SLOW STROKE BACK RUB

By Carolyn Fakouri, MS, RN, and Patrice Jones, MSN, RN

The back rub has been used for centuries as a means of treating many ills. Nurses recognize that back rubs stimulate circulation and promote relaxation by decreasing muscle tension.\(^1\)\(^2\) This article looks at the slow stroke back rub as a means of promoting relaxation in elderly clients.

In addition to the physiological effects, the back rub has psychological benefits. Burnside refers to the back rub as an example of task-oriented touching that may also demonstrate the caring and concern associated with affective touch.\(^3\) The need for affective touch continues throughout life and even increases with age, especially when the individual experiences stress and/or social isolation—common reactions to hospitalization and long-term care.

The physiological reactions to relaxation techniques, in general, have certain common features which include, "an integrated hypothalamic response which results in generalized decreased sympathetic nervous system activity, and perhaps also increased parasympathetic activity."\(^5\) The physiological effects, therefore, that should occur as a result of relaxation include, among others, a decreased heart rate, a decreased blood pressure, and an increase in the temperature of the skin. These psychological variables have been used in numerous studies to measure relaxation for a variety of techniques such as transcendental meditation, progressive muscle relaxation, hypnosis, and biofeedback.\(^5\)\(^6\)

Many of these relaxation techniques require considerable training and cooperation that may be unrealistic to obtain from some elderly clients. The back rub, however, has attracted the attention of nurses as a means of promoting relaxation because of its ease of administration. Kaufman, as well as Barr and Taslitz, conducted studies on the relaxation effects of the back rub on the autonomic nervous system. Their studies did not produce consistent findings.\(^7\)\(^8\) Temple, however, distinguishes two kinds of back rubs and attributes different effects to each. She maintains that rapid firm strokes are stimulating, whereas long, slow strokes have a sedative effect.\(^9\)

Sister Elizabeth, Farber, and Tappan advocate the slow stroke back rub for its relaxing effects. They state that the slow
stroke method should consist of slow, rhythmic stroking on both sides of the spinoous process from the crown of the head to the sacral area. A review of the literature, however, shows there is no empirical evidence to support the effectiveness of the slow stroke back rub as measured by the physiological indicators of relaxation.

The purpose of this study was to assess the effectiveness of the slow stroke back rub in promoting relaxation as manifested in physiological responses. Utilizing the measures of pulse, blood pressure, and finger temperature along with verbal responses, it was hypothesized that slow stroking would result in a relaxation response in the elderly client.

Method

Sample—The sample consisted of 18 clients (four men and 14 women) of a nursing home in a small midwestern town. The average age of the clients was 73.7 years with a range of 56 to 96 years. The participating clients represented several diagnostic problems. They had been in the nursing home for a mean of 12.73 months. Criteria for selection included ability to relate to verbal stimuli, ability to hear, absence of sympathetic inhibitory drugs, absence of sedatives or tranquilizers prescribed within the past two weeks, absence of bradycardia (pulse rate lower than 70), and absence of hypertension (systolic lower than 100). Seven of the clients could be up without assistance, seven required the help of an assistive device (cane or walker), and four could be up in a chair with assistance. Consent to include the clients in the study was obtained from the clients themselves and the director of nursing of the nursing home.

Procedure—For three consecutive evenings at the client's usual bedtime, the client was assisted into bed if he/she were not already in bed. The setting was the client's everyday environment in the nursing home. The investigators applied the blood pressure cuff to the client's arm and the Physiologic Trend Indicator (manufactured by Medical Device Corporation) to the palm of the hand. After the client rested for a few minutes, the base-line measures of blood pressure, pulse, and skin temperature (utilizing the Physiologic Trend Indicator) were obtained. The client was then assisted to a side-lying or prone position (whichever was more comfortable) and a three-minute slow stroke back rub was administered using talc. Talcum powder was the lubricant of the institution and, also, its use eliminated the possibility of vasoconstriction and muscle tension that could result from inadequate warming of a lotion.

For this study the slow stroke back rub was a slow, rhythmic massage using light pressure from the crown of the head to the sacral area down the posterior rami (2 inches on either side of the spinous process) without crossing over. There was continuous contact during the back rub—one hand started down the back as the other hand was raised. Rhythmic stroking was done for three minutes with an approximate rate of 60 strokes per minute. Tappan and Farber recommend that the procedure should not exceed three minutes because beyond that time the stroking will tend to stimulate rather than relax.

Conversation during the back rub was avoided as much as possible. Immediately after the back rub the measures of blood pressure, pulse, and skin temperature were obtained. The blood pressure cuff was then removed. The blood pressure was not reassessed after 10 minutes to prevent disruption of
TABLE 2
RESULTS OF T TEST COMPARISONS OF PHYSIOLOGICAL INDICATORS MEANS

<table>
<thead>
<tr>
<th></th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heart Rate:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before vs. Immediately After</td>
<td>5.52**</td>
<td>5.16**</td>
<td>5.25**</td>
</tr>
<tr>
<td>Before vs. Ten Minutes After</td>
<td>3.91*</td>
<td>3.28**</td>
<td>5.66**</td>
</tr>
<tr>
<td><strong>Blood Pressure:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic: Before vs. Immediately After</td>
<td>4.15**</td>
<td>5.34**</td>
<td>6.00**</td>
</tr>
<tr>
<td>Diastolic: Before vs. Immediately After</td>
<td>1.60</td>
<td>1.15</td>
<td>2.29*</td>
</tr>
<tr>
<td><strong>Skin Temperature:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immediately After vs. Before</td>
<td>2.33*</td>
<td>3.69**</td>
<td>2.33*</td>
</tr>
<tr>
<td>Ten Minutes After vs. Before</td>
<td>2.59*</td>
<td>3.46**</td>
<td>3.49*</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01

the relaxed state. Many of the clients had assumed a comfortable position after the back rub which was not conducive to taking the blood pressure. It was felt that a change of position of the client could alter the blood pressure as well as the relaxed state.

