

# Medication concordance in modern medicine – A critical appraisal from an Indian perspective

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## ABSTRACT

Modern medicine encompasses a holistic approach toward patient care that seeks to integrate the social, psychological, and pathological aspects of a disease. In line with this, the traditional model of improving treatment outcomes through improved compliance or adherence has given way to the concept of “concordance” that respects the integrity of the patient, autonomy, and self-determination. A self-conscious patient actively and equally participating in her or his comprehensive healthcare can bring a paradigm shift in the perceptions and functioning of the healthcare sector. Medication concordance can be expected to play a key role in improving patient well-being, clinical outcomes, and healthcare delivery. However, it is fraught with numerous questions to be addressed ranging from lack of clarity or standard protocol, medicolegal intricacies, cultural-linguistic barriers, illiteracy, shortage of time, infrastructure, and manpower. There are major challenges in the effective implementation of this initiative which has definite potential to prove beneficial in Indian healthcare settings. The success of this novel approach can only be accomplished by coordinated, inclusive, and persistent efforts from all participants of healthcare with fostering of a milieu of trust, belief, and communication. A systematic literature search was conducted using key words from relevant articles and MeSh terms on Google Scholar and PubMed. Data were abstracted according to their relevance to subheadings of the review and synthesis of concepts was done through multiple reviews by at least two reviewers for any subsection.

**Keywords:** Adherence, compliance, concordance, medicine, patient choice

## Introduction

The practice of medicine is attaining complex dimensions in the modern world. The boom in medical information and availability of multiple options of treatment has thrown up new challenges for the medical fraternity. The traditional approach of “one diagnosis, one treatment” is no longer the *sine qua non*. This is the era of “Evidence-Based Medicine” where all treatment modalities must be weighed against each other in the background of coexistent factors and in the best interests of the patient.<sup>[1]</sup> The goal of treatment is not only providing physical alleviation but also serving as a tonic of psychological solace in firm commitment to the World Health Organization

definition of health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”<sup>[2]</sup> The objective is to transform present-day patient from a passive receiver to an informed active participant who plays an unambiguous role in the entire treatment process.<sup>[3]</sup> The concept of “medication concordance” revolves around this evolving ideation. It was originally defined as “an agreement reached after negotiation between a patient and a health care professional that respects the beliefs and wishes of a patient in determining whether, when and how medicines are to be taken.”<sup>[4]</sup> Etymologically, concordance comes from the Latin term *concordare* (literally, with the same heart) implying mutual trust and consensus between two parties in decision-making. The aim of concordance is to establish a gateway of free communication between clinicians and patients with focus on patient-centered care and a shift toward “shared decision-making.”<sup>[5]</sup>

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The concept of medication concordance entails to all practising family physicians who interact with the patients in their day-to-day clinical practice. The entire concept revolves around patient–doctor relationship. Hence, this article is of relevance to them to better understand the concept and application of medication concordance in today’s world.

The keywords used in literature search were “concordance,” “medication concordance,” “adherence,” “compliance,” “Indian population,” and “special population.” While searching in PubMed search engine, Medical Subject Headings (MeSH terms), subheadings, and “All Fields” were combined with key Boolean operators “AND,” “OR,” and “NOT” to get relevant studies and exclude the studies which do not match our requirements. Data were synthesized from the articles and reviewed for inclusion in different subsections of the review.

### Compliance versus adherence: The terminology and issues

The traditional medical treatment model assumes that any treatment given to the patient based on clinical and diagnostic evidences is in the best interests of the patient and it would be unwise and irrational for the patient not to follow the given prescription.<sup>[6]</sup> However, medicine intake does not depend only on the properties or effects of the prescribed medications or the strengths of the prescriber. It is the outcome of a highly complex biopsychosocial process, which reflects the *patient’s choice* whether to take the medication or not.<sup>[7]</sup> Efforts to describe the medicine-taking habit have led to use of two well-known terminologies, “compliance” and “adherence” which are in use since the late 1970s. The difference between these terms seems minor and technical but is important to recognize.

