

Strengthening Medication Adherence Practices in Chronic Disease Patients-Clinical Pharmacist Driven Focused Approach

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ABSTRACT

Medication adherence practices are becoming an important concern for healthcare professionals and patients. Globally, medication non-adherence is quite prevalent and affecting the healthcare of patients leading to inadequate response to treatment and augmented healthcare cost. With the advent of improvised practices in clinical care, patient-related problems mainly non-adherence have been conquered to a greater extent. Clinical practice is changing over a period contributing more towards patient care. Expansion of clinical pharmacy activities with a focused approach towards patient care especially optimized pharmaceutical care has seen a tremendous revolution in modern era. According to a study, 50% of patients with chronic conditions are not adherent to their medications with an estimated adherence range of 17% to 80%. Drugs used for asymptomatic chronic conditions have been shown to have low adherence rates. Risk of non-adherence has been shown to be rapidly increasing with the initiation of chronic medication especially in the first year of its commencement. Medication non-adherence is one of the most significant reason for inadequate response to drug therapy, initial hospitalization, frequent hospital visits and Adverse Drug Events (ADEs) leading to inappropriate therapeutic outcome and in turn, raised healthcare cost. Due to lack of sufficient support or appropriate channel, there is a growing concern for healthcare professionals to take initiative and strengthen the medication adherence practices. Clinical pharmacist's initiatives in this direction has been appreciated and documented with clinically proven evidence of better impact on patient's health-related quality of life. Patient tools such as pill reminders, alarming system, dose indicator, standard day-wise schedule, colorful pills etc. have brought pill revolution with the intention of improvising medication adherence practices worldwide. The current requirement is to monitor such patients in clinical practice and encourage them to comply with medication-related instructions and adhere to their medication schedule at the most.

Key words: Adverse drug event, Medication Compliance, Medication Non-Adherence, Polypharmacy, Prevalence.

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INTRODUCTION

Adherence is defined as the extent to which patients are able to follow the recommendations for prescribed treatments.¹ Patients may be non-adherent at different levels of their treatment. Medication non-adherence is quite common in patients having chronic disease like diabetes mellitus, hypertension, geriatric patients having

multiple co-morbidities, patients on multiple drug therapy i.e. polypharmacy and patients with psychiatric disorders or any other disability. Medication non-adherence may lead to inappropriate therapeutic outcome which could have significant impact on patient's Health-related Quality of Life (HRQOL) and indirect increase in healthcare



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costs.^{2,3}

It has been reported in research studies that 50% of patients with a chronic condition are not adherent to their medications with an estimated adherence range of 17% to 80%.³

Health practices pose a great challenge today for healthcare professionals in order to tackle the medication adherence issues. Development of various softwares, mobile applications, patient tools² and patient diaries has improved the current practice but the problem is still prevailing.⁴

Patient tools such as medication calendar, pill reminder, alarm, colored pills and boxes, software regarding medication details, mobile applications etc. have contributed a lot for improving medication adherence practices.² Applicability of smart system in clinical practice in addition to upcoming new technology artificial intelligence, which is an emerging field today, has drastically revolutionized the world of clinical pharmacy.⁴

Complexity of medication use and multiple drug therapy have affected the medication adherence practices to a greater extent. Complexity involves complicated drug regimen especially in case of chronic diseases, frequency of administration multiple times within a single day, consuming medications irrespective of medication related instructions (timing and frequency of administration) etc. This can greatly influence medication adherence practices among patients on chronic medications.²

Use of unnecessary medications or overuse of medications has significantly affected the patient's outcome. Patients irrespective of any medical condition/s consuming plenty of medications on day to day basis. This could greatly affect their health status leading to inappropriate clinical outcomes such as Adverse Drug Reactions (ADRs), Drug-Drug Interactions (DDIs), drug-food interaction etc.³

Various strategies can facilitate patients especially with chronic diseases to improve and adopt rationalized adherence practices.