Ten minutes after the back rub, the investigator returned and again assessed the pulse and skin temperature. The Physiologic Trend Indicator was then removed. Voluntary evaluatory comments were noted after each back rub and questions were asked after the third session regarding the client's perception of the back rub.

**Results**—The means for the physiological measures of heart rate, systolic blood pressure, diastolic blood pressure, and skin temperature for each day were calculated before the back rub and immediately after the rub. The heart rate and also skin temperature were assessed ten minutes after termination of the rub and their means were calculated (see Table 1). The comparison of the means of the physiological indicators for each day were made by the t test for the correlated means of the data. Table 2 shows these comparisons of the means of the physiological indicators before, immediately after, and ten minutes after treatment.

As is evident from Tables 1 and 2, all of the differences between the means of the physiological indicators (except the diastolic blood pressure on Day 1 and Day 2) were statistically significant at least at the .05 level.

The mean differences of heart rate and skin temperature before the back rub and ten minutes after the termination of the back rub indicate that not only did the treatment produce changes in these indicators immediately after the treatment, but these changes were also maintained ten minutes later. The changes in the physiological indicators were consistent with the theoretical basis of the expectation and the directions of the changes. Heart rate and systolic blood pressure dropped significantly after the back rub. The change in the diastolic blood pressure on Day 1 and Day 2 did not reach the conventional level of significance, but the changes were in the predicted direction, hence, consistent with the changes in other physiological indicators. However, on Day 3 the change in the diastolic blood pressure reached the significance level (p < .05). The change in skin temperature also followed the expected pattern as a result of the back rub. Not only did the skin temperature rise significantly on each day after the back rub, but the mean skin temperature stayed above the mean of the pretreatment level ten minutes after the back rub.

**Discussion**—The findings of this study strongly suggest that the slow stroke back rub promotes a relaxation response among elderly clients. Earlier studies found either no statistically significant changes in autonomic responses or an increase in sympathetic activity after administering a "conventional" back rub. Based on the results of this study, it is suggested that the slow stroke back rub may be an effective method of producing a decrease in sympathetic activity and possibly an increase in parasympathetic activity as demonstrated in the selected physiological indicators. The direction of change in these physiological indicators (heart rate, blood pressure, and skin temperature) is considered to be an
indication of relaxation. The only variable not reaching a significant level of change until Day 3 was the diastolic blood pressure. One possible explanation for this slower reaction may be that the systolic blood pressure undergoes wider variations under the stresses of everyday life; therefore, one would not expect the diastolic blood pressure to exhibit change as rapidly as the systolic pressure.14

All of the clients’ verbal responses were of a positive nature indicating relaxation such as, “It helps me relax,” “I could just lay here and sleep,” and “I could go right to sleep.” These comments provide a good clinical insight into the reactions of the clients receiving the slow stroke back rub.

Nursing Recommendations and Implications

The need for further studies with larger samples in a variety of settings is quite evident in order to provide a stronger base for generalization of these findings and their implications. Nevertheless, the demonstrated changes in physiological indicators and the verbal responses resulting from the slow stroke back rub in this preliminary study have implications for nursing care of the elderly client. An important role of the gerontological nurse is to plan and implement appropriate interventions to promote rest and relaxation among elderly clients. Relaxation techniques are recommended instead of drugs to promote sleep16 and relaxation. It has been suggested that the relaxed state resulting from a foot massage may decrease the need for pain as well as sleeping medications.16

The slow stroke back rub may be an effective non-invasive measure for promoting rest and relaxation. This technique is easy to administer, requires only lotion or talc, and a few minutes of time. The back rub is an established aspect of nursing care, especially for the elderly client with unique physiological and psychological needs. When administering a back rub to elderly clients, the nurse should consider the outcome. If circulation stimulation is the main purpose, the conventional back rub consisting of circular movements, hacking motions, and gentle squeezing of the tissues should be used. If, however, relaxation is the desired outcome, then the slow stroke back rub may very well be the technique of choice, especially at bedtime or other times of the day when stress reduction is desired.

References


About the authors

Carolyn Fakouri and Patrice Jones are assistant professors at Indiana State University School of Nursing.

Relaxation RX

KEY POINTS


1. The back rub has been used for years by the nursing profession for a variety of purposes, the two most common being relaxation and promoting circulation.

2. If the purpose of the back rub is relaxation, then this study proposes the use of the slow stroke back rub as the back rub of choice. The slow stroke rub consists of slow, rhythmic stroking on both sides of the spinous process.

3. For three consecutive evenings, the slow stroke back rub was administered to a pilot group of nursing home residents. The verbal responses as well as the physiological measures of heart rate, systolic and diastolic blood pressure, and skin temperature were assessed before and after the back rub to measure the residents’ degree of relaxation.

4. The slow stroke back rub in this pilot study demonstrated changes in the physiological indicators of relaxation. When gerontological nurses wish to promote relaxation in their clients, the slow stroke back rub may be the back rub of choice.