Beyond ‘doctor’s orders’

Doctors and nurses spend much of their working time discussing and assessing patients’ healthcare problems and recommending actions which will help restore or maintain health. On the basis of these consultations, healthcare professionals (HCPs) may recommend taking medication at set times, keeping clinic appointments, attending physiotherapy, taking prescribed exercise or avoiding health-risk behaviours such as unhealthy eating, unsafe sex or smoking. But approximately 50 per cent of patients do not take prescribed treatments as recommended and, across the various recommendations made by HCPs, anything from 15 per cent to 93 per cent of patients do not act on recommendations (Myers & Midence, 1998). Thus, despite the expertise of HCPs, the accuracy of diagnoses and the effectiveness of treatments, a substantial proportion of consultations have little or no impact on patients’ health. Moreover, 10–25 per cent of hospital admissions can be attributed to failures in following HCPs’ recommendations or ‘non-adherence’.

Non-adherence is not confined to minor conditions. Studies in patients who have received an organ transplant indicate that these patients are just as likely to be non-adherent, even though non-adherence to the medical regimen can lead to rejection of the organ and/or death of the patient. For example, in a prospective study of heart, liver and kidney transplants, 15 per cent of patients were considered non-adherent, with 30 per cent of non-adherent patients rejecting organs or dying compared to 1 per cent of adherent patients (Rovelli et al., 1989). Moreover, these levels of non-adherence are not new. Sackett and Snow (1979) reported that ‘patients will keep approximately 75 per cent of the appointments they make, but only about 50 per cent of those made for them…[and]…about [only] one-half of patients on long-term regimens are compliant’ (p.95).

If HCPs changed their consultation styles to maximise adherence this could have a substantial effect on the health of the nation and the cost of providing healthcare services. Investigating how the behaviour of HCPs affects non-adherence has been a core area of health psychology research since the pioneering work of Philip Ley in the 1970s, and it continues to be a focus for health psychology researchers. Findings demonstrate that reduction of non-adherence depends upon understanding the psychology of adherence and the social psychology of communication between HCPs and their patients. In this article we review relevant psychological research and discuss the practical implications for behaviour change among HCPs. These include careful presentation of information, using communication techniques that help patients remember what have been said, managing interaction so as to maximise patient satisfaction and tailoring communication to the beliefs, attitudes and intentions of patients.

Why do we not follow advice?

Patients may be non-adherent for different reasons (Donovan & Blake, 1992). For example, some patients intend to take recommended actions but forget or find it difficult to do so. Other patients may disagree with the doctor’s diagnosis or the medication regimen and so decide not to take medication (or to take more or less than was advised). Some key questions that influence patients’ decisions to adhere, or not, are: Do I really need this treatment? Am I at risk of symptoms if I do not follow recommendation? How effective/beneficial is the recommended action? What side-effects will it have? To what extent will adherence conflict with other things I want to do? When consultations with HCPs do not adequately answer these questions, patients may reach their own conclusions and formulate a different plan to that recommended by a HCP.

Presenting information and instructions

Oral information is poorly recalled. For example, in an early study, patients had forgotten around half of the oral instructions given to them after five minutes (Ley, 1973). Repeating advice can enhance recall because patients may not take everything in on first hearing. In addition, telling someone what you are about to tell them makes it more likely they will remember because this assists encoding in memory. This has been called ‘explicit categorisation’ (Ley, 1988). For example, a doctor might say, ‘I’m going to tell you what I think is wrong with you’ or ‘I’m going to remind you when you should take your tablets and how many you should take’ before going on to provide important information. Instructions may also be remembered more easily if the HCP stresses that instructions are important and repeats them. Specific advice, for example, ‘stop smoking’ or ‘make an appointment for two weeks time’, is easier to remember than general suggestions such as ‘cut down the amount you smoke’ or ‘come in again soon’.

Provision of written information increases adherence. For example, one review found an average increase in adherence of 60 per cent in groups who were provided with additional written information (Ley, 1988). Such improvement depends on the adequacy of written information. To be useful, written information must be large enough to read and consist of words that patients understand. Sadly, this is not always the case. For example, in a national survey, Payne et al. (2002) examined 1038 leaflets distributed by UK palliative care units and found that 64 per cent could be understood by only an estimated 40 per cent of the British population.

Recently, Berry and colleagues conducted a series of experiments investigating how information content and positive or negative presentation affects satisfaction and adherence. In one study, members of the general public were given explanations about medication based on information found to be preferred by: (i) patients or (ii) doctors. Both were presented in either a negative or positive manner. People preferred the explanations based on what patients had wanted to know about their medicines rather than what the doctors thought they should be told. Inclusion of negative information reduced
strength of intention to adhere to the recommended medication regimen (Berry et al., 1997) and presenting more personalised information (e.g. using ‘you’ and ‘your’ whenever possible) was associated with increased intention to adhere (e.g. Berry et al., 2003).

