

The effect of reflexology on the perceived health and well-being of patients with irritable bowel syndrome

Philip Tovey School of Healthcare Studies, University of Leeds, Leeds, UK

A substantial proportion of the symptoms of ill health presented in primary care settings are medically unexplained. Low level physical and mental suboptimal functioning, such as tiredness and nagging psychological discomfort are common features of workload and are rarely amenable to immediate and straightforward treatment and cure. Complementary and alternatives medicines (CAMs), with their frequent focus on overcoming an apparently restrictive mind/body dualism, are being increasingly drawn on to manage such symptoms. reflexology is a CAM that, it is claimed, is able to induce improved physical and mental health and overall well-being. To date, there has been little research which addresses this claim. A single blind trial was conducted to test the effectiveness of reflexology in improving levels of tiredness, overall health and perceived well-being in a sample of 34 patients with chronic irritable bowel syndrome currently under the care of a general practitioner, following diagnosis by a gastroenterologist. Both reflexology and nonreflexology (control) groups were found to produce a moderate improvement in symptoms, but there was no statistically or clinically significant difference in outcome between the groups. Thus, no specific benefit of using reflexology was found. On the basis of this study, there is no evidence for the use of reflexology as a means of enhancing patient well-being in primary care. However, the research was conducted with one quite specific patient group. Considerably more research is needed with a range of patient groups and outcome measures before definitive conclusions can be reached.

Key words: complementary and alternative medicine; irritable bowel syndrome; primary care; reflexology

Background

It is widely acknowledged that a substantial proportion of what is presented to orthodox practitioners in primary health care (PHC) is beyond definitive biomedical classification, poorly understood and, therefore, cannot be effectively treated (Tovey and Adams, 2001). Indeed, it has been estimated that one in four consultations with a general practitioner in the UK is concerned with the pres-

entation of medically unexplained symptoms (Mayou and Sharpe, 1997). Both from professional anecdote and published literature, the ubiquitous nature of TATT (tired all the time) or general fatigue, nagging psychological discomfort, especially that linked to worry, and nonspecific suboptimal functioning are well established (Tyrer, 1999). Further, such 'vague discontents' (Lasch, 1979: 13) can be seen to reach beyond those presenting as patients.

Much theorising has taken place in recent years which attempts to locate the pervasive nature of these individual difficulties within broader historical and societal development – be that in terms of, for instance, life options and reflexivity (Giddens, 1991), or *unsicherheit* – that combination of insecurity, unsafety and uncertainty (Bauman, 1999). At the therapeutic level, these are conditions

Address for correspondence: Philip Tovey, School of Healthcare Studies, Baines Wing, University of Leeds, Leeds, LS2 9UT, UK. Email: p.a.tovey@leeds.ac.uk

Work carried out at current location and at Centre for Research in Primary Care, 71–75 Clarendon Road, University of Leeds, Leeds LS2 9NG, UK

©Arnold 2002

10.1191/1463423602pc104oa

at the intersection of mind and body, and failure to identify a clear physical cause can lead to oversimplified professional responses and enhanced patient unease (Mayou and Sharpe, 1997). In the light of orthodox ineffectiveness and, indeed, of the frequently holistic rhetoric of the (nonorthodox) sector, these individual manifestations of ill health would appear to be the ideal territory for complementary and alternative medicine (CAM). Moreover, some CAMs appear to offer the potential for pro-active life enhancement, to deal with existential or practical worries that may or may not lead to a formal professional–patient interaction.

CAM is very much on the agenda in primary care (Adams and Tovey, 2000), and while scepticism remains, pockets of enthusiasm are evident, most notably within nursing (Tovey, 1997). Equally importantly in view of the current rhetoric surrounding public and patient (user) participation in decision-making processes (Milewa *et al.*, 1999), public enthusiasm for CAMs, which has been widely reported over the past decade (Vincent and Furnham, 1999) shows no sign of abating. Reflexology, ‘a method of treatment whereby reflex points in the feet are massaged in a particular way to bring about an effect in areas of the body quite distant from the feet’ (Hall, 1996: 1), is advocated for just the kind of nonspecific unease discussed earlier. Indeed, it has recently been claimed that, ‘The remarkably relaxing effect of reflexology enables people to begin to take charge of their worries, rather than being overwhelmed by them ... Reflexology creates a sense of well-being’ (Gillanders, 1998: 120). Thus, reflexology would, in theory, appear to be ideally suited to facilitating general life enhancement. It does not offer an ‘alternative’ geared towards cure of extreme maladies, but is perhaps the archetypal ‘complement’.

