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RESEARCH PAPER

What is Bobath? A survey of UK stroke physiotherapists' perceptions of the content of the Bobath concept to treat postural control and mobility problems after stroke

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Abstract

Objective. The aim of this study was to identify which interventions used to treat postural control and mobility are considered part of the Bobath concept (BC).

Design. Hospital-based UK stroke physiotherapists identified interventions which they perceived to be part of the BC from a pre-published list of interventions used to treat postural control and mobility problems. Interventions that >75% of participants felt were part of the BC were classified as 'definitely Bobath'. Interventions that <25% felt were part of the BC were classified as 'definitely not Bobath'. Other interventions were classified as 'unsure'; those identified by 50–74% of participants as part of the BC were classified as 'probably Bobath' and those identified 26–49% were classified as 'probably not Bobath'.

Results. Seventy-four physiotherapists from 33 hospitals participated. Facilitation, mobilizations and practicing components of activities were most strongly associated with the BC. Exercise and the use of equipment were identified as 'not' or 'probably not Bobath'. There was uncertainty about practicing activities, teaching patients and carers and arranging independent practice.

Conclusions. UK stroke physiotherapists perceive that the BC involves interventions that focus on facilitating movement, mobilization, practicing components of activities and some whole activities. Their views about what is not part of the BC and the areas where they are uncertain contrast with British and international teachers of the BC. Consequently, it was not possible to define a 'typical package' of treatment for postural control and mobility that represents the BC. Future research into the BC should focus on the effectiveness of specific, well-defined interventions.

Keywords: Bobath Concept, physiotherapy, stroke, postural control, balance

Introduction

Stroke physiotherapy is often described in terms of the treatment approach used, and in the UK the most widely used approach is the Bobath concept (BC) [1–5]. In recent years, Bobath tutors and projects involving experienced stroke physiotherapists have attempted to define the BC, its theoretical basis and how it has developed since the originators' (Mrs and Dr Bobath) death in 1991 [4,6–12]. Bobath tutors are physiotherapists who teach the BC, and are considered its 'gatekeepers'. Not surprisingly these

articles have much in common [7,10,12]. All give neuroplasticity as the main mechanism through which the BC has an effect, highlight the use of a problem-solving approach (both of which are common to other physiotherapy approaches [13]) and emphasize the importance of movement facilitation and muscle tone. However, there are also important differences, for example, whether and when a patient should be encouraged to perform activities independently and the acceptability of 'adjuncts to treatment' such as muscle strengthening or structured practice. These articles also focus on the theoretical aspects of the BC

[7,9,10,12]. There is little objective information in the literature about how the BC is used in clinical practice, nor its effectiveness. It is important to understand the content of the BC and how it is applied when it is used in research studies so that research findings can be replicated and applied into clinical practice, and absence of this information has been a frequent source of criticism of rehabilitation research [14,15]. We wanted to address this issue as the BC is the most widely used approach to stroke physiotherapy in the UK [1–5] and it is often used as the control or ‘standard’ treatment arm of controlled trials of other physiotherapy interventions or approaches; it is therefore important to know what is meant when someone says that the BC had been used. In particular, we wished to explore whether it was possible to identify a ‘treatment package’ involving the interventions typically used to apply the BC. This could then be used to define how the BC could be operationalized in future studies of the effects of, and effectiveness of, the BC, as well as the control arm of other interventions.

Despite the lack of objective, published information about its content and the contradictory views about its theoretical construct, the BC is used every day by stroke physiotherapists across the UK (and in much of Europe). We aimed therefore to establish which interventions practicing clinical physiotherapists perceived to be part of the BC. The interventions used for one key aspect of stroke physiotherapy; the restoration of postural control and mobility were investigated. This is part of a larger study which has also recorded the actual (rather than perceived) content of physiotherapy treatment sessions, which will be reported elsewhere.

