Efficacy of Hand Massage for Enhancing the Comfort of Hospice Patients

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There is a need to develop and test interventions for patients near end of life that are comforting, easy to learn and administer, and require little effort on the part of recipients. This experimental study tested the efficacy of bilateral hand massage for enhancing hospice patients' holistic comfort as measured with the Hospice Comfort Questionnaire (HCO). We hypothesized that, over 3 time points, patients who received hand massage would have higher comfort and less symptom distress than a comparison group. Participants were randomized into treatment (received the intervention twice weekly for 3 weeks) or comparison groups (received the intervention once at the study's end). Findings indicated that patients receiving hand massage had increased comfort over time, while symptom distress remained flat in both groups. However, findings were insignificant. Ethical and practical issues experienced in this study are discussed.

KEY WORDS

comfort
hand massage
hospice comfort questionnaire
end-of-life care
palliative care
hospice

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The focus of hospice care is to assure that patients are as comfortable as possible and that they receive interventions that will facilitate a comfort state. The need exists to develop and test interventions for patients nearing end of life that are comforting, easily learned and administered by caregivers, and require little effort on behalf of recipients. Hand massage fits these criteria because it is noninvasive, relies on caring touch, is brief and easy to perform, and can be adapted to many situations. The purpose of this study was to determine empirically if there are beneficial effects associated with hand massage done twice per week for 3 weeks on patients near end of life.

**SIGNIFICANCE**

The significance of this research is derived from ANA position statements1,2 about end-of-life care: “The main goal of nursing interventions for dying patients should be maximizing comfort”3 and “Nurses are obliged to provide relief of suffering, comfort, and a death that is congruent with the values and desires of the dying person.”4 Ferrell6 stated that in palliative and hospice care, the overall goal has shifted from cure to comfort. Nurses know intuitively what comfort is but have not formalized their assessments or evaluations of patients’ comfort levels. A holistic and positive outcome such as comfort enables nurses to direct their care to hospice populations in ways that are proactive, goal directed, and measurable. Comfort is an outcome that is highly desired by patients and their families and is congruent with the goals and standards of hospice and palliative care.

**Background**

Clinicians have used basic strokes of massage for years, including effleurage, kneading, and percussion.7 The use of therapeutic massage is identified as a holistic nursing intervention in the Handbook for Holistic Nursing Practice.8 Effects on the patient are psychological, mechanical, and physiological. Regardless of the health status of recipients, effects of massage include increased oxygenation and nutrients to cells and tissue, release of endorphins, physical and mental relaxation, and feelings of well-being, calmness, and wholeness.9 However, few empirical studies have focused on the effects of massage, in any form, for patients near end of life, and none have measured the extent to which comfort is enhanced after massage.

Ferrell-Torry and Glick examined the effects of two 30-minute, whole-body massages for nonterminal, hospitalized cancer patients over a 2-day period. A sample of 7 persons demonstrated empirical and significant reductions blood pressure, pulse, respirations, pain, and anxiety immediately after each massage. There was no comparison group. Meek examined the effect of two 20-minute, slow-stroke back massages on 30 hospice patients over a 2-day period. She found that slow-stroke massage produced statistically significant changes in vital signs indicative of relaxation. Subjective outcomes that might be more meaningful for the patient (eg, reduction of symptoms, enhanced comfort) were not measured. Wilkinson and colleagues compared effects of a full-body massage with and without aromatherapy in 103 randomly assigned palliative care patients. Both groups demonstrated significantly decreased anxiety and improvement in physical symptoms.

Wilkie et al.11 reported data from a clinical trial where, out of 173 referred hospice patients, only 29 completed the study. (This tangential finding is consistent with our experience and that of others12 regarding difficulties of doing clinical trials in hospice populations.) In the Wilkie study, the treatment group (N = 15) received four 30-50 minute whole-body massages in 2 weeks plus usual hospice care; the control group (N = 14) received usual hospice care only. Results indicated significant reductions in pulse and respiration rates, and nonsignificant reductions in emotional distress, pain intensity, and use of analgesia. Only small differences were found between the groups on quality of life scores, suggesting that quality of life and global well-being measures lacked sensitivity to hospice patients’ and were not congruent with the experience of dying.

