

# A Qualitative Scoping Review of Massage and Massage Therapy on the Mental Health and Well-being of Individuals Living with a Serious and Potentially Life-limiting Physical Illness

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**Background:** Serious illness “is a health condition that carries a high risk of mortality and either negatively impacts a person’s daily function or quality of life or excessively strains their caregivers.”

**Purpose:** The aim of this review was to explore the contribution of massage and massage therapy to the mental health and well-being of individuals living with a serious and potentially life-limiting illness.

**Methods:** A scoping review was conducted following Arksey and O’Malley’s six-step scoping review framework and the PRISMA-ScR guidelines. The electronic databases PubMed, CINAHL, MEDLINE (OVID), PsychINFO, CENTRAL, Web of Science, PROQUEST Dissertations and Theses, and Scopus were searched to identify qualitative or mixed-methods studies. The qualitative data were coded from the studies and themes emerged. For the final stage of analysis, a thematic synthesis was utilized.

**Findings:** Sixteen papers were included from eight countries. The overarching theme was “the effable and ineffable impacts of massage” informed by the following themes: massage as a transcendent experience, existential respite, massage helping to preserve dignity, increased inner resources, well-being and relaxation as part of the individualized and personalized vocabulary for massage for the seriously ill, and varied outcomes of the effect of massage on physical symptoms.

**Conclusion:** Good mental health and well-being are important aspects of living

well with serious illness. The review found there is a considerable body of research which points to the value and impact of massage on outcomes of well-being and mental health and, broadly, on patient experience.

**KEYWORDS:** Massage; serious illness; mental health; well-being; massage therapy palliative; coping; relaxation; comfort

## INTRODUCTION

An estimated 129 million people in the United States have at least one major chronic disease<sup>(1)</sup> (e.g., heart disease, cancer, diabetes, obesity, hypertension) as defined by the US Department of Health and Human Services. A situation reverberating around the world, the prevalence of serious chronic illnesses constitutes a profound burden of care.<sup>(2)</sup> Rather than curative treatment, care for such conditions is typically aimed at effective symptom management, maintenance of autonomy, planning for eventual decline, and providing necessary support to maximize multi-dimensional well-being.<sup>(3-5)</sup>

The burden of symptoms and other issues associated with serious and potentially life-limiting illness is known to result in decreased quality of life and poorer outcomes.<sup>(6-8)</sup> Most research about massage in this population tends to focus on patient reporting and rating of symptoms such as pain, anxiety, nausea, and fatigue.

While a variety of tools have been developed in recent years to more accurately measure the impact of health-care interventions on quality of life and well-being, there has been minimal interrogation of patient experiences arising from combined physical and psychosocial interventions like massage.<sup>(9,10)</sup> This signifies a gap in research and outcome measures that address what it means to individuals to receive massage in the context of having a serious illness.<sup>(11)</sup> We hypothesize that the experience and impact of massage is much broader, more nuanced, and more complex than that captured by the typically applied symptom assessment tools.

It is understood that good mental health and well-being are important aspects of living well with serious illness and that patients' and families' ability to achieve and maintain these states is supported by a wide variety of factors.<sup>(12,13)</sup> Despite growing recognition and evidence of massage therapy's potential benefits for individuals with serious physical illness, existing research remains fragmented, with a predominant focus on physiological outcomes or quantitative outcomes and there is limited exploration of massage's impact on mental health and overall well-being. A qualitative scoping review is needed to synthesize the lived experiences, perceptions, and nuanced therapeutic effects of massage in this population, addressing a critical gap in understanding how massage supports holistic well-being beyond clinical measures. By mapping the existing qualitative and mixed-methods research about massage and massage therapy in the setting of serious and potentially life-limiting illness, the goal of this review was to surface data that might demonstrate measurable beneficial impacts of massage on the mental health and well-being of individuals living with serious illness, and thus serve to support its role as a valuable health-care partner.

## METHODS

A scoping review identifies and maps the available evidence about a particular topic and specific populations.<sup>(14)</sup> This scoping review aimed to explore the contribution of massage and massage therapy to the mental health of individuals living with a serious and potentially life-limiting illness.

## Design

The study design was informed by the PRISMA-ScR guidelines<sup>(15)</sup> and the five-stage process for a scoping review design as outlined by Arksey and O'Malley (2005)<sup>(14)</sup> and further developed Levac et al.<sup>(16)</sup> to (i) identify the research question; (ii) identify relevant studies; (iii) study selection; (iv) chart the data; and (v) collate, summarize, and report results. The authors used the Covidence software tool (Veritas Health Innovation Ltd, Melbourne, Australia)<sup>(17)</sup> for screening and data extraction.

## Inclusion and Exclusion Criteria

Massage and massage therapy were defined as listed in Box 1 and have been delineated based on the difference between massage from a trained or from a non-trained massage therapist taking into account the capacity for the skills of the massage provider, both in terms of massage techniques and non-hands-on skills, to impact the experience of the intervention. Herein, the term massage will encompass both massage and massage therapy.

### *Inclusion criteria*

The included papers had to use a qualitative or mixed-methods design with a strong qualitative component and be a thesis or published in a peer-reviewed journal.

The people receiving the massage intervention had to have a serious and potentially life-limiting physical illness as per the definition listed above. Massage treatment could be administered at any timeframe along the spectrum of care.

Massage and massage therapy were defined as listed above and have been delineated separately based on the difference between massage from a trained individual and the capacity for the skills of the massage provider both in terms of massage techniques and non-hands-on skills. Throughout the paper the term massage will encompass both massage and massage therapy.

Massage had to be singularly applied or, if it was applied as part of a group of interventions, the massage findings had to be distinguishable from the other therapies.

Papers and/or theses published in the past 20 years in English from January 2004 onwards were included.

## Box 1. Definitions of Terms Used in This Paper

## Definition of Terms Used in this Paper

*Serious and potentially life-limiting physical illnesses:*

“Serious illness” is a health condition that carries a high risk of mortality AND either negatively impacts a person’s daily function or quality of life, OR excessively strains their caregivers<sup>(18)</sup>

*Mental health:* “Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins individual and collective abilities to make decisions, build relationships, and shape the world they live in.”<sup>(19)</sup>

*Well-being:* “Well-being has been defined as the combination of feeling good and functioning well; the experience of positive emotions such as happiness and contentment as well as the development of one’s potential, having some control over one’s life, having a sense of purpose, and experiencing positive relationships.”<sup>(20)</sup> However, this definition of well-being is not always applicable to people living with serious and potentially life-limiting physical illness. Therefore, based on the work of researchers in this area,<sup>(21–24)</sup> the authors developed a definition of well-being that is unique to people living with serious and potentially life-limiting physical illness: Well-being in this population is characterized by a sense of inner peace, dignity, gratitude, lightness, hope for the future, decreased sense of isolation, existential relief, and the possibility of transcending the impact and effects of illness.

*Massage:* “Massage is a patterned and purposeful soft-tissue manipulation accomplished by use of digits, hands, forearms, elbows, knees, and/or feet, with or without the use of emollients, liniments, heat and cold, handheld tools, or other external apparatus, for the intent of therapeutic change.” (p22)<sup>(25)</sup>

*Massage therapy:* Massage therapy is multidimensional, consisting of the application of numerous massage modalities, combined with non-hands-on components, for the purposes of eliciting physical and mental benefit. Massage therapy, and its outcomes, can be influenced by therapist education, skill level, experience, and cultivation of therapeutic relationships, interpersonal communication, and the therapeutic setting. It may include health promotion and educational messaging for recipient self-care and health maintenance. Adapted from Kennedy et al., 2016<sup>(25)</sup>

**Exclusion criteria**

Papers reporting other bodywork techniques or therapies that are sometimes under the canopy of massage such as manual lymphatic drainage, Reiki, craniosacral therapy, reflexology, aromatherapy, dry needling, and or acupressure were excluded. Papers investigating massage therapy for those with a serious mental illness were excluded. Papers specifically focusing on the physical health of those with a serious physical illness were excluded.

Other sources of gray literature such as reports, white papers, and government documents were excluded.

**Search Strategy**

Electronic databases including PubMed, CINAHL, MEDLINE (OVID), PsychINFO, CENTRAL, Web of Science, PROQUEST Dissertations and Theses, and Scopus were searched to identify studies potentially eligible for inclusion based on predetermined criteria. The search strategy included the Boolean terms “OR”/“AND,” and Medical Subject Headings (MeSH). This

search strategy used varied combinations of search terms and MeSH terms that were unique to each database. Keywords and their synonyms were combined (massage OR myotherapy OR soft-tissue therapy OR muscle therapy) AND (wellbeing OR mental health) AND (qualitative OR mixed methods). The reference lists of all papers that met the inclusion criteria and any reviews were scanned to identify further relevant studies.