Method

Stroke physiotherapists from across the UK were recruited and the interventions they considered part of the BC were surveyed using a written questionnaire based on a previously published checklist of 77 interventions used by physiotherapists to treat postural control and mobility problems in people with stroke; the Stroke Physiotherapy Intervention Recording Tool (SPIRIT) [16,17] (Appendix 1). Respondents were asked to answer the question “Is this intervention part of the Bobath Concept?” for each intervention. They had a choice of three responses (‘yes’, ‘no’ or ‘not sure’). The interventions were divided into the following categories: mobilizations ($n=4$); facilitated movements and activities ($n=15$); practising components of activities ($n=8$), practising activities ($n=22$); exercise ($n=3$), other ($n=2$), teaching carers or health care professionals ($n=10$), provision of equipment ($n=5$) and structuring independent practice ($n=8$). Information about the clinical setting in

which the physiotherapists worked, their length of experience, job grade, postgraduate training in the BC and the treatment concept they used was also obtained. The clinical setting was defined as ‘acute’ or ‘rehabilitation’. Job grades were classified as ‘junior’, ‘senior II’, ‘senior I’ and ‘clinical specialist’ (or the equivalent Agenda for Change bands). Postgraduate training in the BC was classified as ‘none’, ‘weekend introductory courses’, ‘3-week basic course’, and ‘advanced’ (the 1-week advanced course or an MSc). The treatment approach was classified as ‘Bobath purist’, ‘Bobath eclectic’, ‘eclectic’ or ‘other approaches’ (definitions are provided in Appendix 2).

Physiotherapists of any grade (excluding students), who treated people with stroke at least once a week within any hospital-based acute or rehabilitation setting completed the questionnaire. Stroke physiotherapists in all NHS trusts in Greater Manchester, Nottingham, Bristol, Wales and Northern Ireland were approached; all but six trusts (one in England and five in Northern Ireland) agreed to participate. The process of recruitment varied according to the resources and networks available in the different locations. In England, the network of neurological physiotherapists who had taken part in other studies led by the authors were contacted and other trusts were recruited by word of mouth and through personal contacts. In Wales and Northern Ireland, stroke physiotherapists were contacted through the physiotherapy managers’ network. Guidance from the lead authors’ LREC confirmed that ethical approval was not required for this survey as physiotherapists were describing and recording normal practice without identifying any patient specific data. Local trusts followed their local research governance procedures; permission was obtained from relevant departmental managers to conduct the survey. At each NHS trust, one physiotherapist was designated the local lead who distributed the questionnaires to all the stroke physiotherapists in their trust and collected the responses. Once completed, they were returned to the authors by post. The authors were in touch with the local leads to answer any queries, give reminders about deadlines, etc. All responses were anonymized.

The number of physiotherapists who identified each intervention as part of the BC (or not) was investigated descriptively using percentages. Interventions that 75% or more of participants who felt that they were a part of the BC were classified as ‘definitely Bobath’. An intervention was classified as ‘not Bobath’ if 25% or less of respondents identified it as part of the BC, and ‘unsure’ if between 26 and 74% of respondents thought it was part of the BC. The ‘unsure’ interventions were subdivided. An intervention was classified as ‘probably Bobath’ if

50–74% of respondents identified it as part of the BC and ‘probably not Bobath’ if 26–49% of respondents identified it as part of the BC. Cross-tabulation and Chi-squares investigated whether the inclusion of an intervention differed depending on the physiotherapists’ grade, the clinical setting in which they worked, amount of postgraduate training in the BC or perceived treatment approach. The observed and expected counts for each response category from the Chi-Square test were used to assess where any differences lay.

Results

Seventy-four physiotherapists completed the questionnaire from 33 hospitals across England, Wales and Northern Ireland (England: 40 physiotherapists from 15 hospitals; Northern Ireland 10 physiotherapists from 9 hospitals; Wales 24 physiotherapists from 9 hospitals). 26% of respondents were junior physiotherapists, 27% were senior IIs, 39% senior Is and 8% were clinical specialists. They had a mean age of 30 years (SD 6.8) and the majority (65%) worked in a rehabilitation setting. Thirty-seven per cent had not undertaken postgraduate training in the Bobath concept, 37% had completed the introductory course, 17% had completed the basic 3-week course, and 8% had undertaken advanced training.

None of the respondents perceived that their treatment approach excluded the BC (that is, was based on another approach). The majority (58%) based their approach on the BC but used other interventions (‘Bobath eclectic’). Over a third of participants (37%) indicated they were ‘eclectic’ meaning that their practice was not based on any one approach but composed of a mixture of approaches and interventions. Only 5% classified their approach as ‘Bobath purist’ indicating they never or rarely used methods other than the BC.

