

Use of Hand Massage with Presence to Increase Relaxation in Korean – American Elderly

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INTRODUCTION

There are a number of possible sources of role loss for the older immigrants. Their traditional knowledge, which would guarantee them status and well-being in their native land, is not necessarily useful in the United States because of cultural differences and a lack of English proficiency. The ability to adjust with these losses has been an important aspect of the gerontological nursing. Adjustment to the new culture may affect to the well-being of immigrants.

Touch is a expression of concern and channel of communication. Touch is referred to as the overt expression of closeness, intimacy, and sexuality (Fitzsimon, 1983). If nurses neglect to touch elderly patients, they may indirectly convey to people that they are unattractive and undesirable, thereby initiating or reinforcing feelings of insecurity and lack of self-worth (Fraser & Kerr, 1993). According to Langland and Panicucci (1982), use of touch promotes well-being in elderly persons. Massage is thought to be very relaxing and to greatly increase a feeling of well-being (Glaus, 1988). Snyder et al.

(1995) found that administering hand massage produced relaxation in elderly persons with dementia.

The purpose of this study was to examine the effects of the hand massage on producing relaxation and well-being in elderly Korean – American immigrants.

Hypotheses tested were :

1. Subjects will manifest a greater level of relaxation immediately following the administration of hand massage than immediately prior to the administration of the hand massage.
2. Systolic blood pressure will be lower immediately following the administration of hand massage than immediately prior to hand massage.
3. Diastolic blood pressure will be lower immediately following the administration of hand massage than immediately prior to hand massage.
4. Pulse rate will be lower immediately following the administration of hand massage than immediately prior to hand massage.
5. A greater increase in well-being will occur following the third and sixth administration of hand massage as compared to prior to the hand massage.

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Limitation of the study

This study has limitation that it couldn't compare the pure effect of hand massage because there was no control group which was not administered hand massage.

Background

A number of possible sources of role loss exist for older immigrants to the United States. Their traditional knowledge, which would guarantee them status and well-being in their native land, is not necessarily useful in the United States because of cultural differences and a lack of proficiency in the English language. Adjustment or failure to adjust to the new culture may affect the well-being of immigrants. Strategies that will help older immigrants adjust to losses needs to be explored.

Paik(1975) indicates that the psychological stresses associated with culture change are especially intense for elderly immigrants, presumably because their native culture is so deeply ingrained in their thinking. Minority elderly immigrants, in particular, are likely to be systematically excluded from access to social and economic opportunities and suffer from discrimination, low income, lack of access to health services, inadequate housing, and other deprivation(Whang, 1987). The situation of one such group, elderly Asian immigrants, has been characterized as 'quadruple jeopardy', because they tend to be poor, in the minority, old and non-English speaking(Lum, 1983).

One such group is elderly Korean immigrants in the United States. Elderly Korean-American immigrants have grown up in a traditional Confucian society which has very different social norms than those typical in the United States. Confucianism places special importance on the family as both the basic unit of society and the fundamental social structure within which individuals live. Tradition and authority as guides to social behavior are emphasized(Smith, 1958). Western society, on the

other hand, advocates personal freedom.

Most Korean-American elders are recent immigrants; the majority have immigrated to maintain family ties. Typically, many have followed their children to the United States(Kiefer et al, 1985; Kwon, 1978). However, their children' and grandchildren's efforts to adapt to American culture, which emphasizes the primacy of the nuclear family as opposed to extended family, and encourages children to become independent of their parents when they reach adulthood, are experienced by elders as a threat to their status of respect and authority as elders. Uprooted from their familiar culture and the social system of their native country, they become painfully aware of a deep sense of isolation in what seems to them to be a bewildering and often hostile environment(Kang & Kang, 1983).