**Study Selection**

All authors screened all titles and abstracts for inclusion in the study. Following this preliminary screening, the full-text papers were obtained and assessed independently by two authors (SF, CC or RM) for eligibility. Whoever had not completed the screening was available to resolve any disagreements regarding inclusion (see Figure 1). All studies eligible for the review had data extracted by one of the authors and were checked by a different author. A qualitative assessment was undertaken using the JBI qualitative Checklist.<sup>(26)</sup>

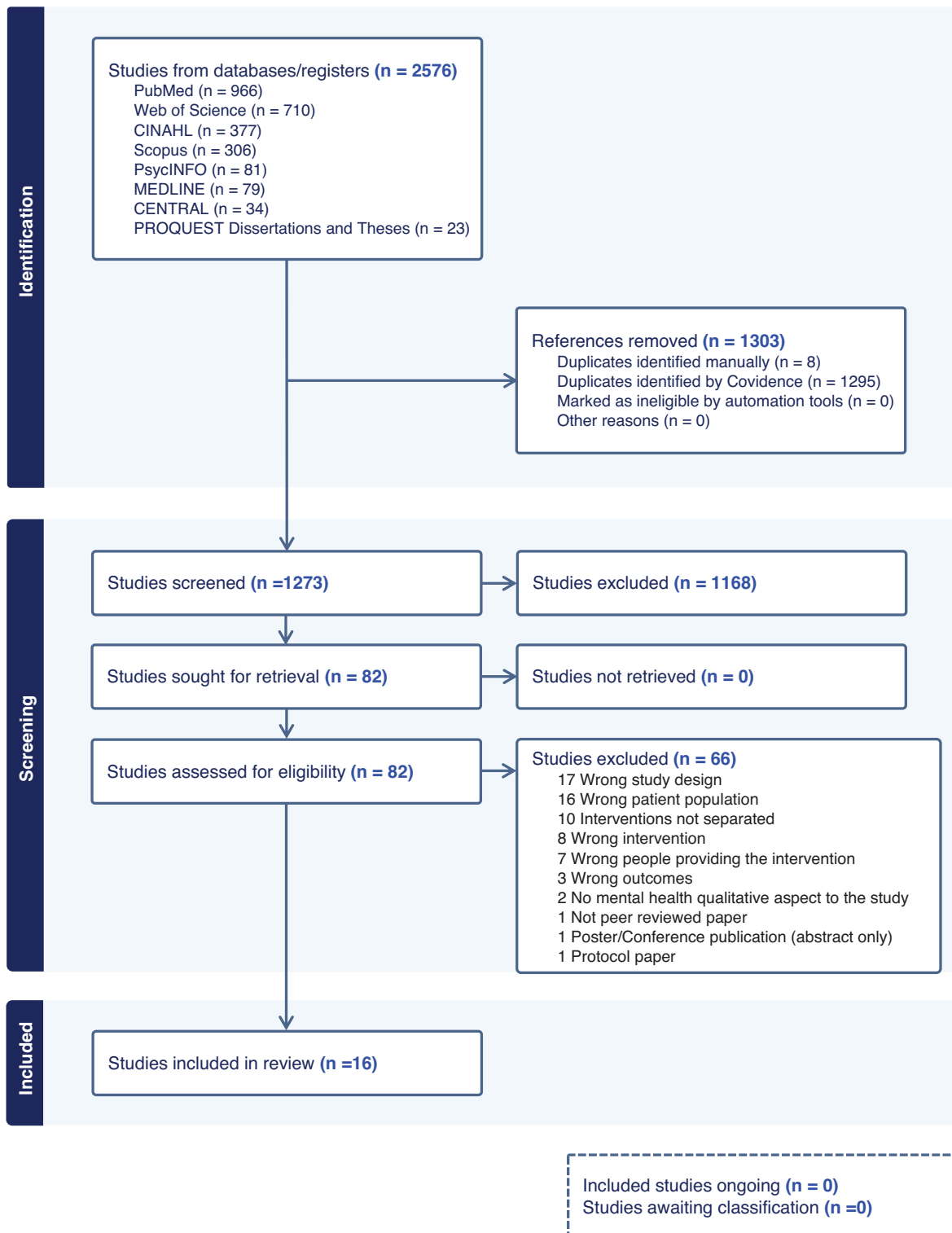


FIGURE 1. PRISMA flow chart for an exploration of the contributions of massage therapy to the mental health of individuals living with a serious and potentially life-limiting physical illness: a scoping review.

### Data synthesis

All authors identified common descriptions, statements, and concepts that were notable in revealing how massage contributed to the mental health of individuals living with a serious and potentially life-limiting illness. The analysis sought common consensuses and divergences in data alongside explicating the entire context of the data.<sup>(27)</sup> An interpretation of findings, led by Braun and Clarke,<sup>(28)</sup> was achieved by making sense of how massage contributed to the mental health of individuals living with a serious and potentially life-limiting physical illness through constant engagement with the data leading to the formulation of major themes and sub-themes.<sup>(28)</sup>

### Reflexivity statement

Given the interpretive nature of this scoping review, it was important that, as a team, the authors were cognizant of their lived experiences and how these may influence the analysis. Author SF is a massage therapist and researcher who has limited experience working with clients with serious physical illnesses. Author CC is a researcher and former massage therapist whose career in both research and practice has focused almost exclusively on people affected by serious illness. Author RM is a massage therapist and graduate researcher who has extensive experience working with clients with serious physical illnesses.

## FINDINGS

An initial search from May 1, 2024 to June 18, 2024 found 2,567 articles (see Figure 1). After screening and excluding papers, a total of 16 papers were included.<sup>(21–24,29–40)</sup> (see Appendix Table S1 and Table 1).

### Study Participants

There was a cumulative total of 606 individuals with a serious physical illness who received massage as part of their health care. Seven studies were undertaken in the United States,<sup>(24,30,34,36,38–40)</sup> three in Sweden,<sup>(21,22,37)</sup> and one in Canada,<sup>(29)</sup> Italy,<sup>(23)</sup> Iran,<sup>(31)</sup> Taiwan,<sup>(32)</sup> Australia,<sup>(33)</sup> and the United Kingdom.<sup>(35)</sup> Participants in the studies ranged from 40 to 82 years<sup>(21–23,29,30,32–35,37–40)</sup> except for three studies that

had age ranges starting younger (32–84 years,<sup>(36)</sup> 37–64 years,<sup>(24)</sup> and 18–60 years<sup>(31)</sup>). Two studies only specified adults when providing information about age<sup>(37,38)</sup> and two did not report on age<sup>(29,34)</sup> although the Egeli cohort was children. There were 84 males collectively and 345 females.<sup>(21–24,29–32,34–36,39,40)</sup> In one study gender was unknown,<sup>(33)</sup> one was “mixed,”<sup>(37)</sup> and one listed gender as “all.”<sup>(38)</sup>

Cancer was the most common serious illness (62.5%).<sup>(21–23,32–34,36,38–40)</sup> Studies also covered Parkinson’s disease,<sup>(35)</sup> children with life-threatening conditions,<sup>(29)</sup> pre-hypertensive individuals,<sup>(31)</sup> and first-time stroke.<sup>(37)</sup> Two studies had participants in palliative care<sup>(24,30)</sup> with the Kelemen study having a cohort with varied illness.

### Massage

The most common massage was Swedish massage, used in five of the studies,<sup>(31,32,38–40)</sup> two studies used “soft-tissue massage,”<sup>(21,22)</sup> one study used “deep whole body (therapeutic) massage,”<sup>(35)</sup> one “holistic massage,”<sup>(23)</sup> one “tactile massage,”<sup>(37)</sup> and four studies did not specify the type of massage provided.<sup>(24,29,30,33)</sup> Two studies described massage techniques rather than types of massage; Mao et al. used light pressure compressions and effleurage,<sup>(34)</sup> and Robison and Smith used effleurage and long gliding strokes.<sup>(36)</sup>

Qualified/licensed massage therapists or massage students under supervision applied the massage in nine studies<sup>(22,24,29,34–36,38–40)</sup> and nurses in four studies.<sup>(21,23,32,37)</sup> Nurses in the Jane 2005 study received 4 months of massage training for the purposes of the study and 16 h of training was reported in the paper by Cronfalk et al. (2020). In three studies, it was not clearly stated who provided the massage but extrapolating from other information in the manuscripts the following assumptions are made: nurses provided the treatments in one study<sup>(31)</sup> and a mixture of therapists provided the treatments in two studies.<sup>(30,33)</sup> The Fletcher study was a mixture of veterans affairs therapists and massage experienced outside the veterans affairs system, although they did have one massage therapist on staff.<sup>(30)</sup> The study by Kweku Sey and Hunter had mixed therapists with 30 certified oncology therapists and 20 therapists with other massage styles such as relaxation, Indian, reflexology, or style not stated.

TABLE 1. The JBI QARI Critical Appraisal Checklist for Interpretive and Critical Research

Checklist Questions	Beck et al. 2009 <sup>(21)</sup>	Cronfalk et al. 2009 <sup>(22)</sup>	Egeli et al. 2019 <sup>(29)</sup>	Enrico et al. 2020 <sup>(23)</sup>	Fletcher et al. 2016 <sup>(30)</sup>	Garaky- et al. 2014 <sup>(81)</sup>	Jane et al. 2009 <sup>(41)</sup>	Kelemen et al. 2020 <sup>(24)</sup>	Kweku Sey and Hunter 2020 <sup>(53)</sup>	Mao et al. 2017 <sup>(34)</sup>	Paterson et al. 2005 <sup>(85)</sup>	Robison and Smith 2016 <sup>(56)</sup>	Cronfalk et al. 2020 <sup>(37)</sup>	Smith and Reed 2023 <sup>(88)</sup>	Snyder 2007 <sup>(59)</sup>	Taylor et al. 2014 <sup>(40)</sup>
1. Is there congruity between the stated philosophical perspective and the research methodology?	✓	✓	✓	✓	✓	✓	Unclear	✓	✓	✓	✓	✓	✓	✓	✓	✓
2. Is there congruity between the research methodology and the research question or objectives?	✓	✓	✓	Unclear	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓
3. Is there congruity between the research methodology and the methods used to collect data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4. Is there congruity between the research methodology and the representation and analysis of data?	✓	✓	✓	✓	Unclear	✓	✓	✓	✓	X	✓	✓	✓	✓	✓	✓
5. Is there congruity between the research methodology and the interpretation of results?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
6. Is there a statement locating the researcher culturally or theoretically?	Unclear	✓	Unclear	✓	X	✓	✓	X	✓	X	X	X	X	X	Unclear	X
7. Is the influence of the researcher on the research, and vice-versa, addressed?	Unclear	Unclear	✓	✓	X	Unclear	X	X	X	X	X	X	X	X	Unclear	X
8. Are participants, and their voices, adequately represented?	✓	✓	✓	✓	Unclear	✓	Unclear	✓	✓	✓	✓	✓	✓	X	✓	Unclear
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	✓	✓	✓	✓	✓	X	✓	Unclear	✓	✓	✓	✓	✓	✓	✓	✓
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The number of treatments varied with some studies having one treatment<sup>(32,34,36)</sup> and others multiple treatments; 3,<sup>(24)</sup> 4,<sup>(23)</sup> 6,<sup>(38)</sup> 8,<sup>(35)</sup> 9,<sup>(22,37)</sup> 10,<sup>(31)</sup> and 21<sup>(39,40)</sup> with four studies not stating the number of treatments received.<sup>(21,29,30,33)</sup> The most common length of treatment was 20 min<sup>(21,23,24,34,36,37)</sup> with other treatment lengths being 10–15 min,<sup>(31)</sup> 25 min,<sup>(22)</sup> 30 min,<sup>(38)</sup> 38–50 min,<sup>(32)</sup> 50 min,<sup>(39,40)</sup> 60 min,<sup>(35)</sup> and not stated in three studies.<sup>(29,30,33)</sup> The most common frequency of treatment was three times per week.<sup>(24,31,37–40)</sup> Other frequencies of treatment were once,<sup>(32,34,36)</sup> two times per week,<sup>(23)</sup> two to three times per week,<sup>(21)</sup> four to five times per week,<sup>(22)</sup> and not stated in three studies.<sup>(29,30,33)</sup>