The basis of the therapy is that reflexes can be found on the feet, principally the soles (and the hands although these are less powerful), which correspond to the full range of body parts and organs. While the physiological mechanisms underlying the treatment remain a matter of conjecture, proponents tend to highlight the role of reflexology in relation to the stimulation of healing induced by an improved blood circulation and a relaxation of tension in the area being worked on (Fulder, 1989; Hall, 1996).

Research evidence on the effectiveness of re-

flexology in the treatment of any condition is very limited. One commentator has attempted to argue that research does exist to support reflexology (Hodgson, 2000), and studies can be identified which indicate some benefit in terms of quality of life (e.g., Joyce and Richardson, 1997). However, the quality of existing research is frequently questioned, and a detailed review of the field recently led to the conclusion that hard data for or against reflexology are rarer than gold dust (Ernst and Koder, 1997).

Irritable bowel syndrome (IBS) is the association of abdominal discomfort with an alteration in bowel habit for which no cause can be found on routine clinical investigation (Read, 1991). It therefore fits neatly into the conceptualisation of a medically unexplained condition introduced earlier. Patients’ overall quality of life can be badly affected (Hope *et al.*, 1996); potential for a general improvement in physical and psychological functioning is therefore established.

The aim of this part of the study (which formed part of a larger study into reflexology, see Tovey, 2000) was to test the claim that reflexology is able to improve perceived health and well-being, in this case in a sample of chronic sufferers of IBS. As will be seen, these participants were not patients requiring ‘cure’ for severe (non-physical) symptoms. They were, though, living suboptimally and potential for health improvement was evident. As such, as well as providing an indication of the potential of reflexology for improving overall functioning of this specific group of service users, the results can also provide a tentative indication of the potential for reflexology to tackle unease and discontent more broadly.

Method

The research, for which the data were collected during 1999, was conducted as a single blind trial after full consideration of methodological debates surrounding CAM research (Lewith and Holgate, 2000). Conscious of the need to avoid post hoc rejection of any findings by the practitioner community on the basis of study artificiality, project design was agreed in advance by a designated lead reflexologist, and the opportunity was explicitly given to raise concerns about any aspect of the procedure which would unfairly establish potential for a negative outcome; none were raised.

It was accepted by the consulted reflexology practitioner that in one important respect the therapy provided would differ from that normally offered – it would be essentially one-dimensional, rather than holistic. In a standard consultation advice may be given on diet, lifestyle, relaxation, etc. The rationale accepted by all concerned was that, irrespective of the other advice, the validity of reflexology rests on the extent to which its specific form of foot massage produces an impact in its own right – a discernible change which is unrelated either to the process of consulting (matched by the control group, see below) or to associated change of behaviour. Only once that independent impact has been established would it make sense to broaden the analysis.

Sampling and recruitment

The study was carried out in a single geographical area of a city in the north of England in four general practices. All four practices served predominantly white patients. Thirty-four patients provided data for this part of the study. The study was, therefore, relatively modest in size, and results should be seen as indicative rather than conclusive. However, the number of participants is similar to that of many IBS trials (Payne and Blanchard, 1995) and larger than other recent work on reflexology (Hodgson, 2000; Stephenson *et al.*, 2000). The study's power calculation was based on the outcome measure of abdominal pain (a core symptom of IBS) which is discussed elsewhere (Tovey, 2000). Data were analysed by a two sample *t*-test.