A number of studies have specifically examined the adjustment problems of elderly Korean-American immigrants. Koh and Bell(1987) identified six major problems experienced by Korean immigrants aged and older living in the New York city area. These are, in order of seriousness(as perceived by the participants), lack of proficiency in English, health conditions, loneliness, transportation, income, and housing. Kiefer et al.(1985), surveyed elder Korean immigrants living in the San Francisco Bay area; they found that Korean elders suffered years of severe psychosocial stress after arriving in the United States. According to Kiefer et al.(1985), the risk was greatest for those who had little education, had arrived most recently, and lived alone. Findings also included that those who lived alone or only with a spouse tended to exhibit less positive moral and less positive self-concept than those who lived with the family of an adult child.

In elderly people, diminished visual and auditory perceptions lessen the opportunity for environmental stimulation at a sensory level. Where sensory opportunities decrease, 'tactile hunger' becomes a reality and touch may become even more important for the well-being of the individual(Fraser & Kerr, 1993). Burton and Heller(1964) stated that the eld-

erly clients' need to touch is greater than the need to verbalize. Barnett(1972) stated, "the age group with the most infrequent touches was the 66 to 100 year old group for a total of 5 touches". Her data suggest that old people are not often touched. Literature suggests that patients are receptive to touch which communicates caring and promotes comfort and that purposeful touch can reduce isolation, enhance interactions, and establish the nurses' presence and availability(Sims, 1986). The need for affective touch is especially needed when the elder experiences stress and/or social isolation (Fakouri & Jones, 1987).

A specific touch technique is massage. It involves the manipulation of soft tissue for therapeutic purposes(Barr & Taslitz, 1970). The manner in which the massage is administered and the strokes used in massage bring about different responses. For example, using pressure strokes of moderate intensity may stimulate the person while light neuro strokes may produce relaxation. Massage has been used to achieve outcomes such as enhancing movement and reducing edema, loosening and stretching tendons, reducing muscle fatigue, improving skin function, and promoting comfort and relaxation (Snyder, 1992).

Benson et al(1974) proposed that the relaxation response is an integrated hypothalamic response that decreases sympathetic nervous system activity and perhaps increases parasympathetic activity. 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.

Longworth(1982) used slow stroke back massage to induce relaxation. Findings after six minutes of back massage showed that the heart rate and electromyogram readings of subjects had increased from baseline but that the systolic blood pressure readings had decreased. Anxiety scores of subjects indicated that they viewed back massage as relaxing.

Fakouri and Jones(1987) found that after 10 minutes of back massage, the skin temperature was higher and the heart rate slower than those obtained during the baseline readings. These findings suggest that relaxation was produced by the back rub. The majority of subjects reported that the back massage produced relaxation.

Fraser and Kerr(1993) used the back massage to decrease the anxiety levels of elderly institutionalized patients. There was a statistically insignificant decrease in mean scores on all variables from pre-test and from post-test to delayed time interval. However, subject verbally reported back massage was relaxing.

There are few studies administering hand massage. Snyder et al.(1995) found that administering hand massage produced relaxation in elderly persons with dementia. Reductions in pulse rates and agitative behaviors were found. Park(1994) reported that the administration of hand massage to Korean cancer patients undergoing radiation therapy produced a reduction in state-anxiety and decreased systolic, diastolic blood pressure and pulse rates.

Methods

A pre-experimental one group pretest-posttest design was used to determine the efficacy of hand massage on producing relaxation and increasing well-being in elderly Korean-American immigrants. Each subject served as his or her own control. The author explained the study to the subjects, and they signed a consent form. Hand massage was the independent variable, while the dependent variables were relaxation(relaxation behavior, systolic blood pressure, diastolic blood pressure, and pulse rate) and well-being. Hand massage was administered once a day, every other day for six times.

Subjects

A convenience sample of 20 female & 2 males

were Korean immigrants aged sixty years or older, who have resided in the United States for at least one year. The participants were all volunteers selected primarily on the basis of their accessibility to the investigator. Approval from human research committee of University of Minnesota were obtained. The subjects signed a consent form.

The subjects consisted of 22, twenty women and two men who lived in Minneapolis, Minnesota in the United States. The age range was from 61 to 84 years with a mean age of 73.3 years. Sixteen subjects lived alone. The time in the United States varied with eight subjects for 1–5 years, five for 6–10 years, six for 11–15 years, while three had lived 16 or more years in the United States for a mean of 9.32 years (table 1).