There are several advantages of bilateral hand massage for patients near end of life: it requires a minimum of body positioning and draping, it enables face-to-face contact between therapist and patient, it is a noninvasive intervention, and it can be easily taught to professional and nonprofessional caregivers.14 Additionally, for patients with cancer, hand massage is removed from solid tumors, satisfying a controversy about massage being performed over malignancies. This intervention has very low demand on the patient; furthermore, the time requirement is low for both the recipient and the professional or nonprofessional caregiver. Of note is that hand massage is comforting because it conveys caring and concern for the dying patient.
There are numerous contraindications for hand massage including:

- deep vein thrombosis in an arm
- intravenous access in a forearm or hand
- presence of rash, lesions, or wounds
- excessive bruising
- pain or
- expression of sensitivity by the client.

Care should be taken and touch lightened in the presence of arthritic inflammation and structural changes. In rare instances when a hand is affected in one of these ways, therapists can stroke lightly around the area or provide simple passive touch to give a semblance of symmetry to the intervention.

Building on the current knowledge base about massage therapy, we collected empirical data about hand massage as an adjuvant therapy to enhance patients' holistic comfort and reduce symptom distress. Demonstrating the effects on comfort of an easily implemented intervention such as hand massage is vital to increasing knowledge about how to help patients to achieve a peaceful transition into death.

**Conceptual Framework**

Kolcaba's Theory of Comfort directs nurses to assess physical, psychospiritual, sociocultural, and environmental comfort needs of patients; design holistic interventions to meet those needs; and measure the effectiveness of interventions to enhance comfort compared to a preintervention baseline.\(^{15,16}\) Although holistic comfort is state-specific, an effective intervention that is delivered consistently over time will be strongly correlated with increased comfort over time. Comfort Theory proposes that enhanced comfort is an immediate, desirable, and altruistic goal of patient care. Comfort is a positive outcome that differs from and is more than the absence of discomforts. Comfort mitigates the effects of specific physical discomforts, provides a sense of overall ease and contentment, and strengthens patients for a peaceful death (a health-seeking behavior [HSB] predicted by Comfort Theory). Additionally, Comfort Theory states that when patients feel comforted, institutional outcomes will improve such as patient and family satisfaction.

Novak and associates\(^{17}\) demonstrated that hospice patients' comfort can be quantified and suggested directions for creating and evaluating comfort interventions for this population, using the taxonomic structure (TS) of comfort as a guide. Hand massage targets the interrelated comfort needs of dying patients. The authors' study is a natural extension of previous work regarding comfort interventions, measurement, and effects over time all of which are holistic.\(^{16,18,20}\)

**Research Questions**

For this pilot study, two research questions were asked:

1. Do hospice patients who receive hand massage demonstrate higher comfort and lower symptom distress over a 3-week period compared to hospice patients who do not receive hand massage?
2. How are functional status, comfort, and symptom distress related in this sample?

**METHODS**

**Design**

This experimental design randomized patients into treatment and comparison groups. The treatment group received hand massage according to the protocol designed by an advanced practice nurse (APN) who was also a licensed massage therapist. Data were collected prior to the massage, so that we could measure the intervention's sustained effects over a 1-week period.

**Setting and Sample**

A total of 31 participants were recruited from 2 hospice agencies in Ohio and 1 agency in New York in the predetermined 1-year time frame. The agencies ranged in census size, but all 3 were nonprofit and hospital sponsored. One hospice agency offered both home care and respite care in a free-standing facility. There were 6 inclusion criteria for study participants:

- males or females enrolled in hospice
- alert and oriented
- age 18 or older
- able to understand English
- expected to be alert for at least 3 weeks
- minimum Karnofsky (K) scores of 40.

K scores consisted of nurse-assigned numbers from 0-100 in which 100 = "perfect health" and 0 = "death."\(^{15}\)
Power Analysis

Sample size determination indicated that 17 evaluable data sets in each group were sufficient, at power of 80%, to detect significant changes in the outcomes over time. A medium effect size for the Hospice Comfort Questionnaire (HCQ) was used, as determined by previous studies using Kolcaba’s comfort questionnaires.\textsuperscript{16,17} Alpha was set at .10 because hand massage has little or no side effects and we wanted to avoid committing a Type II error, which is a failure to find significance.\textsuperscript{21}

