PROMOTING MEDICATION ADHERENCE THROUGH PATIENT EDUCATION: SIMPLE REVIEW

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Abstract:
Physicians play a vital role in combating pharmaceutical non-adherence, but they are not alone in this effort. Chemists and nurses, who possess diverse areas of expertise, also play a crucial role in this sector. By working together with doctors, they can provide comprehensive care and support to patients. It is important to establish clear guidelines for interprofessional collaborations to avoid duplication of care. Nurses and chemists are uniquely positioned to monitor and encourage medication adherence, communicate with doctors, and ensure continuity of treatment beyond the doctor's visit.
Nurses excel in helping patients make lifestyle changes, while chemists are skilled in using medication to reinforce positive behaviors. Both professions are capable of assessing and promoting drug adherence, but they approach it in different ways to meet the specific needs of chronic patients in evolving care models. Medication non-adherence is a significant issue in healthcare, particularly in primary care settings. Research shows that overall patient adherence does not significantly improve with any single approach or program focus. However, interventions that integrate cognitive, behavioral, and emotional components tend to be more effective than individual strategies. By promoting best practices, behaviors, and technological advancements, medication adherence can be greatly enhanced.

Keywords: medication adherence, risk factors, non-adherence consequences, prevalence, Saudi Arabia

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Introduction:

"The extent to which a person's behavior—taking medication, adhering to a diet, and/or executing lifestyle changes—corresponds to agreed recommendations from a healthcare provider" is the definition of medication adherence [1]. Three components make up medication adherence: starting, using, and stopping. In brief, "initiation" denotes the initial dose taken, "implementation" denotes the degree to which a patient's actual dosage complies with the recommended dosage schedule, and "discontinuation" denotes stopping a course of treatment [2]. Another crucial idea is persistence, which is the period of time between an event and its cessation. Roughly half of all chronic patients globally are thought to comply with their prescribed regimen. Patients' inadequate adherence to their medications results in subpar clinical outcomes, a rise in mortality, and financial loss [3]. Healthcare professionals (HCPs)—physicians, chemists, and nurses in particular—are crucial in recognizing patients who adhere to treatment plans that are not optimal and in implementing treatments that enhance adherence, persistence, and patient retention.

Chronic patients in outpatient settings are typically monitored by multiple health care professionals (HCPs), including nurses, chemists, doctors, and others. Poor or nonexistent collaboration between the various healthcare specialists is one of the problems with health systems. Patient treatment is disrupted by the collaboration's conflict and the HCPs' lack of cooperation. Patients frequently seek advice from three different professionals at once. Inadequate coordination and communication between healthcare professionals and patients can have detrimental effects, such as job disarray, interrupted treatment, and delayed care [4]. In 2013, a statement on collaborative practice was released by the World Health Professions Alliance (WHPA). Collaborations that are successful can result in the following: better coordination between medical staff, patients, and families; patient participation in medical decision-making, a more secure wellbeing framework, an expansion in wellbeing experts' fulfillment and a superior utilization of assets. At long last, powerful joint efforts can work on patients' fulfillment, increment the nature of care and patients' personal satisfaction [5]. Besides, joint efforts among HCPs could decidedly affect generally speaking patient medicine adherence and accomplishment of treatment objectives. Notwithstanding, the proof supporting this is as yet restricted [6].

Objectives:

1. To assess the current level of medication adherence among patients receiving education on their prescribed medications.
2. To evaluate the effectiveness of patient education in improving medication adherence.
3. To identify barriers to medication adherence among patients despite receiving education.
4. To explore the impact of patient education on patient knowledge and understanding of their medications.
5. To determine the long-term effects of patient education on medication adherence behavior.

Medication adherence in Saudi Arabia:

Medication adherence is a crucial component of healthcare management in Saudi Arabia, directly impacting patient outcomes and overall health system efficiency [7]. The country is facing a growing concern regarding medication adherence due to the increasing prevalence of chronic diseases such as diabetes, hypertension, and cardiovascular diseases. Research has indicated that a significant number of patients in Saudi Arabia do not comply with their prescribed medication regimens, resulting in suboptimal treatment outcomes, higher healthcare costs, and increased hospitalizations.

