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Original Article

Effectiveness of Commitment Contracts in Facilitating Change in Continuing Medical Education Intervention

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Abstract: *The purpose of this study was to determine whether physicians who committed themselves to making changes in clinical practice following a continuing medical education (CME) course were more likely to change than those not asked to make such a commitment. Physicians participating in a short course in geriatrics were randomly assigned to either a commitment to change group or a no commitment to change group. The physicians in the commitment to change group were asked to identify areas of their clinical practice that they planned to alter as a result of the educational program. All physicians were followed up at 1 and 3 months after the course, either in person or by telephone, to determine what changes they had made. Both groups made changes in their practice, with the largest number of changes being made by the commitment to change group. This study suggests that behavioral change can accrue from a short-course intervention and that this is facilitated when physicians have committed to make change.*

Key Words: Commitment to change, contract learning

Traditional continuing medical education (CME) courses rarely change physician behavior.[1] There are many reasons suggested why short courses do not lead to behavioral changes. Most courses solely provide new information and do not aspire to change behavior or develop clinical skills. Other courses use inappropriate educational methodologies to develop new behaviors. In other instances, the adoption of new behaviors by physicians is impeded when they return to their clinical practices as the necessary facilitating and reinforcing features are not in place.[2]

A conceptual model of the process of behavior change is important when planning programs aimed at changing behaviors of physicians. Geertsma described a three-stage model of change. These stages are (1) priming (feeling dissatisfaction with some aspect of practice behavior); (2) focusing (learning of an alternative practice); and (3) follow-up (obtaining further information).[3] Rogers described a similar process. First, the

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professional hears about an innovation, considers the merits of it, then makes a decision to adopt the change. Following the adoption of the change, the change is evaluated and a decision whether to continue is made. Eventually, the change becomes incorporated into the learned behavior of the physician and reinforced through successive patients.[4]

Behavioral changes have been demonstrated following educational interventions. Several educational techniques have been used to facilitate change. Small-group interactive learning allows physicians to interact with the instructor and their colleagues to query, verify, and validate new knowledge and practices against their own experiences.[5] The technique of asking the physician to make a written or verbal commitment to change is useful in the initiation of the change process[6,7] and is a simpler process than formal learning contracts.[8]

A third technique is the use of repetitive exposures using different learning modalities to reinforce the change. The value of repetition in learning is well recognized[9] and can be accomplished in many ways. One successful method involves using educational visitors (also known as academic detailers) in the physician's office. While, traditionally, this person has been a physician or pharmacist employed by the academic institution or a third party, a trained pharmaceutical representative could be an innovative and useful method of reinforcing changes initiated by a CME program.[10,11]

This pilot project reports on the changes made by physicians following a short course in geriatrics in which physicians were asked to commit to making changes in their practice and an educational visitor, who was a pharmaceutical company representative, was used to query their progress and reinforce the changes.

Methods

Participants and CME Program

Subjects were recruited from the registrants (n = 26) of a CME program titled "Commitment for Change: Improving the Health of the Elderly." The 1-day program consisted of a combination of 3 hours of didactic and 3 hours of small group sessions. Approximately half of the time was spent in small group workshops. To ensure that the course was relevant for family physicians, 150 family physicians who had previously attended geriatric CME programs were asked to complete a needs assessment and their input was incorporated into the course content.

Experimental Design

A randomized factorial design was used. Physicians attending the course were assigned randomly to one of four groups: (1) no commitment contract, follow-up by telephone (control); (2) no commitment contract, follow-up by representative visit; (3) commitment contract, follow-up by telephone; (4) commitment contract, follow-up by representative visit.

At the end of the workshop, the physicians in the commitment groups (i.e., numbers 3 and 4) were asked to make a written commitment to change. This was a one-page contract on which they listed future changes that they were prepared to commit to making in their practice as a result of the course.

Half of the group received a telephone follow-up call. The phone calls occurred at 1 and 3 months after the course to allow the physicians sufficient time to make changes. The other half of the group received two visits from a specially trained pharmaceutical company representative who visited at times distinct from his regular pharmaceutical promotional visits.

