Treatment adherence

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Patients with psychiatric illnesses show a greater degree of non-adherence than those with physical disorders. Adherence to treatment may be assessed using biological measurements, clinician ratings, patient self-report, pill count, caregiver reports and side-effects of medication. Reasons cited for non-adherence include factors related to the treatment, patient-related factors, health care, and socio-economic circumstances. It is important not to make prejudicial predictions of non-adherence based on these factors, or the use non-adherence as an excuse to blame the patient for an unfavourable outcome. Rather, non-adherence should be seen not only as the patient's inability to follow treatment recommendations but also as the health system's failure to provide adequate care and to meet the patient's needs.

The term 'adherence' is often used incorrectly and synonymously with the term 'compliance'.[1] Compliance is the extent to which a patient's behaviour coincides with the medical prescription and recommendations.[2] Adherence, on the other hand, refers to the willingness and ability of patients to follow health-related advice, to take medication as prescribed, to attend scheduled appointments, and to complete recommended investigations. Compliance implies an obligation on the part of the patient to blindly follow the practitioner's instructions, while adherence implies a therapeutic alliance with the practitioner. Previously patients were classified as either adherent or non-adherent but now it is more evident that there is a continuum, with many patients showing some degree of adherence.

Patients with psychiatric disorders show a greater degree of non-adherence to treatment than those with physical disorders.[3] The adherence rates range from 40 - 70% to 60 - 92% in the respective disorders. About 30% of all patients with psychiatric disorders discontinue their medication in the first month and 44% discontinue it within the first 3 months of initiation of treatment.[4,5] The recent CATIE (Clinical Antipsychotic Trials of Intervention Effectiveness) study[6] reports that patients on antipsychotics discontinue their assigned treatment because of inefficacy and intolerable side-effects of medication. In total, 74% of the 1 493 schizophrenia patients recruited discontinued their assigned study medication within 18 months of initiation. Of the newer atypical antipsychotics, olanzapine was found to be the most effective in terms of the rates of discontinuation compared with quetiapine, risperidone, and ziprasidone and conventional antipsychotic agents. Because of high discontinuation rates, the *Diagnostic and Statistical Manual of Disorders (DSM IV TR)*[7] has included 'non-compliance' as a condition that may be a focus for clinical attention.

Non-adherence to treatment in general may manifest in the form of failure to begin a treatment programme, premature cessation of treatment, missed clinic appointments, refusal to enter hospital, and incomplete adherence to instructions.[2] More specifically, non-adherence to medication may take the form of failure to fill a prescription, refusal to take medication, stopping medication prematurely, taking medication at the wrong times or taking the incorrect dosage.[8] Consequently, non-adherence with medication is more difficult to detect than non-adherence to treatment, with the result that the problem is not addressed.

A great deal of psychiatric care takes place in the community setting, and involves patients with chronic mental disorders. Their adherence to treatment cannot always be guaranteed and this may lead to relapses and re-hospitalisation.[9,10] Relapses may also lead to acts of deliberate self-harm, serious social problems[11] and the 'revolving door' phenomenon.[12] Weiden *et al.*[13] postulated that a hypothetical medication that improves efficacy and adherence by 50% could lead to a 37% reduction in re-hospitalisation costs. Partial adherence is also a strong predictor of treatment outcome[14] and is associated with reduced functioning and quality of life, even in patients who do not relapse.[15]

Aside from relapse and re-hospitalisation, non-adherence to treatment greatly compromises the efficiency, quality and promptness of care of the community staff. It carries a major direct cost of increased in-hospital treatment and an indirect cost of patient or carer absenteeism from work.[16] Further, these effects are borne not only by the mental health service, but also by the family and wider community.[17] Almost half of these costs could be saved through strategies directed at improving adherence.[18] Therefore, the purpose of this article was to look at the various forms of assessing adherence, the factors associated with adherence, and ways in which to improve adherence.

Assessment of adherence

Adherence to treatment may be assessed using biological measurements, clinician ratings, patient self-report, pill count, caregiver reports and side-effects of medication.[19]

Biological measurements

This is a direct method of assessing adherence through the presence of the medication or its metabolites in serum or urine samples. This method is reliable for measuring adherence to medication but it is also inconvenient and expensive.[20] Some patients may object to giving blood specimens, regarding these as unnecessary and intrusive.