Strategies to enhance medication adherence

Minimizing the pill burden

Patients tend to take more medications even if at all there is no need. Reducing the number of medications and prioritizing some of the necessary medications can minimize the risk of drug-related problems. Some of the add-on medications like proton pump inhibitors, anti-emetic, multivitamins etc. which are frequently used along with the other primary medications, can be avoided.⁵

Retention of the right medication which has been prescribed for the main indication, can help enhancing the medication adherence of patients. It has been observed that patients with less number of medications remember to take their medications and don't mess up with the complicated regimen.^{5,6}

Polypharmacy is quite common among elderly patients. Due to multiple co-morbidities, patients are on complicated regimen with plenty of medications. To support such patients, we as pharmacist, should try to explain the importance of taking such medications. Patient tools such as pill count method, alarming device, color identification pills etc. can be used to make sure that they adhere to their medications well.⁷⁻¹⁰

Assessing patients for medication adherence on their next follow-up visit

Medication non-adherence is observed on several occasions especially during follow-up visits. Follow-up visits are planned in order to review the patient again and assess if there is any difficulty or problem in taking the medications such as side effects. Sometimes patients refuse to take medications due to fear of side effects. This problem can be overcome by convincing the patient about importance of medications and their role in improving the health status.^{9,11}

Medications are not meant to produce any side effect but when consumed it acts differently sometimes giving negative outcome affecting the condition of the patient. Monitoring patients on their subsequent follow-ups could provide useful information on whether they are adhering to their medications or not. Discussing about their health conditions can be motivating for them. Medication adherence will surely be enhanced with constant guidance and motivation.^{9,11}

Encouraging patients to take their medications on time and avoid missing the doses will certainly help in improving their adherence. Reduce the fear of side effects by highlighting the point that you are less likely to suffer from any adverse effect but if at all you experience, you may stop the medication/s and inform the treating doctor. In case of any emergency, seek immediate medication advice by visiting the nearest clinic or hospital or pharmacy counter.^{9,11,12}

Periodic reminders for patients having previous history of non-adherence

Patients who are non-adherent for long time must be called for follow-up visits to discuss about the reasons for non-adherence. Reasons could be anything like they don't

want to continue their medications thinking that they are quite okay or otherwise they fed up of being consuming medications every day and start skipping doses. Patient should be contacted for discussion regarding their non-adherence status. Pharmacist should try hard to track the reason, extract more and more information, interact with the patient frequently and resolve adherence issue within a short span of time.¹²

Periodic reminders for patients having long standing history of non-adherent to medications are proved to be beneficial in long run. Reminders to patients either personally, through phone call, sms, what's app or discussing with their family member, relatives, care taker may resolve this issue. Patients tend to take medications if insisted upon by healthcare professionals thereby improving medication adherence. Reminders certainly help them especially if the medications are too complex and creating confusion regarding which one to take or which one not. Whatsapp or social networking are some of the smart tools today to help people in getting rid of their problems.¹²

Support for elderly patients in order to remind them for their medications

It is very important to have personal nurse or care taker or any family member especially for patients who are elderly. They need more attention during that age group. Extra care should be provided to console them in their loneliness. Forgetfulness is one such problem which has been seen in elderly patients. They often forget to do a part of routine activity which is not different from medications.⁷⁻¹⁰

Presence of care taker may help them to keep track of their medications, routinely take medications on time, identify easily and follow the instructions on timely basis. Discussion with family members can help in assigning the specific task to them for medicine administration on timely basis to their elders.⁷⁻¹⁰

Use of colored codes to identify pills

Many pharmaceutical industries do manufacture medications with appealing characteristics especially for pediatrics and geriatrics. Use of colored codes on medication blister pack or bottle for the indication specified may help in locating the right medication for the patient. Therefore, chances of skipping the dose or mixing up of medication can be avoided.¹³

Patients can comfortably consume medications and pick the right one from the storage box. In case of pediatrics, utmost care should be taken to avoid the wrong

consumption of medications because of eye-catching colors. Certain medications are formulated especially syrups and suspensions with better taste profile so that children can consume it easily. This will certainly help in improving their condition.^{13,14}

Extra care in case of pediatrics and geriatrics to make them understand the importance of adhering to medications

Use of suspensions or syrups is advisable in case of pediatrics. Extreme care should be taken if using medication device such as inhalers. Few medications which require specific training with the use of medication devices, expert advice should be taken. Additional support is required in case of pediatrics. Convincing them for medication consumption is a very hard task. To fulfill that task, efforts can be made to convince the mother first and then the child. Mother will help in providing extra care for the kid and giving them the medications on time.¹⁵⁻¹⁸