Compliance is defined as “the extent to which the patient’s behaviour matches the prescriber’s recommendations.” Adherence is “the extent to which the patient’s behaviour matches *agreed* recommendations from the prescriber.”<sup>[4]</sup> The key is an agreement with recommendations in adherence. The similarity between these two terms for medicine-taking behaviour has often led to their synonymous and interchangeable use in literature. In simpler words, compliance is the extent to which a patient follows doctor’s advice and instructions. Adherence is the extent to which a patient follows a prescription through his or her decision about medicine-taking. Compliance is a restrictive, authoritarian term which implies obedience to doctors’ orders. Adherence refers to the act of drug prescribing by the doctor along with drug-taking by the patient involving own willingness; so there is a duality which is more similar to concordance.<sup>[8]</sup>

Both compliance and adherence are objectively measured over a period of time and often reported as a percentage of pills consumed from the total number of pills prescribed, taking account of the “missed doses.”<sup>[9]</sup> The calculation is often operationalized in retrospective assessments as the number

of doses dispensed in relation to the dispensing period, often called the “medication possession ratio.”<sup>[10]</sup> In addition, many assessments are based on self-reported subjective measures such as validated questionnaires (like Morisky Medication Adherence Scale) which are easy to administer, nonintrusive, and provide information on attitudes and beliefs. However, limitations arise due to ignorance and unwillingness of the respondents, affecting accuracy especially in settings of illiteracy and crowded clinics.<sup>[11]</sup> Improved compliance or adherence is desirable for achieving treatment goals, but from patients’ perspective, nonadherence/noncompliance often may represent a rational decision supported by their views on the medicines, medication-taking, life circumstances, available resources, priorities, the need to assert their independence, and the need to do other activities when on a long-term treatment.<sup>[12,13]</sup>

### Medication intake and treatment outcomes

High compliance and adherence have shown improved treatment outcomes in numerous studies. Estimates show that as many as up to half of the patients suffering from diseases requiring chronic drug therapy do not follow the recommendations for medicine intake, or do not take medicines at all.<sup>[14]</sup> This “noncompliance” or “nonadherence” is responsible for therapeutic failure and unnecessary switch to alternative or additional therapies, and enhanced morbidity and mortality.

Many studies including systematic reviews done across the world have proven the association between nonadherence and treatment failure, more so in chronic illnesses such as tuberculosis, hypertension, diabetes, and rheumatoid arthritis.<sup>[15-21]</sup> Studies in India have similarly shown high prevalence of nonadherence and detrimental effects on clinical outcomes in various diseases.<sup>[22-24]</sup> At our own center, a study on antihypertensive medication adherence and blood pressure control showed high direct correlation.<sup>[25]</sup>

### Concordance – An evolving approach with potential to improve adherence

In recent years, it has been acknowledged that inclusion of the patients in therapeutic decision-making process is of equal importance in understanding treatment adherence and compliance. The approach of concordance that allows patient autonomy was conceived in the United Kingdom in late 1990s. It can be understood as the doctor and patient coming to a shared agreement about therapeutic goals.<sup>[26]</sup> Concordance takes into account and gives due importance to the health beliefs of the patient. It seeks to establish a collaborative “therapeutic alliance” aimed at fulfilling aspirations and expectations of both patient and doctor. Concordance is not the same as compliance or adherence but seeks to improve both.<sup>[27]</sup> It integrates multiple facets and pushes for a status of equality between the care provider and the receiver in making decisions. It facilitates a personalized treatment approach for the patient decided after mutual discussion and consensual agreement between the physician and the patient.<sup>[28]</sup>

Such an inclusive approach is expected to increase the degree of compliance or adherence. The abstraction of patient concordance in this patient–doctor–drug trifecta can be reflected through an off-track “cafeteria approach.”<sup>[29-31]</sup> The treatment options are supposed to be presented to the patient as a “menu” with description of the “food items” (medicines) the patient may “wish to relish,” complete with “price tags,” and “recipe.” This may be a radical oversimplification, but this approach may give the best results for medication intake behavior, because the patient will take a voluntary informed decision and will be highly motivated to pursue well-understood treatment objectives. In a cross-sectional study on concordance, trust, and patient enablement, conducted in Pune, it was concluded that better concordance was associated with significantly improved trust in the doctor, and with significantly enhanced patient enablement.<sup>[32]</sup> However, more studies are required to establish concordance as a trusted approach, and particularly its facilitation in clinical practice.

