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Suggested citation:

Bloch-Atefi, A. and Smith, J.(2014), *The effectiveness of body-oriented psychotherapy: A review of the literature*. Melbourne: PACFA.

Acknowledgments:

The review was generously funded by an anonymous philanthropic body.

The authors would like to thank the Association of Soul Centred Psychotherapists (especially Anita Bentata and Kat Hathaway) for providing insightful comments.

Correspondence concerning this article should be addressed to:
Alexandra Bloch-Atefi, email: Alexandra.Bloch-Atefi@acu.edu.au

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Foreword

This document is a literature review of research into the effectiveness of body-oriented psychotherapy, intended as a resource for counsellors and psychotherapists. It demonstrates the effectiveness of body-oriented psychotherapy for a range of psychological conditions.

The PACFA Research Committee recognises that it is important to counsellors and psychotherapists that they have access to recent research evidence that demonstrates the effectiveness of different therapeutic approaches, to assist them in their practice. This review is one of a series of reviews that has been commissioned by the PACFA Research Committee to support its Member Associations in their work. It was written on behalf of the PACFA Research Committee. However, this does not imply that PACFA or its Member Associations endorse any of the particular treatment approaches described.

The Committee endorses the American Psychological Association's definition of evidence-based practice as 'the integration of the best available research evidence with clinical expertise in the context of patient characteristics, culture and preferences' (although we refer to a client or consumer rather than 'patient'). The Committee recognises that there is significant research evidence to indicate the effectiveness of counselling and psychotherapy and that different methods and approaches show broadly equivalent effectiveness. The Common Factors research, in particular, has shown the centrality of the therapeutic relationship, and the relatively minimal relevance of specific techniques, to positive therapeutic outcomes.

The Committee acknowledges that an absence of evidence for a particular counselling or psychotherapy intervention does not mean that it is ineffective or inappropriate. Rather, the evidence showing equivalence of effect for different counselling and psychotherapy interventions justifies a starting point assumption of effectiveness.

It should be noted that this review is necessarily limited in its scope and examines the types of mental health issues that body-oriented psychotherapy is effective in treating.

The Committee is committed to supporting PACFA Member Associations and Registrants to develop research protocols that will help the profession to build the research base to support the known effectiveness of counselling and psychotherapy. We hope that you find this review, and others in this series, useful for your own research and advocacy purposes. We welcome your feedback.

Dr Elizabeth Day
Chair of the PACFA Research Committee
July 2014

Abstract

The purpose of this literature-based review was to review research into the effectiveness of body-oriented and somatic psychotherapies, both in international and Australian settings. A systematic review of internationally published research from the last five years and Australian research from the last 10 years was conducted using the Cochrane Library, Google Scholar, Medline, PsycINFO and PubMed. Overall 19 effectiveness studies and 38 reviews met the inclusion criteria. Body-oriented psychotherapy interventions have been found to be effective in different populations and settings. However, in comparison with more established therapeutic modalities, body-oriented psychotherapy interventions require further empirical research to be deemed effective according to the American Psychiatric Association (APA) standards.

Keywords: Body-centered psychotherapies, body-oriented psychotherapies, somatic psychotherapies, effectiveness

Literature Review

“There is more wisdom in your body than in your deepest philosophy.”

(Friedrich Nietzsche)

Introduction

“Body-oriented psychotherapy interventions” is an umbrella term for all psychotherapies “that explicitly use body techniques to strengthen the developing dialogue between patient and psycho-therapist about what is being experienced and perceived ... In most schools of body psychotherapy, the body is considered a means of communication and exploration” (Heller, 2012, p. 1)

Body-oriented or somatic psychotherapy is a very diverse field (Röhrich, 2009; Young, 2011). The common theme is the connection between body and mind and the underlying premise that our relationship to ourselves, others and the world is not only rooted in our mind and thoughts but also in our bodies.

The focus of this literature review is on body-centered and somatic psychotherapies and is structured according to the modalities outlined below. These are the only empirically researched areas in the field (for a detailed description see Appendix 1).

- Body-oriented psychotherapy interventions (*including Breathwork, Relaxation Therapies, Sensorimotor Psychotherapy, Somatic Experiencing, Affect-focused Body-Psychotherapy, Body Awareness Group Therapy, Body-oriented Group Psychotherapy, Gerda Boyesen’s body psychotherapy*)
- Acupoint Tapping Therapies (Emotional Freedom Therapy, Thought Field Therapy)
- Touch Therapies (Healing Touch, Therapeutic Touch)
- Mindfulness-based Therapy
- Eye Movement Desensitization and Reprocessing (EMDR)

Mindfulness-based Therapy and Eye Movement Desensitization and Reprocessing are already established modalities and given the large body of existing research and the overlap with other modalities they have been excluded from the current review.

Methodology

The review of international research focused on papers published in the last five years (i.e., 2008 onwards), and the review of Australian literature concentrated on studies published during the last 10 years (i.e., 2003 onwards). Limits were applied to language (English only) and publication type (periodicals, peer reviewed). The databases searched included the

Cochrane Library, Google Scholar, Medline, PsycINFO and PubMed. These databases were selected to include a broad search of the literature.

The following search terms were used: body-centered psychotherapy; body-oriented psychotherapy; Radix psychotherapy; breathwork; healing touch; touch therapy; somatic psychotherapy; mind-body or body psychotherapy; combined with effectiveness; efficacy; trial*; evidence-based; intervention; outcome*; study or studies; were employed using Boolean operators 'AND' and 'OR'. Each database was searched separately. Studies were selected using the following inclusion criteria for effectiveness:

- publication date
- English Language
- meta-analysis of randomised controlled trials
- randomised controlled trials
- controlled studies without randomisation
- quasi-experimental studies
- comparative studies
- correlation-based studies or
- case-control studies

Studies were excluded based on:

- unsound methodology
- non peer-reviewed articles
- narrative studies
- purely descriptive studies
- not a primary study

Potentially eligible studies on the effectiveness of body or somatic psychotherapies were included if they met the inclusion criteria.

Effect-size

For effect size calculation, we chose Cohen's *d* as it allowed immediate comparison with increasingly larger numbers of published studies. Cohen's (1992) suggestion that effect sizes of 0.20 are small, 0.50 is medium, and 0.80 is large enabled us to compare effect-size results to known benchmarks. In studies where effect size was not reported, we calculated Cohen's *d* as the pre-treatment mean minus the post-treatment mean, divided by the pooled standard deviation.

Body-oriented psychotherapy interventions

This section presents reviews, meta-analyses and empirical studies that met the inclusion criteria outlined above.

Previous reviews and meta-analyses of body-oriented psychotherapy interventions

Seven reviews of body-oriented psychotherapy interventions were found (see Table 1).

Röhricht (2009) empirically evaluated the effect of body-oriented psychotherapy in the treatment of mental disorders. He found that body-oriented psychotherapy has generally good effects on subjectively experienced depressive and anxiety symptoms, somatisation, psychosomatic disorders and social insecurity, as well as improved psychomotor behaviour and social and emotional interaction in people living with schizophrenia.

Ventegodt and Merrick (2009) reviewed 857 records from a combined Medline/PubMed and PsycINFO search and found that non-drug therapies such as psychotherapy, bodywork (without high-energy manipulations), mind-body medicine, body-psychotherapy, sexology, clinical holistic medicine, and complementary and alternative medicine had no significant negative side effects (NNH (number needed to harm) > 18,000). The authors concluded that the likelihood of significant side effects with body-oriented psychotherapy interventions is insignificantly small, compared to the likelihood of having significant side effects with psychopharmacologic drugs (NNH=2) (Adams, Awad, Rathbone, & Thornley, 2007)

Another review (Allmer, Ventergodt, Kandel, & Merrick, 2009) investigated the adverse effects of Gerda Boyesen's type of body psychotherapy. They reviewed 13,500 patients who were treated during 1985 and 2005. The review found that at least one in two individuals was helped to improve their quality of life, or physical, psychological, sexual, psychiatric and existential issues. No patient committed suicide or attempted to commit suicide during the treatment.

These reviews indicate that body-oriented psychotherapy interventions provide safe and effective help for clients with physical, mental, sexual, quality of life-related psychological and existential problems as well as suicide prevention (Allmer et al., 2009). The interventions appear to offer promising additional psychotherapeutic tools in areas where traditional talking psychotherapies seem to fail, such as somatoform disorders, medically unexplained syndromes, Posttraumatic Stress Disorder (PTSD), anorexia nervosa and chronic schizophrenia (Röhricht, 2009).