Patients can be trained properly for the use of medication devices such as Metered Dose Inhaler (MDI) with spacer, nasal spray etc. The demonstration of these devices will probably help them to understand and repeat the steps. This training or demonstration should be done in presence of expert pharmacist in order to make sure that steps are followed properly without any miss. Incorrect use or skipping of any step may lead to inadequate therapeutic response. Care should be exercised in all cases.^{15,16,18,19}

Alarming or monitoring devices can be used and set according to timings and frequency of medications

Use of automated devices concerned with medicine administration and monitoring medication adherence have gained much attention today. Consumers are attracted toward such devices for example, alarming device, pill count device etc.^{2,20-22}

Availability of automated devices have simplified the procedure with improved medication adherence devices which are more advanced. With the advent of smart devices, adherence practices have improved a lot. More number of patients are approaching towards smart devices. Fusion of these smart devices with the ongoing system has shifted the trend towards smarter way of managing non-adherence issues or problems.²⁰⁻²³

Split the dosage schedule, in case of multiple drugs, at different intervals suitable for patients

In case of multiple drug therapy, it is not suitable for patients to consume tablets at one point of time rather

definite dose interval can be designed which is suited as per patient's requirement. Fixed but definite dose interval will allow the patient to remember few tablets in a particular time interval and consume without affecting the other dosage schedule. Medication adherence will be achieved with suitable dosage schedule.^{24,25}

The same principle is applicable in case if drugs are prescribed with more frequency like tid or qid. Patients may not take multiple tablets at one point. If rational combinations are available and can be recommended after consultation with the treating doctor, then frequency will be reduced to minimum. Considering the pharmacokinetics of the molecule may help in recommending drugs with longer duration of action and less frequency.^{24,25}

Train patients in clinics/hospitals for medicine consumption and highlight the importance of medicines in their condition

Patients can be treated initially after the medication being prescribed in outpatient clinics. Allow the patient to consume medication/s in presence of a treating doctor or a pharmacist. In presence of healthcare professionals, patient will be attentive to take medications at least one dose prior to the actual dosage schedule. This practice will probably help patients to understand the importance of medications on the basis of discussion raised in presence of a treating doctor or a pharmacist. In addition to the basic understanding of medications, patients will get to know more about the way of administration for example through oral route, subcutaneous, intranasal or otherwise any other route of drug administration. This will enhance the confidence level of the patients thereby encouraging them to follow the right practice and consume medications on time.²⁵⁻³⁰

Clinical pharmacist driven approach may promote better understanding of medications apart from web-based information. For in-patients at the time of discharge, medication related instructions can be provided by showing the medications patient is supposed to take during post-discharge period. Physical verification of tablets/capsules in presence of healthcare professionals will certainly improve the understanding of the patient.²⁶⁻³⁸

Focused group discussions

Chronic disease patients can be asked to visit pharmacy clinics for focused group discussions. In this type of discussion, patients can be encouraged for more active participation, interaction with other patients, to clarify doubts and discuss about any medication adherence issues. Group discussion will help patients to gain

confidence and understand their disease condition better by observing and sharing the experiences with others. Other patients will be in a better position to guide and explain the importance of adherence. In such group discussions, patients gain confidence, learn effectively from others, share their own experiences, clarify issues seen in the past and even discuss with the clinical pharmacist to resolve issues or problems. Clinical pharmacists driven approach may enhance the medication adherence to an extent where issues are completely resolved. Any confidential or privacy conflict, if arises can be dealt separately. Medication adherence practices are well promoted with focused group discussions.³¹⁻³⁹

Confidentiality and privacy should be maintained at all times during focused group discussions. Discussion between patients observed to be very fruitful. They get to know many things about their condition and medications. Medication use is very critical in any disease state. Medications, if used appropriately, play a vital role in therapeutic management resulting in optimal outcome.^{40,41}

Problem based discussion

Patient should be encouraged to have one-on-one discussion with a clinical pharmacist. Problem based discussion will help in resolving many issues whether related to personal matters or medication issues. Privacy and confidentiality should always be maintained throughout the discussion.^{26-31,40,41}

Issue based discussion can be initiated by involving patients in the discussion process with the objective of clarifying from patients the reason for being non-adherent. After obtaining the reason, the plan can be made to resolve the specified problem. Problems in a given situation should not compromise with the condition of patients rather pharmacist should try hard to resolve the problems.^{42,43}