Instrumentation

The dependent variables were well-being (Can-

tril ladder) and relaxation (behaviors, bloods pressure, pulse rate).

A Cantril ladder was used to measure well-being. The Cantril ladder, which has anchoring points of the spectrum on which some scale measurement is desired—for example, one may be asked to define the “top” and “bottom”, the “best” and the “worst” (top is 10, bottom is 0). The subjects were asked to choose the scale from 10 to 0 according to their well-being sense. Well-being was measured three times: prior to the first massage, after the third massage and after the sixth massage. As reliability coefficients, Cronbach α was 0.75 in this study.

The relaxation checklist developed by Luiselli and colleagues (1982) was used to assess behaviors indicative of tension/relaxation. The scale was developed for measuring relaxation on children and three of the nine behaviors were not appropriate for assessing relaxation in elders. Therefore, six behaviors were used. Each behavior was rated on a scale of one to five with “one” representing the greatest level of relaxation. These behaviors were forehead, eyes, neck, head, arms and hands. Luiselli and colleagues reported an interrater reliability of .82 for the checklist. In this study, reliability coefficients as Cronbach α was 0.76. Relaxation was measured prior to each massage and immediately following the intervention.

The blood pressure and pulse rates were obtained pre- and post-intervention and calculated means of six times. A Sunbeam digital sphygmomanometer (model 7650) was used to obtain the blood pressure and pulse rate.

Verbal reports from subjects also obtained as an indicator of subjective response on hand massage.

Hand massage was independent variable tested. The protocol developed by Snyder et al. (1995) was used. This protocol included on elements of the Swedish massage technique described by Maanum and Montgomery (1985). After a subject was comfortably seated or supine, a simple explanation of the procedure was provided. A small amount of lotion was applied to the hand. Effleurage strokes,

<Table 1> General Characteristics of subjects

Variables		No	%	mean	SD
sex	female	20	9.9%		
	male	2	90.1%		
age	60–69	7	31.8%		
	70–79	9	41.1%	73.27	6.78
	80–84	6	27.1%		
marital status	married	5	22.8%		
	widowed	16	72.7%		
	separated	1	4.5%		
No. of family	1	16	72.7%		
	2	6	27.3%		
education	nothing	10	45.5%		
	elementary	9	40.9%		
	middle	2	9.1%		
	university	1	4.5%		
lived in U.S.A	1–5 years	8	36.4%		
	6–10	5	22.7%	9.32	5.55
	11–15	6	27.3%		
	over 16	3	13.6%		

large circular stretching strokes, small circular pressure strokes, petrissage strokes and neuro strokes were used on the ventral and dorsal surfaces of the hand. Palpation, stretching and circular range of motion strokes were used on the fingers. Massage was administered to each hand for two and a half minutes.

Analysis

Each subject's set of pre and post intervention scores for the level of relaxation, blood pressure, and pulse rates were averaged for six times rather than analyzing data for each time of the study.

Paired *t*-tests were used to determine the changes in the hand massage on dependent variables from before and after administration of hand massage. Each subject's differences of pre- and post-hand massage scores for level of relaxation, systolic blood pressure, diastolic blood pressure and pulse rates were used for repeated measures analysis of variance (ANOVA) to determine the time effects.

Results

The first research hypothesis was strongly supported. The changes in averaged scores from baseline to after treatments on the level of relaxation were significant ($t=10.70$, $p=.000$). Most of subjects were relaxed after administering hand massage than before administering hand massage. The mean, standard deviation, *t* values and *p* values for relaxation are found in table 2. The repeated

measures ANOVA testing of changes from pre- to post-hand massage on relaxation ($F=4.59$, $p=.001$) indicated a significant time effect for hand massage. 6 paired *t*-test were done as a post hoc, all (from first intervention to sixth intervention) were significant.

The second research hypothesis was supported, too. Changes in the pre- to post intervention for averaged systolic blood pressures were significantly decreased ($t=6.09$, $p=.000$). The results for systolic blood pressure are found in table 2. However, the repeated measures ANOVA results on the difference pre- to post-hand massage of systolic blood pressure were not found to be significant ($F=.11$, $p=.991$).