The areas of the body treated varied between studies. Four studies provided full-body treatments,<sup>(32,35,39,40)</sup> three studies provided individualized treatments,<sup>(21,23,34)</sup> two studies treated the hands or feet,<sup>(22,37)</sup> one study treated the hands/lower arms or feet/lower legs,<sup>(36)</sup> and one study treated the face, neck, shoulders, and upper chest.<sup>(31)</sup> Two studies did not report on the areas of the body treated.<sup>(29,30)</sup> The areas of the body treated did not appear to be related to the serious illness the massage was treating with each area of the body being treated covering various conditions except for the hands and feet/lower limbs which were more likely to be treated when applied during chemo infusion.

### Mental Health/Psychological Benefits

Every paper contained mention of psychological benefits from receiving massage<sup>(21–24,29–40)</sup> (see Table S1). These psychological benefits embraced many aspects of psychological/mental health benefits, with the most common areas of benefits being improved mood (such as from depression, anxiety, death anxiety, anger<sup>(21–24,29–34,36,37)</sup>) and relaxation/stress relief.<sup>(22–24,29,31–36,38–40)</sup>

### Data Synthesis

The scoping review exploring how massage contributes to the mental health of individuals living with a serious and potentially life-limiting illness revealed an overarching theme of “the effable and ineffable impacts of massage” informed by the following themes: massage as a transcendent experience, existential respite, massage helping to preserve dignity, increased inner

resources, well-being and relaxation as part of the individualized and personalized vocabulary for massage for the seriously ill, and varied outcomes of the effect of massage on physical symptoms.

“The effable and ineffable impacts of massage” theme captures the complexity of trying to describe the impact of massage and the varied impacts it can have on individuals with serious and potentially life-limiting physical illnesses. These impacts were not linear or predictably structured, and not all impacts were experienced by all participants or by participants every time they received a massage. For some people, massage inspired meaningful changes in symptoms or functions such as decreased pain or improved energy which was easier to describe (effable). For others, the impact of massage transcended the initial symptom change, such as pain, leading to other more profound changes. Some participants’ experience was more difficult to express in words (ineffable) where massage impacted a person’s soul, sense of value, capacity to hope and dream, sense that their life had meaning, and feelings of dignity.

### Massage as a Transcendent Experience

Transcendence, in health care for individuals with serious physical illness and life-limiting conditions, is the engagement and support of individuals to find “meaning and purpose, and to experience connectedness to the self, others, and the significant, or sacred.”<sup>(42)</sup> Massage was able to provide a transcendent experience for many individuals.<sup>(21–23,29,32,36)</sup> Some participants experienced massage as facilitating a connection to a sense of self that was significant and sacred, and they were able to find comfort and value in the moment and beyond.

*“I had great pleasure from the massage, not only during the moment when she (massage therapist) was here but also afterwards. I felt satisfied and happy afterwards even if the circumstances in which I am in do not usually have the effect on me.”<sup>(22)</sup>*

*“It’s also a way of just reintegrating all my pieces and I’m not sure if grounding is the correct word for that, but it’s like I can get back into the world and it’s okay again.”<sup>(29)</sup>*

For others, massage was perceived as caring for all aspects of themselves (physical, spiritual, emotional) and massage felt like a holistic treatment that connected them back to themselves as a whole and provided a sense of home. This was emphasized by one participant who stated that *“massage is a cure for souls.”*<sup>(23)</sup>

*“I’m so relaxed [in] mind, body, [and] spirit. It’s the whole thing; your body is not just cancer.”*<sup>(36)</sup>

*“I just felt secure because of the tactile touch and having a professional around. It was just like [a] return to Mom’s womb.”*<sup>(32)</sup>

### Existential Respite

Existential distress/suffering is defined as “a distress arising from an inner realization that life has lost its meaning”<sup>(43)</sup> and can include feelings of hopelessness, spiritual distress, and depression.<sup>(44)</sup> While not all individuals with serious physical and life-limiting illness will experience existential distress, existential distress is common in this population.<sup>(44)</sup> Several studies found that individuals experienced existential respite during or after the massage.<sup>(22,24,29,31,34,37,38,40)</sup> Participant experiences were wide-ranging, reflecting the multifactorial and individualized nature of existential distress and were represented by three subthemes: making connections, presence in the moment, and finding refuge.

### Making connections

For some, massage fostered a sense of meaningful connection with massage being described as *“always very warm and comforting”*<sup>(40)</sup> and seeing the therapist *“became the highlight of the day when she came and then the massage on top of that....”*<sup>(22)</sup> The massage treatments were impactful as they provided something to look forward to and a sense of physical connection to somebody providing supportive care.

*“I look forward to the physical connection with somebody and somebody touching you. It just feels so nice to have someone touching you, helping you with certain issues or problems that you have in certain areas. You feel like you’ve been treated special for the hour.”*<sup>(29)</sup>

*“[The massage therapist and I] connected and that connection is what gave me that certain ease where I can just flow right on into that massage.”*<sup>(24)</sup>

### Present in the moment

For some individuals, having a massage provided an experience of awareness of the present moment, a feeling of being grounded and connected to their body and mind.<sup>(22,31,38)</sup> This allowed participants the time for their body to be tended to and participants felt replenished during and after the massage treatment, often describing a feeling of floating away: *“Relaxing and interesting. Very useful, my anxiety is greatly reduced. I felt at ease somehow, calm and wonderfully at peace floating away on clouds....”*<sup>(31)</sup>

*“Many have asked me if I was thinking of anything specific (while receiving the massage) but I don’t know if I did... It is like getting to sleep somehow and being in a wonderful atmosphere of feeling good.... I almost feel happy in a way... not in a religious way... it was just wonderful around me.”*<sup>(22)</sup>

*“It gave me another place and time that was quiet and I was able to connect again”*<sup>(38)</sup>

### Finding refuge

Many studies reported the experience of massage as facilitating the capacity to relegate negative thoughts and feelings to the background (bracketing) and for a moment forget about their serious illness.<sup>(21,22,24,31,38)</sup> For participants this was viewed as a sanctuary and respite from their health concerns and/or thoughts about end of life.

*“It helps me just relax and be at ease and kind of forget about it for a little bit.”*<sup>(24)</sup>

*“It was very relaxing, I could forget about everything. It let me daydream. I did not want it to stop. I had wonderful feeling. It surprised me....”*<sup>(31)</sup>

### Massage Helping to Preserve Dignity

Living with a serious and potentially life-limiting physical illnesses can undermine a person’s sense of dignity and capacity to

preserve dignity. Due to the illness itself and/or the medical care administered, there can be numerous situations or occasions where there is loss of personal privacy, or a loss of physical or emotional independence. Massage provided moments of preservation of dignity where individuals were able to experience caring and respectful touch. Touch that was not perceived as “medical” but experienced as caring and compassionate was valued: *“Tactile therapies such as massage provide a nurturing touch unlike the medical touch.”*<sup>(33)</sup>

*“Physical touch is underestimated—it feels great and has a soothing effect. It meant a lot to me and that someone showed compassion.”*<sup>(22)</sup>

*“The security in knowing that someone dares touch me too... without me having to ask for it.”*<sup>(21)</sup>

For some, preservation of dignity was related to their environment, and massage transformed their environment either by having a respite from the environment they were continually in or changing the feeling about a static environment which they could not leave.

*“The hospital was not as cold as before and it was more homelike. The bed was not a hospital bed, rather it was my home bed.”*<sup>(32)</sup>

*“Having 1 hour where you are not in your room and you are not having medical stuff done and people aren’t talking to you about taking your pills or other medical things.”*<sup>(29)</sup>

The massage therapist/provider of the massage treatment was also part of the experience of preservation of dignity. The way that the massage therapist/provider of the massage treatment interacted with the recipient, their compassionate presence, their communication, body language, verbal interaction, and time spent with the recipient engendered a sense of dignity.

*“As for the rest of the nursing staff it’s mostly about medicines and such. ... and with the masseur it’s a different kind of support... Well, it is knowing it’s there, that she will come ... I think she can look at me in a special kind of way.”*<sup>(21)</sup>

*“I felt uplifted and happy. It was more than just a massage it had to do with one person (the therapist) giving of herself.”*<sup>(22)</sup>

### Increased Inner Resources

Massage was viewed as a resource or tool that participants had in their armory to help manage their illness. For some, this was experienced as a resource that helped them manage and carry the impacts of living (and dying) with a serious physical illness.

*“In a way it (the massage) had a calming effect on my disturbing thoughts.”*<sup>(22)</sup>

*“... and look back and think, like you say, that there is a nice moment still. Because I’m saying you can’t go on carrying it the whole time. And just that short moment means so much.”*<sup>(21)</sup>

In one study where massage was provided during medical care, massage helped them *“stay in my body when being in my body was hard due to sickness from chemo.”*<sup>(33)</sup>

For others, massage brought forth a sense of power despite the objective frailty and limitations of having a serious physical illness.

