Evidence into practice

Application of psychological models of change in evidence-based implementation

RUPATHARSHINI CHILVERS, GLYNN HARRISON, ATTILA SIPOS and MADELINE BARLEY

Psychiatrists have long recognised that routine clinical practice needs to be shaped and informed by external evidence (Lewis, 1958). Psychiatric researchers were among the first to utilise multi-centre randomised controlled trials (demonstrating the effectiveness of antipsychotics), and psychologists were among the first in the health field to develop techniques of meta-analysis. Social workers, too, point to their tradition with the publication of one of the earliest controlled trials (Lehrman, 1949).

Despite these early achievements by mental health professionals, there remain significant gaps between routine care and the current state of evidence. For example, in the UK, as elsewhere, the slow uptake of psychoeducational interventions for schizophrenia demonstrates the difficulties experienced by health care providers in developing coordinated training and organisational responses to new knowledge. The Schizophrenia Patient Outcomes Research Team (PORT) studies (Lehman *et al*, 1998) carried out in the USA also demonstrated significant shortfalls in clinician conformance across a range of evidence-based recommendations for the management of schizophrenia, and routine audits continue to report prescribing of inappropriately high doses of neuroleptics. Such findings have led to the exploration of new strategies for the dissemination and implementation of research findings and complex interventions to effect clinician behaviour change. But what has been achieved and how good is the evidence that they work?

DISSEMINATION v. IMPLEMENTATION

There has been extensive growth in the passive dissemination of research findings in recent years: examples in the UK include the National electronic Library for Health, the National Institute for Clinical Excellence and, internationally, the Cochrane Collaboration. It is now widely recognised, however, that simple diffusion and passive dissemination of information are largely ineffective at changing practice (NHS Centre for Reviews and Dissemination, 1999). Mason *et al* (1999*a*) report an interrupted time series measure of the impact of recommendations in the *Effective Health Care Bulletin* that there were no additional benefits to using the newer antidepressants within primary care (NHS Centre for Reviews and Dissemination, 1993). Despite some evidence of clinician response, the attempt to change behaviour across the board was disappointing and the upward trend in the use of the newer antidepressants continued.

Implementation (as opposed to dissemination) strategies, on the other hand, have shown promise. Here, a more systematic and participatory approach is employed. Interventions such as face-to-face educational outreach visits (academic detailing) to individual practitioners and to teams, computerised and manual reminders about new information and interactive educational meetings show some evidence of effectiveness (NHS Centre for Reviews and Dissemination, 1999). Evidence generally suggests that multi-faceted interventions combining two or more strategies are more likely to result in favourable change in practice than single interventions (Wensing *et al*, 2000). There is still a relative lack of robust research in this area, however, and the methodological quality of existing studies is frequently poor (Mason *et al*, 1999*b*). In particular, interventions often are inadequately described, hampering the identification of critical components that predict success or failure. With interventions already evaluated having, at best, a relatively modest effect on practice, there is a long way to go in understanding the processes and models that effect changes in professional practice.

MODELS OF CHANGE

To learn how to influence the behaviour of clinicians, it may be useful to examine models that have been developed to motivate change in the behaviour of their patients, especially in the field of addiction. The 'stages of change' (transtheoretical) model proposed by Prochaska & Di Clemente (1983) was used initially within the field of drug and alcohol misuse but has had a significant impact on health promotion initiatives in a range of settings and problem areas. Applications include the promotion of healthy diets in the workplace, encouraging regular exercise patterns and smoking cessation. The resulting model (see Fig. 1) describes change as a continuous process in which participants move through stages of pre-contemplation, contemplation, decision, active change and maintenance. The model enables the 'change agent' to tailor information and support according to the individual's (or group's) stage of readiness, with the cumulative effect producing a permanent behavioural change. Although initially devised to motivate behavioural change in patients, could this model be developed further to motivate doctors in getting research into practice?

