



PROFESSIONAL DEVELOPMENT STUDY

# Evaluation of a back stability CPD course

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## KEYWORDS

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**Summary** A two-day CPD (continuous professional development) course teaching integrated back stability (IBS) to post-graduate physiotherapists, sports therapists, and massage therapists was evaluated using a descriptive (mixed methods) design. An eight-question, 5-point Likert scale questionnaire and six person focus group were used. The course was evaluated over a five-year period and questionnaires were returned from 80 therapists, representing 65% of course attendees. Scores ranged from mean values of 2.81–3.81, and all questions scored above the mid-point of the 5-point Likert scale (2.5) and were therefore positive. The focus group addressed the three themes covered by the Likert scale and group consensus was that (i) the course had changed professional practice and had been incorporated into treatment protocols currently in use; (ii) the course did provide some novel techniques, but most effectively incorporated techniques from several sources and made them easier to apply; and (iii) the educational standard of the course was high. The course format may act as a model for other CPD programmes.

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## Introduction

### Exercise and low back pain

Chronic low back pain (CLBP) has a lifetime incidence of 84% (Airaksinen et al., 2005), and is a condition regularly treated by physiotherapists in the United Kingdom. Exercise has been shown to be of value in the management of this condition (Hayden et al., 2005), and is now considered an essential component of clinical management within

physiotherapy (Mercer et al., 2006). Back stability exercise which uses low load training of the abdominal and trunk muscles is often the treatment of choice (Norris, 1995; Richardson and Jull, 1995). This approach has been found to be as useful as spinal fusion surgery (Fairbank et al., 2005), and more effective than manual therapy or patient education when used as a component of musculoskeletal physiotherapy (Goldby et al., 2006).

An integrated back stability (IBS) programme has been described (Norris, 1995, 2000). This initially uses postural evaluation and muscle isolation training, later progressing to higher loading and technique specific movements. The IBS programme

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integrates techniques from a variety of professional cross boundary sources within both physiotherapy and sport rehabilitation.

## Continuous professional development

Continuous professional development (CPD) is a requirement for all healthcare professionals. Within physiotherapy the information paper *Framework for the creation of successful systems of CPD in physiotherapy services* (CSP, 2005) highlights the importance of CPD which is both systematic and efficient. Members are required not simply to attend courses, but to show evidence of applying CPD to their practice.

IBS is taught to post-graduate therapists as CPD, over a two-day course giving 12 contact hours. This is supported by a course textbook (Norris, 2000), CD ROM programme (2002), and video (Norris, 2003). Both theoretical and practical aspects of low back rehabilitation are covered. The course is almost always self-funded and conducted at weekends within a National Health Service (NHS) physiother-

apy department. A synopsis of the course content is shown in Table 1.

## Course structure and content

Participants on the IBS course were graduate therapists as detailed in Table 2.

Participants in this study could be categorized as adult learners, and as such had accumulated experience, which could be used as a source of learning. Therapists of this type often value learning, which integrates with the demands of their clinical life, and they generally place greater value on problem-centred rather than subject-centred approaches. Participation in the course was voluntary, and this feature has been described as fostering both mutual respect and collaboration between tutor and course participant (Stuart, 2003).

Many participants on the IBS course come as dependent learners wanting a tutor to act as a coach and present them with information—the colloquially termed ‘cookbook’ approach. However, the course structure emphasized a progression towards self-directed learning (Grow, 1996) aiming to involve participants in the learning cycle with the tutor acting only as facilitator encouraging critical reflection.

Course evaluation forms issued at the end of day two cited practical content and clinical guidelines as the ‘most useful’ items on the course. Although there is a move within physiotherapy in general to be more evidence based, learners on the IBS course rarely list ‘lectures’ or ‘scientific review’ as most useful, although the course content contains both of these items.

Assessment of clinical competence in the IBS course is through continuous observation—there is no final examination. Demonstration of new skills on a partner, case scenarios and building IBS programmes form the major part of assessment giving participants a motivation to learn (Stuart, 2003), rather than testing knowledge retention.