Several factors contribute to poor medication adherence in Saudi Arabia, including lack of patient education, cultural beliefs, financial constraints, and limited access to healthcare services. To address this issue, various initiatives have been implemented to enhance medication adherence, such as educational programs, mobile health applications, and telemedicine services aimed at supporting patients in effectively managing their medications [8].

As the healthcare system in Saudi Arabia continues to develop and expand, it is imperative to prioritize efforts to improve medication adherence to ensure better health outcomes for the population. Collaboration among healthcare providers, policymakers, and patients is essential in devising sustainable strategies to enhance medication adherence and ultimately elevate the quality of healthcare delivery in the country [9].

Factors associated with low medication adherence:

Various factors contributing to medication nonadherence have been identified, including side effects and the complexity of the treatment regimen, forgetfulness, and sociodemographic variables like educational attainment and monthly income. One significant factor leading to non-adherence is the lack of alignment between patients

and physicians, ultimately reducing patient satisfaction [10]. Research indicates that a substantial portion of patients, ranging from 40% to 60%, are unable to accurately recall their physicians' instructions within a short time frame of 10 to 80 minutes after receiving the information [11, 12]. Furthermore, a separate study found that more than 60% of patients misunderstood the medication instructions immediately following their doctor's visit [13]. Non-adherence may also stem from the complexity of the medication regimen, which could involve issues such as incorrect timing of drug administration or the need to take multiple medications at various times throughout the day. These behavioral aspects on the part of the patient, whether or not recognized by the physician, can lead to suboptimal treatment outcomes. One major factor that influences adherence is the patient's ability to read and understand medication instructions. Patients with low literacy may have difficulty understanding instructions; this ultimately results in decreased adherence and poor medication management. Gender, personality, and cultural factors may influence adherence-compliance rates [14].

Consequences of medication non-adherence:

Non-adherence to medication can have significant repercussions, including wastage of medication, disease progression, diminished functional abilities, a lower quality of life, and increased utilization of healthcare resources such as nursing homes, hospital visits, and hospital admissions [15]. Economic analyses have underscored the serious health implications of poor adherence to prescribed treatment regimens, as evidenced by various research findings. For example, a study by Anon demonstrated that patients with diabetes mellitus, hypercholesterolemia, hypertension, or congestive heart failure who were non-adherent to their prescribed therapies had more than double the risk of hospitalization compared to the general population [16]. The negative effects of medication non-adherence extend beyond the individual patient to impact healthcare providers, physicians, and medical researchers striving to assess the efficacy of medications for specific populations. The potential burden of non-adherence on healthcare delivery highlights its significance as a critical public health issue [17].

Methods to measure adherence:

Various methods have been reported and are in use to measure medication adherence. The methods available for measuring adherence can be categorized into direct and indirect methods of measurement.

Direct methods of measuring adherence include direct observed therapy, measurement of the level of a drug or its metabolite in blood or urine, and detection or measurement of a biological marker added to the drug formulation in the blood. Direct approaches are considered to be one of the most accurate methods of measuring adherence, but they can be costly. Additionally, variations in metabolism can sometimes lead to a false impression of adherence [18].

On the other hand, indirect methods of measuring adherence include patient questionnaires, patient self-reports, pill counts, rates of prescription refills, assessment of a patient's clinical response, electronic medication monitors, measurement of physiologic markers, and patient diaries.

Each method has its own set of advantages and disadvantages, and there is no universally accepted gold standard for measuring medication adherence. The simplest way of measuring adherence is through the patient's self-report [19].

Pill counts, which involve counting the number of pills remaining in a patient's medication bottles or vials, are a commonly used method to measure adherence. However, this method has its drawbacks, such as the potential for patients to switch medications between bottles or discard pills before hospital visits to give the appearance of adherence. Therefore, pill counts are not considered an ideal measure of adherence [20].

Ways to enhance adherence to medication:

The success of a treatment hinges on both the effectiveness of a drug and the patient's commitment to following the treatment plan. Patients, healthcare providers, and healthcare systems all play crucial roles in enhancing medication adherence. Employing a variety of adherence strategies rather than relying on a single method is essential to boost patients' adherence to their prescribed treatment [21]. A structured approach that can be adopted to enhance medication adherence includes the following steps:

1) Prescription practices:

Incorporate patients into the decision-making process concerning their medications whenever feasible to foster a sense of ownership and collaboration in the treatment plan. Opt for simplified medication regimens tailored to individual patient characteristics during the initial stages of drug therapy [22].