Variables

Independent Variable

The intervention, hand massage, consisted of several types of massage including slow stroke (effleurage), kneading (petrissage), friction, and/or caring touch. To assure uniformity of the protocol, data collectors were nurses who were taught hand massage by our certified APN massotherapist using her written protocol (Appendix A). The massage took approximately 5 to 8 minutes for each hand. For this study, we preceded the massage by wiping our hands and those of the patient with a cool, prepackaged, cleansing wipe that was very refreshing to our participants. We also used a water soluble, nonfragrant lubricant to minimize reactions to the lubricant’s odor or texture. All data collectors gave a return demonstration of the protocol that the massotherapist supervised. Although the protocol was helpful in facilitating uniformity, the research team found that they each brought their own personal art of nursing into the administration of the intervention. Because each patient was urged to report uncomfortable sensations immediately, very little could go wrong with hand massage.

The research team met regularly to discuss data collection procedures, including recruitment, assisting patients with responding to questionnaires, and ethical issues that arose. The team at the out-of-state agency was trained by the massotherapist via a conference call. In addition to team meetings within their agency, the out-of-state group also reported regularly to the principal investigator regarding their progress.

Dependent Variables

The main outcome of interest was holistic Comfort, defined as the immediate state of being strengthened by having needs for relief, ease, and transcendence addressed in 4 contexts of experience: physical, psychospiritual, sociocultural, and environmental. These attributes of comfort have been diagrammed on a 12-cell grid and the grid used to develop positive and negative items that cover the content domain of comfort and assure the holistic nature of the resulting questionnaire.\textsuperscript{16,25} For this experiment, Comfort was measured by the HCQ that was abbreviated from the original End-of-Life Comfort Questionnaire (EOLCQ) to reduce burden on patients. The original EOLCQ had a 49-item Likert-type self-administered format with 6 responses ranging from “strongly agree” to “strongly disagree.”\textsuperscript{17} In a 2001 instrumentation study,\textsuperscript{7} the EOLCQ with 49 items had a Cronbach’s alpha of .92 with 37 patients enrolled in hospice.

To abbreviate the long version, a panel of 8 hospice nurses ranked the 49 items in open discussion and voting, retaining the top 24 items from the EOLCQ. Retained items were compared to the item analysis that was done in the psychometric study.\textsuperscript{15} Retained items were then plotted on the TS of comfort to assure that the content domain was covered and evenly represented. To score the EOLCQ, negatively worded items were reverse scored and summed; higher scores indicated higher comfort. Patients were assisted when needed with 5” \( \times \) 8” cards with the response format printed in large text.\textsuperscript{26} In this sample, the Cronbach’s alpha of the 24-item HCQ averaged .65 over 3 measurement points (T1 = .70, T2 = .67, T3 = .58). Some of the decrease in Cronbach’s alpha was due to shortening the instrument by one-half. See Appendix B for the abbreviated version of the HCQ.

The second dependent variable was symptom distress, defined as the extent to which sensations such as nausea, fatigue, pain, anorexia, constipation, concentration, worry, dyspnea, and cough caused discomfort to patients. This variable was operationalized by the Symptom Distress Scale (SDS), a 13-item scale self-administered by alert patients in approximately 5 minutes.\textsuperscript{23} Respondents used a 5-point scale to rate symptoms and their related distress; higher scores indicated more distress. In this sample, the Cronbach’s alpha averaged .80 over 3 measurement points (T1 = .79, T2 = .84, T3 = .78).

Although these questionnaires together constituted 37 items, patients had no difficulties with the protocol provided they were fully conscious. In particular, they appeared to enjoy answering questions about their comfort because they seemed to feel an affinity to the nature and tone of the questions. The SDS was not as uni-
formally applicable. Burden for participating in the study increased only when participants slipped into semiconscious states and, at that point, any self-report questionnaire would have been impossible to answer accurately. We wanted to obtain self-reported information because we believed it would be the most accurate reflection of how and what participants were experiencing over time.

**Procedures**

Appropriate institutional review boards approved the study. Potential study participants were identified by nurse/data collectors who attended team conferences at cooperating hospice agencies and made phone calls to appropriate contacts. Data collectors (who were strangers to the patients) then telephoned the homes of the identified persons, explained the study, and scheduled an appointment for a research visit. Data were collected in patients' homes and at hospice centers. During the first visit, data collectors explained the study to patients in general terms, answered questions, and obtained informed consent. After informed consent was obtained, participants drew from an envelope containing randomly assigned numbers to determine whether they were in the treatment or comparison group. K scores were recorded at intake. Persons in both groups then answered the questionnaires; those in the treatment group received the intervention after completing the forms each week. For the intervention group, massage was given twice weekly for 3 weeks. Both groups answered questionnaires once per week for 3 weeks. Depending on the patients' ability, questionnaire completion required approximately 15 minutes. In addition to the pamphlet given to all family members describing the study, data collectors taught the massage to caregivers as permitted.