The inclusion criteria were tightly defined. They were: 'patients currently under the care of a primary care physician following referral to a gastroenterologist; the diagnosis of IBS in line with the Rome criteria (Thompson *et al.*, 1992); and, therefore, the exclusion of other causes of symptoms'. One exclusion criterion – previous use of reflexology – was employed. The purpose of this approach was three-fold. Firstly, to ensure that the IBS classification was as standard as possible from patient to patient and that symptoms were not caused by other conditions. Second, to ensure that those included in the trial were chronic sufferers, thereby minimising the potential for both spontaneous symptom remission, or for symptom reduction as a consequence of increased attention alone. Thirdly, the exclusion criterion was

employed in order to ensure that patients would be unable to distinguish between treatment and control groups. Both written consent from participants and ethical approval from a Local Ethics Committee were sought and received.

Data recording and collection

The principal means of recording the impact of treatment was the Health Assessment Sheet (HAS). The requirement for daily assessments, for recording IBS-specific, as well as broader symptoms, and the need to avoid multiple form filling, prevented the use of generic scales. The HAS is similar to a tool used successfully in other work with IBS patients (Whorwell, 1987). Each participant recorded their perception of health in relation to tiredness, personal well-being (taking into account level of happiness, depression, etc), and overall health (taking into account physical and psychological health; short-term and chronic conditions) on a five-point scale ranging from 0 to 4. The terms were explained on accompanying guidance notes. The forms were completed by all participants for 2 weeks before the first session (details of sessions below) throughout the intervention, for 2 weeks after and again for 2 weeks at follow up 3 months after the final session.

The groups

Participants were allocated either to treatment or control on the basis of order of recruitment, i.e., beginning with a reflexology treatment the practitioners alternated in order to arrive at roughly equal numbers in each group. This approach was successful in establishing groups with no significant differences in baseline symptoms (tiredness: reflexology, median (md) 2.4, interquartile range (IQR) 1.9–3.0, $n = 19$; control, md 2.1, IQR 2.0–2.6, $n = 15$; well-being, reflexology md 2.0, IQR 1.9–2.6, $n = 19$; control, md 2.0, IQR 1.6–2.3, $n = 15$; overall health md 2.0, IQR 1.6–2.3, $n = 19$; control, md 2.0, IQR 1.4–2.0, $n = 15$). The consistent baseline figure at, or slightly above, 2 (0, optimal functioning; 4, severe difficulties) indicates clear potential for an effective therapy to be of benefit.

Sessions were conducted in the participants' surgery. A written code of conduct was followed to maximise procedural rigour. The intervention was delivered by three qualified and experienced reflexologists. Consistency of style was ensured as

the lead reflexologist had originally trained the other two therapists. Due to practicalities of participant and practitioner availability, the lead reflexologist conducted the majority of sessions. A comparison between practitioners was therefore not feasible.

The two groups were as follows:

- *The reflexology experimental group*: the treatment consisted of a series of six (four \times weekly, 2 \times fortnightly) 30 min treatments conducted as closely as possible (that is, in a manner in which all aspects of a session which might lead to the blind nature of the work being undermined were excluded) in line with 'normal' practice. The length of individual sessions and the total number of those sessions was agreed with the lead reflexologist. Prior to concentrating on areas said to be IBS-specific, the practitioners carried out a whole foot treatment of a type used in regular practice to address the type of general nonspecific malaise, ill health and tiredness being assessed here.
- *The indistinguishable control group*: this group were exposed to exactly the same number of contact sessions as the experimental group and those sessions were carried out in exactly the same way, following the same procedures, with the single exception that a nonreflexology foot massage was given. According to reflexology theory this should have no curative effect as no stimulation of healing has occurred.

Piloting, training and monitoring

Before the first session the whole procedure was piloted on two people from outside the trial, both of whom had identified symptoms of IBS, although no such diagnosis had been confirmed. The researcher sat in on sessions at various stages of the trial. Compliance with agreed practice was noted to be very good on each occasion. Fifteen participants were approached at varying stages of the trial and asked if they were able to confidently identify to which group they belonged. None expressed a 'confident' assessment, although two offered a 'guess' and both of these guesses were correct. A reasonable degree of confidence that the blind nature of the trial was maintained can therefore be expressed.