The interviews were semistructured. The physicians were asked to describe changes that they had made. They rated on a 5-point Likert scale the degree of difficulty that they had making the change, the number of patients that were affected by the change, and whether they intended to continue with the changes that they had initiated. The changes were categorized according to the Fox[12] criterion for change, namely, accommodation (simple changes usually in response to policy and

Table 1 Physician Changes in Clinical Practice Following a CME Program

	1-Month Follow-up		3-Month Follow-up	
	Commitment Group (n = 7)	Noncommitment Group (n = 9)	Commitment Group (n = 7)	Noncommitment Group (n = 9)
Number of changes	13	4	15	9
Number of changes per MD	1.9	0.4	2.1	1.0
Fox type				
Accommodation	2	0	6	3
Adjustment	11	4	8	6
Structural	0	0	1	0
Median degree of difficulty*	2.5	1.5	3.0	2.0
Total number of patients affected	73	39	298	194

*Difficulty was measured on a scale of 1 to 5 with 5 being high and 1 being low.

regulations), adjustment (incremental changes in practice), and redirection and transformations (complex changes in the structure of practice). During the first (but not the second) visit with the physician, the representative reviewed the topics covered in the workshops that the physician had attended and offered to provide additional educational materials related to the workshop. The course chair monitored the pharmaceutical company representative's visits by contacting three physicians by telephone to verify their understanding of the role of the representative and the purpose of the visit.

Data Analysis

Frequencies were calculated for subject characteristics and descriptive variables. A 2×2 repeated measures analysis of variance was used to examine the effect of commitment, type of follow-up, and time on the number of changes and the number of patients involved in the changes.

Results

A total of 26 physicians registered for the course, with 17 physicians agreeing to participate in the study. Eight were assigned to the commitment group and nine to the noncommitment group. One of the eight physicians in the commitment group subsequently dropped out and was eliminated from further analysis. The groups were equivalent in terms of the proportion of male and female participants and number of years in practice.

As there were no appreciable differences in the number of changes between the two types of follow-up contact (i.e., in person versus by phone), the follow-up groups were collapsed in one group. Only the differences between the commitment and noncommitment groups are reported. The seven physicians in the commitment group agreed to make 15 changes for a mean of 2.14 changes per physician. As shown in Table 1, the commitment groups made more changes than the noncommitment groups both at 1 month and at 3 months. This approached statistical significance ($p < .07$). The commitment group perceived the difficulty of the changes that they made to be higher than that of the noncommitment group.

The changes that the physicians made coincided with the content of the course. The most common change cited was in the assessment and treatment of urinary incontinence (n = 6). Both reducing the use of benzodiazepines and incorporating health promotion activities into office practice were cited by four physicians. Two physicians began to assess and modify drug use in older patients and two indicated that they began to take

a sexual history in the elderly. One physician who had not made any changes at the end of 3 months indicated that a change was still likely. For the noncommitment group, there were three physicians who had not made any changes at the end of 1 month, with two of these physicians making changes by the 3-month follow-up.

Discussion

Our study, while small, demonstrates that the much maligned short course can have an impact on clinical practice provided that one asks physicians to identify and commit to changes and follows up on those changes to determine whether they occur. This result is consistent with findings by other investigators.[6–8] While the differences did not reach statistical significance, the small sample size makes it probable that this was a Type II error[13] (assuming no difference when a true difference exists).

It was interesting to note that the changes were sustained at 3 months and the number of patients affected continued to grow. This suggests that Rogers'[4] diffusion model was operational in our study. The fact that the noncommitment group doubled the changes that they cited at the 3-month period suggests that the phone call and/or visits by the pharmaceutical company representative probably had an effect on their behavior. Further, this follow-up likely served as an intervention in its own right to promote change. Both telephone calls and face-to-face visits were equally effective in effecting change. Further validation of these findings needs to be done.

The study has its limitations. The study size was very small. The generalizability of this study is of concern; the changes reported occurred after a specific educational intervention designed to change practice behaviors in geriatrics. The differences in the number of changes between the two groups may also relate to other practice factors that facilitated or obstructed change.[14] As well, self-report data can be a concern when it cannot be verified easily. However, we believe that the methodology of asking physicians to commit to making changes and following up with them about those changes has great potential as a practical method of strengthening the effectiveness of the traditional CME intervention and it is a simple addition to make to a course. Larger studies with adequate samples are needed to confirm our findings.

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