**RESULTS**

**Sample**

It took approximately 13 months to obtain 31 complete data sets for the study, 3 data sets below the number determined by power analysis to be sufficient for achieving significance. At the end of the 13 months, we depleted our funding and time allotment. In addition to having difficulty recruiting participants, attrition was high because of rapid decline in patients' cognitive function. The sample is described by group in categories of diagnosis, gender, age, K score at entry into the study, and ancestry in Table 1.

There were 16 patients in the treatment group and 15 in the comparison group. The comparison group had higher functional levels (as measured by K score) and lower comfort and symptom distress at Time 1; however, the differences were not statistically significant. Thus, the study groups were comparable on important

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study variables at the start of the study, before the intervention was applied.

**Data Analysis**

Descriptive statistics were computed for the sample. Analyses of changes in responses over time were done within and among each group. The test statistic was repeated measures analysis of variance with the first grouping factor being the dependent variables (comfort and symptom distress) and the second grouping factor being group (treatment or comparison). Because differences between groups were not significant for comfort, symptom distress, or K scores at Time 1, no covariates were applied in the analyses.

**Research Question 1**

The first question asked was, "Do hospice patients who receive hand massage demonstrate higher comfort and lower symptom distress over a three week period compared to hospice patients who do not receive hand massage?" There was a smaller overall decrease in the means of comfort scores for the treatment group (Table 2). Although comfort was higher for the comparison group at the beginning of the study, at the study's end the comparison group had lower comfort than the treatment group. These results created a slight cross-over effect between treatment and comparison groups when plotted (Fig 1). However, differences in comfort over time between the treatment and comparison group were not significant (time × group interaction: F = 0.837, p = .445), and could be due to the smaller than required sample size. Also, there was no significant overall change with time (time main effect: F = 0.862, p = .434) or overall difference in comfort between the groups (group main effect: F = 0.511, p = .481).

For symptom distress, the comparison group started with higher symptom distress and remained higher than the treatment group throughout the end of the study (group main effect: F = 3.886, p = .060); see Table 2. However, differences in symptom distress over time were not significantly different between groups (time × group interaction: F = 0.617, p = .548) and changes in symptom distress over time were flat for both groups (time main effect: F = 0.366, p = .698).

**DISCUSSION**

Despite the more lenient alpha, this study did not yield significant results with regard to differences on comfort or symptom distress between groups over time. However, an interesting finding was that although comfort and symptom distress did not change significantly, the two outcomes clearly were independent. Of clinical significance is that comfort increased somewhat in the treatment group even as patients approached death while, in the comparison group, comfort scores decreased steadily over the 3 time points.

Another interesting finding was that the treatment group had lower K score means and lower comfort
means versus the comparison group at Time 1 (see Tables 1 and 2). While these differences were not significant, they raise questions as to why comfort would be higher when functional status (K score) is lower. Perhaps, as function decreases, individuals begin to accept their impending death or reflect upon the extent of meaningfulness of their life. The HCQ contains items about these important end-of-life issues and trends demonstrate that comfort is more than the absence of symptoms and also different than functional status.

A longer version of the HCQ (48 items) was tested in a population of hospice patients, yielding a Cronbach’s alpha of .93. However, for the psychometric test, patients completed the instrument only once. In the present research, conducted over 3 measurement points, alpha levels on the 24-item HCQ decreased from .70 to .58. The most likely explanation is that cognitive acuity decreased as patients got closer to death, affecting patients’ ability to give consistent responses. However, if we sensed decreased cognitive acuity in any of our participants, we did not continue to gather data (adding to the high attrition).