Research suggests that adherence will be greatest when HCPs listen to what a patient wants to know about their medication and provide information which answers the questions that patients typically want answered. Although this seems obvious, much written information about treatments and medication fails to achieve this (Coulter et al., 1999). In addition, HCPs can encourage patients to take notes in consultations and, when explaining how to undertake treatments, stress and categorise important information, repeat it and personalise it. If HCPs follow these evidence-based recommendations, their patients are more likely to follow their healthcare recommendations.

Helping patients to remember and act on their intentions

When patients intend to adhere, successful adherence depends upon recalling this intention at appropriate times and acting accordingly. Such ‘prospective memory’ recall typically occurs some time after the original instructions have been conveyed and may not be directly prompted (e.g. by a reminder from someone else). Moreover, recall may be required while the patient is engaged on other, often unrelated activities.

Research into prospective memory has explored factors influencing intention recall (Ellis, 1998). Results suggest event-based recall is better than time-based recall. So trying to remember to ‘take antibiotics (or do physiotherapy) twice a day’ is not likely to be as effective as trying to remember to ‘take antibiotics before breakfast and before dinner’. If multiple intentions have to be recalled, more complex routine event sequences can be used, e.g. ‘take blue pill before cereal and red pill with toast’. The need to link medication to routine events may be imposed by the effects of some medications. For example, nonsteroidal anti-inflammatory drugs such as ibuprofen can cause gastric irritation and it is recommended that they be taken with or after food. The same approach to other treatments, including the construction of individualised mnemonics that link treatment actions to specific routine events and contexts, can reduce non-adherence.

Prospective memory can be a poorer amongst older people. A recent study explored the relationship between prospective memory and medication adherence in 42 older patients with tablet-controlled diabetes (Vedhara et al., 2004). Patients who performed better on a computer task designed to enhance prospective memory took significantly more correct medication doses and made significantly fewer omission errors than those who performed less well on this task, suggesting that efforts to enhance prospective memory amongst older patients can improve adherence.

Studies of intentions and adherence using electronic monitoring devices which record the date and time of an event (such as opening a pill-bottle) have suggested another approach to improving adherence. By examining data from individual patients it is possible to identify when adherence failures occur. Patients can then be offered individualised recommendations to improve medication recall at specific times of the day (e.g. when brushing one’s teeth or at a mealtime). They can also be advised to leave medication in a prominent position associated with a routine event (e.g. beside the bed or in the refrigerator). This approach has been called ‘cue-dose’ training and has had some success in reducing non-adherence in relation to blood glucose control in diabetes, nebuliser use in people with obstructive lung disease and taking medication, including psychiatric, antiretroviral and anti-diabetic medication (e.g. Rosen et al., 2004).

Similarly, making plans that specify where and when intentions are to be acted on has been shown to increase the likelihood of action. Gollwitzer (1999) has called such specific plans ‘implementation intentions’. For example, resolving to take one’s medication in the bathroom, immediately after a morning shower makes enactment more likely than just resolving to take medication. Without forming such an implementation intention, a genuine intention may be postponed and then forgotten in the midst of other morning priorities, whereas an implementation intention can prompt taking medication as soon as the person steps out of the shower. Implementation intention formation has been shown to have this effect for a variety of health-related behaviours such as breast self examination, taking vitamins, attending screening and rehabilitation after surgery (Sheeran, 2002).

From ‘doctor’s orders’ to concordance

Early research in this area used the term ‘non-compliant’, reflecting a view that patients should do what they are told by HCPs and that failing to do so was patients’ own responsibility. Psychologists (and other social scientists) have clarified that patients may not follow advice because they do not remember it, do not understand it or do not know how to follow it. The term ‘adherence’ is now preferred because it suggests a collaborative involvement of HCPs with their patients in which they work together to plan and implement treatments. The need for such co-operation has been emphasised more recently by the suggestion that HCPs and patients should reach ‘concordance’ in consultations – a mutual understanding and agreement about treatment and its implementation (Mullen, 1997).

Communication between HCPs and
patients is critical to adherence. A recent review demonstrated that doctor–patient interaction influences treatment adherence (Di Matteo, 2003) and other studies have found that GP–patient communication style (e.g. Bultman & Svarstad, 2000) and the pharmacist–patient relationship influences patient adherence (e.g. Worely-Louis et al., 2003).

Fortunately, considerable work has been undertaken on identifying key communication skills needed in consultations and on developing effective communication skills training programmes (e.g. Maguire & Pitceathly, 2002; Simpson et al., 1991) so it is possible to train HCPs to use satisfaction-inducing communication styles in consultations. This is key because patient satisfaction with HCPs, and consultations with HCPs, is significantly correlated with adherence (Ley, 1988). If a patient feels their doctor is not interested in their problem, or has not understood it, this will undermine confidence in the doctor’s advice. For example, in a seminal study of paediatric consultations, Korsch et al. (1968) found that mothers who were very satisfied with their doctor’s warmth, concern and communication were three times more likely to adhere than dissatisfied mothers.

