

Review Article

Effect of patient education and healthcare campaigns on medication adherence in co-morbid patients

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Received: 05 November 2023

Accepted: 20 November 2023

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ABSTRACT

Co-morbidities are characterized by the presence of multiple chronic diseases within a single individual. They pose an escalating healthcare challenge and managing this growing burden, particularly with non-communicable diseases, has become a major concern. However, a significant impediment to effective management lies in medication nonadherence. The importance of medication adherence has long been a focus of healthcare literature, yet many comorbid patients tend to underestimate its significance, leading to health deterioration. Research studies indicate alarmingly low adherence rates in comorbid patients. To address this issue, patient education and healthcare campaigns have become essential tools in enhancing adherence. The research, which commenced on October 19, 2023, was initiated after an exhaustive review of existing academic literature. Multiple databases, such as PubMed, Web of Science, and Cochrane, were employed for this comprehensive literature review, utilizing a wide array of medical terminology combinations. The study aims to shed light on potential strategies and educational approaches to enhance medication adherence in comorbid patients. Findings from this research have the potential to influence healthcare policy, the design of tailored interventions, and overall healthcare delivery improvements for co-morbid patients, ultimately leading to enhanced health outcomes, reduced costs, and an improved quality of life.

Keywords: Medication, Adherence, Co-morbid conditions, Impact, Healthcare

INTRODUCTION

Comorbidities, defined as the presence of multiple chronic diseases in a single individual, represent a growing health challenge.¹ Managing the increasing

burden of comorbidities, particularly non-communicable diseases, has become a matter of great concern. According to the world health organization, chronic conditions are prone to a rise, and approximately 63% of global mortalities can be attributed to it.² Additionally,

comorbidities are also observed in around two thirds of the adult population in the world.³ In the United States, an estimated 80% of the Medicare budget is allocated to patients with comorbid conditions, underlining the significant impact these overlapping health issues have on healthcare expenditure, quality of life, mortality rates, and the functioning of healthcare systems.⁴ Hence, the impact of these multiple coexisting diseases on the quality of life, mortality, and functioning of health systems needs crucial attention.^{5,6}

Non-communicable diseases, such as diabetes, hypertension, cardiovascular diseases, and hypercholesterolemia, often require lifelong medication management to control symptoms, prevent complications, and improve overall well-being. However, various factors contribute to low medication adherence among comorbid patients. These factors can include complex medication regimens, polypharmacy (the use of multiple medications), side effects, forgetfulness, lack of understanding about the benefits of adherence, and socioeconomic barriers.^{7,8} In addition, the presence of multiple chronic conditions can complicate treatment adherence, as patients may struggle to balance multiple medications, appointments, and lifestyle changes.⁸

To increase medical adherence, various interventions have been designed and implemented. Behavioral interventions have been explored in this regard, with the aim of improving the patient's behavior towards the treatment regime.⁹ These interventions are specifically characterized by cognitive behavioral therapies, that emphasize emotions, and cognitions to promote health-seeking behaviors.¹⁰ However, multiple pieces of evidence have reported contradictory effects of behavioral interventions.^{11,12} Another interventional plan is the integrated care intervention. The integrated care plan's goal is to increase the patient's quality of life by improving the efficiency of work by the health care providers.¹¹ Despite its benefits, the major shortcoming of the integrated care intervention is the lengthiness and complexity of the task, and hence, the healthcare providers often find it difficult to implement this intervention plan.¹³ Self-management intervention is also an intervention method for medication adherence, based on self-monitoring, health behavior change, and collaborative care, so that patients play a more active role in their own treatment.¹⁴ Another intervention plan is risk communication, which is based on communicating the extent of risk associated with non-adherence to the patient, making them more aware and conscious of the health related consequences.¹⁵ However, perceptions of risk can be very subjective and vary between patients and their healthcare providers, making this intervention plan a challenge to implement.¹⁶ In this regard, patient education has recently been recognized and appreciated as one of the most important domains and intervention plans for medication adherence. It has been widely used as an effective medication adherence intervention around the world.¹⁷ Healthcare professionals can play a pivotal role