An interesting phenomenon which has been described as probable explanation supporting concordance is the theory of psychological reactance. It basically points to the fundamental fact that in the absence of perceived freedom, the patients’ behavior can be opposite to what has been recommended, albeit with high interindividual variation. A motivational approach, respecting autonomy and self-determination, is beneficial in improving adherent behavior in medicine-taking.<sup>[33]</sup>

### Factors affecting adherence and concordance

While concordance is not synonymous with adherence, it does extend support in medicine-taking. It is more concerned with shared decision-making in medicine prescribing, rather than a direct role in medicine-taking. However, a lot of the factors associated with adherence, or nonadherence rather, hold value in the concordance approach. Medication nonadherence is a widespread problem across healthcare and may reflect discrepancies between provider and patient perception of treatment benefits. Numerous factors associated with medication nonadherence are by extension related to concordance. These factors can broadly be categorized into demographic (age, gender, occupation, income, education, comorbidity, habits), nature of medications and/or regimens, and communication issues such as linguistic/cultural barriers, instructions, tailored information, and interpersonal skills. At one end of spectrum, simple forgetfulness underlies the commonly seen “unintentional” nonadherence, and at the other end is the “intelligent or wilful” nonadherence guided by a rational decision by the patient to not take medicines as prescribed.<sup>[8]</sup>

Studies have shown that middle-aged (40–60) patients tend to have poorer adherence.<sup>[34-36]</sup> It is considered that patients with higher educational level are likely to be more adherent to the drug regimens, but “health literacy” (HL) plays a more important role in medication concordance; it entails a better knowledge and understanding of the disease or condition.<sup>[37]</sup>

Lower socioeconomic status has also been identified as an important factor for nonadherence.<sup>[38]</sup> Factors such as regimen complexity, understanding of instructions, motivation, personal behavioral pattern, and affordability are strong determinants of adherence in any population. All these need to be kept in mind while adopting a concordance approach. Failure to address any of these and not understanding patients’ needs and concerns would be certain barriers.

### Issues with concordance

Patient concordance is not an entirely novel terminology in medical parlance. The bedrock of concordance is good doctor–patient relationship based on trust and transparency. The principles of patient autonomy and fundamental human rights make it ethically obligatory on the part of physicians to apprise the patient with the disease he or she is suffering from, necessity of diagnostic tests, benefits and risk of treatment options, costs of treatment, duration of therapy, adverse effects of drugs, and clinical outcomes expected. The informed patient then gives authority to the doctor to provide the best possible treatment according to existing standards of care. It is the amalgamation of this consent with informed decision that touches the essence of concordance in modern drug therapy.<sup>[39]</sup>

Concordance cannot be imposed; it requires patient’s willingness. It also does not guarantee the best possible outcomes as patient’s decision may not be aligned to doctor’s recommendations or it may be to not take medicines altogether.<sup>[27]</sup> Even in the Western countries, there are concerns about proper understanding of its application and lack of a framework of implementation. NICE, UK have released extensive guidelines on the subject.<sup>[40]</sup> Questions have been raised such as where, in whom, and how exactly to apply concordance in clinical practice. In the era of medical litigation, the implementation of patient concordance may no longer remain a moral obligation but has become a legal obligation like informed consent.<sup>[41]</sup> The repercussions are unpredictable. Patient care and satisfaction are expected to improve with enhanced medicine-taking behavior, particularly for chronic noncommunicable disease such as hypertension, diabetes, ischemic heart disease, dyslipidemia, and arthritis. The overall healthcare expenditure can be expected to drop. However, concordance does not necessarily reflect in improved adherence always as it is more aligned with collaborative prescribing than medicine-taking. Studies have indicated that patients may not even agree to shared decision-making and view doctor’s decisions to be definitive.<sup>[33]</sup>

The already overburdened healthcare system may not be able to cope with the increased workload creeping in with the basic requirements and obligations of concordance with need for more consultation times, resource intensiveness, and individual skill dependence. The apprehensive clinician may become more investigation-oriented and pursue intensive data acquisition to comply with the demands of patient concordance, as is already the alleged practice in the West. This can have consequences

such as delays in treatment and rise in healthcare expenses. It also seems inconceivable that a naive patient will take a better decision than a trained doctor for deciding the course of treatment. So HL would require a massive uplift, along with addressing patients' attitudes. Even the responsibility for failure of therapy or complications due to treatment will be a matter of conflict.