The third research hypothesis was not supported. Changes in the pre- to post- intervention for averaged diastolic blood pressure readings were not significant ($t=.27$, $p=.793$). The results for diastolic blood pressure are found in table 2. The repeated measures ANOVA were also not significant on the difference pre- to post-hand massage of diastolic blood pressure ($F=.51$, $p=.767$).

The fourth research hypothesis in which it is stated that hand massage would result in a significant decrease in pulse rates pre- to post-hand massage was supported. Changes in the pre- to post-hand massage averaged scores for pulse rate were significantly different ($t=4.45$, $p=.001$). The results for pulse rates are found in table 2. The repeated measures ANOVA were no significant on the difference pre- and post-hand massage of pulse rate ($F=.63$, $p=.677$).

〈Table 2〉 Effects of Hand Massage between the baseline and after treatments

		df	Means	SD	t	p
Relaxation	baseline(averaged)	21	15.62	2.24	10.70	.000*
	intervention(averaged)	21	11.16	1.33		
Systolic blood pressure	baseline(averaged)	21	131.40	20.71	6.09	.000*
	intervention(averaged)	21	125.58	19.56		
Diastolic blood pressure	baseline(averaged)	21	79.52	7.25	.27	.793
	intervention(averaged)	21	79.25	8.92		
Pulse rate	baseline(averaged)	21	74.22	7.93	4.45	.001*
	intervention(averaged)	21	71.45	6.67		

Although the Cantril well-being scores increased from sessions 1 to sessions 6, the changes were not significant ($F=2.42$, $p=1.01$). Thus, hypothesis 5 was not supported (table 3).

〈Table 3〉 Effect of Hand Massage on Cantril well-being scale

	Mean	SD	F	P
CWS1	6.00	2.53		
CWS2	6.77	1.48	2.42	0.101
CWS3	7.14	1.55		

Discussion

The findings from this study indicate that the administration of hand massage produced immediate relaxation as indicated by increase in the level of relaxation and reductions in systolic blood pressure and pulse rates. However, the administration of the hand massage did not result in a decrease in diastolic blood pressure or increase in well-being.

Elderly people have experienced multiple changes of life patterns. Well-being is affected by changes in life patterns. Immigrants inevitably face the difficulty of leaving behind old cultural and social norms and adjusting to new ones. Studies have shown that cultural change is usually stressful and painful for immigrants (Dyal & Dyal, 1981; Sluzki, 1979). Therefore, immigrants who experience changes in their life patterns may have low levels of well-being and various levels of stress. Sympathetic arousal resulting from stressful environment has been found to induce significant changes in heart rate and rhythm.

When the person has perceived the stimulus to be relaxing, the relaxation response is elicited. Touch and massage are postulated to be means of bringing about relaxation in people. Benson et al. (1974) proposed that the relaxation response is an integrated hypothalamic response that decreases sympathetic nervous system activity and perhaps increases parasympathetic activity. Massage

stimulated neural activity and the automatic nervous system. The indicators of relaxation following massage include the physiological parameters of heart rate, systolic and diastolic blood pressure, and skin temperature (Meek, 1993).

Fakouri and Jones (1987) found that systolic blood pressure and heart rate decreased following slow stroke back rub. Snyder et al. (1995) found that hand massage was an effective method in producing the relaxation state. Park (1994) also found that systolic and diastolic blood pressure, pulse rate, and level of state-anxiety decreased after administration of hand massage. The direction of change in these physiological indicators (systolic blood pressure, pulse rate) is considered to be an indication of relaxation.

The variables not reaching a significant level of change were the diastolic blood pressure and Cantril well-being scale. One possible explanation for this reaction may be that systolic blood pressure undergoes wider variations under the stresses of everyday life; however, one would not expect the diastolic blood pressure to exhibit change as directly as the systolic pressure (Fakouri & Jones, 1987).