Clinician ratings

The clinician's subjective rating of the patient's response to treatment is another method of assessing adherence. This method has not proved to be accurate. Outcomes of therapy may be reliable only for certain forms of medication (e.g. anticonvulsants that lower the number of seizures, etc.). For most other forms of treatment this approach is not sufficiently sensitive or ineffective.[21]

Patient self-report

The most commonly used method is an interview. Other methods are daily records, charts, or graphs. Generally these methods rely on the patient's memory, e.g. a patient is asked how many doses were missed in the last day, 2 days or 2 weeks. Non-adherence rates are higher and often inaccurate where longer recall times are used. Responses are also influenced by the patients' desire to provide socially acceptable answers, particularly when the interviewer is a health worker whose role has been to exhort patients to adhere. Other inaccuracies may result from imprecise or inconsistent questioning.

Pill count

This method involves either a standard pill count or use of drug packs with a built-in counting system. The pill count system requires that patients co-operate in bringing their pills to the health visits. Pill counts tend to show increased adherence as it may be that patients dispose of their medication rather than taking it.[22] The medication event-monitoring system, with a micro-processor in the cap of the drug container, records when the container is opened. However, this requires that patients only remove one dose at a time. Moreover, it is argued that the caps only measure bottle opening and not actual medication ingestion. Both methods require that the patients do not share their pills.

Caregiver reports

This method involves utilising the observations of relatives, housemates or caregivers for the adherence data, and may be unreliable.[23]

Side-effects of medication

The presence of side-effects is a limited way of showing adherence as patients are often unreliable in reporting side-effects. This is supported by the occurrence of side-effects when patients are taking placebo in double-blind control trials.

Factors associated with non-adherence

The World Health Organization (WHO)[24] cited the following reasons for non-adherence, viz. discomfort resulting from treatment, costs of treatment, personal value judgement/religious/cultural beliefs about the advantages and disadvantages of the treatment, maladaptive personality traits, and the presence of a co-morbid mental disorder. Factors influencing non-adherence may be broadly categorised into factors related to the treatment, patient-related factors, health care, and socio-economic circumstances.

Treatment-related factors

Adherence is influenced by the patient's acceptance of the treatment,[25] the length of treatments, previous treatment failures, frequent change of treatments and whether treatment is inpatient or outpatient.[26] Patients usually respond to treatment with a single drug, although the use of polypharmacology is acceptable when switching drugs or in the case of augmentation.

Complex treatment regimens are less user-friendly[27,28] and lead to unpleasant side-effects (extrapyramidal, sexual, and metabolic disturbances) which cause subjective distress and discontinuation.[2,6] In the black population of southern Africa cultural and social beliefs and attitudes towards treatment are cited as reasons for non-adherence.[29]

Strategies to address treatment-related factors

Clinicians must reduce the complexity, duration and the cost to the patient of treatment regimens. This must be followed up with education on the nature and possible untoward effects of the treatment, and continuous monitoring and reassessment of treatment to decrease the likelihood of missed appointments.[30]

The general consensus is that depot antipsychotic agents are more effective than their oral equivalents in that they increase

adherence and reduce relapse rates.[31-34] As depot treatment must be given by a health care professional, any lack of adherence will be detected immediately and with certainty. Further, as the rate of decline in serum drug levels is lower with depot formulations, missing a depot injection is potentially less serious than missing doses of oral medication.

However, physicians have a number of misconceptions about depot medication, viz. that they are old-fashioned and stigmatising,[35] that they should only be used to treat patients who are considered 'incurable', and that they have a higher incidence of side-effects than oral medication.[35] This is compounded by the belief that patients will not accept depot medication,[35] and that patients are fearful of injections and feel that depot medication is 'controlling' or 'humiliating'.[33] These misconceptions have been refuted.[36,37] It must be highlighted, though, that conventional depot antipsychotics are associated with an inferior safety profile[38,39] and are less efficacious in managing negative symptoms[38] than atypical depots. As a long-acting atypical depot, Risperdal Consta has the potential to further increase adherence and thereby improve the long-term prognosis of patients with schizophrenia.[40]

Patient-related factors

These include factors such as age, sex, and social status. The non-adherent patient is more likely to be younger,[41] of lower socio-economic status and to have a lower level of education.[42] Other factors include forgetfulness, anxiety about side-effects, inadequate knowledge, lack of insight, lack of motivation, fear of being stigmatised, lack of financial resources, and dual diagnosis of schizophrenia and substance abuse.[43,44] The presence of paranoid delusions, grandiosity, cognitive impairment and disorganised behaviour also increases the risk of medication non-adherence.[45]