### Concordance in Indian scenario – Unique challenges

As a vast and culturally diverse country, policies differ in their implementation and effectiveness across India. Communication barriers are prominent affecting meaningful doctor patient interaction and adequate patient information. This is especially important for rural and socioeconomically weaker sections of the population. These groups have additional difficulties in identifying medications, understanding prescriptions, and giving informed agreement to doctor. It is often experienced in clinical practice that even if doctor asks about views on possible treatment options, the patients simply tell that they will follow whatever they shall be prescribed because they believe the doctor or that it is after all the doctor's job to decide the prescription!

HL has been defined as “the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions.”<sup>[42]</sup> Studies indicate that patients' HL has a direct relationship with the extent of medication adherence. While the literacy rate is slowly increasing in India at almost 10% per decade,<sup>[43]</sup> the increase in HL rate continues at a snail's pace. A study done in Karnataka showed that 60.4% of 500 subjects had low HL, while only 10.2% had desirable levels of HL. But interestingly, the level of education did not affect the HL rate.<sup>[44]</sup> Another study revealed low HL in 50% of the patients at a tertiary healthcare center, while patients less than 25 years of age showed better HL.<sup>[45]</sup> Low HL is associated with issues such as increased use of emergency or tertiary care services instead of outpatient department or primary/secondary care services and inability to interpret and follow prescribed medications.

Religious sentiments and cultural beliefs have to be taken into account while prescribing to an Indian patient. For instance, in gynecology or venereology practice, issues are highly sensitive and the doctor needs to discuss appropriately with the patient and come to a concordant conclusion. Language barrier is another major issue; there are 22 major languages and several dialects spoken in India.<sup>[46]</sup> People migrate frequently in lieu of better job or educational opportunities but are often unable to access health services properly due to language barriers. They are unable to explain their health problems to the healthcare professionals and often misunderstand the advice given to them. Here, the doctor needs to be vigilant and try to make the patients and their families understand the disease and therapy as family members often supervise the drug intake schedule. There are health problems endemic to certain geographic areas with protective measures often unknown to the migrant population.

Perhaps, most pertinent is the time crunch which is commonplace in clinics – public and private – all across the country. Consultation times in overcrowded hospitals and practices are simply nowhere close to the desired time for a meaningful interaction between patients and doctors, hampering the basic tenet of concordance. This is the most stringent barrier, alongside lack of HL, which would need a serious overhaul and expansion of current healthcare setup. Despite all these challenges, concordance is in practice subconsciously in many ways where healthcare professionals have good interaction, allow patients to express concerns, which is actually demanded by a lot of patient subsets especially in educated urban settings. This also requires capability in patients to communicate effectively, clearly without being vague or too elaborate.

### Special populations

Concordance issues need to be dealt uniquely in case of special populations, particularly the children and elderly. In children, medicine administration is usually looked after by parents, hence concordance has to include both children and their parents. Medicine intake in children is affected by dosage form, taste, appearance, and ease of administration. The doctor should prescribe drugs mindful of the daily schedule of the child like school and meal timings. In elderly, the doctor needs to explain in very simple terms and with a lot of patience as there may be issues with memory, hearing, vision, and comprehension. If good communication is ensured, keeping the regimen simple, then avoidance of polypharmacy is also possible, which is very prevalent in the geriatric population. A reminder chart could be established after discussing with the patients, which can make them feel like an important part of the process. This will encourage taking the pills properly, with responsibility. Often the elderly forget to follow the proper schedule and end up going to various doctors, leading to multiple or botched up regimens; concordance can play an important role in reducing this.

### Conclusion

Concordance is a dynamic process, achievable but requiring a set of approaches to patient therapy and management different to the ones currently being practiced in medicine. There is prevailing incoherence between attempts to align individualized care with a predetermined outcome-based clinical practice. Concordance, in contrast, is an end in itself, more coherent with shared care than adherence or compliance, but rejected by many guideline developers of various nations because of its complexity. The arrival at an agreement with the patient and the family members regarding therapy decisions rather than merely giving and receiving instructions is the way to go forward. A flexible approach is perhaps desirable where doctors alter their interactions regarding concordance depending on patients' receptivity. Recent Medical Council of India (MCI) recommendations in the newly released MBBS curriculum have placed significant emphasis on effective patient–doctor communication skills, which will boost the concordance approach. One can always argue that concordance is not achievable in time-constrained, resource-deficit, low-income



countries of the developing world with ever-increasing patient load and overburdened healthcare delivery system. But we can always make efforts to strive toward achieving it thereby creating a true patient-centered healthcare delivery service.

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### Conflicts of interest

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