the brand name may only be included if there are no alternatives available or if the physician provides a technical justification. This justification is required in three specific cases: when medications have a narrow therapeutic margin, when there have been previously reported adverse reactions to a medication containing the same active substance, or when the medication is intended for long-term use exceeding 28 days. Besides the INN, prescriptions must also specify the dosage, pharmaceutical form, package size, number of packages, and posology.

Prescriptions can be issued either electronically or manually, each with its own specific requirements. Manual prescriptions must meet certain criteria to be deemed valid, including the prescriber's identification labels, the absence of erasures, and patient identification. When dispensing, pharmacists must check that these and other criteria are met to confirm the legitimacy of the prescription. Due to the handwritten nature of these prescriptions, they are prone to spelling mistakes or misinterpretations. Difficulties in reading handwriting can sometimes result in the dispensing of incorrect medications. Fortunately, the advent of electronic prescriptions has It is crucial to understand that patients do not retain the manual prescription after its initial use, necessitating them to gather all prescribed medications at once; should they opt not to do so, they will be unable to retrieve the remaining packages at a later time. Conversely, electronic prescriptions permit two packages for short-duration treatments, and for long-duration treatments, the quantity of packages can ensure a supply for up to 12 months, which the patient can obtain as required within the designated timeframe. To obtain their medication, the patient must present the prescription at the community pharmacy, where it is dispensed by either a pharmacy technician or a pharmacist.streamlined this process and reduced the likelihood of dispensing errors.

Renewal of Prescriptions by Pharmacists

Following physicians and nurses, pharmacists represent the largest workforce in healthcare and play a crucial role in the sector. In Portugal, pharmacists undergo training through a 5-year master's program that encompasses a wide range of disciplines. Upon graduation, they have the opportunity to work in various fields, including the pharmaceutical industry, clinical analysis laboratories, academia and research, hospital pharmacies, and community pharmacies. Unfortunately, their scope of responsibilities is more limited compared to pharmacists in several other countries. For instance, in nations such as Switzerland and Ireland, pharmacists participated in the administration of COVID-19 vaccines. In Portugal, the intention for pharmacists to be involved was articulated in 2021, but actual implementation did not occur until September 2023. In France, due to the success of COVID-19 vaccination efforts, authorities have gradually broadened the pharmacists' role to include other vaccines, such as those for tetanus, diphtheria, and pneumococcus.

Similarly, the authority to renew medical prescriptions varies by country. In places like France and the Netherlands, pharmacists are permitted to renew prescriptions for certain medications, including those for chronic conditions like hypertension and diabetes. In the Netherlands, they are also allowed to modify prescriptions if a potentially relevant drug-related issue is identified.

In Portugal, pharmacists are authorized to administer the seasonal influenza vaccination, similar to practices in several other countries. To offer this service, Portuguese pharmacists must fulfill various requirements and standards, including mandatory training in vaccination, recertification every five years, proof of ongoing activity, and certification in basic emergency resuscitation.

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Prescription Renewal in Portugal

According to the Portuguese National Institute of Statistics (INE), the average life expectancy in Portugal for the period of 2020-2022 was estimated to be 80.96 years. Additionally, it was reported that life expectancy at the age of 65 has risen over the past decade. This trend, along with a declining birth rate, suggests that, similar to many other developed nations, Portugal's population is aging, which brings several challenges. An aging population is linked to a higher prevalence of chronic conditions. Consequently, there is an increasing demand for healthcare services and resources. Allowing prescription renewals at community pharmacies can enhance healthcare systems by offering patients more convenient and accessible ways to manage their medical needs. This initiative may also alleviate the pressure on healthcare centers, enabling more patients to receive medical consultations daily when they are genuinely required, and freeing up resources for more complex cases. The demand for medical appointments in primary care units is frequently high, resulting in lengthy waiting lists. Many patients schedule appointments solely to renew their prescriptions, which can lead to delays and frustration, potentially jeopardizing health outcomes. Prescription renewals at community pharmacies can improve the efficiency and cost-effectiveness of the NHS.

Additionally, pharmacists are able to perform medication reconciliation, which guarantees that patients are given the appropriate medications and dosages, thereby minimizing the likelihood of medication errors.62 In community pharmacies, prescription renewals utilize computer systems to streamline the flow of information between physicians and pharmacists.52,63 Enhancing the interaction among healthcare professionals can foster and elevate patient care. This integration has the potential to improve communication, collaboration, and coordination among healthcare providers, ultimately leading to better patient With the ability for patients to renew their prescriptions more frequently and conveniently, they no longer need to buy multiple packages at once; instead, they can obtain only the required amount of medication for a designated time frame. Furthermore, prescription renewals at community pharmacies may include compliance monitoring, such as tracking how often medications are picked up. From a sustainability perspective, this initiative will not only aid in monitoring but can also significantly reduce medication waste over time. A study conducted in 2020/2021 on the effects of the prescription renewal refill service found that it could be a valuable addition to pharmaceutical services, leading to increased satisfaction among both patients and healthcare professionals. It also emphasized the positive effects on maintaining treatment continuity and optimizing therapy regimens. Another study focused on the results of a pharmacist-managed medication refill program showed that patients were interested in having community pharmacists oversee and manage the process. Patients indicated a preference for this method due to the expertise and attentiveness of community pharmacists in ensuring safe and effective medication refills. The practice of prescription renewal in community pharmacies presents a promising strategy that can benefit patients, healthcare providers, and the overall healthcare system in Portugal.outcomes.

CONCLUSION

Adherence to therapy is vital for the effectiveness of treatment. Alongside the clinical advantages, minimizing healthcare expenses and medication waste allows for the reallocation of resources to other healthcare sectors. Consequently, it is imperative to devise strategies that enhance adherence, such as streamlining therapeutic regimens and fostering patient education. Healthcare professionals, particularly community pharmacists, due to their close relationship with patients, can significantly contribute to improving adherence. This proximity fosters a trusting relationship that can positively impact therapy. A recent regulation implemented in Portugal facilitates the renewal process of chronic prescriptions within community pharmacies. This marks a crucial advancement in broadening the pharmacist's role and enhancing patient care. Considering the large population of chronic patients in Portugal, permitting prescription renewals in pharmacies is instrumental in boosting adherence, as it simplifies the renewal process. Regular visits to community pharmacies can enhance patient monitoring and promote the early identification of health issues. Additionally, it reduces the workload on physicians, allowing them to reserve appointments for urgent cases and ultimately decreasing waiting times. Besides physicians, pharmacists, with their expanded roles and responsibilities related to prescription renewals, gain increased recognition and appreciation for their profession. The favorable outcomes observed in other nations (such as France and The Netherlands), where pharmacists already possess this authority, further reinforce the aforementioned benefits. By tracking patient adherence to therapy, alongside ensuring compliance with dosage schedules and treatment effectiveness, a significant long-term reduction in medication waste can be realized, which is vital for fostering sustainability. The introduction of prescription renewals in community pharmacies could provide advantages for patients, healthcare professionals, and society as a whole. By prioritizing patient welfare and encouraging cooperation among healthcare providers, it becomes feasible to improve adherence rates and optimize healthcare results.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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