Empirical studies using body-oriented psychotherapy interventions

Seventeen international efficacy studies met the inclusion criteria (see Table 2). The designs used in these studies were: randomised controlled trials (n=10), quasi-experimental (n=1), outcome studies (n=4), comparison study (n=1) and an uncontrolled clinical trial (n=1). No Australian body-oriented or somatic psychotherapy intervention study met the eligibility criteria for this review.

Dejian Mind-Body Intervention

Three randomised controlled trials compared the effect of a Chinese Chan-based Dejian Mind-Body Intervention (DMBI) with Cognitive Behavioral Therapy (CBT). In two of the studies a waitlist group was also included.

In a 2011 randomised controlled trial, Chan, Cheung, Tsui, Sze, and Shi compared the efficacy of DMBI with CBT on improving depressive mood in an adult community sample. Both the DMBI and CBT groups demonstrated significant reduction in depressive mood according to the *Beck Depression Inventory*. However, only the DMBI group demonstrated a significant increase in prefrontal activation asymmetry which suggested an increase in positive affect.

Chan, Wong, Kwong, Han, and Cheung, (2012) conducted a RCT study of the use of DMBI for improving sleep disturbances in patients with major depression. The DMBI group demonstrated significantly reduced ratings by psychiatrists for overall sleep problems after treatment ($d=1.00$, $p < 0.01$) and improved total sleep time ($d=0.48$, $p < 0.05$), however this was not reflected in the CBT or waitlist groups, which indicates that DMBI can be beneficial for improving sleep outcomes.

A similar group of Chinese researchers, Chan, Wong, Sze, Kwong, Han, and Cheung, conducted a RCT in 2012 comparing the effect of DMBI with CBT and waitlist, examining improving depressive symptoms in patients with depression. Both groups showed a significant reduction in the overall depressive syndrome after the intervention (CBT, $d=1.03$, $p < 0.01$ and DMBI, $d=0.93$, $p < 0.01$). Furthermore, the DMBI group demonstrated a significant reduction in gastrointestinal health, which was not seen in the other two groups.

Dohsa-hou relaxation

In an explorative study, Fujino (2012) investigated the effects of Dohsa-hou relaxation on body awareness and psychological distress. The results indicate significant differences between the Dohsa-hou relaxation and control groups in walking and standing awareness, bodily distress, awareness of bodily feeling, and psychological distress.

Functional relaxation is an effective treatment for somatisation (Lahmann, Loew, Tritt, & Nickel, 2008), asthma (Lahmann, Nickel, Schuster, Sauer, Ronel, Noll-Hussong, Tritt, Nowak, Röhrich, & Loew, 2009) and Irritable Bowel Syndrome (Lahmann, Röhrich, Sauer, Ronel, Noll-Hussong, Henrich, Nickel, Tritt, K. & Loew, 2010).

Progressive Muscle Relaxation Technique

A quasi-experimental study investigated the effect of Progressive Muscle Relaxation Technique on health-related quality of life in Multiple Sclerosis patients (Ghafari, Ahmadi, Nabavi, Anoshirvan, Memarian, & Rafatbakhsh, 2009). Participants were equally assigned to experimental or control groups (either usual care or waitlist). The experimental group received 63 progressive muscle relaxation sessions over two months, while the control group received no intervention. The results indicate that progressive muscle relaxation significantly

improved physical well-being and mental functioning, which remained stable after the two month follow up.

Mind-body interventions

Gordon and colleagues, (2008) conducted a random controlled trial investigating the effects of mind-body interventions (including meditation, biofeedback, autogenic training, guided imagery, movement, and breathing techniques) on war-exposed Kosovar high school students. The adolescents showed significantly lower symptoms of PTSD compared to the initial values. The lower PTSD symptoms remained for over a year after the group finished, whereas PTSD symptoms increased for the students who did not participate.

Functional relaxation

A German trial (Lahmann, Loew, Tritt & Nickel, 2008) assessed the effect of Functional Relaxation in participants with non-specific chest pain. Participants received 10 sessions of Functional Relaxation and a 60-minute education session in the treatment of non-specific chest pain. After treatment, there were significantly reduced ratings in psychosomatic strain, anxiety scores and cardiovascular complaints.

Lahman and colleagues (2009) randomised asthmatic patients to receive either Functional Relaxation, Guided Imagery, both treatments combined or a placebo relaxation technique as the control intervention (CI). Results showed that Functional Relaxation had a positive effect on lung parameters in patients with bronchial asthma and that these remained stable at a four month follow-up.

Lahmann, Röhricht, Sauer, Noll-Hussong, Ronel, Henrich, and Loew (2010) then examined Functional Relaxation as a complementary therapy for Irritable Bowel Syndrome (IBS) where participants were randomly allocated to either relaxation sessions or to enhanced medical care. Functional Relaxation seemed to decrease bodily complaints associated with IBS ($d=0.85$, $p < 0.01$) which remained stable over a three month follow-up ($d=0.48$, $p < 0.05$).

Sensorimotor psychotherapy

Ten women with a history of childhood abuse participated in a pilot study that explored the effects of Sensorimotor Psychotherapy on interpersonal trauma (Langmuir, Kirsh, & Classen, 2012). Results of the study provided preliminary evidence of the effectiveness of Sensorimotor Psychotherapy in reducing trauma-related symptoms. Twenty weeks of group therapy resulted in a significant improvement in body awareness, which remained at the six month follow-up. However, there was no significant change in somatic aspects of dissociation, dissociative experiences and the receptivity to soothing.

Somatic experiencing/Trauma resiliency model

A US comparison study (Leitch, Vanslyke & Allen, 2009) examined a group of social service workers who were given Somatic Experiencing/Trauma Resiliency treatments to relieve the effects of *secondary trauma* after treating people affected by Hurricane Katrina.

The researchers administered Somatic Experiencing/Trauma Resiliency therapy and psychoeducation against a matched comparison group. Significant differences between the treatment and comparison group were found for PTSD symptoms, psychological distress factor and resiliency, but not for coping or the physical symptoms factor of the *Somatization and Anxiety* of the *Symptom Checklist (SCL-90-R)*.

Body awareness group therapy

A Norwegian investigative study (Leirvåg, Pedersen & Karterud, 2010) compared the treatment effects of psychodynamic group therapy and body awareness group therapy. Female patients diagnosed with severe personality disorders (comprising *avoidant, borderline, dependent, obsessive–compulsive, histrionic, paranoid*) were given psychodynamic group therapy whilst another group received body awareness group therapy. The average length of outpatient therapy was 24 and 25 months respectively. The magnitude of change on the *Global Assessment of Functioning (GAF)* and *Circumplex of Interpersonal Problems (CIP)* was significantly higher in the body awareness therapy sample compared with the psychodynamic therapy sample who displayed only minor changes after outpatient treatment. Results showed that patients receiving BAGT improved significantly on GAF and CIP and remained stable after 25 months of follow up. They also reported high ratings of satisfaction with therapy and group climate at the end of outpatient treatment.

Affect-focused body-psychotherapy

A Swedish randomized controlled trial (Levy Berg, Sandell & Sandahl, 2009) examined the effects of Affect-focused body-psychotherapy on Generalized Anxiety Disorder (GAD). Participants diagnosed with GAD were randomized into Affect-focused body-psychotherapy or psychiatric treatment as usual. Affect-focused body-psychotherapy patients were seen for an average of 37 sessions over one year, while treatment length for the control condition varied. Affect-focused body-psychotherapy was found to significantly reduce anxiety while participants' sense of well-being increased ($d=0.71$, $p < 0.1$). The changes remained stable at the one year follow up. Although patients in the Affect-focused body-psychotherapy condition experienced significantly greater reductions in general psychiatric symptoms, differences in anxiety were not significant between the two groups at follow up.

Color breathwork method

A pilot study using a one-group pre and post test design (Sand-Jecklin, 2008) investigated the effects of a single relaxation session called the Color breathwork method on patients' anxiety levels. Women scheduled for a gynaecology examination received a single session of Color breathwork method. It was found that the intervention significantly reduced anxiety, systolic blood pressure, diastolic blood pressure and heart rate.

Body-oriented group psychotherapy

Three studies investigated the effect of body-oriented group psychotherapy. Röhricht, Papadopoulos, Suzuki, and Priebe (2009) investigated the effect of body-oriented group

psychotherapy on symptoms of schizophrenia. Outpatients with persistent negative symptoms of schizophrenia (blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, difficulty in abstract thinking, lack of spontaneity and flow of conversation, stereotyped thinking) received 20 sessions of 90 minutes duration of body-oriented group psychotherapy, while the comparison group received supportive counseling. The body-oriented psychotherapy sample showed significantly lower negative symptoms post -therapy compared to the supportive counselling sample. The pre-post treatment comparison for the body-oriented psychotherapy sample also revealed significant improvement in ego-pathology scores for the subscales 'body', 'activity', 'consistency', and 'demarcation'.