Primary Health Care Research and Development 2002; 3: 169–175

<https://doi.org/10.1191/1463423602pc1040a> Published online by Cambridge University Press

Results

For each of the following symptoms baseline measurement was taken at the end of week 2 (prior to the first session), outcome was measured at week 10 (after the last session), and follow up 3 months after the last session.

Tiredness

The progression of feelings of tiredness throughout the trial are represented on Figure 1. There was a slight improvement (i.e., participants felt less tired) in both groups. However, there was no significant difference in outcome for the two groups, although on this measure reflexology did perform slightly better (control: -0.18 , SD 0.66 , $n = 15$; reflexology: -0.35 , SD 0.7 , $n = 19$). $T = 0.378$, $df = 31$, $P = 0.708$.

At follow up, benefit had been maintained and slightly extended in both groups. Again any difference between the groups was marginal.

Well-being

The results on personal perceptions of well-being are presented in Figure 2. A slight improvement in well-being was recorded across both groups; the level of improvement was virtually identical (controls: -0.27 , SD 0.56 , $n = 15$; reflexology: -0.24 , SD 0.61 , $n = 19$). $T = 0.194$, $df = 31$, $P = 0.847$.

At follow up, the size of improvement had increased and the reflexology group had shown the greatest improvement, though again not to a statistically significant extent.

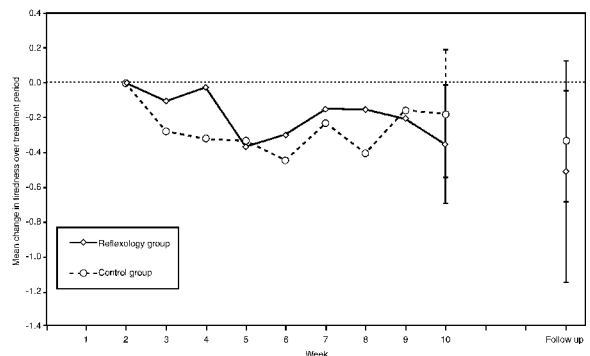


Figure 1 Impact of reflexology on tiredness.

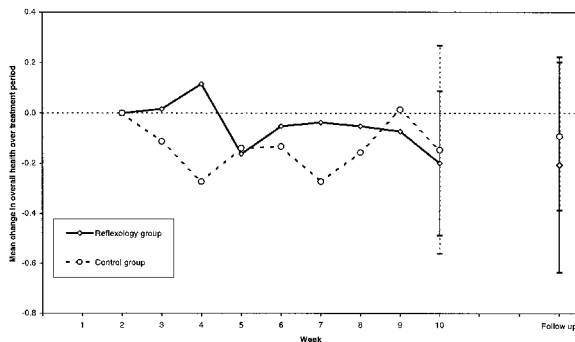


Figure 2 Impact of reflexology on personal well-being.

Overall health

The final assessment was overall health. Much the same trends were found again (see Figure 3). At the end of the intervention, both groups showed a slight improvement, and the difference between the groups was very slight (controls: -0.15 , SD 0.75 , $n = 15$; reflexology: -0.2 , SD 0.6 , $n = 19$). $T = -0.295$, $df = 31$, $P = 0.770$.

At follow up the slight improvement had been maintained, with the reflexology group showing the higher level of improvement.

To summarise, there is a high level of consistency in the results across these three health assessments. The main finding is that participation produced slight benefit across the board, and that differences between groups were very small – in no case reaching statistical significance. In each case the improvement in symptoms was maintained at follow up.

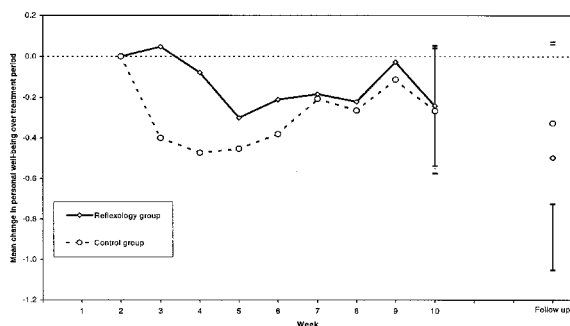


Figure 3 Impact of reflexology on overall health.