*“..... I feel like a new woman, I feel extra power in me. I was cheerful the day that I received massage, I felt more composed somehow, it’s difficult to explain but I felt strengthened in some way...”*<sup>(31)</sup>

*“I am in a very difficult situation, the massage helped me to gain strength.”*<sup>(22)</sup>

Massage provided some individuals with an increase in energy which allowed them to do the things that they felt were important to them.

*“Fantastic, I do not feel tired after the massage. I was full of energy and without any tiredness. I could follow my responsibility, and interestingly all my daily fatigue was eliminated with massage...”*<sup>(31)</sup>

*“It was relaxing, it puts you on the point of having a nap...like you’re meditating and when I’m done...you have that energy to concentrate and do stuff and interact with people.”*<sup>(24)</sup>

For many participants, massage was a resource that provided distraction,<sup>(34,36–38)</sup>

particularly when provided while receiving medical care: *"I like that the massage can take my mind off the chemo."*<sup>(34)</sup> The distraction was also useful as it took participants' mind off their situation and the negative thoughts and emotions that accompany serious physical illness.

*"It was really enjoyable and relaxing. It takes your mind off what you are really doing here."*<sup>(36)</sup>

*"It was a way to disengage from worrying thoughts and anxiety and so on. And that's what was important...To feel the warm hand touching me, that was actually peaceful. Very comforting, I could dissolve my thoughts from my brain, just disappear and not think about all the strange thoughts and of being scared, just disappear into the massage."*<sup>(37)</sup>

### **Well-being and Relaxation as Part of the Individualized and Personalized Vocabulary for Massage for the Seriously Ill**

Participants in the studies used the words relaxation and well-being frequently to describe the impact of massage.<sup>(31,33–35,37)</sup> The words relaxation and well-being were applied to a variety of experiences (anxiety, pain, troubled thoughts), highlighting the complexity, and the physical and psychological components of relaxation and well-being.<sup>(45,46)</sup> In the context of serious and potentially life-limiting physical illnesses, participants used semantic augmentation (introduction of new meanings to words) to create their personal meaning of well-being and relaxation that allowed them to describe their experiences of massage. There was no pattern to how participants used well-being and/or relaxation other than they applied it uniquely to their circumstances at the time. It was clear, however, that these overarching terms are allegories for deeper meaningful changes after a massage. For some individuals, well-being was used where the participants felt a sense of lightness as well as a regained sense of self:

*"When offered the opportunity to take part in a trial of oncology massage for prostate patients I agreed. Although not severe at the time I was finding the effects of fatigue very intrusive in my life and felt a little disoriented and not quite in control. I was astonished at the end of*

*each session of oncology massage at the "lightness" I felt, the sense of well-being that had been increasingly eluding me. It is astounding, and its positive effect came at a crucial time in my treatment, and I believe has greatly assisted my shaking of the fatigue I had experienced and to allow me to get back to feeling my old self."*<sup>(33)</sup>

For others, well-being was used in the context of living well with the symptoms of their illness: *"Marvellous. My well-being, you know overall well-being has been really great. I've gained confidence. I've been really good. Doctor just can't believe it."*<sup>(35)</sup>

Relaxation was also used with individual meaning for participants. For some participants, relaxation was linked with a reduction in anxiety: *"Massage was surprisingly relaxing; it helped me relax, especially in such a short time. I definitely feel better, and it relieves some anxiety. It stimulated relaxation..."*<sup>(31)</sup> and for others it was used when they experienced a respite from thinking about their illness: *"Makes me relax. Takes my thoughts off of my health."*<sup>(34)</sup> Others used it when the massage fulfilled their specific needs at the time.

*"As I am overwhelmingly satisfied, I can only say that nothing I have previously experienced have had the same effect. I felt relaxed. I think it must be the same for everyone, I mean the deep sense of relaxation that the massage contributes with"*<sup>(37)</sup>

### **Varied Impacts of Massage on Physical Symptoms**

Physical symptoms were often improved with massage, but the ways recipients described that impact varied. For some participants, massage resulted in an improvement in physical symptoms alone, which was important in the context of serious illness and receiving treatment for their illness.

*"It [massage] doesn't make it [pain] go away permanently but it does make you feel better for a while, which when you are in pain all the time is a big thing."*<sup>(30)</sup>

*"Had massages once a week during chemo. Helped me tolerate the pain."*<sup>(34)</sup>

For some participants, a change in physical symptom elicited physical and psychological benefits that transcended the challenges of the initial physiological state.

*"It [massage] helped me relax and that decreased the pain and helped me to sleep and relieving some of the anxiety."<sup>(22)</sup>*

*"To me, the most precious benefit of massage was to ease the tightness [in my] chest, so I felt more [relaxed] while I breathed."<sup>(32)</sup>*

*"I feel whole again. This morning my knees were a little shaky...now they feel like they're solid."<sup>(39)</sup>*

## DISCUSSION

The objective of this scoping review was to surface the qualitative aspects of the impact on mental health and well-being of massage in the context of serious physical illness. A striking feature of participant reflections, signifying the complexity of describing subjective experiences, was the extent to which participants constructed highly individualized descriptive accounts and vocabularies, richly imbued with personal metaphors and meanings about their massage experiences, in general, and in relation to relaxation and well-being in particular. The review found that mental health and well-being are important experiences of massage care for individuals with a serious physical illness and our theme, the "effable and ineffable impacts of massage," describes the wide-ranging and meaningful impacts of massage.

The effable and ineffable impacts of massage are not unique to those receiving care for a serious illness. Massage is a body-based practice that has the capacity to address a broad range of symptom and quality-of-life issues and, in so doing, traverses the biopsychosocial domains of human illness experiences. In the context of individuals with a serious physical illness, massage is distinguishable from usual clinical care in that massage is not treating the illness as such. Rather, massage care can principally and purposively focus on actions that facilitate a pleasant care experience such as an experience of ease and comfort, an experience free from discomfort or pain. Smith et al. (2009)<sup>(47)</sup> and Smith and Reed (2023)<sup>(38)</sup> identified

the critical factors for massage delivery as care, connection, contact/touch, and comfort. Kolcaba's theory of comfort locates comfort as a primary goal of care, and identified comfort as a fundamental human need for relief, ease, or transcendence that is more than the absence of pain or physical discomforts.<sup>(48)</sup> Similarly, Wensley et al. (2020) describes comfort as transient and dynamic, holistic, and multidimensional, associated with relief from pain, emotional and physical distress, feeling safe, feeling in control, and feeling cared for and valued.<sup>(49)</sup> Theories, concepts, and frameworks can help individuals understand, clarify, communicate, and generally make sense of phenomena. For many massage therapists, cultivating comfort, ease, and relaxation is a "base-camp" goal. For therapists working with the seriously ill, it is integral. Illness is a multi-faceted phenomenon, with each manifestation of the illness influencing another in dynamic and iterative ways. As recounted in the participant commentary and captured in the review themes, massage interposed within this dynamic interacts with this iterative process. The capacity of massage to engender feelings of comfort, relaxation, safety, and/or connection was personal and on a spectrum from something seemingly simple (effable) to something quite transformational or transcendent (ineffable).

The objective of the review was to explore the impacts of massage on the mental health and well-being of the participants. While mental health impacts and well-being were mentioned and described in the included studies, they were often not mentioned explicitly. Instead, phrases such as "I felt strengthened," "I felt uplifted and happy," "a wonderful atmosphere of feeling good," and "so calming" capture a sense of well-being in the moment from which it can be inferred that the mental health of the individuals in those moments benefited, sometimes profoundly, from the experience, and it was common that people reported those feelings lasting beyond the moments of the massage itself. These were experiences beyond a "mere" cessation of pain or worry; rather they described actively positive states of well-being. It can be inferred from the identified themes that the mental health of some participants was enhanced in ways that might be expected (relaxation, well-being) and in ways both unexpected and reaching beyond the immediate effect (meaning

restoration, inner resource building). However, each of the themes represent states or complex constructs that, thus far, are resistant to objective measurement in the context of massage practice. The paucity, overall, of objective measurement of massage effects (the ineffable in particular) minimizes the value (recipient aside) of such effects. Several studies in this review reported both quantitative and qualitative data and it may be that this is the means through which rich and meaningful data may continue to be sourced.

At present, in the global sphere of health care, there is a “push” toward person-centered care (PCC).<sup>(49–51)</sup> The primary components of PCC are the engagement of patients in care, co-design of treatments, attention to patient preference and needs, and the utility of patient-reported outcome measures (PROMS) and patient-reported experience measures (PREMS).<sup>(52)</sup> These are goals of care congruent with massage practice. However, of interest here is the possibility of the development of sensitive and specific-to-massage PROMS and PREMS to robustly capture massage effects in accurate and comprehensive ways for application in research and practice. Capturing massage effects in this way may further cultivate the integration of massage therapy into the clinical care of individuals with serious illnesses, which has gained increasing recognition as a complementary approach to enhancing patient well-being and quality of life. While quantitative research indicates that massage therapy can provide significant benefits for individuals with conditions such as cancer, advanced cardiovascular disease, and neurodegenerative disorders by alleviating pain, reducing anxiety, improving sleep, and enhancing overall emotional resilience,<sup>(41,53,54)</sup> qualitative research has shown that massage therapy can foster a sense of connection and support, addressing psychosocial aspects of illness that are often inadequately managed by standard medical interventions.<sup>(55)</sup> Through development of sensitive and specific-to-massage PROMS and PREMS, it may be possible to gather the data to further support access to massage and massage therapy in populations, such as the seriously ill, to have the opportunity for ease, relief, and transcendence and further establish the evidence-based guidelines to facilitate the incorporation of massage therapy into multidisciplinary models of care.<sup>(56)</sup>

## Strengths and Limitations

This review expands on the increasing understanding of the contributions of massage and massage therapy to the mental health and well-being of individuals living with a serious and potentially life-limiting physical illness. Some relevant studies may not have been included due to the exclusion of studies published in a language other than English. There is a lack of heterogeneity of study participants which may impact the transferability of the findings, and the contributions of massage may not be applicable to all individuals living with a serious and potentially life-limiting physical illness.