Similarly, in their uncontrolled trial, Röhricht, Papadopoulos, Holden, Clarke, and Priebe (2011) found that body-oriented group psychotherapy was associated with reduced marked negative symptoms in participants with chronic schizophrenia. Their results showed a significant reduction from pre-post therapy in the negative symptoms of emotional withdrawal, motor retardation, uncooperativeness and blunted affect.

A recent randomised control trial *evaluated the effectiveness of* body-oriented group psychotherapy on chronic depression (Röhricht, Papadopoulos & Priebe, 2013). *Thirty-one participants were included in the trial, and of these 21 received the body-oriented group psychotherapy intervention. The control group received treatment as usual. The results indicate that* body-oriented group psychotherapy significantly improved core symptoms of chronic depression ($d=0.93$, $p < 0.05$) *in comparison with the control group which showed no changes from pre to post assessment.*

Effective interventions summary

All of the reviewed studies employed valid and reliable assessments such as the *Beck Anxiety Inventory* (Levy Berg et al., 2009), *Hamilton Rating Scale for Depression* (Chan et al., 2012; Röhricht, et al., 2013), *Harvard Trauma Questionnaire* (Gordon, Staples, Blyta, Bytyqi, & Wilson, 2008), the *PTSD checklist* (Leitch et al., 2009), *Positive and Negative Syndrome Scale for Schizophrenia* (Röhricht et al., 2009; 2011) and *Symptom Checklist* (Leitch et al., 2009; Levy Berg et al., 2009) as called for in APA standards, to measure symptom levels before and after treatment to determine any decrease with treatment (Church, 2013). Several of the studies outlined above have large effect-sizes, which indicates the effectiveness of body-oriented psychotherapy as treatment for certain psychosomatic and/or physiological disorders. These can be summarised as:

- The Chinese Chan-based Dejian mind-body intervention is an effective treatment for depression (Chan et al., 2012) and sleep disturbances in depressive patients (Chan et al., 2011).
- Mind-body interventions (meditation, biofeedback, autogenic training, guided imagery, movement, and breathing techniques) are an effective treatment for PTSD (Gordon et al., 2008).

- Affect-focused body-psychotherapy is an effective treatment for anxiety (Levy Berg et al., 2009).
- Body awareness group therapy is an effective treatment for personality disorders (Leirvåg et al., 2010).
- Color Breathwork Method is an effective treatment for anxiety (Sand-Jecklin, 2008).
- Body-oriented group psychotherapy is an effective treatment for schizophrenia (Röhricht, et al., 2009; 2011) and depression (Röhricht, et al., 2013).

Although these empirical studies indicate that body-orientated therapy interventions are effective for treating somatization, anxiety symptoms, PTSD and schizophrenia, there is a need for further rigorous research to increase the generalisability of results on body-oriented interventions with larger sample sizes and controlled conditions.

Acupoint stimulation

Acupoint stimulation has been shown to release serotonin (Ruden, 2005) to normalise brainwave patterns (Diepold & Goldstein, 2009) and to reduce blood cortisol levels (Church, Yount & Brooks, 2012; Feinstein & Church, 2010). Feinstein (2012) suggests that brain imaging studies provide a possible explanation of how acupoint tapping reduces stress levels and regulates emotions. A ten year research program at Harvard Medical School Neuroimaging confirmed that stimulating certain meridian points produced decreased activity in the amygdala, hippocampus and other brain areas associated with fear (Hui, Liu, Marina, Napadow, Haselgrove, Kwong & Makris, 2005). This finding was supported by further research that linked acupuncture to extensive deactivation of the limbic-paralimbic-neocortical system (Fang, Jin, Wang, Li, Kong, Nixon & Hui, 2009).

Systematic reviews on acupoint stimulation

Seven systematic reviews on acupoint stimulation/tapping have been identified (see Table 3). Previous reviews have covered the efficacy of acupoint stimulation (Feinstein, 2012), the underlying physiological mechanism of energy therapies (Lane, 2009), its application for PTSD (Feinstein, 2008; 2010) and its validation as an evidence-based clinical practice (Church, 2013).

The reviews concluded that a considerable body of research has validated acupoint stimulation as an efficacious or probably efficacious treatment for several conditions according to APA standards. These conditions include phobias, PTSD, anxiety, food cravings, physical pain, athletic performance and depression (Church, 2013; Feinstein, 2012). The results of neuroimaging studies of acupoint stimulation suggest that tapping sends signals to the amygdala and other brain structures that rapidly reduce hyperarousal (Fang et al., 2009; Hui et al., 2005).

Touch therapies

Physical touch plays an important role in the healing practices and religious ceremonies of various cultures, and many research studies have validated the importance of touch for physical and emotional well-being (Hunter & Struve, 1998; Levitan & Johnson, 1986; Miller, 1997). Touch therapies are often used in collaboration with other approaches to health and healing. Similarly, most somatic and body psychotherapists regularly use touch as part of their interventions.

The most widely used touch therapies are Healing Touch and Therapeutic Touch. Both therapies are forms of biofield energy therapy. The term biofield describes the concept that humans are surrounded by an energy field formed by the body, mind, and emotions. This energy can be manipulated or changed for the purpose of healing (Anderson & Taylor, 2011).

Recent studies suggest that touch therapies may be effective in treating pain (So, Jiang, Quin, 2008), PTSD (Jain, McMahon, Hasen, Kozub, Porter, King, & Guarner, 2012), symptom relief in patients with cancer (Wilkinson, Barnes, & Storey), reduction in symptoms of clinical depression (Stötter, Mitschea, Endler, Oleksy, Kamenschek, Mosgoellerd & Haring, 2013) and providing psychological support (Jones & Glover, 2012).

Systematic reviews of touch therapies

Four systematic reviews of touch therapies have been identified (see Table 4). Bonitz (2008) provides a comprehensive review of how therapists in traditional verbal psychotherapy used physical touch with their clients over the last century. Studies on the frequency of the use of nonsexual touch (for example, hugging, shaking, or holding hands) yielded mixed results. In a psychotherapeutic setting, touch can have considerable healing effects; however there is a risk that clients may misinterpret the touch and the possibility of fostering dependency. The author concludes with practical recommendations for maximizing the potential benefits while maintaining appropriate safeguards to protect the welfare of both clients and therapists. Bonitz notes the importance of having a clear rationale for using touch and that it should be embedded in a larger therapeutic context, where permission is always requested and the clients are made aware that they have the right to refuse. The potential for erotic transference and countertransference reactions also need to be considered and assessed appropriately. Additionally, client characteristics (diagnosis, developmental history, prior experience with touch, or sexual abuse history) need to be considered when deciding whether touch therapy is appropriate.

A Cochrane review (So et al., 2008) found significant effects for touch therapies (Healing Touch, Therapeutic Touch and Reiki) in reducing pain intensity compared to “sham touch” and no-treatment control groups. The review found studies involving experienced practitioners tended to yield greater effects in pain reduction. The greatest effects on pain reduction were found in studies of highly experienced Reiki practitioners. Although the

Cochrane study was inconclusive due to the lack of sufficient data, existing evidence supports the use of touch therapies in pain relief.

Another literature review explored the duality of touch and talk between therapist and client in the psychotherapy setting (Phelan, 2009). Phelan's research identifies several modalities in which the application of touch and contact are integrated within a therapeutic framework. These modalities include Thought field therapy, Gestalt therapy, and various forms of body-oriented psychotherapy. Clients' responses to touch are based on a complex interaction of perceived intention, expectation and prior experience. Touch as a therapeutic intervention appears to be effective and in turn leads to greater self esteem and reinforces trust and bonding between client and therapist. Clients were found to perceive touch as nurturing and communication enhancing. However, when clients perceived the touch as being used for the therapist's own well-being, negative outcomes were reported, such as feeling trapped and guilty. Phelan concludes that guidelines around the appropriate use of touch in therapy need to be included in clinical training programs and continuing education forums (2009).

A systematic review of randomised control trials of Healing Touch was performed by Anderson and Taylor (2011). Five studies were selected from 332 potential studies based on inclusion criteria (random assignment, Healing Touch as a single intervention, and Healing Touch with a comparison group) and exclusion criteria (no statistical information reported, methodology not aimed at outcomes, or Healing Touch was used as part of a complex intervention). The findings suggest no known side effects of Healing Touch and a significant decrease in heart rate, respiratory rate, blood pressure, pain and total mood disturbances, although none of these variables were associated with statistical evidence. Limitations include the fact that many biofield practitioners have no research expertise and therefore studies may lack scientific rigor.