Self-engagement in medication adherence practices

Patient can engage themselves in medication adherence practices by practising the day-to-day medication intake, remembering the frequency of medications and duration. Appropriate consumption of medications and following the right instructions provided by the treating doctor and a clinical pharmacist, patients can train themselves in adhering to the medication schedule. Self-engagement may promote good adherence behavior among patients. Recalling the non-adherence issues with a concern about the inadequate response due to lack of medications or skipping medications, may indulge them in adopting good adherence practices.^{42,44,45}

Awareness about medication adherence

Awareness campaign can be held for patients observed to be non-adherent and need to follow the proper medication plan as instructed. Patients can be explained about the medications and their role in the disease management. Patients can be allowed to speak in such awareness campaign and share their own experiences with respect to disease, drugs, adverse effects, dosage regimen related instructions etc. For conducting awareness campaign, activities can be planned in advance. As a part of planned activities, role play, act, skit and dramas can be shown on stage or otherwise open cinema projections can be used as a tool to create awareness. Awareness campaign being the most appropriate channel for spreading the message across masses has been utilized before in many health awareness campaigns.^{28,29}

To spread awareness among community, various mobile phone applications and social networking sites can be also be used in addition to general awareness campaign. Patients can be motivated to participate in web activities if found feasible and blog by sharing their own experiences without disclosing the personal identity.⁴⁶⁻⁴⁸

Health status of the patient

Being a chronic disease patient, patients should strictly adhere to the medications and medication related instructions. In chronic disease, patients generally lose the hope and get demotivated which in turn affect the health status of the patient. Health should be first priority always. Patients who have been prescribed with more number of drugs should be very careful with the consumption of medications and their consequences. Consequences can be positive or negative. Negative consequences may compromise with the safety of medications leading to adverse drug reactions.^{2,5,49}

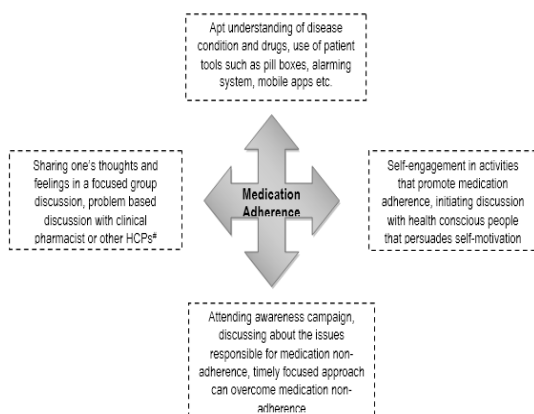


Figure 1: Conceptual network depicting strategies to overcome medication non-adherence.

#HCPs: Healthcare Professionals/Providers

Approaching health conscious people

Non-adherent patients can be advised to mingle with health conscious people for increasing their level of understanding about the benefits of healthy food and adopting better life style in order to ensure better quality of life.⁵⁰ (Figure 1)

CONCLUSION

Clinical pharmacist driven focused approach can certainly help chronic disease patients in better understanding of their disease condition and timely management. With improved initiatives in the direction of medication adherence, patients are better relying on clinical pharmacist for their disease control and management. Due to complexity of medication use in case of chronic disease, sometimes patients do forget or mix-up their medications leading to inadequate response to medication or failure of drug therapy. Clinical pharmacists can play a vital role in promoting good medication adherence practices in chronic disease patients. Numerous activities can be proposed to ensure medication adherence like focused group discussion, self-engagement activities, open forum discussion etc.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

ADEs: Adverse Drug Events; **ADRs:** Adverse Drug Reactions; **DDIs:** Drug-drug Interactions; **HCPs:** Health Care Professionals/Providers; **HRQOL:** Health Related Quality of Life; **MDI:** Metered Dose Inhalers.

SUMMARY

Clinical pharmacist driven focused approach can certainly help chronic disease patients in better understanding of their disease condition in addition to therapeutic management. Selection of rational therapeutic plan as per individual requirements or needs may improve patient's adherence thereby optimizing the clinical outcome.

Clinical pharmacists can play a vital role in promoting good medication adherence practices in chronic disease patients.

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