## CONCLUSION

Good mental health and well-being are important aspects of living well with serious illness. The review found there is a considerable body of research which points to the value and impact of massage on outcomes of well-being and mental health and, broadly, on patient experience. The data synthesis underlined the complexity of describing subjective experiences, and that the impact of massage was highly individualized, and participants constructed personalized descriptive accounts and vocabularies, richly imbued with personal metaphors and meanings, to describe their massage experiences. Massage therapy can have an important role as a meaningfully integrated health-care intervention in clinical care that enhances well-being and quality of life for individuals with a serious physical illness. To strengthen its presence, rigorous, mixed-methods research needs to be conducted to better understand the impact of massage therapy on patient experience and, thereby, on clinical outcomes beyond pain management. Future massage research should use research methodologies that ensure that these personalized and profound impacts are captured.

## CONFLICT OF INTEREST NOTIFICATION

Authors SF and RM work clinically as massage therapists. CC is part of an organization that advocates and teaches massage for individuals affected by illness.

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APPENDIX

TABLE S1 (Part 1 of 13). Included Studies

Author and Date	Country	Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Beck et al., 2009 <sup>(21)</sup>	Sweden		To explore how soft massage, given as an established and integrated part of palliative home care, was experienced by people with incurable cancer	<p><i>Design:</i> Not stated</p> <p><i>Data collection method:</i> Interviews</p> <p><i>Analysis:</i> Potentially a deductive thematic analysis with predetermined themes or concepts of lived relationships, lived body, and lived time and space</p>	<p><i>Intervention:</i> Soft massage which is light strokes, circular movements, and crossing motions over hands or feet</p> <p><i>Environment:</i> During the massage, the caregiver strived for a conscious and focused presence and to create an undisturbed and pleasant environment</p> <p><i>Duration and frequency:</i> 20-min sessions two to three times a week</p> <p><i>Body areas treated:</i> As per the individual's wishes (not stated where)</p> <p><i>Treatment provider:</i> Assistant nurses from an advanced home nursing team whose care was based on the palliative care philosophy</p> <p><i>Provider qualifications:</i> Not stated</p> <p><i>Protocol:</i> Not stated</p>	<p><i>Serious illness:</i> Incurable cancer disease (1 x breast cancer, 1 x pancreatic cancer, 2 x prostate cancer, 1 x gallbladder cancer, 1 x lung cancer and 2 x malignant myeloma)</p> <p>People with the illness.</p> <p><i>Number of participants:</i> 8</p> <p><i>Gender:</i> Five women and three men</p> <p><i>Age:</i> Between 48 and 82 years of age</p> <p><i>Relationship status:</i> Partnered</p>	<p>Three main themes with subthemes:</p> <ol style="list-style-type: none"> <li>To be dignified (lived relationship)                             <ul style="list-style-type: none"> <li>Memory of dignity</li> <li>Dignity in present</li> <li>Hope of dignity</li> </ul> </li> <li>To become free (lived body)                             <ul style="list-style-type: none"> <li>Memories of freedom</li> <li>Hope of freedom</li> </ul> </li> <li>To float away (lived time and space)                             <ul style="list-style-type: none"> <li>Memories of floating away</li> <li>A longing to float away</li> </ul> </li> </ol> <p>Soft massage was experienced by the participants as a way to find inner peace. During the massage they felt dignified, and there were feelings about becoming free. These experiences of dignity and freedom brought hopes for the future.</p>	<p><i>Psychological:</i> Inner peace, hope for the future, feeling of being cared for, sense of dignity, seen as more than a disease, disappearance of heavy thoughts while being massaged (e.g., the disease is incurable, their death, how last moments would be)</p> <p><i>Physical:</i> Improved relaxation; less body pain; be in harmony with oneself; freedom from physical suffering, relief from physical concerns during the massage (nausea, tension, pain, constipation), nausea disappeared during the massage, place of peace (floating away in time and space)</p> <p><i>Social:</i> Connection with God during the massage</p> <p><i>Psychological:</i> Better emotional management, relaxation, listed specifically as mental relaxation which resulted in respite and feelings of being free and liberated from illness which signified an experience of body and mind as a complete union (whole). Compassion, acceptance, and full attention made them feel special. A break, "a pause" from everyday life.</p>
Cron-falk et al., 2009 <sup>(22)</sup>	Sweden		To explore how patients with cancer in palliative home care experienced soft-tissue massage	<p><i>Design:</i> Qualitative</p> <p><i>Data collection method:</i> Semi-structured interview</p> <p><i>Analysis:</i> Hermeneutic approach with focus on interpretation</p>	<p><i>Intervention:</i> Soft-tissue massage (i.e., gentle but firm touch of the skin). The massage was carried out with slow strokes, light pressure, and circling hand movements.</p> <p><i>Environment:</i> The massage was mostly performed in the patients' homes and in their own beds or in their favorite armchair. If in hospital, then the massage sessions were performed at the wards.</p>	<p><i>Serious illness:</i> Participants with incurable cancer (severe/advanced cancer)</p> <p><i>Study participants:</i> People with the illness</p> <p><i>Number of participants:</i> 25 enrolled and had the massage but 3 died before the interview, so 22 people interviewed</p>	<p><i>Main theme:</i> A time of existential respite</p> <p><i>Subthemes:</i></p> <ol style="list-style-type: none"> <li>An experience of thoughtful attention</li> <li>A sensation of complete tranquility</li> </ol> <p>Soft-tissue massage generated feelings of existential respite with perceptions of being released from illness for a while.</p>	<p><i>Psychological:</i> Better emotional management, relaxation, listed specifically as mental relaxation which resulted in respite and feelings of being free and liberated from illness which signified an experience of body and mind as a complete union (whole). Compassion, acceptance, and full attention made them feel special. A break, "a pause" from everyday life.</p>

TABLE S1 (Part 2 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
				<p><i>Duration and frequency:</i> 25-min sessions nine times over a period of 2 weeks 4 days during the first week followed by 5 days in the second week. Massage was scheduled between 8 am and 8 pm</p> <p><i>Body parts treated:</i> Hand or foot massage</p> <p><i>Treatment provider:</i> Massage therapist</p> <p><i>Provider qualifications:</i> Qualified therapist</p> <p><i>Protocol:</i> Semi-structured. Massage was mostly performed in silence.</p>	<p>Gender: 14 women and 8 men</p> <p>Age: Ranged from 41 to 76 years</p>	<p>Soft-tissue massage allowed time of rest and respite from a weak and poor body and from bothering thoughts as it stimulated peacefulness, relaxation, and energy in daily life.</p> <p>The physical touch and attentiveness by the therapist confirmed and acknowledged their existence.</p> <p>Soft-tissue massage gave rise to existential respite, mainly by counteracting loneliness, meaninglessness, and anxiety. By means of warm hands of a human being confirming the dying patient's individual value, soft-tissue massage counteracted feelings of being lonely physically, socially, as well as existentially. Feelings of meaninglessness in their exposed situation were counteracted at least during and after the massage by respite from symptoms and by the positive sense of luxury and existential well-being. The patients reached a feeling of transcendence, i.e., they were in a space away and beyond their current situation, beyond their actual suffering. During that transcendent mode, anxiety was absent.</p> <p>All patients expressed a conviction that the massage and being physically touched was the most important aspect rather than the human interaction.</p>	<p>The massage reduced the anxiety that triggered the pain, and by doing so, it induced relaxation and sleep. Reduced marked death anxiety, satisfied and happy afterwards, helped to somehow manage the days in a good way.</p> <p><i>Physical:</i> Improved relaxation, improved sleep, less body pain, bodily well-being, physical closeness, and care created a bond of trust, a time free from bodily frailness and vulnerability, and feeling free from illness and impending death.</p> <p>Most patients experienced a pleasant feeling of inner force and power. Even though they were in a frail condition, soft-tissue massage gave a temporary subjective feeling of physical strength.</p> <p>The message was seen as a mode of regaining control of their own physical body as no pain or other symptoms ruled during and immediately after the session.</p> <p><i>Social:</i> Reduced isolation. To receive message in one's own home and being offered positive personal attention was important to the patients. Helped alleviate feelings of loneliness.</p>

TABLE S1 (Part 3 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Egeli et al., 2019 <sup>(29)</sup>	Canada	To explore clinicians' perspectives on the value of providing massage therapy to support children in hospice care, their families, and staff	<i>Design:</i> Qualitative, using phenomenological inquiry <i>Data collection method:</i> Semi-structured interviews <i>Analysis:</i> Thematic analysis	<i>Intervention:</i> Massage (type not specified) <i>Environment:</i> Not stated <i>Duration and frequency:</i> Not stated other than that it was a 20-month intensive massage program that provided an average of 496 supervised treatments each year to individuals in care, families, volunteers, and the hospice care team <i>Areas of the body treated:</i> Not stated <i>Treatment provider:</i> Upper-level massage therapy students as part of a practicum <i>Provider qualifications:</i> Students under supervision <i>Supervision qualifications:</i> A practicing, trained massage therapist <i>Protocol:</i> Not stated	<i>Serious illness:</i> Children at the hospice have life-threatening conditions <i>Study participants:</i> Health clinicians of the hospice care team <i>Number of participants:</i> 6 <i>Gender:</i> Female <i>Age:</i> Not specified	<i>Main themes:</i> 1. Massage therapy as a practical support 2. Massage therapy as a physical support 3. Massage therapy as a psychosocial support  <i>Subthemes:</i> 1. A valued support, financial and practical accessibility, self-care 2. Injury support and prevention, children's symptom management 3. Dignifying, interconnection, intracommunity, providing rest/relaxation, nurturing/comforting  Clinicians valued the massage therapy practicum for its practical support in terms of creating access to massage therapy and self-care in the hospice.	<i>Psychological:</i> Better emotional management; increased sense of self-efficacy; experiencing a sense of inner security and trust; spiritual growth; relaxation; comfort (emotional); prioritization of self-care, increased dignity, inter- and intracommunity. Clinicians expressed joy from having massage as a service at the center. Care provided that is not "medical stuff." That the kids/patients are more than their illness (humanizing).  <i>Physical:</i> Improved relaxation; less body pain; comfort (physical); injury prevention/maintenance/symptom management. Injury prevention for the family members and caregivers.  <i>Social:</i> Reduced isolation, belief that the facility actually cares about self-care
Enrico et al., 2020 <sup>(23)</sup>	Italy	To assess implementation of nurse-delivered massage in four Italian hospitals on oncology and palliative wards	<i>Design:</i> Mixed methods. The qualitative arm was inspired by phenomenology. <i>Data collection method:</i> Nurses' observation notes and patient questionnaire <i>Analysis:</i> Written note analysis	<i>Intervention:</i> "Holistic" massage because it is a safe and feasible technique characterized by moderate pressure, without any specific therapeutic goal, focusing mainly on caring and personal well-being <i>Environment:</i> Treatment should be offered in a "dedicated setting," avoiding the ward routine time, preferably in a gap between patients' activities and relatives' visits	<i>Serious illness:</i> Cancer (also patients from the palliative ward) <i>Study participants:</i> People with the illness <i>Number of participants:</i> 48 <i>Gender:</i> 77% female (37), 33% male (11) <i>Age:</i> 57 years (mean)	<i>Quantitative:</i> Therapy impact questionnaire found a significant reduction of physical and psychological symptoms after the massage sessions ( $p = 0.001$ ).  <i>Serious illness:</i> Cancer (also patients from the palliative ward) <i>Study participants:</i> People with the illness <i>Number of participants:</i> 48 <i>Gender:</i> 77% female (37), 33% male (11) <i>Age:</i> 57 years (mean)	<i>Psychological:</i> Experiencing a sense of inner security and trust; spiritual growth, relaxation, comfort (emotional); other: sense of acceptance, gratitude, lightness, feeling like being cuddled, protected, accepted, and considered, "massage is a cure for our souls," feeling less sad or depressed, feeling less nervous, irritable, or restless