in enhancing medication adherence by effectively educating patients. This education involves thorough explanations of how to correctly take prescribed medications, addressing any concerns or hesitations patients may have regarding their medications, and engaging in meaningful discussions about patients' beliefs and knowledge related to their health conditions and treatment plans.¹⁷ The importance of communication and information regarding both pharmacological treatment and the underlying diseases cannot be overstated. It is increasingly recognized that efforts to improve adherence should not be confined solely to the patient but should also encompass a broader perspective that considers the healthcare system and its dynamics. Many chronic non-communicable diseases have well-established drug management plans that can effectively control or mitigate their symptoms. However, one substantial obstacle to effective management is the issue of medication nonadherence. Research indicates that adherence rates to prescribed medications for comorbid patients are alarmingly low.¹⁸ For instance, in cases of osteoporosis, adherence hovers around a mere 45%.¹⁹ Hypercholesterolemia patients are also observed to have prolonged periods of non-adherence, which sometimes last longer than 90 days.²⁰ Similarly, in the context of diabetes mellitus (DM), approximately 21% of patients exhibit extended gaps between medication refills, resulting in non-adherence for a significant portion of the year. This lack of adherence is a critical issue that compromises the effectiveness of treatment regimens for these conditions.²¹ The importance of medication adherence has long been a subject of study and emphasis in healthcare literature. Implementing self-care plans that prioritize adherence to prescribed medications has proven to be vital.²² However, a substantial number of patients with comorbidities tend to underestimate the significance of adhering to their prescribed medication regimens. This casual attitude towards medication adherence can lead to a deterioration in their health.²³

The rationale for conducting a study on the impact of patient education and healthcare campaigns on medication adherence in co-morbid patients is multifaceted and critical. Co-morbid patients, those experiencing multiple chronic conditions simultaneously, face a unique set of challenges that make adherence to medication regimens particularly complex. The burden of managing multiple medications, potential drug interactions, and the necessity for lifestyle modifications can overwhelm these patients, leading to suboptimal adherence. Given the growing prevalence of comorbidities, understanding the effectiveness of interventions such as patient education and healthcare campaigns is vital. By examining this, the study aims to shed light on the potential strategies and educational approaches that can improve medication adherence in this high-risk population. This study's findings could inform healthcare policy, influence the design of tailored interventions, and contribute to the overall enhancement of healthcare delivery for co-morbid patients, ultimately

leading to better health outcomes, reduced healthcare costs, and improved quality of life for these individuals.

LITERATURE SEARCH

The research project, which commenced on October 19, 2023, was initiated following an exhaustive review of existing academic literature. Multiple databases, such as PubMed, Web of Science, and Cochrane, were utilized to conduct this comprehensive literature review. The search process involved the utilization of a wide array of medical terminology combinations. Furthermore, we performed manual searches on Google Scholar to identify pertinent research terminology. The primary objective of this literature review encompassed several pivotal domains, including medication adherence, the impact of co-morbid conditions, healthcare campaigns, health promotion, public health, health awareness, and patient education. It's worth noting that the selection of articles for inclusion in this study was based on multiple criteria, ensuring a rigorous and robust review process.

DISCUSSION

Role of patient education and healthcare campaigns in medication adherence

Patient education and healthcare campaigns have a substantial and favorable impact on medication adherence among individuals dealing with co-morbid conditions. Notably, a study focusing on rheumatoid arthritis highlighted the positive influence of patient education campaigns on medication adherence.²⁴ These campaigns play a pivotal role in educating patients about the significance of adhering to their prescribed medication regimens, with a specific emphasis on the potential consequences of non-adherence, which can be especially complex in the context of co-morbid conditions.²⁴ Empirical evidence further underscores that well-informed patients exhibit a higher likelihood of adhering to their prescribed medications.²⁴ Patient education and awareness were also found to be excessively fruitful in improving the medication adherence outcomes in multiple studies.^{20,22,25,26} Literature suggests that patient awareness improves the cognitive understanding of the patient and makes them realize the significance of adhering to their medication regime for the improvement of their health and quality of life. In addition to traditional patient education methods, computer-assisted education has emerged as a valuable tool, empowering patients to take charge of their own health.²⁶ When patients perceive themselves as active participants in their healthcare, they tend to be more diligent in adhering to their treatment plans. Moreover, cognitive-behavioral techniques form an integral part of patient education initiatives, equipping patients with strategies to modify their behavior and overcome barriers to adherence.²⁶ Cultivating improved clinician-patient relationships is another essential aspect of promoting adherence behavior, with healthcare campaigns encouraging dialogues between patients and