Most participants were appreciative of the intervention and for many, hand massage facilitated enabling them to share their concerns about their transition toward death or developmental tasks that had yet to be accomplished. The intervention seemed to offer patients a feeling of being “special” and to engage in an activity that “feels good” similar to that described by Billhut and Dahlberg14 in their qualitative study of female patients with cancer. Most family members appreciated the effects of the intervention on their loved ones and were pleased with the data collectors’ visits once a routine was established. Many caregivers learned how to conduct the intervention so that they, too, could give hand massage to their loved ones. Because of its simplicity, and the considerable room for personal variation on the massage methods, the intervention could be done by nursing assistants, neighbors, teenagers, friends, and relatives of the dying person. Hand massage is especially helpful in breaking down communication barriers, and often no “small talk” was necessary once the massage was initiated. Indeed, the touch of hands seemed to be like a direct phone line to patients and many shared their most intimate concerns with data collectors.
Because our comfort measurements were conducted prior to giving the massage, results supported the lasting effects of the intervention over time. That is, comfort derived from hand massage was sustained for at least 1 week, with the massage following measurement providing a “boost” for the next week. Thus, we were impressed with the sustained benefits derived from this simple, inexpensive, and quick, yet elegant, intervention.

Offering the hand massage was also rewarding for the data collectors and it facilitated meaningful (and literal) personal connections with these dying persons. In addition to touch, hand massage also fosters face-to-face contact due to positioning of patient and therapist. Because of its simplicity, minimal time and effort on behalf of patients, negligible harmful effects, and the connectedness it provided, the intervention had considerable clinical significance.

Limitations

Recruitment issues for this study were difficult to overcome. Agencies were willing to participate and allowed us to contact all eligible patients to offer them the option of participating in the study. It was helpful, but not necessary, for nurses to tell patients and families about the study prior to the data collectors’ initial phone call. One researcher estimated that it took between 5 and 8 phone calls to enroll a participant. In addition, several patients or families reneged (especially if they were in the comparison group) or patients had sharp health declines after the first or second visit. Several persons died before completing the study.

Patients or families refused to participate for a variety of reasons such as fatigue from too many personal or agency-sponsored visitors, lack of energy for involvement in any additional activity, or because they did not want another stranger in their home. These reasons were valid and affirmed that our procedures assured human subject protection. However, in many cases, family members who answered the telephone refused on behalf of the patient, without informing or asking the patient if he or she wanted to talk to the researcher. The most frequent reasons given were “too much stress” or “too many people coming to the home.” These paternalistic/paternalistic attitudes against research prevented patients from asserting their rights to accept or refuse, often denying patients what previous participants described as “a way to add meaning to my life and death” and to assist nurses in “gaining knowledge to help other patients.”

Future Research

Power analysis for future studies should use calculations based on a small effect size for the abbreviated EOLCQ and the intervention. This will result in a much larger desired sample than the one we recruited and should lead to finding significant differences between groups on comfort over time. Symptom distress scores between groups were not significantly different and they did not change; however, this was probably due to excellent management of symptoms by hospice nurses. While elimination of this instrument would decrease participants’ burden, especially as they become weaker, we believed it was important to demonstrate the effectiveness of hospice interventions on specific symptoms. It would also be interesting to see if symptoms demonstrated more changes in a larger sample size.

Also, the 3-week time frame could be reduced to 1.5 weeks duration over which 3 measures and at least 6 interventions are conducted. For patients who decline less rapidly, it would be interesting to determine for how long the comforting effects of hand massage are maintained, and if any one else in the patients’ circle of care continues with the intervention.

To account for the effects of “presencing” by nurse/data collectors, a third group of hospice patients who received twice-weekly visits by clergy or Stephen Ministers could be added to the design. However, this would increase the necessary sample size, which is a distinct detractor from the appeal of changing to a 3-group design.

For future studies, data collectors should have a closer connection with hospice or palliative care agencies so that persons can be recruited earlier. Larger grants would facilitate “release time” for data collectors, allowing them to spend more time at each participating agency in order to recruit possible participants upon admission to hospice. Because this was a small pilot study, we could not continue data collection indefinitely or harness more resources.

Researchers who are recruiting and conducting research should not be those who are directly involved in patient care, because it is difficult for patients to refuse persons involved in their care. We followed this ethical principle rigorously in the present design, but our rigor hampered recruitment. For example, in our out-of-state agency, nurses initially were very enthused about participating in the study, but the added burden of making research calls on patients outside of their caseload proved to be insurmountable and very few complete data sets were produced.
An additional factor impacting future access by patients who want to participate in research are the new Health Insurance Portability and Accountability Act regulations that may prevent independent researchers from entering healthcare agencies for the purpose of recruiting human subjects. Hiring project directors temporarily and directly through the agencies is a possible solution, but it is difficult to predict with any certainty that agencies will have such funding allocated to research.