The pharmaceutical industry clearly has achieved considerable success in shaping clinician behaviour (Wazana, 2000) and may have something to teach us. For instance, in the 1980s, Eli Lilly increased prescriptions of benoxaprofen in the UK from 2000 to 55 000 a week (Nelkin, 1986). Although companies doubtless would highlight the self-marketing quality of their products, in practice they harness a range of behaviour modification techniques targeted at clinicians. The most familiar technique is the deployment of representatives making direct contact with clinicians. It has been estimated that up to 60% of promotional budgets is spent on representatives and executive accounts (Lexchin, 1988). These visits have similarities to 'academic detailing' or educational outreach visits but utilise a marketing approach. The visits incorporate a range of additional interventions, such as quotation of 'opinion leaders', reminders printed on gifts having high desk-top visibility and behavioural reinforcers in the form of rewarding conference venues where socially mediated behavioural modification can take place. These participatory and multi-faceted approaches appear to be based on a theoretical and conceptual framework for
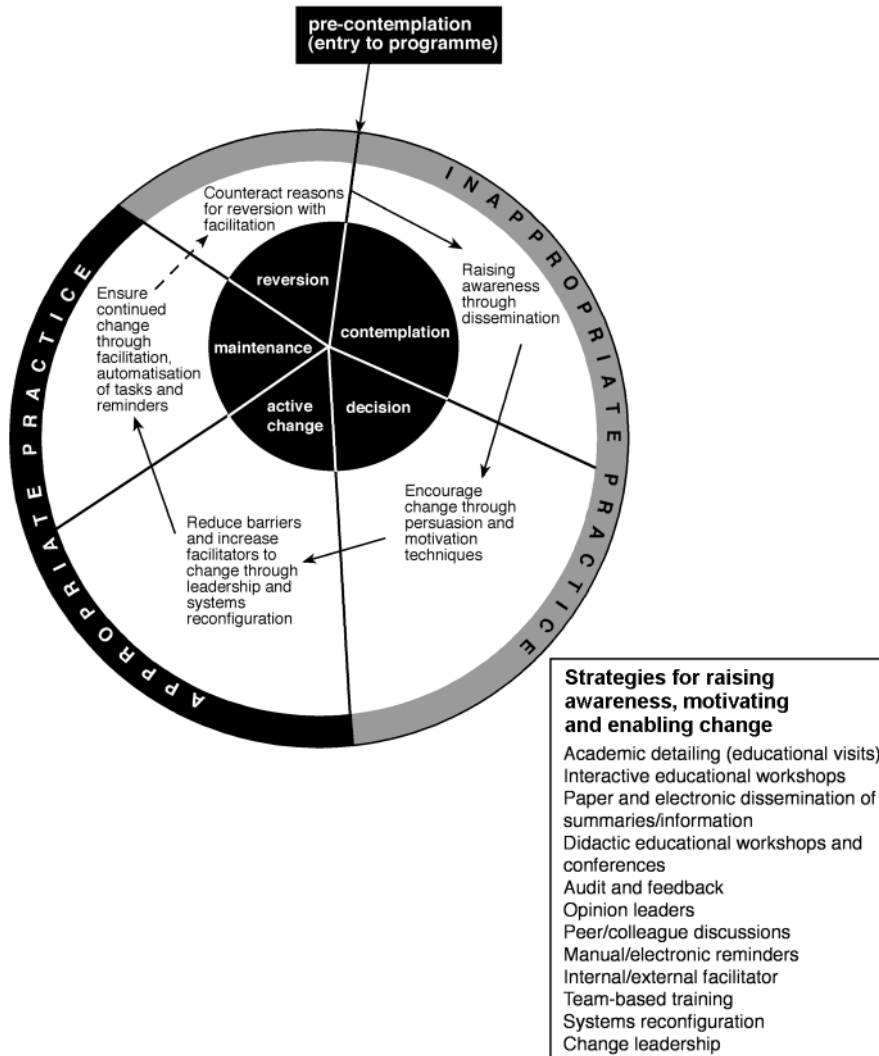
Fig. I A 'stages of change' model.