While there is evidence that touch therapies may be effective in decreasing heart rate, respiratory rate, blood pressure, pain, and total mood disturbances, there is a need for more high quality studies in this area.

Empirical studies using touch therapies

Only two empirical touch therapy studies (see Table 5) met the eligibility criteria for this review and fit within the psychotherapeutic framework.

Healing Touch effects on PTSD

A US randomised control trial (Jain et al., 2012) looked at whether complementary medicine interventions (Healing Touch and Healing Touch with Guided Imagery) reduced PTSD symptoms compared to treatment as usual. The participants were post-deployed from a combat zone and suffered from PTSD symptoms. Participants randomised to the Healing Touch with Guided Imagery condition experienced a significant drop in PTSD symptoms ($d=0.85$, $p < 0.01$) and in depression ($d=0.70$, $p < 0.01$) as well as improved quality of life and

reduced cynicism. Limitations include the lack of follow-up and control group as well as the combined therapy interventions, all of which weaken the validity of the study.

Mindfulness-based touch and depression

An Austrian study (Stötter et al., 2013) explored the effects of mindfulness-based touch therapy, in combination with mindfulness practice in patients with moderate recurring or episodic depression. The outcome was highly significant with a general alleviation of depressed mood ($d=2.04$, $p < .01$), reduction in feelings of guilt ($d=1.07$, $p < .01$), suicidal thoughts ($d=1.62$, $p < .01$) sleep maintenance disorders ($d=1.18$, $p < .01$); increase in motivation in carrying out everyday activities ($d=1.31$, $p < .01$), reduction in feelings of anxiety at both psychological ($d=2.68$, $p < .01$) and somatic levels ($d=1.45$, $p < .01$) and easing of general somatic symptoms ($d=1.56$, $p < .01$). Limitations are due the relatively small sample size and the lack of follow-up.

The studies summarised above provide promising results for touch therapies as an effective intervention for PTSD and depression, although higher quality research is needed with different populations. Future studies need to focus on establishing the efficacy of touch therapy as a single intervention.

Conclusion

The aim of this literature review was to determine the effectiveness of body-oriented psychotherapy interventions. The review focused on body-centred, somatic, body-oriented and mind-body therapy efficacy studies and include only those studies that potentially meet American Psychiatric Association (APA) criteria.

While the review set out to include Australian research within the last ten years, apart from three acupoint studies (Stapleton, Sheldon, Porter & Whitty, 2011; Stapleton, Sheldon & Porter, 2012; Stapleton, Church, Sheldon, Porter & Carlopio, 2013) which had already been included in two previous reviews (Church, 2013; Feinstein, 2012), no other Australian studies met the inclusion criteria.

The international effectiveness studies on body-oriented psychotherapy interventions were predominantly European and American. Modalities included breathwork, relaxation therapies, sensorimotor psychotherapy, somatic experiencing, affect-focused body-psychotherapy, body awareness and body-oriented group therapy, body oriented group psychotherapy and touch therapies. Progress has been made by the UK National Institute of Health and Care Excellence in incorporating body-oriented psychotherapy in the guidelines for treatment of schizophrenia (Röhrich, 2009).

Body-oriented psychotherapy interventions have been demonstrated to be effective with different populations and settings (Loew, Tritt, Lahmann & Röhrich, 2006; Röhrich, 2009). However, in comparison with established modalities such as EMDR, Mindfulness-based

therapy and acupoint stimulation, body-oriented psychotherapy interventions require further empirical research to be deemed effective according to the APA standards. A difficulty in standardising treatments and comparing effectiveness is that body-oriented psychotherapy includes a range of different approaches and protocols.

As Röhrich (2009) recommends, from a scientific perspective, further research on the interface between neuroscience and psychotherapy should be conducted, in order to understand the therapeutic processes in body oriented psychotherapy interventions more fully, particularly with regard to emotional processing, movement behaviour and body/self perception.

Additionally, more qualitative research is needed to further investigate the unique interactive therapeutic relationships in body-oriented psychotherapy, the dynamics of touch in psychotherapy and the additional self-helping potential of creative/arts therapy components. Once these requirements are fulfilled, body-oriented psychotherapy interventions could be established as one of the main psychotherapeutic modalities in clinical care, alongside other mainstream schools such as psychodynamic, cognitive-behavioural and systemic psychotherapies.

Randomised controlled trials are regarded as the gold standard of research and are the type of experimental design usually used to evaluate a therapy against APA standards; consequently more trials are needed in body-oriented psychotherapy evidence-based research. However, randomised controlled trials may not necessarily be the best form of research for the more human-oriented and psychosocial sciences, given that the effectiveness of body-oriented psychotherapies is strongly dependent on the interpersonal relations within the therapeutic context (Slade & Priebe, 2001). Slade and Priebe (2001, p. 287) questioned: “Are randomised controlled trials the only gold that glitters?” They proposed that:

Mental health research needs to span both the natural and social sciences. Evidence based on RCTs has an important place, but to adapt concepts from only one body of knowledge is to neglect the contribution that other well-established methodologies can make (Slade & Priebe, 2001, p. 287).

Conflict of Interests

Alexandra Bloch-Atefi and Julie Smith confirm that there are no known conflict of interests associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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Description of the modalities

Body-oriented psychotherapy interventions

Gerda Boyesen's bodypsychotherapy

Gerda Boyesen's body psychotherapy includes a combination of intensive psychodynamic psychotherapy with therapeutic bodywork, healing massage, acupressure and body-energy-work. This psychodynamic body psychotherapy is of the Jungian and Reichian type, with focus on archetypes, energy, charkas, and the human collective unconscious. The bodywork is of the psychodramatic type, where central gestalts of life - birth, all kinds of human interactions and finally death - are confronted, and old repressed emotions released (Allmer et al., 2009, p. 286).

Functional Relaxation (FR)

FR is a commonly-used method in psychosomatic medicine in German-speaking countries. It combines a body and symptom-centered approach, together with a psychodynamic and analytically-oriented background. This treatment modality is therefore not only a relaxation, but also a psychotherapeutic technique (Lahmann et al., 2008).

Chinese Chan-based Dejian Mind-Body Intervention (DMBI)

DMBI was developed upon the medical principle of the Shaolin Temple. The intervention consists of psychosocial education, mind-body exercises, and diet modification (Chan et al., 2011).

Dohsa-hou relaxation

Dohsa-hou is a Japanese body-oriented psychotherapy that works with relaxation techniques, posture and movement (Fujino, 2012).

Somatic Experiencing/Trauma Resiliency (SE)

SE is an integrative (mind-body) approach developed by Peter A. Levine (1997, 2005) that focuses on identifying the psychophysiological patterns that underlie the traumatic responses (Leitch et al., 2009). SE develops sensory resources (e.g., places in the body that do not feel pain but feel strong) that help the client feel safe in developing sensory awareness and the corresponding self-regulation (Leitch et al., 2009, p. 11).

Sensorimotor Psychotherapy

Sensorimotor Psychotherapy is a body-oriented talking therapy that integrates verbal techniques with body-centered interventions such as mindfulness. It incorporates theory and technique from psychodynamic psychotherapy, cognitive-behavioral therapy, neuroscience,

and theories of attachment and dissociation. Clients are taught how to use their somatic awareness to reduce their trauma-related symptoms and improve their affect regulation skills (Langmuir et al., 2012).

Color Breathwork Method (CMB)

CBM is a holistic intervention that combines the relaxation techniques of breathing, muscle group relaxation, and visualization (Barry, 1996).

Affect-focused body-psychotherapy

Affect-focused body-psychotherapy is a combination of bodily intervention developed in Psychomotor Physiotherapy with a focus on affect exploration which aims to increase the tolerance for affects in general and anxiety in particular (Monsen & Monsen, 2000).

Body awareness group therapy (BAGT)

The intention of BAGT is to improve the clients' emotional and bodily awareness, their verbalising capacity and their interpersonal and psychomotor function. The therapy approach consists of individual exercises such as grounding, bodily relaxation and free breathing as well as partner and group activities (Skatteboe, Friis, Hope, & Vaglum, 1989).

Body-oriented group psychotherapy (BPT)

BPT incorporates movement/exercises and sensory awareness techniques to improve affect regulation and address suppressed negative and aggressive impulses (Roehricht et al., 2013)

Acupoint stimulation

Acupoint stimulation refers to a number of related energy therapies that are based on kinesiology and the Chinese Meridian system of medicine. The most widely practised are "Thought Field Therapy" (TFT) (Callahan & Callahan, 1997), the "Tapas Acupressure Technique" (TAT) by Tapas Fleming (Fleming, 1996), and the "Emotional Freedom Technique" (EFT) (Craig, 2010). Although these therapies employ different protocols, they share mindful exposure to traumatic memories combined with simultaneous acupoint stimulation.