TABLE S1 (Part 4 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Fletcher et al., 2016 <sup>(30)</sup>	USA	To examine the experience, knowledge, and opinions of veterinarians receiving massage therapy at a large veterinarian's affairs facility regarding massage therapy in particular and complementary and integrative health therapies in general	Design: Qualitative Data collection method: Structured interviews Analysis: Content analysis	Intervention: Not stated Environment: Not stated Duration and frequency: Not stated Areas of the body treated: Not stated Treatment provider: Not stated Provider qualifications: Not stated Protocol: Not stated	Serious illness: Illnesses not listed. Majority of inpatients were in the palliative care service. Study participants: People with the illness Number of participants: 15 Gender: 93% male (n = 14), 7% female (n = 1) Age: 62.3 mean years (11.9 SD) Ethnicity/race: 87% Caucasian (n = 13) and 13% African American (n = 2)	Qualitative (no themes generated): Eighteen patients (50%) felt relaxed while eight (22%) reported a sense of well-being. Five patients (13.5%) described a reduction of their symptoms in terms of relief, less anxiety, less pain, normalization of breathing patterns.  Others expressed feelings of gratitude, lightness (physical and spiritual), and calmness. Participants reported feelings linked with security such as being cuddled, feeling protected, and being accepted and considered. One patient defined that "massage is a cure for souls."	Physical: Improved relaxation; better body awareness and perception; improved sleep; less body pain; comfort (physical); easier breathing, less tiredness, less drowsiness, less nausea  Social: Feeling protected, accepted, and considered
				Intervention: Not stated Environment: Not stated Duration and frequency: Not stated Areas of the body treated: Not stated Treatment provider: Not stated Provider qualifications: Not stated Protocol: Not stated	Serious illness: Illnesses not listed. Majority of inpatients were in the palliative care service. Study participants: People with the illness Number of participants: 15 Gender: 93% male (n = 14), 7% female (n = 1) Age: 62.3 mean years (11.9 SD) Ethnicity/race: 87% Caucasian (n = 13) and 13% African American (n = 2)	Quantitative: Inpatients reported a decrease in pain from 1 to 3 points on a 0 to 10 numeric rating scale  Qualitative (no themes generated): Participants reported that massage was well received and resulted in decreased pain, increased mobility, and decreased opioid use	Psychological: Calmed down, helped with managing anxiety, reduce anxiety, and depression  Physical: Improved relaxation, improved sleep, less body pain, feeling better, enjoyment, increased flexibility, and mobility  Social: Feeling protected, accepted, and considered

TABLE S1 (Part 5 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Garaky-araghi et al., 2014 <sup>(31)</sup>	Iran	To assess and analyze women's experiences of receiving massage to respond to the need for treatment strategies to prevent prehypertensive people from developing hypertension and cardiovascular disease	<b>Design:</b> Qualitative using a descriptive phenomenological approach <b>Data collection method:</b> Interview <b>Analysis:</b> Colaizzi method	<b>Massage:</b> Swedish massage using superficial and deep stroking <b>Environment:</b> Not stated <b>Duration and frequency:</b> 10–15-min treatments, three times a week for 3.5 weeks for a total of 10 sessions <b>Areas of the body treated:</b> Face, neck, shoulders, and upper chest <b>Provider:</b> Not stated <b>Provider qualifications:</b> Nothing stated, brief mention of "easy to learn" <b>Protocol:</b> Not stated	<b>Serious illness:</b> Prehypertensive women <b>Study participants:</b> People with the illness <b>Number of participants:</b> 9 <b>Gender:</b> Women <b>Age:</b> 18–60 <b>Ethnicity/race:</b> 13 African Americans (65%), 6 Caucasians, and 1 other	<b>Qualitative (no themes generated):</b> Findings reported under six categories: relaxation, sleeping better, reduction of anxiety and tension, reduction of fatigue, invigorating experience, and improve connecting.  The results indicated that women evaluated the massage therapy positively.	<b>Psychological:</b> Better emotional management, increased sense of self-efficacy, reduced anger, relaxation, reduction of anxiety and tension, invigorating  <b>Physical:</b> Improved relaxation, improved sleep, fewer negative feelings about one's body, reduction of fatigue, feeling of physical and mental strength  <b>Social:</b> Reduced social difficulties
Jane et al., 2009 <sup>(41)</sup>	Taiwan	To 1. Describe the feasibility of implementing full-body massage therapy in hospitalized Taiwanese cancer patients with bone metastases, and 2. Describe the effects of massage, if any, across time, on pain intensity, anxiety, and physiological measures, including heart rate and mean arterial pressure	<b>Design:</b> Mixed methods <b>Data collection method:</b> Qualitative arm used post-intervention interviews <b>Analysis:</b> Thematic analysis	<b>Massage:</b> Swedish (skin-to-skin contact) effleurage, light petrissage, brushing, light compression <b>Environment:</b> No music, curtains drawn, conversation during the session was not permitted <b>Duration and frequency:</b> One massage between 38 and 50 min <b>Areas of the body treated:</b> "Full body" <b>Provider:</b> Registered nurse (there are no licensed massage therapists in Taiwan) <b>Provider qualifications:</b> Registered nurse specializing in oncology nursing and was trained in massage for a 4-month period <b>Protocol:</b> A standardized protocol	<b>Serious illness:</b> Metastatic cancer with bone metastases <b>Study participants:</b> People with the illness <b>Number of participants:</b> 30 <b>Gender:</b> 63% female (n = 19), 37% male (n = 11) <b>Age:</b> 52 (SD 11.6) <b>Ethnicity/race:</b> Taiwanese 70% (n = 21), Haka 16% (n = 5), Mainland Chinese 7% (n = 2), Aborigines 7% (n = 2) <b>Education:</b> None 23% (n = 7), primary school 37% (n = 11), college or university 10% (n = 3)	<b>Quantitative:</b> Statistically reduced pain and anxiety. No statistically significant reduction in pain locations, heart rate or mean arterial pressure.  <b>Qualitative:</b> Themes: Muscle relaxation, less pain, feeling comfort or good, generalized relaxation, reducing anxiety, or stress	<b>Psychological:</b> Better emotional management, experiencing a sense of inner security and trust, relaxation, comfort (emotional), comfortable or good, secure or safe, decreased anxiety or stress, feeling earth (cozy) while at the hospital, relief of emotional tension  <b>Physical:</b> Improved relaxation, improved sleep, less body pain, comfort (physical), distraction from pain, improved circulation, reduction from other symptoms  <b>Social:</b> None