The frequency with which the physiotherapists identified each intervention is shown in Tables I–IV. Thirty (39%) of the 77 interventions were considered ‘definitely Bobath’ (Table I). These involved facilitation, mobilizations, ‘practising components of activities’, ‘practising activities or tasks’ and one intervention about teaching carers or other health care professionals (HCP).

Five (7%) of the 77 interventions were considered not part of Bobath (Table II). These included practising activities, exercise and the use of equipment.

Interventions which 26–74% of respondents identified as part of the BC were classified as ‘unsure’. These interventions were subdivided in to ‘probably Bobath’ for interventions which 50–74% of respondents identified as part of the BC (Table III) and ‘probably not Bobath’ for interventions which

Table I. Interventions definitely considered part of the Bobath concept.

Intervention	Percentage of respondents who identified the intervention as part of the Bobath concept
Facilitated Movements	
Weight transfer to either side in sitting	97
Anterior/posterior Pelvic tilt in sitting	97
Weight transfer with feet level in standing	95
Selective movements of the hip and/or knee	95
Anterior/posterior pelvic tilt in standing	94
Reaching to either side in standing	92
Selective movements of foot/ankle	92
Selective movement of arm	92
Reaching to either side in sitting	90
Weight bearing through affected arm	84
Bridging	84
Mobilizations	
Trunk mobilizations	90
Shoulder girdle mobilizations	89
Specific muscle mobilizations	79
Practising components of activities	
Practising components of standing	92
Practising components of walking	90
Practising components of sit-to-stand	90
Practising components of sitting	89
Practising components of rolling	89
Practising components of lie-to-sit	86
Practising components of transfers	81
Practising activities	
Practising reaching activities in sitting	87
Practising reaching activities in standing	82
Practising walking with help	82
Practising lie-to-sit	81
Practising sit to stand	81
Practising rolling	79
Practising bed mobility	76
Practising transfers	76
Teaching patients and/or Carers	
Teaching positioning	76

Seventy-five per cent or more of respondents identified these interventions as part of the Bobath concept.

26–49% of respondents identified as part of the BC (Table IV). Twenty-five (32%) interventions were considered ‘probably Bobath’ (Table III). These involved: facilitation, practicing activities, practising components of activities, structuring independent practice, mobilisations, teaching carers and other HCPs, exercise and ‘other’ interventions. Fifteen interventions (19%) were classified as ‘probably not Bobath’ (Table IV). They were providing equipment, exercise, practicing activities, teaching carers and other HCPs and structuring independent practice.

None of the categories of interventions were wholly contained within the classifications ‘definitely

Table II. Interventions considered definitely not part of the Bobath concept.

Intervention	Percentage of respondents who identified the intervention as part of the Bobath concept
Practising activities	
Practising crossing roads	24
Practising falls routine	24
Practising wheelchair skills	21
Exercise	
Cardiovascular exercise	19
Equipment	
Providing or training how to use wheelchairs	19

Twenty-five per cent or less (75%) or more of respondents identified these interventions as part of the Bobath concept.

not Bobath'. Interventions involving the gym ball and sensory stimulation (the 'other' category) and structuring independent practice all fell within the 'unsure' classification. Interventions involving facilitation, mobilization and practicing components of activities were all 'definitely' or 'probably Bobath'. Practising some activities: bed mobility, sit-to-stand and transfers, sitting, standing, walking and stairs were 'definitely' or 'probably Bobath' but interventions for advanced activities such as walking outdoors, crossing a road, falls, using a walking aid or a treadmill were 'not' or 'probably not' Bobath; as were interventions involving a wheelchair.

There were some inconsistencies about how interventions within categories were classified. For example, arranging independent practice of sit-to-stand, transfers, walking and bed mobility were 'probably Bobath', but arranging independent practice of walking outdoors and exercises were 'probably not'. Interventions involving exercise and equipment were 'not' or 'probably not Bobath' (except stretching or passive exercises which were 'probably Bobath'). There was also inconsistency over the role of teaching carers or other health care professionals how to help the patient. Teaching carers on how to position the patient was 'definitely Bobath', how to do transfers, bed mobility, walking indoors and negotiate stairs were 'probably Bobath', whereas how to do passive movements, walk outdoors and use wheelchairs or moving and handling equipment was 'probably not Bobath'.