Well-being is an aspect of quality of life. Dalkey and Rourke (1973) offered a comprehensive definition of quality of life: a person's sense of well-being, his satisfaction or dissatisfaction with life or his happiness or unhappiness. However, Campbell (1981) argued that happiness and satisfaction are conceptually different, stating that satisfaction implies a judgmental or cognitive experience, while happiness suggests an experience, a feeling or effect. Well-being may be more similar concept to satisfaction than happiness, hand massage affected the feeling rather than cognition. Also, well-being is seemed a indicator which represents general daily life than response of hand massage. Therefore hand massage may produce relaxation rather than well-being.

Verbal reports from subjects indicated that they perceived hand massage as relaxing. Some of the subjects fell asleep either during the massage or

during the post massage or during the post massage period. Many of the subjects wanted to continue hand massage at the end of the study. Two of the subject expressed an interest in learning to do hand massage so they could use it on themselves and others.

The administration of the protocol for hand massage is easy to learn. Since the results from this study revealed that hand massage produced relaxation, teaching elderly Korean immigrants to use hand massage is indicated. They may use hand massage each other as an expression of affection and concern. Further programs of the use of hand massage for family members of elderly Korean in the Korean community service center may be considered.

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- 국문초록 -

주요개념 : 한국이민노인, 손마사지, 이완

제미 한국이민노인에게 시행한 손마사지가 이완에 미치는 영향

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간호사가 사용하는 중재로서 관심을 표현하는 방법이며 의사소통의 통로인 접촉의 한 형태로서의 마사지가 이완과 안녕감을 증진시킬 수 있는지를 알아보기 위해 산편하면서노 상소에 서의 구애를 받지 않는 손마사지를 미국 미네소타주에 살고 있는 22명의 한국 이민노인에게 시행하였다. 자료수집 기간은 1992년 12월부터 1993년 6월까지 약 6개월이 소요되었다.

편의표출방법으로 대상자를 선정한 원시실험연구설계로, 독립변수로 손마사지를 사용하였고 이완행동, 수축기혈압, 이완기 혈압, 맥박수로 측정된 이완의 정도와 안녕감을 종속변수로 사용하였다.

손마사지는 Snyder등이 개발한 방법으로 한 손에 2분 30초씩 5분이 소요되는데 이틀에 한번씩 6회 실시하였다. 안녕감을 측정하는 Cantril ladder는 10개의 사다리로 된 도구로 첫번 마사지전, 세번째 마사지후, 그리고 여섯번째 마사지후에 대상자로 하여금 직접 사다리 점수를 매기도록 하였다.

Luiselli등이 개발한 이완행동 측정도구로 각 마사지 전후에 대상자의 이완정도를 관찰하였고, 마사지 전후에 혈압과 맥박수를 측정하였다.

자료는 paired t-test와 ANOVA, repeated measures ANOVA로 분석하였다. 연구의 결과는 다음과 같다. :

1. 1-6회동안의 마사지전의 이완점수의 평균값과 1-6회 동안의 마사지후의 이완점수의 평균값을 비교한 결과 마사지후에 이완의 정도가 유의하게 증가하였고($t=10.70$, $p=.000$), repeated measures ANOVA로 검증한 시간에 따른 효과도 유의한 차이를 보였다.

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2. 1-6회동안의 마사지전의 수축기 혈압의 평균값과 1-6회 동안의 마사지후의 수축기 혈압의 평균값을 비교한 결과 마사지후에 수축기 혈압이 유의하게 저하되었다($t=6.09$, $p=.000$).

3. 1-6회동안의 마사지전의 이완기 혈압의 평균값과 1-6회 동안의 마사지후의 이완기 혈압의 평균값을 비교한 결과 유의한 차이를 보이지 않았다($t=.27$,

$p=.793$).

4. 1-6회동안의 마사지전의 맥박수의 평균값과 1-6회 동안의 마사지후의 맥박수의 평균값을 비교한 결과 마사지후의 맥박수가 유의하게 감소하였다. ($t=4.45$, $p=.001$).

5. Cantril 안녕감의 점수는 유의한 차이를 보이지 않았다($F=2.42$, $p=1.01$).