Discussion

The aim of this research was to systematically address one of the frequently heard claims of CAM in general, and reflexology in particular: that overall health and well-being can be enhanced through treatment. This was tested with one specific group of participants suffering with a chronic, and biomedically unexplained, condition. As research into the effectiveness of reflexology is at an early stage, and indeed in view of the quite specific nature of the sample, these results should be taken to be indicative, rather than conclusive. Just as it is dubious to advocate therapies on the basis of one-off or specifically focused studies, so too it is inappropriate to reject them on the same basis.

However, having stated that proviso, the results of the study are quite clear: there is no evidence from these data that reflexology provides a specific positive contribution to the improvement of health, well-being and levels of tiredness in this group of patients. Moreover, the validity of the method was enhanced by the incorporation of an experienced reflexology practitioner and teacher into decision-making at all stages of the process. Thus, within the inevitable limits set by a trial, reflexology was given every opportunity to have improved patient health.

It is important that the discussion is of the specific benefit to be provided by reflexology because there was actually an improvement on all three outcome measures for both groups. (As an aside, this is interesting as it confirms the potential for health improvement in this sample.) Of course, it is entirely reasonable to suggest that this was the consequence of participation and whatever the nature of the ‘treatment’ (including an absence of direct intervention altogether) may have produced the same results. Alternatively, this could be the consequence of benefits being derived from the act of physical contact. In the latter case the questions and therapeutic possibilities would be manifold – the most intriguing one of all perhaps being that positive results from non-specific contact would legitimately facilitate a marginalisation of professional input as a whole – be that orthodox or complementary. However, that is to take the discussion beyond the current data, and these data provide nothing to support reflexology.

At this time, when the integration of CAMs into mainstream (especially primary care) practice is so

readily discussed (Adams and Tovey, 2000), there are two points about the results and their possible implications which are worth underlining. Firstly, and as noted in the introduction, the very rhetoric of reflexology – frequently presented in patient orientated publications (Gillanders, 1998) – is of a therapy geared towards the facilitation of optimal health; the enhancement of well-being. If reflexology is to contribute to the primary care portfolio of therapeutic options (and indeed to public well-being more broadly) it is reasonable to assume (on the basis of claims made for the therapy) that it is precisely the kind of patients included here, those with chronic conditions (at the mind/body interface) that impinge upon quality of life, but who are not extreme cases, that should be predicted to derive benefit from it. If future work confirms an inability to improve the lives of such patients, the project of reflexology mainstreaming must be seriously undermined. Secondly, there is a broader issue of the potential conflict between two mainstream policy priorities that have a particular resonance with CAM: evidence-based medicine and user involvement, or the intrinsic validity of patient perspectives. Should evidence develop on, say, the ineffectiveness of reflexology, whilst public enthusiasm for it is maintained, interesting questions will emerge about the relative weight to be ascribed to research evidence on the one hand, and patient preferences on the other. However, given the current paucity of evidence, that matter remains some way off.

So where do these results leave the debate about the efficacy of reflexology? Clearly these data should be seen to be contributing to the early stages of a systematic examination of the therapy. Indeed, it is certainly theoretically possible that a failure to improve broad well-being may not necessarily be accompanied by an inability to contribute towards the management of other specific aspects of physical, and in particular psychological, distress (Tovey, 2000). There is a need for substantially more work with different patient groups, different outcome measures, and with different ways of measuring those outcomes (Lewith and Holgate, 2000). Indeed, given the emphasis on reflexology's potential to enhance well-being, work looking at reflexology in the community, rather than with 'patients', might well provide fascinating data. There are many possible therapeutic combinations that need to be examined before definite con-

clusions are reached on the potential of reflexology to manage individual manifestations of structural *unsicherheit*.

Acknowledgements

This work was funded by award number P0065 from Northern and Yorkshire National Health Service Research and Development. Statistical input was provided by Brett Scaife, Sub-unit of Medical Statistics, University of Leeds.