2) Patient communication:
When prescribing or dispensing a medication, provide comprehensive information, including details on common side effects and crucial facts that patients need to be aware of. Utilize tools and aids designed to enhance medication adherence, such as medication calendars, schedules outlining medication timings, drug information cards, medication charts, and informational sheets about the prescribed medicines [23].
3) Follow-up appointments:
Integrating monitoring of medication adherence into patient follow-up schedules is essential. Assess adherence using diverse methods that may vary based on patient and drug-specific factors, as this plays a pivotal role in ensuring treatment efficacy [24].

Conclusion:
In conclusion, promoting medication adherence through patient education is a crucial component in improving patient outcomes and overall healthcare quality. By providing patients with comprehensive information about their medications, including the purpose, dosage, potential side effects, and importance of adherence, healthcare providers can empower patients to take an active role in managing their health. Patient education can also help to address misconceptions or fears that may be preventing patients from taking their medications as prescribed. Furthermore, by fostering a collaborative relationship between patients and healthcare providers, patient education can enhance communication and trust, leading to better treatment outcomes. Overall, investing in patient education to promote medication adherence is a cost-effective and impactful strategy that can ultimately improve patient health and well-being.

References:

1. Brown M.T., Bussell J.K. Medication adherence: WHO cares? Mayo Clin. Proc. 2011;86:304–314. doi: 10.4065/mcp.2010.0575. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
2. Sabaté E., editor. Adherence to Long-Term Therapies: Evidence for Action. World Health Organization; Geneva, Switzerland: 2003. [Google Scholar]
3. Basu S., Garg S., Sharma N., Singh M.M. Improving the assessment of medication adherence: Challenges and considerations with a focus on low-resource settings. Ci Ji Yi Xue Za Zhi. 2019;31:73–80. doi: 10.4103/tcmj.tcmj_177_18. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
4. Lam W.Y., Fresco P. Medication Adherence Measures: An Overview. BioMed Res. Int. 2015;2015:217047. doi: 10.1155/2015/217047. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
5. Baudrant-Boga M., Lehmann A., Allenet B. Thinking differently the patient medication compliance: From an injunctive posture to a working alliance between the patient and the healthcare provider: Concepts and determinants. Ann. Pharm. Fr. 2012;70:15–25. doi: 10.1016/j.pharma.2011.10.003. [PubMed] [CrossRef] [Google Scholar]
6. Lehmann A., Aslani P., Ahmed R., Celio J., Gauchet A., Bedouch P., Bugnon O., Allenet B., Schneider M.P. Assessing medication adherence: Options to consider. Int. J. Clin. Pharm. 2014;36:55–69. doi: 10.1007/s11096-013-9865-x. [PubMed] [CrossRef] [Google Scholar]
7. Burden of disease, injuries, and risk factors in the Kingdom of Saudi Arabia, 1990-2010. Memish ZA, Jaber S, Mokdad AH, AlMazroa MA, Murray CJ, Al Rabeeah AA. Prev Chronic Dis. 2014;11:0. [PMC free article] [PubMed] [Google Scholar]
8. The unmet challenge of medication nonadherence. Kleinsinger F. Perm J. 2018;22:18–33. [PMC free article] [PubMed] [Google Scholar]
9. Factors affecting medication adherence among pre-dialysis chronic kidney disease patients: a systematic review and meta-analysis of literature. Seng JJ, Tan JY, Yeam CT, Htay H, Foo WY. Int Urol Nephrol. 2020;52:903–916. [PubMed] [Google Scholar]
10. Medication adherence: Importance, issues and policy: A policy statement from the American Heart Association. Piña IL, Di Palo KE, Brown MT, et al. Prog Cardiovasc Dis. 2021;64:111–120. [PubMed] [Google Scholar]
11. Assessment of medication adherence in patients with chronic diseases in Tabuk, Kingdom of Saudi Arabia. Prabahar K, Albalawi MA, Almani L, Alenizy S. J Res Pharm Pract. 2020;9:196–201. [PMC free article] [PubMed] [Google Scholar]
12. Factors associated with non-adherence to drugs in patients with chronic diseases who go to pharmacies in Spain. Llorca CV, Cortés Castell E, Ribera Casado JM, et al. Int J Environ Res Public Health. 2021;18 [PMC free article] [PubMed] [Google Scholar]
13. Burnier M. Long-term compliance with antihypertensive therapy: another facet of chronotherapeutics in hypertension. Blood Press Monit 2000;5(Suppl 1):S31-S34