Insight implies that patients judge some of their perceptual experiences, cognitive processes, emotions, or behaviours to be pathological in a manner that is congruent with the judgement of involved mental health professionals. Patients with insight believe they need treatment, perceive the benefits of the treatment[25,46] and are therefore usually adherent to treatment. Alternatively, those lacking insight have been reported to be highly associated with non-adherence.[46] Improvements in insight are linked to improved adherence, greater expressed willingness to take medication and less likehood of hospitalisation.[47]

Stigma results from negative attitudes, separation between 'us' and 'them', status loss, and discrimination. The fear of being stigmatised may lead the patient, family, caregivers and neighbours to deny symptoms and illness and to search for others explanations for the disorder.[48] Many patients with psychiatric illness are likely to consult traditional healers before, during or after the course of their treatment, making it important to explore the cultural meaning and discuss patient concerns on these issues.

Strategies to address patient-related factors

Educational strategies to improve adherence are based on the view that poor adherence is linked to insufficient information. Psycho-educational strategies aim to both motivate and educate patients regarding their illness and treatment.[49] Patients must understand what is expected of them because often written information alone is insufficient in long-term therapy. Reminder schedules, pharmacy-generated refill reminders and special medication containers or packaging have been shown to improve adherence significantly. Patients should also learn about self-management (behavioural and educational). This requires a co-ordinated effort by the mental health team and the other agencies and carers involved with the patient. Evidence-based practice suggests that education must be a responsibility shared by clinicians and patients.

Health care-related factors

Poor patient-health care provider relationships may cause poor adherence. Failure of physicians to establish good rapport with patients may determine much of the effectiveness of care.[37,50] A good therapeutic alliance with a doctor who is enthusiastic about treatment and its outcome will ensure better adherence.[51] The patient's perception of the physician's interest in him or her as a person is the best predictor of adherence,[52] and regular contact is necessary. However, the development of negative counter-transference may destroy the patient-physician alliance and result in poor adherence.[53]

Other factors that might impact negatively on adherence include poorly developed services, poor medication distribution systems, poor staff training, overworked health care providers, poor capacity to educate patients and to provide continuity of care, and inability to establish community supports. Long waiting periods between first contact and initial appointment,[54,55] lack of continuity and poor liaison between the hospital and the outpatient teams may be associated with aftercare and treatment dropouts.[56] An active and interested attitude by all staff is essential for success.

Strategies to address health care-related factors

Health care providers must be aware of and concerned with the extent of patient non-adherence and its effects on quality of care.

They should be educated on the use of medicines, management of disease in conjunction with patients, multidisciplinary care, and should be trained in monitoring adherence. Early identification of signs of aggravation of the condition or co-morbidities that affect adherence is essential.

Attendance at initial and subsequent clinic appointments can be improved by shortening waiting times, telephone reminders and letter prompts.[57] The referring professional from the emergency service should make the initial contact with the receiving agency and, if possible, obtain an appointment for the patient.[56] Clinics and hospitals should have a flexible and accommodating intake procedure to facilitate the referral process.

Aftercare appointments should be scheduled before patients are discharged, and the time interval between the discharge and first outpatient appointment must be minimal.[58] Treatment dropouts could be reduced by orientating the patient on initial contact, introducing treatment early and making the goals of treatment realistic. For certain groups of patients such as the chronically mentally ill, treatment may need to be delivered wherever they are, such as in their homes or hostels.[59]

Factors related to socio-economic circumstances

These include suboptimal socio-economic conditions, level of education and literacy, unstable or poor living conditions, access to clinics (long distance from the centre, high cost of transport), support system, and stigmas and attitudes associated with suffering from a mental disorder. The availability of support in the form of family, friends, or caregivers to assist or supervise medication is associated with increased outpatient adherence to treatment.[60]

Strategies to address patient-related factors

Improving the support system by getting the family involved in management of the patient, empowering them with educational and behavioural techniques, and improving patient living conditions will improve adherence.

Conclusion

It is important not to make prejudicial predictions of non-adherence based on patient characteristics or to use non-adherence as an excuse to blame the patient for an unfavourable outcome. From a systemic point of view, non-adherence can be seen not only as the patient's inability to follow treatment recommendations, but also as the health system's failure to provide adequate care and to meet the patient's needs. Adherence is a major health issue with outcomes related to levels of morbidity, mortality and cost-utilisation, and as such every effort should be made to improve it.

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