TABLE S1 (Part 6 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Kelemen et al., 2020 <sup>(24)</sup>	USA	To examine the perception and experience of hospitalized palliative care eligible patients receiving massage therapy from specially trained massaged therapist	<p><b>Design:</b> Qualitative study using a grounded theory approach</p> <p><b>Data collection method:</b> Interview</p> <p><b>Analysis:</b> Grounded theory and constant comparative analysis</p>	<p><b>Massage:</b> Not stated</p> <p><b>Environment:</b> In a hospital setting</p> <p><b>Duration and frequency:</b> 405 hospitalized patients receiving palliative care were consented and randomized to receive either three 20-min massages on consecutive days, three 10-min massages on consecutive days, or one 20-min massage. From this parent study, participants approached were purposively sampled to include those who were English-speaking, capable a 30-min interview. There were not equal number of participants from each study arm.</p> <p><b>Areas of the body treated:</b> Individualized but not reported what areas treated</p> <p><b>Provider:</b> Massage therapists</p> <p><b>Provider qualifications:</b> Experienced and licensed massage therapists</p> <p><b>Protocol:</b> Individualized protocol</p>	<p><b>Serious illness:</b> All palliative: cancer 4 (20%), heart failure 9 (45%), sepsis/infection 2, sickle cell anemia 1, pulmonary HTN 1, trauma/other 3</p> <p><b>Average length of hospital stay:</b> 40.24 days (range 8–146 days)</p> <p><b>Study participants:</b> People with the illness</p> <p><b>Number of participants:</b> 20</p> <p><b>Gender:</b> 10 males and 10 females.</p> <p><b>Age:</b> 50.8 years (13.5 SD)</p> <p><b>Ethnicity/race:</b> 13 African Americans, 6 Caucasians, and 1 other</p>	<p><b>Themes:</b></p> <ol style="list-style-type: none"> <li>Respondent reflections on being hospitalized</li> <li>Invasive nature of routine care</li> <li>Treatment outside the norm</li> <li>Isolation and loneliness</li> </ol> <p><b>2. Respondent reflections on impact of massage on hospital experience</b></p> <ul style="list-style-type: none"> <li>provide sense of peacefulness</li> <li>improved sleep/relaxation</li> <li>increase</li> </ul> <p><b>3. Companionship/connection</b></p> <ul style="list-style-type: none"> <li>improved coping</li> <li>physical touch</li> </ul> <p>Participants generally perceived the hospital-based massage experience positively. Participants noted how the massage experience provoked reflection on the overall hospital experience in two ways: first, as a reference point to the inpatient environment of how massage reduces this distress and creates a sense of peace, at least temporarily.</p>	<p><b>Psychological:</b> Better emotional management, relaxation, a treatment that was not uncomfortable/invasive, a sense of peacefulness, improved coping with negative emotions and pain, forgetting about it for a little bit, reduced worry, less emotional distress, feeling lighter due to positive touch</p> <p><b>Physical:</b> Improved relaxation, improved sleep, less body pain, the benefit of being touched, breathing better</p> <p><b>Social:</b> Reduced isolation, reduces boredom, energy to concentrate and do stuff, and interact with people. Less loneliness, connection with the therapist, companionship, a gift they could not normally access.</p>
Kweku Sey and Hunter, 2020 <sup>(33)</sup>	Australia	To quantify massage service provision by Australian cancer services and explore providers' and survivors' views about massage services	<p><b>Design:</b> Mixed methods</p> <p><b>Data collection method:</b> Survey, focus groups, and interviews</p>	<p><b>Massage:</b> Not provided, thoughts about massage and cancer care</p> <p><b>Environment:</b> N/A</p> <p><b>Duration and frequency:</b> N/A</p> <p><b>Areas of the body treated:</b> N/S</p>	<p><b>Serious illness:</b> Cancer</p> <p><b>Study participants:</b> Cancer services and cancer survivors</p> <p><b>Number of participants:</b> Cancer services: 275</p>	<p><b>Meta-themes:</b></p> <ol style="list-style-type: none"> <li>An under-provision of high-quality massage services</li> <li>The perceived benefits of massage extend beyond symptomatic relief</li> <li>The interrelated barriers to massage services provision and access reflect different values</li> </ol>	<p><b>Psychological:</b> Better emotional management, increased sense of self-efficacy, experiencing a sense of inner security and trust, relaxation, comfort (emotional), relief from anxiety, fatigue.</p>

TABLE S1 (Part 7 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
			<p><i>Analysis:</i> Results were merged and meta-themes identified based on the principles of thematic analysis</p>	<p><i>Provider:</i> N/A <i>Provider qualifications:</i> N/A <i>Protocol:</i> N/A</p>	<p><i>Cancer survivors:</i> 121 survey, 31 focus group <i>Gender:</i> Unknown (accidentally omitted from survey) <i>Age:</i> Cancer survivors 59.6 (SD 11.1) survey and 64 (SD 8.1) for focus group <i>Ethnicity/race:</i> Survey 92.2% Anglo-European (n = 106) Focus group deliberately overrepresented culturally and linguistically diverse individuals (Anglo-European, Arabic, Chinese, Vietnamese, and Australian backgrounds)</p>	<p>Relief from specific symptoms such as pain, anxiety, or fatigue were common reasons why respondents would use massage. The overall impression from survey respondents and interviewees was that the outcomes experienced from massage were much broader and more holistic than simply addressing one symptom or problem. Along with improving quality of life and well-being, respondents stated that massage helped them cope with the sequelae of their cancer treatment and helped with recovery. Respondents valued the "human touch" of massage that helped to de-medicalize their cancer care.</p> <p><i>Massage services:</i> Engaging the services of volunteer therapists (50%, n = 25) was most common, followed by philanthropic funding (30%, n = 15), patients paying for the service with or without private health insurance rebates (30%, n = 15) and lastly, direct funding by the cancer service (26%, n = 13). The greatest barrier to providing or accessing massage was financial. Other barriers common to both cancer services and survivors were difficulties finding suitably qualified massage therapists. The other important barrier that emerged from the meta-thematic analysis was the</p>	<p>Massage addressed quality of life and well-being. De-medicalizing their cancer care.</p> <p><i>Physical:</i> Improved relaxation, better body awareness and perception, fewer negative feelings about one's body, less body pain, comfort (physical) Side effects of chemo (sore legs and tingly feet)</p> <p><i>Social:</i> Friendly face Care provided Another person's presence</p>

TABLE S1 (Part 8 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Mao et al., 2017 <sup>(34)</sup>	USA	The development, implementation, and evaluation of an integrative clinical oncology massage program for patients undergoing chemotherapy for breast cancer in a large academic medical center	<p><b>Design:</b> Mixed methods</p> <p><b>Data collection method:</b> Written feedback and distress thermometer</p> <p><b>Analysis:</b> Word clouds for qualitative data and content analysis for the qualitative data</p>	<p><b>Massage:</b> Type not stated. The pressure of the therapeutic treatments involved light or very light compressions and techniques of effleurage and compression.</p> <p><b>Environment:</b> Messages were delivered in the chemo infusion suites. Questions were asked about comfort level (body temperature) and position. They were offered blankets, pillows, and/or tea if needed and comfort. Lights were turned off and quiet music offered. The door was closed if possible.</p> <p><b>Duration and frequency:</b> One session lasting approximately 20 min (range 15–30 min)</p> <p><b>Areas of the body treated:</b> Choice of lower extremity or head and neck massage</p> <p><b>Provider:</b> Massage therapists</p> <p><b>Provider qualifications:</b> Licensed massage therapists who completed a 24-h course in advanced training for oncology massage (Society for Oncology Massage)</p> <p><b>Protocol:</b> Semi-rigid</p>	<p><b>Serious illness:</b> Breast cancer</p> <p><b>Study participants:</b> People with the illness</p> <p><b>Number of participants:</b> 184</p> <p><b>Gender:</b> Women</p> <p><b>Age:</b> Not stated</p>	<p>tendency to downplay the value of massage. This was an underlying reason for cancer services not providing or funding massage, practitioners not recommending massage, and cancer survivors deciding not to use massage.</p> <p><b>Quantitative:</b> Significant reduction in anxiety, nausea, pain, and fatigue</p> <p><b>Key words:</b> Relaxation was used most frequently to describe the massage experience</p> <p><b>Qualitative:</b> Major recurrent themes:</p> <ol style="list-style-type: none"> <li>1. Relaxation</li> <li>2. Symptom relief</li> <li>3. Distraction</li> <li>4. Positive relationship with therapist</li> </ol>	<p><b>Psychological:</b> Relaxation, takes thoughts off their health, takes stressful feelings away, cleared mind from anxiety, feeling of well-being, lower fear, distraction—takes mind off the chemo-therapy</p> <p><b>Physical:</b> Improved relaxation, less body pain, relief of stiffness, warm touch, soothing, and less tension in legs</p> <p><b>Social:</b> Friendly face, care provided, another person's presence</p>

TABLE S1 (Part 9 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Paterson et al., 2005 <sup>(35)</sup>	United Kingdom	To carry out a pilot study, with particular attention to adequacy of outcome measures and explore the experience of massage therapy for people with Parkinson's disease from several perspectives	Design: Mixed methods Data collection method: Semi-structured interviews Analysis: Content analysis	Massage: Deep whole body (therapeutic) massage Environment: Not stated Other intervention: Exercises were prescribed and it varied as to how many and how often participants completed the exercises at home Duration and frequency: 1 h weekly sessions for 8 weeks Areas of the body treated: Back, legs, chest, arms, shoulders, neck, and feet Provider: Massage therapist Provider qualifications: Qualified and experienced therapist Protocol: Semi-rigid protocol	Serious illness: Parkinson's disease. All participants had been affected by Parkinson's disease for between 2 and 19 years and had baseline PDQ scores ranging from 11 to 31 Study participants: People with the illness Number of participants: 5 Gender: Four men and one woman Age: 60–78 years	Quantitative: No analysis due to small study numbers. Three people saw a reduction in scores from baseline scores. Qualitative (no themes generated): Participants enjoyed the massage, individuals showed improvement in self-confidence, well-being, walking, and activities of daily living. There was good agreement between data from the outcome questionnaires, interviews, and clinical notes. A few people commented that talking [during the massage] had built their hopes up, added to them feeling more relaxed and more confident, or led to them learning new things, improved well-being, and increase in confidence.	Psychological: Relaxation and talking with the massage therapists had built their hopes up, added to them feeling more relaxed and more confident, or led to them learning new things, improved well-being, and increase in confidence. Physical: For three people they had improved relaxation, enjoyable, improved function (walking, balance, ability to dress themselves), walk more easily, feeling that massage had helped maintain mobility. Two felt that massage had done them no good. Social: Reduced isolation
Robison and Smith, 2016 <sup>(36)</sup>	USA	To describe patients' perceptions of pain, fatigue, nausea, and anxiety and their overall satisfaction with therapeutic massage provided concurrently with chemotherapy and/or biotherapy	Design: Descriptive, correlational, mixed-methods pilot study Data collection method: Open-ended questions Analysis: Content analysis	Massage: Messages included effleurage, a slow, full-hand, long-flowing or gliding stroke Environment: Conducted in outpatient medical oncology infusion clinic setting in a private room or in a multiple-chair room with the curtain drawn. The amount and topic of conversation during the massage varied and was determined by each patient. Duration and frequency: A 20-min session once Areas of the body treated: Feet and lower legs, hands and lower arms, or both Provider: Licensed massage therapist	Serious illness: Cancer diagnoses: breast, colon, brain, lung, chronic lymphocytic leukemia Study participants: People with the illness Number of participants: 58 Gender: Male 12, Female 46 Age: 32–84 years	Quantitative: Significant reduction in pain, fatigue, nausea, and anxiety. Patients reported high level of satisfaction with massage. Qualitative: Themes: Positive impact of massage, distraction, holistic impact of massage, side effect improvement, and impact on satisfaction with cancer center	Psychological: Relaxation, comfort (emotional), distraction, good sense of well-being, reduced anxiety, feel like a whole person (body mind spirit) Physical: Improved relaxation, improved neuropathic pain Social: Reduced isolation