Cross-tabulations and Chi-square tests showed significant differences in the interventions defining the BC dependent on clinical setting, post-graduate training in the BC, perceived treatment approach,

Table III. Interventions considered 'probably part of the Bobath concept'.

Intervention	Percentage of respondents who identified the intervention as part of the Bobath concept
Facilitating movements	
Holding/placing arm	74
Holding/placing leg	74
Practising activities	
Practising walking around a plinth	74
Practising static sitting activities	73
Practising walking indoors	73
Practising static standing activities	71
Placing unaffected foot on/off step	68
Placing affected foot on/off a step	66
Practising picking things up in standing	65
Practising stepping on & off a step	61
Practising stairs	57
Practising walking around obstacles	52
Practising components of activities	
Practising components of steps and stairs	71
Arranging independent practice	
Arrange independent practice of sit to stand	68
Arrange independent practice of transfers	65
Arrange independent practice of walking indoors	65
Arrange independent practice of bed mobility	60
Mobilizations	
Specific joint mobilizations	63
Teaching patients and/or carers (including staff)	63
Teaching transfers	61
Teaching bed mobility	61
Teaching walking indoors	60
Teaching stairs	52
Other	
Gym ball	60
Postural perturbations	58
Exercise	
Stretching exercises/Passive movements	55

50–74% of respondents identified these interventions as part of the Bobath concept.

and physiotherapists' grade but there were no consistent trends (Table V).

Discussion

The results of this study indicate that UK stroke physiotherapists perceive that the BC involves interventions that focus on facilitating movement, mobilization, practising components of activities, and some aspects of practising whole activities and teaching patients and carers how to position the patient. None of the interventions involving exercise, equipment, independent practice were identified as

Table IV. Interventions considered 'probably not part of the Bobath concept'.

Intervention	Percentage of respondents who identified the intervention as part of the Bobath concept
Equipment	
Providing or training how to use issue or train to use walking aids	39
Providing or training how to use ankle foot orthoses	34
Providing or training how to use teaching splints	32
Providing or training how to use moving and handling or transfer equipment	31
Exercise	
Strengthening exercises	40
Practising activities	
Practising walking with an aid	47
Practising walking outdoors	44
Practising walking on a treadmill	27
Teaching the patient and/or carers (including staff)	
Teaching walking outdoors	50
Teaching stretching / passive movements	47
Teaching wheelchair skills	27
Teaching moving and handling equipment/ techniques	27
Arranging Independent Practice	
Arrange independent practice walking outdoors	48
Arrange independent practice of stretching exercises	44
Arrange independent practice strengthening exercises	44

26–49% of respondents identified these interventions as part of the Bobath concept.

'definitely Bobath'. There was uncertainty about many of the interventions involving practicing activities, teaching patients and carers, and arranging independent practice. This uncertainty about what constitutes the BC was further illustrated by our attempts to compare the choice of interventions between different groups of physiotherapists according to the treatment approach they used, their postgraduate training in the BC, job grade and the clinical setting in which they worked. We had hypothesized that more experienced, highly trained, or 'purist' Bobath physiotherapists may have a clearer view about what constituted the BC than others with less knowledge or expertise in the Concept. Although statistically significant differences were found in our comparisons (Table V), there was no consistency in the differences found and no trends could be identified, thereby suggesting that the uncertainty was generalized across all groups of respondents.

These results echo the core themes defining the BC identified in a previous project of experienced UK stroke physiotherapists [3,4,11,12]. These themes were the analysis of normal movement, normalizing or controlling of tone and facilitating postural alignment, normal movement and function. This contrasts with the more recent reports by the British Bobath Tutors Association (BBTA) [10] who emphasize the promotion of movement efficiency and the International Bobath Instructors Training Association [7] (IBITA, which includes members of

the BBTA) and states that increased tone should not be considered the primary cause of motor dysfunction and highlight the importance of muscle weakness, stiffness and shortening.