healthcare providers to simplify medication regimens, a crucial step in ensuring compliance, particularly among co-morbid patients.²⁵ Evidence suggests that patients were more inclined to adhere to their medication regimes if their interventions were delivered by nurses or pharmacists, than those patients which were catered directly or only by general practitioners.²⁷ Simplifying medication regimens makes adherence more manageable. Furthermore, the incorporation of regular check-ins and monitoring by healthcare providers as part of healthcare campaigns fosters patient engagement, offers feedback on their progress, and aids in the identification and resolution of any barriers to adherence.^{25,27} These campaigns also confront the stigma and fear associated with certain medical conditions and medications, particularly pertinent for co-morbid patients who might contend with mental health issues or substance abuse, thereby diminishing psychological obstacles to adherence.¹⁴ The integration of reminder systems, such as smartphone apps, text message alerts, or pill organizers, contributes to reinforcing medication adherence by assisting patients in remembering to take their prescribed medications, thereby simplifying their adherence routines.²³ These multifaceted interventions not only address gaps in patient knowledge but also target psychosocial factors that influence adherence, ultimately yielding improved health outcomes and an enhanced quality of life for patients contending with co-morbid conditions. In addition to that, patient education has also been found to have improved morbidity and patient satisfaction.²⁷ Incentivized adherence campaigns have also been fruitful in some regions around the world.²⁸ Although the incentives could be small, the spirit of competition helps the patient maintain their habits, eventually leading towards behavior modification.²⁸

Recommendations

To address the issue of medication adherence in comorbidities, there is a pressing need for comprehensive healthcare campaigns and patient education initiatives that target comorbid patients specifically. Recognizing that comorbid patients face unique challenges, interventions should be tailored to their specific needs and circumstances. Each patient's treatment plan should be personalized. Initiatives should commence with the primary objective of raising awareness regarding comorbidities and the critical role of medication adherence in effectively managing these complex health conditions.²³ This foundational knowledge serves as a cornerstone for promoting improved healthcare outcomes among individuals with co-morbid conditions. Moreover, patients should be equipped with comprehensive knowledge about their medications.²² This entails a thorough understanding of the purpose of each prescribed medication, the recommended dosing schedule, potential side effects that may arise, and any possible interactions with other drugs. Empowering patients with this information fosters informed decision-making and enhances medication adherence, ultimately contributing

to more effective healthcare management for individuals with co-morbid conditions. Promoting patient engagement with their social support network, which may include family members, friends, or support groups, can also establish a robust system of assistance that serves as a powerful motivator for medication adherence.⁸ Involving these individuals in the patient's healthcare journey not only offers emotional support but also encourages and reinforces adherence to prescribed treatments. Lastly, incorporating technology, such as the use of medication reminder apps or text message alerts, can be a highly effective strategy for assisting patients in recalling and adhering to their medication schedules.²⁷ These digital tools provide a convenient and reliable means of enhancing medication adherence by delivering timely reminders and notifications, thereby simplifying the process for patients with co-morbid conditions and contributing to more consistent and successful healthcare management.

CONCLUSION

In conclusion, patient education and healthcare campaigns have emerged as powerful allies in the battle to improve medication adherence, particularly among individuals grappling with co-morbid conditions. This comprehensive overview highlights the multifaceted positive effects of such interventions. Patient education not only imparts essential knowledge but also empowers patients, making them more informed and proactive in their healthcare journey. It underscores the critical role of awareness and understanding, illustrating that adherence is not merely a matter of compliance but a pathway to better health outcomes. Moreover, campaigns and interventions must be customized to cater to the specific challenges faced by co-morbid patients. By tailoring approaches to individual needs, healthcare providers can simplify medication regimens and bolster adherence, ultimately leading to more effective healthcare management. The involvement of support networks, such as family, friends, and support groups, reinforces patients' commitment to their treatment regimens. The collaborative approach and shared responsibility for health outcomes can significantly impact medication adherence. Furthermore, the integration of technology in the form of medication reminder apps and text message alerts streamlines the adherence process, enhancing consistency and effectiveness. Regular check-ins with healthcare providers facilitate patient engagement and offer opportunities for real-time feedback and adjustments to treatment plans. It's worth noting that incentives and competitive adherence campaigns have shown promise in certain regions, fostering a sense of motivation and behavior modification. In essence, addressing medication adherence in co-morbid patients requires a holistic approach that combines awareness, education, support, simplification, and technology. The shared goal is to enhance the quality of life for individuals dealing with multiple chronic conditions while reducing the burden on healthcare systems.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Abdullah MY, Alanazi AF, Alandijani AA, Alshehri MS, Aljuaid FS, Saab NAB et al. Effect of patient education and healthcare campaigns on medication adherence in co-morbid patients. *Int J Community Med Public Health* 2023;10:5009-13.