Thought Field Therapy (TFT)

In TFT there are prescribed series of acupuncture points (so called algorithms) to tap on for each problem (Callahan & Callahan, 1996). Each algorithm is designed to treat a specific emotion such as panic, anxiety, phobia, addictive urges, anger, and more. The TFT practitioner uses muscle testing to determine meridian disturbances and instructs the person to gently tap on acupuncture points in the prescribed sequence to treat psychological problems.

Emotional Freedom Technique (EFT)

EFT is an exposure therapy combining cognitive and somatic elements. The cognitive element involves self-assessment of the degree of distress, and the pairing of an exposure

statement and a self-acceptance statement. The somatic portion of an EFT treatment consists of the subject rubbing or tapping 12 acupressure points on the body with one or two fingertips (Craig, 2010).

Tapas Acupressure Technique

The TAT procedure combines acupressure with specific mental focuses, altering the energy patterns stored in the body. It uses touch at acupoints and other places on the head and focuses the mind on an issue, but does not incorporate a counteracting affirmation (Fleming, 1996).

Touch therapies

Touch therapies are practiced by either light touch, near touch, or self-directed mindful meditation (Kerr, Wasserman, & Moore, 2007). The mechanism is repeated sensory input, relaxation, attentional modulation, and behavioral relevance that has proven efficacy in many trials (Kerr et al., 2007).

Healing Touch (HT)

HT uses non-invasive techniques that utilise the hands and gentle touch to clear, energize, and balance the human and environmental energy fields, thus affecting physical, emotional, mental, and spiritual health to facilitate healing (Mentgen, 2001). HT can reduce anxiety and stress, promote self-empowerment, and enhance spiritual development (Van Aken & Taylor, 2010).

Therapeutic Touch (TT)

TT was first developed in the 1970s by Dolores Krieger, then a nursing professor at New York University and Dora Kunz, a lay healer. Since its introduction, TT has gained widespread support in over 75 countries (Krieger, 1993). Previous studies have reported that TT can reduce anxiety in the elderly (Lin & Taylor, 1998) as well as in burn patients (Turner, Clark, Gauthier, & Williams 1998). Other studies have found no significant differences in the reduction of anxiety when TT is compared to control conditions such as mimic TT and routine treatment (Hale, 1986).

Mindfulness-based touch therapy

The intervention is comprised of touch exercises for deepened bodily awareness and gentle massage techniques based on experiences from Buddhist mindfulness practice, Mindfulness-based stress reduction (Kabat-Zinn, 2003), the Hakomi method (Kurtz, 1990) and various forms of massage and body work.

Mindfulness-based Therapy and Eye Movement Desensitization and Reprocessing

Mindfulness-based Therapy (MBT)

MBT represents a clinical integration of mindfulness and western psychotherapies. Based on ancient eastern meditation and yoga traditions, MBT programs involve the key element of non-judgemental observation of feelings, thoughts, external stimuli from the environment, physical pain or psychological distress (Kabat-Zinn, 1990). Participants are gradually taught to become more aware of their own body, and to use this awareness to process and regulate emotions and intense bodily sensations.

Eye Movement Desensitization and Reprocessing (EMDR)

EMDR is, a therapeutic approach introduced by Shapiro in 1987, EMDR integrates techniques from cognitive behavioural, psychodynamic, and body-oriented therapies as well as bilateral stimulation via eye movements, auditory tones, or hand taps. A core feature of EMDR therapy is that the patient is asked to hold a disturbing memory in mind while engaging in sets of eye movements or other bilateral stimuli, such as taps or tones (Lee & Cuijpers, 2013).

Table 1: The findings of systematic reviews on the effectiveness of body oriented psychotherapy interventions

Author & Year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
Almer et al. (2009) (Denmark)	Review	Evaluates adverse events of intensive, clinical holistic medicine (CHM) at two BOP centers in UK & Germany.	Chronic, mentally ill patients with physical, psychological, sexual, psychiatric and existential problems.	13,500 patients who were treated at two Gerda Boyesencentres for BPT in the UK & Germany.	Evaluated patients' records, treated from Jan 1985 to Dec 2005, in regards to potential side effects such as: retraumatisation, depression, brief reactive psychosis, or impulse to commit suicide.	No patient had significant side effects from the therapy at these two centres. Thus BOP interventions provide safe and effective help for physical, mental, sexual, quality of life-related psychological, and existential problems as well as suicide prevention.
Röhrich (2009) (UK)	Literature Review	Reviews empirical studies, which evaluated the effect of BOP as intervention strategies in the treatment of mental disorders.	Anxiety disorders, body image, body related psychopathology, neurosis & drug abuse, depression, anorexia nervosa, bulimia nervosa, somatoform/psycho-somatic disorders, schizophrenia, breast cancer, healthy participants.	Number of studies not defined clearly. References made to empirical studies, cohort studies & RCTs.	Database search criteria were "body psychotherapy", "body oriented psychological therapy", "body mind therapy" in MEDLINE (1966-2011), PsycINFO (1806 to date) and EMBASE (1974 to date).	BOP seems to have generally good effects on subjectively experienced depressive and anxiety symptoms, somatisation, psychosomatic disorders, social insecurity and improves psychomotor behaviour, social and emotional interaction in people living with schizophrenia. Patients undergoing BOP appear to benefit in terms of improved general well-being, reduced motor tension and enhanced activity levels.
Ventegodt, & Merrick (2009) (Denmark)	Review	Evaluation of negative side effects of non-drug therapies (psychotherapy, bodywork, mind-body medicine, body-psychotherapy, sexology, clinical holistic, complementary and alternative medicine).	Patients undergoing non-drug therapy treatment.	857 database records as well as 1,600 records from casuistic reports and studies.	Database search (Medline/PubMed and PsycINFO) as well as search for all case reports between 1950-2009 and studies that included data on side effects and negative events.	Non-drug therapies did not have significant side effects (NNH > 18,000) and the only severe side effect (brief reactive psychosis, a temporary illness with full recovery) were rare (NNH >65,000). Non-drug therapies did not significantly cause re-traumatisation, implanted memories, or induction of suicide (NNH>100,000) and have been found to be highly efficacious for various treatments as well as low in cost.

Author & Year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
Young (2008) (UK)	Review	Covers the scope and development of body-psychotherapy, from Reich's early work in Europe to the growth of different methods.	Population not clearly defined however reference made to manual labourers, students, farmers, and people with low earnings.	Number of studies not clearly defined.	Looked at direct and indirect ways of working with the body.	Neo-Reichian psychotherapies developed out of Reich's work and over time have received their own labels such as Bioenergetic-Analysis, Core Energetics, Radix, Gentle Bioenergetics, etc. BPT, is basically the direct successor of this 'Reichian' heritage.
Young (2011) (UK)	Review	Reviews the collaboration and integration between the diverse schools and countries that furthered the development of BPT in Europe, which started in the mid-1990s.	Population not clearly defined.	Number of studies not clearly defined.	Reviews articles that focus on the 'Politics of BPT in Europe', 'Wider Recognition' and 'Professional Associations'.	The EABP Bibliography of Body Psychotherapy has over 4,500 entries, represents diversity of BPT (sexuality & intimacy, trauma, effectiveness of BPT in outpatient settings, recovering from sexual abuse; use of mindfulness and physical touch). Overall, at least 7,500 practitioners in Europe, with a European College of Somatic Psychology. Masters and/or PhD programmes in Somatic Psychology in USA, Naples, plans for a UK one.

Note. Treatments of interest abbreviations: BOP=Body oriented psychotherapy, BPT=Body psychotherapy, CHM=Clinical holistic medicine. **Other abbreviations:** EAP=European association of psychotherapy, NNH=Number needed to harm, RCT=Randomised controlled trial.