There are also contradictions about whether and when a patient should be encouraged to perform activities independently. Lennon *et al.*'s [4,14] experienced clinicians state that activity, particularly walking, should be limited unless the patient is able to perform with optimal movement patterns. The BBTA [10] states that patients should not be stopped from walking, but with the caveat that they should walk with facilitation (from another person) or a walking aid if it is considered detrimental to walk independently. The IBITA [7] contradicts both views; stating that task performance should not be prevented to avoid compensation strategies. The results of the present study suggest that some of these changes have been incorporated into physiotherapists' understanding of how the BC should be applied in clinical practice. Practising some tasks (sitting, standing, walking with help, transfers and bed mobility) were considered definitely part of the BC but this did not extend to walking activities which indicated greater independence or 'higher level' activity such as walking outdoors or negotiating obstacles and roads. In contrast to the perceived developments reported by Lennon [3,4,11,12], the respondents in the present study had not adopted interventions involving independent practice outside of the physiotherapy treatment session.

Table V. Results of Chi-squared tests to show whether the interventions identified as part of the Bobath concept differ with physiotherapist-related variables. (Significant comparisons only are shown)

Physiotherapist variables	Intervention	P value
Comparison of the interventions chosen as part of the BC between physiotherapists working in the acute or rehabilitation setting	Mobilizations	
	Specific joint mobilizations	0.01
	Facilitated Movements	
	Placing affected foot on/off a step	0.02
	Practising components of activities	
	Practising components of transfers	0.04
	Practising components of steps and stairs	0.02
	Practising activities	
	Practising stepping on and off a step	<0.01
	Practising walking with an aid	0.04
	Practising walking around obstacles	<0.01
	Practising falls routine	0.04
	Exercise	
	Strengthening exercises	0.04
	Teaching the patient and/or carers	
	Teaching bed mobility	0.05
	Teaching transfers	0.03
	Teaching ankle foot orthoses / splints	<0.01
	Equipment	
	Provide or train to use ankle foot orthoses	0.01
	Provide or train to use splints	0.02
	Provide or train to use walking aids	0.01
	Arranging independent practice	
	Arrange independent practice of stretching exercises	<0.01
	Arrange independent practice of strengthening exercises	<0.01
	Arrange independent practice of bed mobility	0.01
Comparison of the interventions chosen as part of the BC between physiotherapists with different degrees of postgraduate training in the BC	Facilitated Movements	
	Placing affected foot on/off a step	0.04
	Placing unaffected foot on/off step	0.03
	Practising activities or tasks	
	Practising picking things up in standing	0.03
	Practising stepping on and off a step	<0.01
	Practising falls routine	0.03
	Teaching the patient and/or carers	
	Teaching transfers	0.05
	Teaching walking indoors	0.01
	Teaching to use ankle foot orthoses/splints	0.03
	Issue or train to use walking aids	0.03
	Issue or train to use wheelchairs	0.04
Comparison of the interventions chosen as part of the BC between physiotherapists according to the treatment approach they used	Facilitated Movements	
	Anterior/posterior pelvic tilt in sitting	0.01
	Weight bearing through the affected arm	0.03
	Reaching to either side in sitting	0.05
	Anterior/posterior pelvic tilt in standing	0.02
	Reaching to either side in standing	0.01
	Practising components of activities	
	Practising components of standing	0.02
	Practising components of walking	0.01
	Practising components of rolling	0.01
	Practising components of lie-to-sit	0.02
	Practising components of sit-to-stand	0.01
	Practising components of transfers	0.04
	Practising activities	
	Practising reaching activities in standing	0.02
	Practising stepping on and off a step	0.01
	Practising walking with help	<0.01
	Practising rolling	0.01
	Practising lie-to-sit	0.03
	Practising sit to stand	0.03
	Practising transfers	0.01

(continued)

Table V. (Continued).

Physiotherapist variables	Intervention	P value
Comparison of the interventions chosen as part of the BC between physiotherapists according to their job grade	Facilitated Movements Selective movement of foot/ankle Selective movement of arm Practising activities Practising walking with help	0.02 0.02 0.04

The BBTA [10] identified a number of 'adjuncts to treatment' which could now be used to compliment the BC. These were muscle strengthening, structured practice, orthotics, mental imagery, treadmill training, Maitland mobilisations and constraint of less affected body segments. The use of adjuncts to the BC are not mentioned in the IBITA's [7] consensus document, although it explicitly states that constraint of the less affected limbs should not be used. Lennon and Ashburn [11] stated that Bobath was a broad concept and that other techniques could be used in parallel; orthotics and Maitland mobilizations were given as examples. The results of the present study suggest that 'adjuncts to treatment' had not been adopted into physiotherapists' understanding of the BC; exercise, the use of equipment and independent practice were among the interventions perceived as 'definitely not' Bobath'.