References

- Adams, J. and Tovey, P. 2000: Complementary medicine and primary care: towards a grassroots focus. In: P. Tovey, editor. *Contemporary primary care: the challenges of change*. Buckingham: Open University Press, 167–82.
- Bauman, Z. 1999: *In Search of Politics*. Cambridge: Polity.
- Ernst, E. and Koder, K. 1997: An overview of reflexology. *European Journal of General Practice* 3, 52–57.
- Fulder, S. 1989: *The Handbook of Complementary Medicine*. London: Hodder and Stoughton.
- Giddens, A. 1991: *Modernity and Self Identity*. Cambridge: Polity.
- Gillanders, A. 1998: *A Family Guide to Reflexology*. London: Gaia.
- Hall, N. 1996: *Reflexology*. London: Thorsons.
- Hodgson, H. 2000: Does reflexology impact on cancer patients' quality of life. *Nursing Standard* 14, 33–38.
- Hope, R., Longmore, J., Hodgetts, T. and Ramrakha, P. 1996: *Oxford Handbook of Clinical Medicine*. Oxford: Oxford University Press.
- Joyce, M. and Richardson, R. 1997: Reflexology can help MS. *International Journal of Alternative and Complementary Medicine* 15, 10–12.
- Lasch, C. 1997: *The Culture of Narcissism*. New York: Norton.
- Lewith, G. and Holgate, S. 2000: CAM research and development. *Complementary Therapies in Nursing and Midwifery* 6, 19–24.
- Mayou, R. and Sharpe, M. 1997: Treating medically unexplained symptoms (editorial). *British Medical Journal* 315, 561–62.
- Milewa, T., Valentine, J. and Calnan, M. 1999: Community participation and citizenship in British health care planning: narratives of power and involvement in the changing welfare state. *Sociology of Health and Illness* 21, 445–65.
- Payne, A. and Blanchard, E. 1995: A comparison of cognitive therapy and self help support groups in the treatment of irritable bowel syndrome. *Journal of Consulting and Clinical Psychology* 63, 779–86.
- Read, N. 1991: The neurotic bowel. In: N. Read, editor. *Irritable bowel syndrome*. Oxford: Blackwell, 1–19.
- Stephenson, N., Weinrich, R. and Tavakoli, P. 2000: The effects of foot reflexology on anxiety and pain in patients with breast and lung cancer. *Oncology Nursing Forum* 27, 67–71.

- Thompson, W.G., Creed, F.H., Drossman, D.A., Heaton, K.W.** and **Mazzaccal, G.** 1992: Functional bowel disease and functional abdominal pain. *Gastroenterology International* 5: 75–91.
- Tovey, P.** 1997: Contingent legitimacy: UK alternative practitioners and inter-sectoral acceptance. *Social Science and Medicine* 45: 1129–34.
- Tovey, P.** 2000: *A single blind trial of reflexology and irritable bowel syndrome*. Report submitted to NHS R&D Northern and Yorkshire Region.
- Tovey, P.** and **Adams, J.** 2001: Primary care as intersecting social worlds. *Social Science and Medicine* 52, 695–706.
- Tyrer, P.** 1999: *Anxiety: a multi-disciplinary review*. London: Imperial College Press.
- Vincent, C.** and **Furnham, A.** 1999: Complementary medicine: state of the evidence. *Journal of the Royal Society of Medicine* 92, 170–77.
- Whorwell, P.** 1987: Controlled trial of hypnotherapy in the treatment of severe refractory irritable bowel syndrome. *Lancet*, 1232–34.

Practice box

- CAM is an increasingly popular treatment option for service users; there is evidence of significant levels of interest and acceptance within health professions
- Reflexology is a CAM which is advocated for its capacity to enhance overall physical and psychological well-being; hitherto, little research has been conducted to examine these claims
- On the basis of this study there is no basis on which to support the use of reflexology in primary care as a means of enhancing patient well-being
- This conclusion should, however, be seen as tentative; systematic research into the efficacy of reflexology is at an early stage, and further research with a range of patient groups and outcome measures is needed