Table 2: The findings of empirical studies on the effectiveness of body oriented psychotherapy interventions

Author & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size	Follow up period	Follow up (n=)	Change between post-treatment & follow up
Chan et al., (2011) (Hong Kong)	RCT	Dejian mind-body intervention (DMBI)	4 weekly group sessions (90 mins each)	Total=40 DMBI=20 CBT=20	Adult community sample with symptoms of depressive mood	BDI-II ERPAA	Change after 4 weeks: <u>DMBI</u> BDI-II ↓: (d=0.85, p < .01) ERPAA ↑: (d=0.58, p < .05) <u>CBT</u> BDI-II ↓: (d=1.49, p < .01) ERPAA: n.s.			
Chan et al., (2012) (Hong Kong)	RCT	Dejian mind-body intervention (DMBI)	10 weekly group sessions (each 90 min) either on CBT or DMBI	Total=49 DMBI=17 CBT=17 waitlist=15	Adults from psychiatric clinic with major depressive disorder (DSM-IV) and sleep disturbances	Psychiatrist rating on HRSD sleep items Total sleep time in hours (TST)	Change after 10 weeks: <u>DMBI</u> HRSD (sleep) ↓: (d=1.00, p < .01) TST ↑: (d=0.48, p < .05) <u>CBT</u> HRSD (sleep): n.s. TST: n.s.			
Chan et al. (2012) (Hong Kong)	RCT	Dejian mind-body intervention (DMBI)	10 weekly group sessions (each 90 min) either on CBT or DMBI	Total=50 DMBI=17 CBT=17 waitlist=16	Major depressive disorder and reported sleep disturbances, aged 28-62	HRSD	Change after 10 weeks: <u>DMBI</u> HRSD ↓: (d=0.93, p < .01) BDI-II ↓: (d=1.10, p < .01) GSQ ↓: (d=0.52, p < .05) <u>CBT</u> HRSD ↓: (d=1.03, p < .01) BDI-II ↓: (d=0.95, p < .01) GSQ ↓: (d=0, p < .05)			
Fujino (2012) (Japan don't use abbreviations)	Explorative study	Dohsa-hou relaxation	3 weekly relaxation sessions (25 minutes)	Total=40 Relaxatio n=20 CG=20	University students	BAS (Awareness standing/walking, Bodily distress, Awareness of bodily feeling,	Change after 3 weeks: Awareness (standing /walking) ↑: (d=0.23, p < 0.01) Bodily distress ↓: (d=0.56,			

Author & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size	Follow up period	Follow up (n=)	Change between post-treatment & follow up
						Actual bodily feeling) RRQ K10	p < .01) Awareness (bodily feeling) ↑: (d=0.56, p < 0.01) Actual bodily feeling: n.s. RRQ: n.s. K10 ↓: (d=0.26, p < .05)			
Ghafari et al. (2009) (Iran)	Quasi-experiment	Progressive Muscle Relaxation (PMRT)	63 PMRT group sessions for 2 months	Total=66 PMRT=33 Control=33	Multiple Sclerosis patients	PCS-8 score MCS-8 score	Change after 1 month: PCS-8 ↑: (d=0.63, p < .01) MCS-8 ↑: (d=0.77, p < .01)	2 months	33	Change between 1 and 2 months: PCS-8 ↑: (d=0.74, p < .01) MCS-8 ↑: (d=0.66, p < .01)
Gordon et al. (2008) (USA)	RCT	Mind-body group program (meditation, GI, breathwork, movement)	12-session mind-body group program	139	High school students with PTSD from the Suhareka region of Kosovo	HTQ	After 6-week program HTQ ↓: (d=1.67, p < .01)	3 months	77	3-month follow-up: maintained decreased PTSD symptom scores
Lahmann et al. (2008) (Germany)	RCT	Functional Relaxation (FR)	10 sessions of FR and a 60-min. education session of NSCP	Total=22 FR=11 CGn=11	Adults with non-specific chest pain	SCL-90 (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxious Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism) GSI GBB (Exhaustion, Gastro, Musculoskeletal Complaints, Cardio-vascular Complaints)	After 6-week treatment period Somat ↓: (d=1.21, p < .01) Obs-Comp: n.s. Interp. Sensitivity: n.s. Depression: n.s. Anxiety ↓: (d=1.19, p < .01) Hostility: n.s. Phobic Anxiety: n.s. Paranoid Ideation: n.s. Psychoticism : n.s. GSI ↓: (d=1.19, p < .05) Exhaustion : n.s. Gastro. Comp: n.s. Musc Comp: n.s. Cardio. Comp. ↓:(d=0.59, p < .05)			

Author & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size	Follow up period	Follow up (n=)	Change between post-treatment & follow up
Lahmann et al. (2009) (Germany)	RCT	Functional Relaxation (FR); Guided Imagery (GI); Control Intervention (CI)	4 week period	Total=64 FR=16 GI=16 FR+GI=16 CI=16	Bronchial Asthmatics	FEV1 sRaw	<u>Pre-treatment to Post-treatment:</u> <u>FR treatment:</u> FEV1 ↑: (d=0.77, p <.05) sRaw ↓: (d= 1.17, p <.05) <u>GI Treatment</u> FEV1 ↑: (d=0.49, p <.05) sRaw ↓: (d=0.58, p <.05) <u>FR & GI Treatment:</u> FEV1 ↑: (d=0.60, p <.05) sRaw ↓: (d=1.03, p <.05)	4 months	FR (n=16) GI (n=15) FR & GI (n=15) CI (n=13)	<u>Pre-treatment to follow-up</u> <u>FR treatment:</u> FEV1 ↑: (d=0.99, p <.01) sRaw ↓: (d=1.66, p <.05) <u>GI Treatment</u> FEV1 ↑: n.s. sRaw ↓: n.s. <u>FR & GI Treatment:</u> FEV1 ↑: n.s. sRaw ↓: (d=1.75, p <.05)
Lahmann et al. (2010) (Germany)	RCT	FR vs EMC	The FR condition consisted of twice-weekly 60-minute sessions in a group setting	Total=68 FR=39 EMC=39	Diagnosis of IBS according to the Rome-II criteria	Overall IBS symptoms Abdominal pain & tenderness Diarrhea Bloating IS (<i>Bodily complaints, Psychic C-SOSI impairment, social impairment</i>)	<u>Change after 5 weeks</u> Overall IBS ↓: (d=1.32, p <.01) Abdominal pain ↓: (d=0.42, p <.01) Diarrhea ↓: (d=0.78, p <.01) Bloating ↓: (d=0.74, p <.01) Bodily complaints ↓: (d=0.85, p <.01) Psychic impairment ↓: (d=0.67, p <.01) Social impairment: n.s.	3 months	32	<u>Change between pre-test and 3 months:</u> Overall IBS ↓: (d=0.81, p <.01) Abdominal pain ↓: n.s.; Diarrhea ↓: n.s.; Bloating ↓: (d=0.81, p <.01) Bodily complaints ↓: (d=0.48, p <.05) Psychic impairment: n.s. Social impairment: n.s.
Langmuir et al. (2012) (Canada)	Pilot study	Pat Ogden's sensorimotor psychotherapy (SP)	20 weekly group sessions (each 1h 45min)	SP=10	Women with a history of childhood abuse	SBC (body awareness, body dissociation) SDQ DES IIP SRS	<u>Change after 20 weekly sessions</u> SBC ba ↑: (d=0.41, p <.01) SBC bd: no change SDQ ↓: (d=0.70, p =.06) DES ↓: (d=0.35, p <.05) IIP: no change SRS ↑: (d=0.18, p <.01)	6 months	8	<u>Change after 6 months</u> SBC ba ↑: (d=0.29, p <.01) SBC bd: n.s. SDQ: n.s. DES: n.s. IIP: n.s. SRS: n.s.

Author & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size	Follow up period	Follow up (n=)	Change between post-treatment & follow up
Leitch et al. (2009) (USA)	Comparison study	Somatic Experiencing/Trauma Resiliency Model (SE/TRM) vs propensity score matching for comparison group	All participants received 90-min psycho-education session. TG received 1-2 sessions of SE/TRM that lasted 40-60mins	Total=142 SE/TRM=91 CG=51	Social service workers who were survivors of Hurricanes Katrina and Rita in New Orleans and Baton Rouge, Louisiana, 2-3 months after the disasters	Coping, SCL-90-R Physical, SCL-90-R Psychological, PCL-C, Resiliency	<u>Change between treatment and comparison group</u> Significant differences between the TG and CG were found for PTSD symptoms (PCL-C), psychological distress, and resiliency, but not for coping or the physical symptoms measured by the SCL-90-R			
Leirvåg et al. (2010) (Norway)	Investigative study	Body awareness group therapy (BAGT) vs psycho-dynamic group therapy (PGT)	Outpatient group therapy for 24 months (2h sessions once a week)	Total=50 PGT=21 BAGT=29	Female patients with personality disorders (avoidant, border-line, dependent, obsessive-comp., histrionic, paranoid)	GAF GSI CIP	<u>After discharge of 18 weeks day treatment</u> GAF ↑: (d=2.03, p <.01) GSI ↓: (d=1.02, p <.01) CIP ↓: (d=1.05, p <.01)	25 months	29	<u>Change after 25 months</u> GAF ↑: (d=1.80, p <.01) GSI ↓: (d=0.79, p <.01) CIP ↓: (d=0.76, p <.01)
Levy Berg et al. (2009) (Sweden)	RCT	Affect-focused body-psychotherapy (ABP) vs Treatment as Usual (TAU)	Received an average of 37 (29-47) 1-hr sessions	Total=61 ABP=33 TAU=28	GAD according to the criteria of DSM-IV	SCL-90 (GSI-Anx, Anxiety) BAI WWBI SCID	<u>Change after 1 year:</u> GSI-Anx ↓: (d=0.93, p <.01) Anxiety ↓: (d=1.07, p <.01) BAI ↓: (d=0.89, p <.01) WWBI ↑: (d=0.71, p <.01)			<u>Change between 1 year and 2 years:</u> GSI-Anx ↓: (d=1.17, p <.01) Anxiety ↓: (d=1.23, p <.01) BAI ↓: (d=0.96, p <.01) WWBI ↑: (d=0.8, p <.01)