All three studies [7,9,10] state that Bobath is an evolving concept and chronology may be a factor explaining some of these contradictions. Lennon's work was published in 1996–2006 [3,4,11,12,18,19], and may reflect views of the BC which are now outdated, although they most closely match the perceptions of practising physiotherapists reported in the present study. However, the BBTA's [9,10] and IBITA's [7] work were published within a few months of each other and should be considered contemporaneous. It would appear therefore that the contradictions within the articles represent differences of opinion. Given its inconsistency it is difficult to relate the literature about the definitions of the BC and its theoretical basis, to the present study which reports physiotherapists' views of how it is applied in every day practice. If anything, the participants' in the present study reflect the 'traditional' view of the BC described by Lennon et al. [3,4,11,12]. They include interventions which focus on changing tone and facilitating movements and were uncertain about many interventions which promoted independence and 'adjunct' techniques. This suggests that although the British and International Bobath Tutors' views on the BC have evolved, these developments have not yet been integrated into clinical practice in the UK. Although the reports [7,9,10] detail the changes to the theoretical construct of the BC, they have not addressed how it should now be applied. It is not

clear whether, or how, the techniques to be used have changed, or whether there has merely been an evolution of the description of the BC and the theory which is drawn upon to justify and explain it.

One of the aims of this study was to establish whether it was possible to identify the interventions which represented the BC – a 'typical treatment package' – that could be used in future clinical trials. The results of the present study suggest that such a package would focus on facilitation, mobilization, practising the components of movement, practising a few whole activities and teaching patients and carers on how to position the patient. Some of these perceptions are contrary to the current evidence for effective practice [20,21] and are contradicted by either, or both, the BBTA [9,10] and IBITA [7]. Given these contradictions, it is not clear how future research studies can explore 'the Bobath concept'. If this approach is used, then care should be taken to record the interventions used so that what is meant by 'Bobath concept' can be understood and if appropriate replicated and applied. It may be more effective to study individual interventions (or combinations of interventions) to restore movement and functional activity after stroke rather than focusing on specific named treatment approaches [5,15].

The main limitation of this study is its generalizability. Although 74 physiotherapists from 33 hospitals in England, Wales and Northern Ireland participated in this survey, their views cannot be assumed to reflect the views of all UK stroke physiotherapists. However, the results are compatible with the few previous studies that have examined the way the BC is applied in actual practice [18,19]. Their results show that Bobath therapists use preparation (mobilization and facilitation) most frequently and focused on therapist-led interventions aimed at normalizing tone and promoting normal movement patterns. Although physiotherapists appear to consistently believe that the BC involves facilitation and mobilization interventions, respondents were unsure about 51% of the interventions defined in this study. It would be useful to explore these findings with a larger sample size using alternative methodologies such as Delphi to clearly establish which interventions to include and which to exclude as part of the BC.

The study has also only addressed physiotherapists' perceptions about the content of the BC, it does neither provide evidence about the content of other stroke physiotherapy approaches, nor the differences – real or perceived – between the BC and other treatment approaches.

Conclusions

The results of this study indicate that UK stroke physiotherapists perceive that the BC involves interventions that focus on facilitation, mobilization, practising the components of movement, practising a few whole activities and teaching patients and carers how to position the patient. None of the interventions involving exercise, equipment, independent practice and 'other' were identified as 'definitely Bobath'. Respondents were uncertain about many of the interventions involving practising activities, teaching patients and carers, and arranging independent practice. These perception views contrast with British and international teachers of the BC, consequently it was not possible to define a 'typical package' of the treatment of postural control and mobility, which represents the BC. Future research into the BC should focus on the effectiveness of specific, well-defined interventions.