Satisfaction depends upon the patient’s perception of the doctor’s sensitivity, concern, respect and competence. Reducing waiting time, taking time to greet the patient in a courteous manner and engaging in friendly introductory exchanges are all likely to increase satisfaction. Asking open-ended questions which cannot be answered ‘yes’ or ‘no’ and allowing the patient time to express their worries, without interruption, is also likely to enhance patient satisfaction. This may require restraint on the part of HCPs who may feel under time pressure to develop a clear action plan and move on to the next patient (e.g. Simpson et al., 1991) but if such restraint increased adherence it would be a good investment of professional time.

Tailoring communication to the patient’s beliefs

A variety of models have been used to identify specific beliefs and cognitions associated with health-related behaviour, including treatment adherence (for example see Conner & Norman, 1996). Models such as the theory of planned behaviour (Ajzen, 1991), the health belief model (Rosenstock, 1974) and social cognitive theory, including self-efficacy (Bandura, 1977; 1997) provide useful and parsimonious accounts of the psychological antecedents of behaviour. For example the TPB has been found to explain between 23 per cent and 34 per cent of the variance in measures of behaviour across reviews (Ajzen, 1991; Armitage & Conner, 2001).

Applications of such models to adherence have been encouraging. For example, a study of adherence to prophylactic antimalarials found that in addition to the cognitions specified by the theory of planned behaviour, perceived side-effects were an important predictor of adherence on return from a malarious region. It was also found that that perceived susceptibility to malaria infection and perceived severity of symptoms (cognitions specified by the health belief model) contributed to strength of intentions to take the medication as directed (Abraham et al., 1999). Thus good information on susceptibility to malaria and side-effects, from either GPs or community pharmacists, may be crucial to adherence rates for this treatment.

Such models specify a series of cognitions that affect whether or not a person follows treatment recommendations. These include beliefs about consequences of the action. For example, ‘the treatment will only effectively prevent further illness if I take it as directed’, ‘the treatment has serious side-effects’, ‘the illness is life-threatening if not treated’. Others’ approval is also a potentially important consequence. For example, ‘my partner thinks I should take my medication and my partner’s approval is important to me’. If a patient has doubts about the effectiveness of a recommended treatment, believes it will be difficult or unpleasant or thinks it is socially unacceptable, they are unlikely to formulate stable intentions to adhere to the recommended treatment regimen. By allaying fears about side-effects or social desirability and/or emphasising the effectiveness of the treatment and the threat posed by the illness, HCPs can promote concordance. This may be enhanced by prompting patients to express their treatment intentions (e.g. ‘Yes, I will stop smoking this Friday’) and even sign contracts. This can bolster commitment, especially in relation to actions to be undertaken at particular times and places.

Self-efficacy, that is, the belief that one can successfully take specified actions, has been found predict action (Bandura, 1997). For example, in a study of adolescents and young adults with Type 1 diabetes, self-efficacy and personal control beliefs explained 39 per cent of self-reported adherence (including insulin injections, diet, exercise, and blood glucose measurement) (Griva et al., 2000). Encouraging patients to break down complex tasks (such as taking exercise or changing diet) into to easier steps, to monitor and record their actions and to focus on past successes can all help enhance treatment self-efficacy. Self-efficacy can also be developed by discussing how patients will manage treatment in practice, by considering difficulties patients foresee and developing plans to over come these. For example, helping people plan how they will acquire recommended foods or nicotine patches, how they will join a smoking cessation group, how they will talk to others about changing their habits or how they will renew commitment to behaviour change (even after failures) are all likely to enhance feelings of control over the recommended treatment actions.

Patients can also benefit from discussing treatment with other patients and learning new ways to manage difficult aspects of treatment. The Chronic Disease Self-Management Programme involves patient group meetings covering topics such as relaxation, symptom management,
exercise, fatigue and interaction with healthcare professionals. The programme has been found to improve a range of health outcomes; for example, a five-year randomised control trial found that participants increased health behaviours, such as exercise, had more satisfactory interactions with doctors and less disability (British Liver Trust, 1999). Similarly, evaluations of the patient-led Arthritis Self-Management Programme has been found to enhance self-efficacy and health behaviours, including exercise (Lorig et al., 1986).

Such programmes provided models for the Expert Patient Programme (EPP) now being implemented by many primary care trusts in the UK. EPP consists of patient-led groups run over six consecutive weeks for about 12 patients. Topics include diet, exercise, communication and use of medication. Evaluations of the EPP are ongoing but it seems likely that such self-management interventions could help patients to act in accordance with HCPs’ recommendations.

**Conclusion**

Research into psychology of non-adherence has identified a series of factors which determine whether or not patients’ act on the advice of healthcare professionals. Many of these factors can be modified through the consultation management or communication style of healthcare professionals. Health psychologists can review this evidence and then make evidence-based recommendations for modifications to consultation management, professional training and preventive healthcare services. The challenge is to change the routine behaviour of healthcare professionals in order to change the health behaviour of their patients.

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**References**