Author & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size	Follow up period	Follow up (n=)	Change between post-treatment & follow up
Sand-Jecklin (2008) (USA)	Pilot study using a one group pre test & post test design	Color Breathwork Method (CBM)	Single session of 7–10 minutes instruction	CBM=40	Women scheduled for gynaecology examinations	Self-reported anxiety, BP (<i>systolic, diastolic</i>) HR	Change after single instruction: Anxiety ↓: (d=0.95, p <.01) Syst BP ↓: (d=0.45, p <.01) Diast BP ↓: (d=0.37, p <.01) HR ↓: (d=0.56, p <.01)			
Röhrich et al. (2009) (UK)	A pilot RCT	Body oriented group therapy (BPT)	20 group BPT (each 90 min) over a period of 10 weeks compared with a Supportive Counselling (SC) group	Total=45 BPT=24 SC=21	Patients with chronic schizophrenia	PANSS EPI	After 10 weeks/20 sessions of group BPT PANSS-negative ↓: (d=1.07, p <.01) PANSS-positive ↓: n.s. PANSS-general ↓: n.s. EPI body ↓: (d=0.35, p <.01) EPI-activity ↓: (d=0.44, p <.05) EPI-vitality ↓: n.s. EPI-identity ↓: n.s. EPI-consistency ↓: (d=0.57, p <.01) EPI-demarcation ↓: (d=0.69, p <.01)			
Röhrich et al. (2011) (UK)	Uncontrolled clinical trial	Body oriented group therapy (BPT)	20 group therapy sessions (a 90 min) over 10 weeks.	n=18	Patients with chronic schizophrenia	PANSS (negative) BPRS (anergia)	After 10 weeks/20 sessions of group BPT PANSS (negative) ↓: (d=1.12 p <.01) BPRS (anergia) ↓: (d=0.48, p <.05)			
Röhrich et al. (2013) (UK)	RCT	Body oriented group therapy (BPT) vs wait list group	10 weeks of 20 group sessions (each 90 min)	n=31	Patients with chronic depression	HAMD Rosenberg MANSA	After 10 weeks/20 sessions of group BPT HAMD ↓: (d=0.93, p <.05) Rosenberg ↑: n.s MANSA ↑: n.s			

Note. Treatments of interest abbreviations: ABP=Affect-Focused Body-Psychotherapy, BAGT=Body awareness group therapy, BPT=Body Oriented Group Therapy, CBM=Color Breathwork Method, FR=Functional Relaxation, SC=Supportive Counseling, SE/TRM=Experiencing/Trauma Resiliency Model, SP=Sensorimotor Psychotherapy. **Other treatment abbreviations:** CG=Control Group, CI = Control Intervention, EMC=Enhanced medical care, GI=Guided Imagery, NSCP=non-specific chest pain, PGT=Psycho-dynamic group therapy, TG=Treatment group. **Outcome measure abbreviations:** BAI=Beck Anxiety Inventory, BAS=Body Awareness Scale, BP=Blood Pressure, BPRS=*Brief Psychiatric Rating Scale*, CAPS=Clinician-Administered Posttraumatic Stress Disorder Scale, CIP=Circumplex of Interpersonal Problems, DASS-21=Depression Anxiety Stress Scales, DES=Dissociative Experiences Scale, EPI=Ego psychopathological Interview schedule, FEV=Forced Expiratory Volume in the first second, GAF=Global Assessment of Functioning, GBB=Giessen Inventory of Complaints, GSI= Global Severity Index, GSI-Anx= Global Severity Index for Anxiety, GSQ=Gastrointestinal Symptoms Questionnaire, HAMD=Hamilton Rating Scale for Depression, HR=Heart rate, HTQ=Harvard Trauma Questionnaire, IIP=Inventory of Interpersonal Problems, K10=Measure of psychological distress, MANSA=Manchester Short Assessment Quality of Life, PANSS=Positive and Negative Symptom Scale, PCL-C=PTSD checklist for Civilians, RRQ=Rumination Reflection Questionnaire, SBC=Scale of Body Connection, SCID =Structured Clinical Interview for DSM-IV Pds, SCL-90=Symptom Checklist, SCL-90R=Symptom Checklist-Revised, SDQ=Somatic Dissociation Questionnaire, SF-36=Quality of Life the short-form 36, sRaw=Specific Airway Resistance, SRS=Soothing Receptivity Scale, WWBI=WHO Well-Being Index.

Table 3: The findings of systematic reviews on the effectiveness of Acupoint tapping

Author & year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
Church & Feinstein (2013) (USA)	Review	Examined published trials of EP for PTSD and the physiological underpinnings of the method	PTSD	Number of studies not defined but included referenced Outcome studies and RCTs	All studies looked at the clinical implications for PTSD Treatment and the effects of EP inclusive of EFT or TFT on PTSD.	EP that was inclusive of EFT or TFT is beneficial for several reasons: <ul style="list-style-type: none"> • Only few treatment sessions to reduce PTSD • Effects have depth, breadth, and longevity • Low incidence of adverse events • Only minimal training for basic application • Effective in a group format • Reduces psychological & physiological symptoms • Delivered effectively via phone, video or internet
Church (2013) (USA)	Literature review	Aims to define EFT as a clinically validated treatment	Psychological conditions (<i>anxiety, depression, phobias, PTSD</i>) Physiological problems (<i>pain and autoimmune conditions</i>) Professional and sports performance	23 RCTs & 17 within-subjects studies	Studies were reviewed in terms of meeting APA standards of evidence-based practice. The studies employed clinically validated and reliable assessments such as the Beck Anxiety Inventory & Beck Depression Inventory to measure symptom levels before & after treatment.	The reviewed body of research validates EFT as an “evidence-based” practice that is safe, fast, reliable, and cost- effective for several conditions, such as phobias, PTSD, anxiety, and depression.
Feinstein (2008a) (USA)	Review	To investigate the efficacy of acupoint tapping for survivors in disaster zones	Practitioners who were associated with disaster relief organizations and engaged in e-mail dialogue with the leaders of three of those disaster relief organizations	Interviews with 8 EP practitioners and 3 leaders of disaster relief organizations	No meta-analyses on the effectiveness of Acupoint Tapping were performed. Provides number of people treated and details of EP intervention used in disaster zones in the Congo, Guatemala, Indonesia, Kenya, Kosovo, Kuwait, Mexico, Moldavia, Nairobi, Rwanda, South Africa, Tanzania, Thailand, and the USA.	Strong anecdotal reports about the efficacy of EP spanning 20 years from practitioners in emergency and disaster zones. EP treatments in the weeks after a trauma can continue to lower anxiety levels, countering intrusive thoughts and images, reducing arousal to previous memories activated by the trauma.