Finally, as the overall benefits of hospice become more fully known to physicians and as entry requirements into hospice become more relaxed, patients may spend more quality time under hospice care. More time in hospice then will facilitate more ease in conducting experimental studies.

In the future, we will test relationships predicted by the Theory of Comfort among patient comfort, the HSB of peaceful death, and institutional outcomes such as caregiver satisfaction. Another goal is to determine if comfort measures reduce the need for pharmaceutical pain interventions which would provide dying persons with options that are less invasive and mind altering. To conduct research in this arena will require special documentation forms for determining how much and when persons used their “break-through” pain and/or anxiety medications when nurses or data collectors are not present. Data about duration of hand massage related to analgesia administration and dose amount would also be important.

It would also be of interest to determine if aromatherapy would enhance the effect of hand massage as well as it did with a more extensive massage in a study with patients with cancer who were not terminally ill. It would be worth knowing if combining approaches such as massage and aromatherapy is associated with better outcomes than massage alone and under what circumstances. Patient preferences for lubricants and fragrances can render this intervention even more personalized.

† CONCLUSION

There are many reasons why experimental research with hospice patients is scant. First, hospice and palliative care are relatively young specialties and, therefore, the present body of knowledge is largely descriptive. This level of research is necessary, and much of it has been done, setting the stage for quasi-experimental and experimental studies. Second, patients enter hospice late and have many stressors so recruitment and data collection over time is difficult. Third, emphasis on symptom management has been largely pharmaceutical with little attention paid to adjuvant complementary therapies. The tremendous potential and interest in complementary therapies to reduce pharmacological dosing requires that we conduct experimental, empirical, intervention research related to all types of symptom management.

The outcome of holistic comfort is congruent with patients’ needs during the dying process and with holistic interventions that address physical, psychospiritual, sociocultural, and environmental needs. This outcome focuses on the whole person, in the context of his or her family, and it captures feelings about oneself and one’s predicament not disclosed by quality-of-life instruments. Many quality-of-life instruments become irrelevant as patients progress toward death and turn, naturally, to very narrow interests.

The clinical significance of bilateral hand massage for patients near end of life is noteworthy. Nurses and other caregivers can readily offer this intervention to patients who are dying, providing personal and individual contact that connects caregiver to care recipient in a profound way. Thus, communication and caring—either nonverbal, verbal, or both—is enhanced. Potentially, when nurses provide and/or teach the intervention, increases in patient and family satisfaction could reflect positively on the institution. In addition, this simple, nurturing intervention could increase job satisfaction for nurses because it represents the art of nursing, something that may be difficult or undervalued for nurses to provide in the high stress and technological environment of present patient care.

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References


Appendix A. Protocol for Hand Massage

**Definition of Terms:**

**Stroking:** A massage stroke that glides over the skin without attempting to move the deep muscle masses. The therapist hand is molded to the part, moving with firm and even pressure, usually upward. The purpose is to disperse lubricant, offer a passive stretch to the tissue and soothe.

**Kneading:** A massage stroke that attempts to move a muscle mass gently. The tissue is pressed and rolled under the therapist's hands.

**Friction:** A massage stroke that permits deeper work with the tissue. It is performed by small circular movements with the tips of the fingers, the thumb or heel of the hand according to the area covered. Friction occurs when the fingers move the tissue under the skin, not the skin itself.

**Phalanx (phalangeal):** The bones of the fingers.  

**Thenar eminence:** The bulge at the base of the thumb.  

**Metacarpal phalangeal:** The bones in the body of the hand between the fingers and the wrist.

**Protocol:** In the following protocol, all strokes are repeated three times. Each hand is gently massaged for 5-8 minutes.

Greet the client and establish a therapeutic rapport. Place the client in a comfortable position with the forearm and hand easily accessible to the therapist. Explain the procedure to the client and clarify any questions or concerns. Hold the client's hand between your hands to establish contact. Request that the client report any sensations that are not comfortable to him/her as you massage the hand.

Place the client's forearm and hand in a palm up position with thumb abducted. The therapist collects a small amount of lubricant in his/her hand and rubs the hands together to disperse and warm the lubricant. The lubricant is then evenly applied to the palm and dorsal surfaces of the client's hand.