10.1097/00126097-200005001-00006 [PubMed] [CrossRef] [Google Scholar]
14. Praska JL, Kripalani S, Seright AL, Jacobson TA. Identifying and assisting low-literacy patients with medication use: a survey of community pharmacies. Ann Pharmacother 2005. Sep;39(9):1441-1445 10.1345/aph.1G094 [PubMed] [CrossRef] [Google Scholar]
15. Garcia-Aymerich J, Barreiro E, Farrero E, Marrades RM, Morera J, Antó JM. Patients hospitalized for COPD have a high prevalence of modifiable risk factors for exacerbation (EFRAM study). Eur Respir J 2000. Dec;16(6):1037-1042 10.1034/j.1399-3003.2000.16f03.x [PubMed] [CrossRef] [Google Scholar]
16. Sokol MC, McGuigan KA, Verbrugge RR, Epstein RS. Impact of medication adherence on hospitalization risk and healthcare cost. Med Care 2005. Jun;43(6):521-530 10.1097/01.mlr.0000163641.86870.af [PubMed] [CrossRef] [Google Scholar]
17. National Council on Patient Information and Education. Enhancing prescription medicine adherence: a national action plan. August 2007. Available at: http://www.talkaboutrx.org/documents/enhancing_prescription_medicine_adherence.pdf Accessed on June 5, 2010.
18. Wagner JH, Justice AC, Chesney M, Sinclair G, Weissman S, Rodriguez-Barradas M, VACS 3 Project Team Patient- and provider-reported adherence: toward a clinically useful approach to measuring antiretroviral adherence. J Clin Epidemiol 2001. Dec;54(Suppl 1):S91-S98 10.1016/S0895-4356(01)00450-4 [PubMed] [CrossRef] [Google Scholar]
19. Alcoba M, Cuevas MJ, Perez-Simon MR, Mostaza JL, Ortega L, Ortiz de Urbina J, et al.HAART Adherence Working Group for the Province of Leon, Spain Assessment of adherence to triple antiretroviral treatment including indinavir: role of the determination of plasma levels of indinavir. J Acquir Immune Defic Syndr 2003. Jun;33(2):253-258 10.1097/00126334-200306010-00022 [PubMed] [CrossRef] [Google Scholar]
20. Walsh JC, Mandalia S, Gazzard BG. Responses to a 1 month self-report on adherence to antiretroviral therapy are consistent with electronic data and virological treatment outcome. AIDS 2002. Jan;16(2):269-277 10.1097/00002030-200201250-00017 [PubMed] [CrossRef] [Google Scholar]
21. Osterberg L, Blaschke T. Adherence to medication. N Engl J Med 2005. Aug;353(5):487-497 10.1056/NEJMra050100 [PubMed] [CrossRef] [Google Scholar]
22. Aremu, T. O., Oluwole, O. E., Adeyinka, K. O., & Schommer, J. C. (2022). Medication Adherence and Compliance: Recipe for Improving Patient Outcomes. Pharmacy (Basel, Switzerland), 10(5), 106. https://doi.org/10.3390/pharmacy10050106
23. Zahradnik A. Asthma education information source preferences and their relationship to asthma knowledge. J. Health Hum. Serv. Adm. 2011;34:325–351. [PubMed] [Google Scholar] [Ref list]
24. Kreslake J.M. Use of Mass Communication by Public Health Programs in Nonmetropolitan Regions. Prev. Chronic Dis. 2019;16:E96. doi: 10.5888/pcd16.190014. [PMC free article] [PubMed] [CrossRef] [Google Scholar] [Ref list]