Author & year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
Feinstein (2008b) (USA)	Literature review	Evaluates the efficacy of energy psychology interventions such as TFT, EFT and TAT	PTSD, anxiety, phobias, weight loss,	<u>Total of 17 studies:</u> 6 Uncontrolled outcome studies, 4 RCTs with limited generalizability, 7 Controlled trials with potentially strong generalizability	No meta-analyses on the effectiveness of Acupoint Tapping were performed. Numerous anecdotal reports, systematic observation, and case studies.	Only 2 peer-reviewed RCTs comparing the most well-established EFT and TAT protocols with other modalities can be found in the literature. These RCTs, however, meet APA Division 12 criteria establishing EFT and TAT as a "probably efficacious treatment" for specific phobias and another as a probably efficacious treatment for maintaining weight loss.
Lane (2009) (USA)	Review	Explores the neurochemistry of the types of acupressure counter-conditioning used in EP and provides explanations for the mechanisms of actions of EFT & TFT	Participants where counter-conditioning ("desensitization") was required.	Number of studies not defined but referenced case studies, anecdotal collections, uncontrolled outcome studies and RCTs.	Studies used SUDs, V/KD, TIR as outcome measures.	Acupressure desensitization therapies first elicit the midbrain's anxiety reflex and then utilize acupressure to reciprocally inhibit anxiety by producing a biochemical relaxation response through the regulation of cortisol, opioid peptides and serotonin.
Feinstein (2010) (USA)	Literature review	Reviews evidence for the efficacy of acupoint tapping (EFT, TFT and TAT) on PTSD	Military veterans, disaster survivors, and other traumatized individuals	2 RCTs 6 outcome studies as well as anecdotal reports & systematic clinical observation	Standardized pre- and post-treatment measures	Tapping on selected acupoints during imaginal exposure quickly and permanently reduces maladaptive fear responses to traumatic memories and related cues.
Feinstein (2012) (USA)	Literature review	Use of acupoint stimulation in treating psychological disorders	PTSD, anxiety, depression, phobias, GAD, weight control, physical pain, physical illness, athletic performance	<u>51 peer reviewed clinical reports</u> 7 case studies, 8 systematic observations, 14 uncontrolled outcome studies, 4 controlled outcome studies, 18 RCTs	Criteria for evidence-based treatments proposed by Division 12 of the APA were applied along with the following selection criteria: <ul style="list-style-type: none"> • Use of acupoint tapping by EP practitioners within a psychotherapeutic or coaching framework • Clinical outcomes • Peer- reviewed 	Studies demonstrated strong effect sizes that far exceed chance after relatively few treatment sessions. Acupoint protocols appear to meet the criteria for designation as a "probably efficacious treatment" for PTSD depression and public speaking anxiety.

Note. Treatments of interest abbreviations: EFT=Emotional Freedom Technique, EP=Energy Psychology, TAT=Tapas Acupressure Technique, TFT=Thought Field. **Outcome measure abbreviations:** SUDs=Subjective units of distress scale, TIR=Traumatic incident reduction, V/KD=Visual/Kinesthetic Dissociation. **Other abbreviations:** APA=American Psychological Association, GAD=Generalised anxiety disorder, PTSD=Posttraumatic stress disorder, RCT=Randomized controlled trial.

Table 4: The findings of systematic reviews on the effectiveness of touch therapies

Author & year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
Anderson et al (2011) (USA)	Review & Meta-analysis	To critically evaluating the data from RCTs examining the clinical efficacy of Healing Touch as a supportive care modality for any medical condition	Participants had a medical condition that required chronic disease management and received HT.	Total of 5 RCTs	Electronic databases search (MEDLINE, CINAHL, and ClinicalTrials.gov from their respective inception date through to January 22, 2010). Search term was healing touch. All studies were peer-reviewed and used some form of HQoL as an outcome.	Very few RCTs were identified in the process of conducting this review. Though the studies support the potential clinical effectiveness of Healing Touch in improving HQoL in chronic disease management, more studies are required given the limitations of the studies included (e.g unstandardised protocols, subjective outcome measures, treatment duration varied in length).
Bonitz (2008) (USA)	Literature Review	Historical review of attitudes toward touch in therapy	Not clearly defined due to historical review but including: Woman in a state of crisis, Hysteria Disease, Mother & child attachment.	Number of studies not defined	Illustration of the extensive use of touch by physicians in the treatment of hysteria in the 18th and 19th centuries, different theoretical views on touch after Freud, summary of research efforts on touch in therapy.	Provides practical recommendations concerning the use of touch in the current therapeutic setting such as having a clear rationale for using touch, use of touch should be embedded in a larger therapeutic context, asking the client for permission to touch, as well as assessing transference and countertransference reactions.
Phelan (2009) (USA)	Literature Review	Looked at the ethical considerations, prohibitions, and attitudes as well as at the considerations of the client's perception of touch in psychotherapy	Not clearly defined due to nature of review.	Number of studies not defined	Discusses several studies, which confirm the positive aspects of contact in psychotherapy, and its therapeutic benefits as part of the intervention process.	A client's response to touch is based on a complex interaction of perceived intention, expectation, and prior experience. Touch, as a therapeutic intervention, appears to be most useful when the participant and therapist consent to its application, and when the client perceives it as nurturing or enhancing communication. Is touch perceived as for the therapist's own well-being, negative client outcomes were reported, such as feeling trapped and guilty.
So et al (2008) (China)	Cochrane Review	Evaluates the effectiveness of touch therapies (including HT, TT, and Reiki) on relieving both acute and chronic pain and	≥ 16 year & adult participants of either gender complaining of pain of any kind, including acute pain, chronic pain, cancer	24 RCTs & CCTs (1153 participants) HT=5 TT=16	Databases search (Cochrane Library, MEDLINE, EMBASE, CINAHL, AMED and others from their inception to June 2008)	Participants exposed to touch had on average of 0.83 units (on a 0 to ten scale) lower pain intensity than unexposed participants (95% Confidence Interval: -1.16 to -0.50). Results of trials conducted by more experienced practitioners appeared to yield greater effects in

Author & year	Study type	Focus	Participant characteristics	Number of studies	Study characteristics	Conclusion
		to determine any adverse effect of touch therapies.	pain, AIDS pain, and spiritual pain etc. caused by any kind of disease or illness.	Reiki=3		pain reduction. It is also apparent that these trials yielding greater effects were from the Reiki studies

Note. Treatments of interest abbreviations: HT=Healing Touch, TT=Therapeutic Touch. **Outcome measure abbreviations:** HQoL=Health-related quality of life. **Other abbreviations:** APA=American Psychiatric Association, CCT=Controlled Clinical Trials DSM-IV=Diagnostic and Statistical Manual, ICD-10=the International Classification of Diseases, RCT=Randomized controlled trial, TAU=Treatment as usual.

Table 5: The findings of empirical studies on the effectiveness of touch therapies

Authors & year	Design	Name of intervention	Intervention duration	n=	Participant characteristics	Outcome measures	Effect Size
Jain et al. (2012) (California, USA)	Two-arm RCT	Healing Touch (HT)	The HT group received 6 treatments (1h long, twice a week) over 3 weeks, Standardized GI was used with HT	Total=123 HT+GI+TAU=68 TAU=55	18 years or older, back from fighting in a combat zone, had a physician referral, having PTSD	PCL BDI-II SF 36	Change after 3 weeks: PCL ↓: (d=0.85, p < .01) BDI-II ↓: (d=0.70, p < .01) SF-36 PCS ↑: (d=0.20, p < .05) SF-36 MCS ↑: (d=0.58, p < .01) CM Cynicism: ↓: (d=0.49, p < .01) CM Hostile Affect ↓: (d=0.58, p < .05) CM Aggressiveness: n.s.
Stötter et al. (2013) (Austria)	Prospective, randomised, single-blinded study	Mindfulness-based touch therapy vs Control Group	All patients received medicinal therapy but the TG received 16 × 60-minutes sessions of mindfulness based touch therapy over a period of 8 weeks.	Total=28 TG=14 CG=14	Adults patients from a psychiatric hospital who fit the criterion of moderate depression	HAMD	Post-treatment after 8 weeks: Depressed mood ↓: (d=2.04, p < .01) Feelings of guilt ↓: (d=1.07, p < .01) Suicidality ↓: (d=1.62, p < .01) Sleep onset ↓: n.s. Sleep maintenance ↓: (d=1.18, p < .01) Terminal sleep ↓: n.s. Work & Interest ↓: (d=1.31, p < .01) Slowed activity ↑: n.s. Restlessness ↓: n.s. Anxiety (psych. symp) ↓: (d=2.68, p < .01) Anxiety (somat. symp.) ↓: (d=1.45, p < .01) Gastrointestinal symp. ↓: n.s. General somatic symp. ↓: (d=1.56, p < .01) Loss of Libido ↓: n.s. Hypochondria ↓: n.s. Lack of awareness of being ill ↓: n.s. Weight loss ↓: n.s.

Note. Treatments of interest abbreviations: HT=Healing Touch, GI=Guided Imagery, TT=Therapeutic Touch. **Outcome measure abbreviations:** BDI-II=Beck Depression Inventory, CM=, HQoL=Health-related quality of life, HAMD=Hamilton Rating Scale for Depression, PCL=Posttraumatic Stress Disorder Checklist, SF-36=Quality of Life the short-form 36. **Other abbreviations:** APA=American Psychiatric Association, CG=Control group, DSM-IV=Diagnostic and Statistical Manual, ICD-10=the International Classification of Diseases, PTSD=Posttraumatic Stress Disorder, RCT=Randomized controlled trial, TAU=Treatment as usual, TG=Treatment group.