Clinical message

- UK stroke physiotherapists perceive that the BC involves interventions that focus on facilitating movement, mobilization, practising components of activities, practising a few whole activities and teaching patients and carers on how to position the patient. They were unsure about many other categories of intervention, particularly practising activities, teaching patients and carers and arranging independent practice. Exercise and equipment were considered 'not' or 'probably not' part of the Bobath concept.
- It was not possible to define interventions that demonstrate how the BC is defined.
- Future research should focus on the effectiveness of specific intervention.

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Appendix 1. List of categories and interventions

Category	Interventions
MOBILIZATIONS: Movements of trunk, shoulder girdle or pelvis or more distal body segments which aim to normalize muscle tone. The physiotherapist leads/guides the movements and the patient is passive or active assisted.	Trunk mobilizations • Shoulder girdle mobilizations • Specific muscle mobilizations • Specific joint mobilizations
FACILITATED MOVEMENTS: The performance of 'normal movement patterns' with the therapist guiding/leading the movements while providing stability to allow for selective movement in the limbs. The patient is physically passive or active-assisted. The movement is led/guided by the therapist	a) Sitting: • Weight transfer to either side • Anterior/posterior pelvic tilt • Weight bearing through affected arm • Reaching to either side in sitting b) Standing • Weight transfer with feet level to either side • Anterior/posterior pelvic tilt • Reaching to either side in standing • Placing affected foot on/off step • Placing unaffected foot on/off step c) Leg and arm • Bridging • Selective movement of hip/ knee • Selective movement of foot/ ankle • Selective movement of arm • Holding/placing arm • Holding/placing leg
PRACTISING COMPONENTS OF ACTIVITIES: Practising components of activities within a therapy session. They are practised under the therapist's supervision but without direct (hands on) facilitation. It may include the use of equipment or assistive devices. The patient is active.	• Sitting • Standing • Walking • Rolling • Lie-to-sit • Sit-to-stand • Transfers • Steps/stairs
PRACTISING WHOLE ACTIVITIES: Practicing whole activities or games that include that activity within a therapy session. They are practised under the therapist's supervision but without direct (hands on) facilitation. It may include the use of equipment or assistive devices. The patient is active.	• Sitting • Reaching activities in sitting • Standing • Reaching activities in standing • Stepping on/off block • Picking up objects from the floor • Walking round plinth • Walking with help • Walking with aids • Walking around obstacles • Walking on the treadmill • Rolling • Lie to sit • Bed mobility • Sit to stand • Transfers • Walking indoors • Stairs • Walking outside • Crossing roads • Wheelchair skills • Falls
EXERCISES	• Stretching exercises/Passive movements • Strengthening exercises including resisted exercise • Cardiovascular fitness exercises

(continued)

Appendix 1. (Continued).

Category	Interventions
TEACHING CARERS/PROFESSIONALS TO DO OR ASSIST PATIENTS: Any activity to teach/show another person how to help the patient in the therapist's absence. It may involve using equipment or assistive devices.	• Positioning • Stretching • Bed mobility • Transfers • Walking indoors • Walking outdoors • Stairs • Use of wheelchair • Use of manual handling equipment • Use of ankle foot orthoses/splints
PROVISION OF OR TRAINING PATIENT IN THE USE OF EQUIPMENT	• Ankle foot orthoses • Other splints, e.g. wrist splints • Walking aids • Transfer/manual handling equipment • Wheelchairs
ORGANIZING/TEACHING PATIENT ACTIVITIES FOR INDEPENDENT PRACTICE: Any organizing or teaching activity which aims to enable the patient to practise functional activities or undertake specific exercises outside therapy sessions and/or therapist supervision.	• Stretching exercises • Strengthening exercises • Bed mobility • Sit to stand • Transfers • Walking indoors • Walking outdoors • Stairs
OTHER Any activities, or treatment interventions not identified in other categories	• Gym ball • Postural perturbations

Appendix 2. Question asked to define physiotherapists' perception of their treatment approach

Which physiotherapy approach do you use when treating people with stroke? Please circle the most appropriate statement.

- Bobath purist:** My work is very strongly based on the Bobath concept. I never or rarely use other methods.
- Bobath eclectic:** My work is based on the Bobath concept but I use other interventions/methods.
- Eclectic:** My practice is not based on any one approach. I use a mixture of approaches and interventions.
- Other approaches:** I do not use the Bobath concept but my practice is based on another approach, which I use all or most of the time.