Assessment within physiotherapy CPD has tended to focus on a reductionist approach, which simplifies

**Table 1** IBS two-day course programme.

Day one	Day two
<ul style="list-style-type: none"> <li>• Back stability concepts</li> <li>• Revision and application of lumbar biomechanics</li> <li>• Lumbar support mechanisms</li> <li>• Muscle imbalance concepts</li> <li>• Posture types and assessment</li> <li>• Muscle imbalance tests of the lower limb</li> <li>• Motor skill learning and back stability</li> </ul>	<ul style="list-style-type: none"> <li>• Exercise progression for back stability</li> <li>• Structuring back stability programmes</li> <li>• Current concepts in stretching</li> <li>• Stretching practical</li> <li>• The stabilizing muscles</li> <li>• Re-educating segmental control</li> <li>• Abdominal training in sport</li> <li>• Revision and problem solving</li> </ul>

**Table 2** Course participants.

Learners		Gender		Workplace		Profession			Group size <i>mean</i> (SD)
Attended	Q returned	Female	Male	H	PP	PT	ST	MT	
123	80	68	12	76	4	72	6	2	18.3 (3.7)

PT—physiotherapist; ST—sports therapist; MT—massage therapist; PP—private practice; H—hospital; Q—questionnaire.

tasks (in the case of the IBS course an example is isolation of multifidus muscle contraction). However, breaking down of competencies has been criticized (van der Vleuten, 1996), as clinical learning is said to be facilitated more effectively when tasks are integrated (van der Vleuten and Schuwirth, 2005). This type of training mimics the division between part task training and whole task training which is used when teaching motor skill training in sport (Norris, 2004). As such it is highly relevant to the IBS programme, which incorporates training techniques from both therapy and sport. Initially, clinical skill competency may be more successfully taught as a number of single units. However, once basic (core) skills have been learnt, whole task actions are used. Within the IBS programme core skills included items such as facilitation of muscle contraction, reliable and valid reproduction of muscle tests, accurate movement analysis, and correct teaching methods. Whole task action involved successful execution of rehabilitation exercises with a patient using several core tasks combined. Key educational elements of the course are shown in Table 3.

## Implementation of key educational elements

To focus teaching on learners clinical requirements, each learner was asked to bring with them case

histories of patients who they thought would benefit from IBS. Each case history was presented in small groups to form the basis for exercise programme development. In this way learners could develop programmes with the aid of their peers, integrating the course material they had just learnt with their own knowledge. Learners also began to appreciate programme development outside their own clinical specialty. For example, those who regularly treated elite athletes could see the development of IBS programmes for CLBP sufferers, and begin to understand the requirements for less rigorous exercise. The group work also fostered mutual respect both between learners and between tutor and learner, as individuals were valued as clinical specialists within their group.

The tutor acted as facilitator by drawing knowledge out from the learners. For example, the section on muscle imbalance began with a revision of basic muscle physiology. Rather than present this to the group as a whole, learners worked in pairs for 5 min to describe the process of muscle contraction. The group as a whole was then asked to call out key elements of muscle physiology which were then written by the tutor as bullet points on a flipchart.

Brainstorming sessions were used to discover the best way to teach essential elements of the IBS programme. For example, the abdominal hollowing action (drawing the abdominal wall inwards through isolated contraction of the deep abdominal muscles) is a movement familiar to many therapists, but learners also admitted that they were often frustrated when some patients failed to learn the technique easily. Brainstorming sessions were focused on methods to teach this action in a given clinical scenario. Sessions were limited to 5 min to encourage rapid and non-evaluative thinking.

Role play was used to develop effective teaching techniques with groups of three learners. The third learner observed the role play and gave feedback to the pair. Assuming the role of a patient also gave the opportunity for the learner to appreciate the patient's point of view, while allowing skill practice in a non-tutor supervised situation. Groups were regularly changed to ensure self-conscious learners were not placed into intimidating situations.

During the latter part of the course, practical sessions were re-structured so that learners worked in groups of three where multisource feedback was used (Shrank et al., 2004) from self, co-learners, and tutor. Within this environment self-assessment (tickboxes of teaching points correctly given) constituted a formative assessment allowing participants to 'own and control' their learning (Stuart, 2003).

**Table 3** Key educational elements of the course.

- Teaching included direct contact supported by a course textbook, CD ROM, and video
- Content focused on therapists' clinical requirements
- Emphasis on problem-centred rather than subject-centred approach
- Mutual respect and collaboration between tutor and participants
- Emphasis on self-directed learning
- Tutor acted as facilitator to encourage critical reflection
- Continuous assessment and observation used in place of final examination
- Course assessment used to motivate learning
- Assessment included demonstration of skills on partner, case scenarios and building IBS programmes
- Clinical skills taught as single units early in course. Once basic (core) skills learnt, whole task (integrated) actions used
- Multisource feedback used

## Aim of the study

The aim of this study was to determine whether the two-day IBS course was perceived positively by participants. Secondary aims were to determine if the course instigated clinical practice change within participants, and to use the course format as a model for other CPD programmes. A mixed methods approach was used (Barbour, 2005) combining a single questionnaire supported by a focus group.