TABLE S1 (Part 10 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Cron-falk et al., <sup>(37)</sup> 2020	Sweden	To evaluate emotional experiences of gentle skin massage, combined with regular rehabilitation in patients shortly after being diagnosed with stroke	Design: Qualitative Data collection method: Semi-structured interviews Analysis: Manifest content analysis	<p><i>Provider qualifications:</i> Qualified massage therapist who was nationally certified in oncology massage <i>Protocol:</i> Detailed semi-rigid protocol</p> <p><i>Massage:</i> Tactile massage: slow strokes and light pressure using structured movements <i>Environment:</i> Specialized rehabilitation ward/inter-vention received in own hospital bed <i>Duration and frequency:</i> 20-min sessions three times per week for 3 weeks (nine sessions total) <i>Areas of the body treated:</i> Hands or feet <i>Provider:</i> Nurses with massage training for purposes of study <i>Provider qualifications:</i> Training sessions with the massage expert in hand and foot massage prior to the patient inclusion to confirm intra- and inter-person reproducibility of the massage routine given by the team members. Training was 16 h in total (4 x 4 h session) including a theoretical part describing touch and its neurophysiological effect followed by practical training sessions giving/receiving hand and foot massage. <i>Protocol:</i> Semi-rigid protocol</p>	<p><i>Serious illness:</i> First-time stroke patients admitted to stroke care rehabilitation unit <i>Study participants:</i> People with the illness <i>Number of participants:</i> 8 <i>Gender:</i> Mixed <i>Age:</i> Greater than 18 years</p>	<p><i>Qualitative:</i> 1. Human touch in general was described as important and included different dimensions by the participants in the massage group. 2. The predominating experiences were feelings of comfort, calmness, and a sense of respite. The experience of massage was also described as intense and generating peacefulness. 3. The dimension of human touch in relation to feeling lonely. Touch was described as a resource that varied in intensity depending on one's life situation, with or without family members and close friends. 4. The contact between the massage therapist and the participant was also described as a positive experience allowing feelings and moments of stillness.</p>	<p><i>Psychological:</i> Relaxation, comfort (emotional), sense of peacefulness, "disappear and not think about all the strange thoughts and of being scared"  <i>Physical:</i> Improved sleep, comfort (physical), respite from intense effort of rehabilitation activities  <i>Social:</i> Contact/reduction of loneliness</p>

TABLE S1 (Part 11 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Smith and Reed, 2023 <sup>(38)</sup>	USA	To explore and understand patients' experiences of receiving massage therapy (and simple touch) as part of an investigation examining the outcomes of these forms of touch for patients with advanced cancer enrolled in a hospice	<p><b>Design:</b> Qualitative descriptive</p> <p><b>Data collection method:</b> Structured interviews</p> <p><b>Analysis:</b> Conventional qualitative content analysis (theoretical framework drawn from Roger's Science of Unitary Beings)</p>	<p><b>Massage:</b> Swedish massage with some trigger point therapy or a simple touch control group (light touch with both hands)</p> <p><b>Environment:</b> Not stated</p> <p><b>Duration and frequency:</b> Treatment applied to for 3 min at each location (30 min in total) for six sessions over a 2-week period, with at least 24 h between sessions</p> <p><b>Areas of the body treated:</b> 10 specified locations on the body but locations not provided</p> <p><b>Providers:</b> Massage group—massage therapists, simple touch group—volunteers</p> <p><b>Provider qualifications:</b> Massage group were professional massage therapists, simple touch group were volunteers with no body work background, trained for this study</p> <p><b>Protocol:</b> Not stated</p>	<p><b>Serious illness:</b> Advanced cancer</p> <p><b>Study participants:</b> People with the illness</p> <p><b>Number of participants:</b> 17</p> <p><b>Gender:</b> All</p> <p><b>Age:</b> Adults</p>	<p><b>Qualitative:</b> Themes: Sensing, reflecting, connecting, after experience, making it better, most helpful, and recommendations.</p> <p><b>Overarching theme (post theme development):</b> Sanctuary, derived from the themes of sensing, reflecting, and connecting.</p> <p>Both forms of touch were perceived by participants as improving pain, symptom distress, and quality of life.</p>	<p><b>Psychological:</b> Experiencing a sense of inner security and trust, relaxation, comfort (emotional), sanctuary, letting go, peaceful, experience of wholeness, distraction</p> <p><b>Physical:</b> Improved relaxation, better body awareness and perception, better listening to one's body and its needs, comfort (physical), peaceful, letting go, relief from fatigue, out of body sensations, warmth</p> <p><b>Social:</b> Reduced isolation, presence, sense of belonging, not alone, connecting</p>
Snyder, 2007 <sup>(39)</sup>	USA	<p><b>Qualitative aim:</b> To describe barriers and facilitators to autologous stem cell transplantation patient acceptance of supportive care massage therapy in both the hospital and home settings</p>	<p><b>Design:</b> A mixed-methods pilot unmasked, prospective, randomized experimental study (thesis)</p> <p><b>Data collection method:</b> Open-ended questions and therapists' comments</p>	<p><b>Massage:</b> Swedish techniques of effleurage and petrissage, applied with very gentle pressure, and hand-over-hand continuous stroking with a slow tempo</p> <p><b>Environment:</b> A quiet environment without distractions in hospital or in participant's home</p>	<p><b>Serious illness:</b> Lymphoma, leukemia, myeloma</p> <p>patients receiving autologous stem cell transplantation.</p> <p><b>Study participant:</b> People with the illness and therapist observations</p>	<p><b>Quantitative:</b> The massage group reported lower anxiety scores across the autologous stem cell transplantation phases and lower affective and sensory pain scores during post-transplant hospitalization than participants in the standard medical care group. Both groups reported a decrease in quality of life at the chemotherapy phase related to nausea, vomiting, and diarrhea, as well as a decrease in role functioning during the stem cell collection phase and the transplant phase.</p>	<p><b>Psychological:</b> Relaxation, comfort (emotional), and stress reduction</p> <p><b>Physical:</b> Improved relaxation, less body pain, improvement in peripheral neuropathy, nausea reduction, fluid reduction.</p>

TABLE 1 (Part 12 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
Taylor et al., 2014 <sup>(40)</sup>	USA	To test the feasibility and effectiveness of a novel massage intervention on disease and treatment-related symptoms, including anxiety and emotional distress, for people with acute myelogenous leukemia	Design: Mixed-methods prospective study Data collection method: Open-ended questions Analysis: Not stated	Duration and frequency: Three 50-min sessions per week (21 sessions in total) Areas of the body treated: Head, neck, shoulders (avoiding central line site), back, abdomen (except on the first session because abdominal massage may be initially aversive to many persons), feet, legs, hands, and arms. Patients identified the areas for greater proportion of time, but an effort made to provide each patient with a full-body massage each session. Providers: Massage therapists Provider qualifications: Trained certified professional massage therapists (all female) A 3-h training session specific to the massage protocol, hospital environment, and cancer treatment was undertaken. Protocol: Rigid protocol	Number of participants: 8 Gender: One male and three females in message group, one male and three females in standard medical care group Age: 51-69 years (mean 60) Ethnicity/race: Two African Americans, six Caucasians. Relationships: Married 7, not married 1	Qualitative (no themes generated): The most important descriptive findings for participants in the message group were reduced stress, and increased relaxation and comfort immediately following message.  Social: More relaxed and patient with family members	All participants in the message intervention group reported massage had benefited them by increasing relaxation. Four of the five participants (80%) reported stress reduction and increased comfort as benefits following the final message. One reported that massage made them "feel looser." Two participants stated that they looked forward to their message sessions.
				Massage: Swedish massage; Primarily effleurage and petrissage Environment: Hospital setting and continued with same therapist whenever possible in patients' home after discharge. No music. Therapists avoided initiating any conversation other than to ascertain comfort level and feedback on message technique but responded to direct questions asked of them.	Serious illness: Acute myelogenous leukemia Study participant: People with the illness Number of participants: 16 Age: 52 years Gender: Message group: Five males and four females Usual care: Four males and three females	Quantitative: Stress significantly reduced over time in the message group. A trend toward statistical improvement in quality of life in the message group. No statistically significant change in sensory or affective pain, fatigue, or nausea and vomiting.  Qualitative (no themes generated): All described stress reduction, increased comfort, and increased relaxation.	Psychological: Relaxation; comfort (emotional)  Physical: Improved relaxation; less body pain; comfort (physical)  Social: Feeling protected, accepted, and considered

TABLE S1 (Part 13 of 13). Included Studies

Author and Date	Country Study Conducted In	Study Aim	Study Design	Intervention	Population and Characteristics	Results	Benefits
		Quantitative analysis primary part of study. Qualitative: no detail about analysis.		<p><i>Duration and frequency:</i> 50-min sessions three times per week for 7 weeks (21 sessions in total)</p> <p><i>Areas of the body treated:</i> Head, neck, shoulders (avoiding the central line site), back, abdomen (except on the first session because abdominal massage is initially aversive to many persons), feet, legs, hands, and arms</p> <p><i>Provider:</i> Massage therapists</p> <p><i>Provider qualifications:</i> Trained, certified professional massage therapists. A 3-h training session specific to the massage protocol, hospital environment, and cancer treatment was undertaken.</p> <p><i>Protocol:</i> Flexible protocol mimicking massage in the non-research setting but rigid around infection control.</p>	<p><i>Ethnicity/race:</i> Massage group: Eight nonminority, one minority Usual care: Six nonminority, one minority</p> <p><i>Relationships:</i> Massage group: Six married and three other Usual care: Six married males and one other</p>	Preference for home setting rather than hospital setting. Some participants noted that massage therapy made hospitalization more tolerable.	