The therapist's dominant hand supports the client's hand. The non-dominant hand grasps the radial half or the thumb side of the hand at the palm near the fin-
Appendix A. Protocol for Hand Massage (Continued)

gers. Using the thumb, the therapist strokes up the midline of the palm around the base of the thumb (the thenar eminence) to the wrist. The fingers pass up the midline of the dorsal surface of the hand to join the thumb at the wrist with a squeeze-out movement. Repeat this movement across the entire surface of the palm. Each time the hand returns with a superficial stroke over the hand surface.

The therapist uses the thumbs to knead the same area where stroking took place. Small circular movements of the thumbs over the tissue produce the kneading effect on the muscles.

Reposition hands to have the therapist’s non-dominant hand support the client’s hand. The dominant hand grasps the ulnar half (the little finger side) of the patient’s hand at the metacarpophalangeal joint line, where the fingers join the palm. The thumb then passes up the midline of the palm around the hypothenar eminence (the fifth or little finger edge of the hand) to the wrist. The fingers pass up the midline of the dorsal surface of the hand to meet the thumb at the wrist with a gentle, squeezing, kneading movement. The hand returns with a superficial stroke. Repeat over the entire surface of the hand.

Support the client’s hand in the therapist’s dominant hand while the thumb of the non-dominant hand strokes over the each of the following areas: the thumb edge (thenar eminence) from the first metacarpophalangeal joint to the wrist; the interosseous and lumbrical muscles (the muscles of the palm of the hand) from the metacarpophalangeal joints to the wrist; and the fifth finger edge (hypothenar eminence), from the fifth metacarpophalangeal joint to the wrist. The thumb returns with a superficial stroke after each movement. Repeat over the entire surface of the hand. Pressure is gentle and adjusted to the comfort of the client.

The thumb pad is kneaded in small circles over the same areas and in the same order as indicated earlier, returning each time with a superficial stroke.

The entire palm surface of the hand is massaged with light, circular strokes. Before massaging the dorsal surface of the hand, stroke lightly with several long motions toward the heart.

**Dorsal Surface:** Turn the client’s hand palm down. In effect, the therapist will be stroking in the spaces between the metacarpals, with pressure directed toward the tissue forming the spaces between the bones in the back of the hand.

The client’s hand is supported by the therapist’s non-dominant hand. The thumb of the dominant hand strokes over the ulnar side of the first metacarpal, the little finger, just proximal to the intraphalangeal joint, continuing to the wrist. The thumb pad then returns with a superficial stroke along the radial side of the second metacarpal to the first joint; it strokes over the same area to the wrist. This is repeated over the entire posterior surface of the hand.

Supporting the hand, massage all surfaces of each finger and the thumb, starting at the point where the finger connects to the palm and move towards the tip of the finger. Pressure should be gentle to avoid any unnecessary pressure on the finger joints.

Finish the massage by stroking the surface of the hand, wrist to fingertips with a feather-like stroke three times. Tell the client you are moving to the other hand and repeat the entire procedure on the opposite hand. Gently break physical contact with the client, using long gentle strokes toward the head, and reposition the hand in a comfortable position.
Appendix B: Hospice Comfort Questionnaire (Patient)

Below are statements that pertain to your comfort right now. Six numbers are provided for each question; please circle the number you think most closely matches your feeling. Relate these questions to your comfort at the moment you are answering the questions.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My body is relaxed right now</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>2. My breathing is difficult</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>3. There are those I can depend on when I need help</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>4. I worry about my family</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>5. I know I am loved</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>6. These surroundings are pleasant</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>7. I have difficult resting</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>8. I feel peaceful</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>9. I sleep soundly</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>10. I like being here</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>11. I am nauseated</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>12. I am able to communicate with my loved ones</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>13. I am afraid of what is next</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>14. I have experienced changes which make me feel uneasy</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>15. My mouth and throat feel very dry</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>16. I’m okay with my personal relationships</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>17. I can rise above my pain</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>18. The mood around here is depressing</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>19. This chair (bed) makes me hurt</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>20. I feel confident spiritually</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>21. I feel good enough to do some things for myself</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>22. I feel helpless</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>23. I feel lonely</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
<tr>
<td>24. In retrospect, I’ve had a good life</td>
<td>6 5 4 3 2 1</td>
<td></td>
</tr>
</tbody>
</table>