changing clinician behaviour described by Lidstone (1987). Writing for pharmaceutical companies, Lidstone conceptualises 'stages of change' that a clinician needs to be moved along: unawareness, awareness, interest, evaluation, trial, usage and continued usage. Although gifts and other motivators are appropriate, Lidstone considers the two most effective interventions (at any stage of the process) to be face-to-face visits from representatives and 'educational' meetings.

'REPRESENTATIVES' FOR EVIDENCE-BASED PRACTICE

Could similar, but non-marketing, techniques be used to promote evidence-based practice and to accelerate individual and organisational adoption of new research findings? Cohen et al (1994) provide a detailed account of stage-specific interventions to improve cancer screening and counselling techniques among clinicians in the USA. They suggest that feedback on baseline medical record reviews and patient surveys might work at the 'pre-contemplation' stage and 'peer discussions' could be used to move clinicians from contemplation to the decision stage. Reminders and continued contact are identified as potentially effective strategies in assisting clinicians to take action and maintain the behaviour. Other strategies currently used in the field of dissemination and implementation could be incorporated into this model. Continuing medical education, for example, could move clinicians from the pre-contemplation stage, but would be unlikely to produce sustained change in the absence of further interventions to motivate the move to the decision stage. The role of individual educational visits (academic detailing) across all stages could be a powerful intervention within this conceptual framework, owing to their potentially interactive, supportive and reinforcing nature. This would be closely analogous to a visit from a pharmaceutical industry representative, but here the interaction would be aimed at promoting evidence-based practice for a set of target conditions or clinician behaviour. The approach would be motivational rather than marketing and would seek to accommodate clinician judgement and patient preference into the application of emerging evidence.

Advocates of a 'stages of change' framework within clinical practice face three main challenges. First, there is a relative paucity of outcome trials indicating the effectiveness of interventions based on the stages of change for patients, let alone for its use in clinicians (Whitelaw *et al*, 2000). Second, there appears to be no standardised measure that can be utilised or adapted readily to categorise a clinician's stage of change or readiness for change – a state of play that is still apparent within the health promotion and addiction literature (see Bunton *et al*, 2000). Third, although the model recognises the impact of the environment in which the behaviour takes place, professional behaviour characteristically occurs within an organisational setting that is beyond the control of the individual clinician. This is especially relevant to treatments other than prescribing, which require skills transfer and team-based initiatives. Initiatives promoting change at the organisational level that take into account structures, social factors, physical setting, technology and leadership have been shown to produce positive outcomes within the field of organisational development (see Porras & Robertson, 1992), and need to be incorporated within the 'stages of change' model.

Although many health care providers have established 'Getting Research Into Practice' groups and committees, there is a challenging research agenda ahead for how this can be achieved practically. The 'stages of change' (transtheoretical) model provides a useful theoretical framework in a field where there are currently no 'magic bullets'. But if we are to begin to match the skill and effectiveness of the pharmaceutical industry in shaping clinician

behaviour, we need more resources, greater imagination and, above all, more evidence about what works.

DECLARATION OF INTEREST

Glynn Harrison and Attila Sipos have received financial support from pharmaceutical companies to attend educational meetings. Glynn Harrison has received fees for making educational contributions to meetings sponsored by pharmaceutical companies.

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RUPATHARSHINI CHILVERS, MSc, GLYNN HARRISON, FRCPsych, ATTILA SIPOS, MRCPsych, MADELINE BARLEY, BSc, Division of Psychiatry, University of Bristol, Bristol

Correspondence: Rupa Chilvers, Division of Psychiatry, University of Bristol, Cotham House, Cotham Hill, Bristol BS6 6JL, UK