## Evaluation

The questionnaire format used in this study was a Likert rating scale (Hussey and Hussey, 1997), and a pilot study was conducted using six previous learners who had taken the IBS course to determine the most appropriate questions. The questionnaire was sent to participants who had attended the course over a five-year period (2000–2005), to assess participant perception of the course and to evaluate the effect the course had on changing clinical practice. The Likert rating scale allowed a numerical value to be assigned to an opinion. Each question was presented as a statement and respondents were asked to indicate their level of agreement with the statement by placing a mark on the 5-point rating scale continuum (1 = very strongly disagree to 5 = very strongly agree). This scale has been used successfully in a number of other medical education studies investigating CPD and training. Goldstein et al. (2005) used a 5-point Likert scale to evaluate an educational programme on pelvic examination for 1st year medical residents. They used the scale pre- and post-training to

determine changes in attitude and competency. Sowers and Smith (2004) used a 6-point Likert scale to evaluate the effects of an in-service training programme for nurses, and showed that perception, knowledge, and concerns about students with disabilities can be positively affected through training.

A focus group was used to provide further insight into the responses on the Likert scale, capitalizing on group interaction. A group size of six was used to be manageable and avoid inhibiting group discussion (Kitzinger, 1995). Six previous students on the IBS course were formed into the focus group to discuss three themes covered by the Likert scale: (i) change in practice, (ii) novel approach, and (iii) educational quality. The group setting was a comfortable room with chairs arranged in a circle format. Discussion during the session was recorded by an administrator, and the content later analysed to categorize it into patterns. Comments were classed either as individual opinions or group consensus and were categorized as positive, negative, or neutral.

## Results

The IBS course was given to 123 learners over the five-year period studied, in small groups (mean 18.3, SD 3.7), in both hospital and private practice settings. Questionnaires were sent to these learners via the course organizer in each instance, and a total of 80 (65%) were returned. Instructions were for the questionnaires to be filled in by the learners who attended the course without consultation with others. The questionnaires were to reflect individual views, rather than that of the group. Table 4 gives the results of the questionnaire.

**Table 4** Evaluation of IBS courses over a 10-year period.

	Statement	Score mean (SD)	Rank
Q1	I am better able to understand the principles underlying back stability	3.61 (0.62)	4
Q2	I was motivated to change the way I prescribe low back exercise	3.19 (0.41)	7
Q3	I am better equipped to design back stability programmes for my patients	3.38 (0.49)	6
Q4	I was able to transfer what I learnt on the course into my clinical practice	3.81 (0.43)	1
Q5	As a result of the course my clinical practice has changed	3.47 (0.68)	5
Q6	The course offered some unique clinical techniques	2.81 (0.89)	8
Q7	The course motivated me to modify clinical techniques which I already used	3.74 (0.58)	2
Q8	I still use techniques taught on the course	3.69 (0.53)	3

Scores ranged from mean values of 2.81–3.81. The highest score (3.81) was for Q4 *I was able to transfer what I learnt on the course into my clinical practice*, the lowest (2.81) for Q6 *the course offered some unique clinical techniques*. All questions scored above the mid-point of the 5-point Likert scale (2.5) and were therefore positive. High scores (3.81–3.69) for questions 1 to 3 indicated that material from the course was directly transferable into clinical practice (Q4) and integrated with participants' present knowledge, motivating participants to modify techniques they were already using (Q7). Material from the course clearly had longevity as some participants were still using techniques taught on the course (Q8).

Fewer participants felt that the course motivated them to change the way they prescribed low back exercise (Q2) in general, and fewer participants felt that the course offered unique clinical techniques (Q6).

In common with others who have used focus groups to evaluate CPD (Saidi and Weindling, 2003) quotations from the focus group were selected to illustrate findings within the three thematic areas of the Likert scale.

### Change in physiotherapy practice

Participants reported that the IBS course had changed their practice, with techniques taught on the course being incorporated into exercise regimes still in use. Participants who had attended the course as recently qualified therapists found their practice changed more than those with greater experience. For example one physiotherapist stated:

I first did the course five years ago and still use one of the stretching exercises I learnt.

Another participant confirmed that exercises taught on the course formed the basis of her general rehabilitation for low back pain stating:

Our department exercise sheet is based on exercises I learnt on the course.

Material from books (Norris, 2000) and a computer programme (Norris, 2003) used on the course have often formed the foundation for material in general use within a physiotherapy department with other material incorporated from subsequent courses. One participants stated:

The Physiotools programme (Norris, 2002) is still used in our department for home exercise sheets.

Group consensus was that the course had changed professional practice and had been incorporated into treatment protocols currently in use.

### Novel techniques/ideas

Some participants questioned whether the course offered substantial novel material, but all recognized that it effectively integrated material from many sources. Most participants were familiar with the concepts of back stability, but they felt the course's integrated approach was helpful. A senior physiotherapist stated:

Some of the material was similar to other courses I have been on, but it was put together differently.

Several comments illustrated individual techniques taught on the course which participants found useful:

I found the belt technique for abdominal hollowing great.

I was just talking to patients rather than using verbal cueing.

I found some of the imagery good—balancing the bowl of water on the abdomen is great when teaching pelvic tilt.

The critical approach of stabilization techniques in general was appreciated, and participants were encouraged by the 'real world' methods of treatment. This was illustrated by the comment:

Great to see someone else finds teaching Multifidus contraction difficult!

Group consensus was that the course did provide some novel techniques, but most effectively incorporated techniques from several sources and made them easier to apply.

### Educational features of course

In general participants evaluated the course positively, with general comments including:

The recaps at the end of each session were very helpful.



Good to use the first part of the day as a warm-up and scene setter.

The two-day course was very intense, and the aim was to alternate between theory and practical sessions to avoid staleness. Some participants felt that they had less time than they would like:

Sometimes felt a bit rushed at the end of the day.

However, the style and supervision of the practical sessions was generally seen as good:

Liked how the instructor moved around the class in practicals and saw each person.

Good to see same techniques used in different ways.

The general academic level of the course was felt to be correct, and was perceived positively:

Everything backed up by references—great for evidence based argument.

Group consensus was that the educational standard of the course was high.

## Discussion

The questionnaire was sent to 123 participants and 80 (65%) were returned. This relatively low percentage may be because questionnaires were sent to the original course organizer in each instance and then forwarded to previous course participants, normally at an NHS physiotherapy department. Many participants may have moved hospital and were unable to be contacted; others may have felt that the course was taken too long ago to value returning the questionnaire. No assessment was made of the relationship between course attendance date and number of questionnaires returned.

The fact that the lowest score on the Likert scale was given to (Q6) *the course offered some unique clinical techniques* is reflected in the content of the IBS programme (Norris, 1995). IBS integrates techniques from several sources into a structured treatment progression, which is more easily applied in day to day clinical practice. It is the integration of techniques rather than the techniques themselves, which is novel. This is brought out during the focus group by the comment *some of the material was similar to other courses...but it was put together differently* and the consensus view

that the IBS course effectively incorporated techniques from several sources and make them easier to apply.

Motivation to change low back exercise ranked 7th (mean 3.19), but change in clinical practice as a result of the course ranked 5th (mean 3.47). This is seemingly contradictory; however, it must be emphasized that the IBS programme uses techniques such as stretching, and postural correction, which clinicians may not view as low back exercise. The IBS programme is a three-phase system (Norris, 1995) and in phase (I) termed 'posture optimisation' pain relieving modalities and de-load taping (Norris, 2004) are used before exercise commences. During the focus group participants who took the course soon after qualifying stated that it had changed their practice more than those who were experienced clinicians, with one participant stating *I first did the course five years ago and still use one of the stretching exercises I learnt*. Physiotherapy training does not include a large emphasis on exercise therapy, and so it is likely that recent graduates would incorporate techniques and exercises into their clinical 'vocabulary' and build on these in later years.

The highest scoring questions were Q4, Q7, and Q8 (ranked 1–3, respectively). Put together, these questions are highly significant as they confirm that the course material was directly transferable into clinical practice and that this change was maintained.

The success of the IBS course is most likely due to the integration of new material with the current knowledge, which the therapist possesses. The high practical content gives learners the opportunity to adopt new clinical skills and modify and refine their present skills. In addition, the variety of teaching methods used and the high clinical focus maintains learner interest during an intense learning period. As such, the course approach may act as a useful model for other CPD courses.

## Conclusion

The two-day IBS course had a positive educational effect on course participants. It was effective at enabling participants to transfer what they learnt into their clinical practice. In addition, the IBS course motivated participants to modify clinical techniques, which they already used and this effect was maintained after the course. The course format may act as a useful model when designing other CPD programmes.

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