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The effect of Swedish massage on blood pressure in patients

Sadeghi Kaji, Nariman
Department of critical care nursing, Faculty of nursing and midwifery, Esfahan University of Medical Science

Abstract

Introduction: Swedish massage includes techniques that enable mechanical effects on muscle tissue, skin, tendons, fascia and connective tissue which indirectly cause the autonomic nervous system to regulate.
Objective: This study aimed to determine the effects of Swedish massage on blood pressure of participants in research conducted at the Shahin Shahr Goldis Hospital.
Methods: After simple continuous sampling from male participants with no clinical disorder which contradict with massage, research was over a 12 week period divided into three parts (4 week each part) in which two treatment period contained massage and one period was for washout. The participants' blood pressure was recorded at baseline. Two massage techniques (Effleurage and Petrissage) was done on muscle groups including the back, neck and chest muscles (Group 1) and the second group includes legs, hands and face muscles (group 2) with respect to a massage during the break between the two groups.
Results: In the first period after the massage, decreased systolic blood pressure was observed (group 1 P <0/005 and group 2 P <0/002), but there was no significant change in diastolic blood pressure. Second massage on the muscles showed a decrease in both systolic and diastolic blood pressures in group 1 (P <0/005), while in Group 2 increased systolic blood pressure (P <0/05).

Keywords: *Massage, Swedish massage, Blood Pressure*

1- Introduction:

Increased blood pressure is one of the most important problems related to health in developed countries. Although this disease is often with no sign, the diagnosis and treatment can be easily done and in case of lack of treatment, can lead to lethal symptoms (1). Many patients are unaware of their hypertension (2) and are usually diagnosed during physical

examination (3). Blood pressure may reveal sudden changes in the situation or changes that are progressively caused in the course of time (4). Majoring blood pressure as one of the basic information events, usual state of patient`s health and patient's response to medical intervention can be identified. Changing in patient`s blood pressure which naturally is regulated by homeostatic mechanisms, will reveal the change in patient`s health (5). Many researchers take the view that a combination therapy based on behavioral approaches, alternative medicine as well as nursing care can be more beneficial to control patient`s blood pressure than pure drug therapy (6). Nowadays, using complementary therapy as one of the most important part of health systems is being emphasized (7). Recently, One of the most important of non-pharmacological and available methods of complementary medicine which showed an increase use in treatment unit is massage (8, 9). Today, massage as a standardized nursing intervention will form an important part of the health care, indeed (10). Massage is defined as a form of systematic manipulation and touch of the soft tissues of the body using different parts of the fingers, hands and forearms to achieve treatment goals (11). Massage therapy with its various types such as Reflexology, Russian massage, Shiatsu, Swedish and other type has different effect and can be used in different illness in according to the specific aspect of disease and the patient's treatment plan (12). Swedish massage with its effect on the autonomic nervous system can lead to various results on vital signs and consists of three main categories of techniques: Effleurage, Petrissage and Taputment (13) Effleurage massage technique with its sliding movement hand on the body surface, can lead to increase in blood circulation and lymph drainage of the site. In Petrissage muscle mass in the desired location is gently rotated or pressed with fingers; whilst Taputment techniques include percussion movement which is fast, light and steady with hand edge or concave fingers or palms along the muscle fibers and can lead to irritation of the tissue (14). Aourell et al (2005) in their research showed that massage could decline blood pressure in healthy young males (12). The effect of Swedish massage on patient`s blood pressure conferring to out patients department of Shahin Shahr Goldis Hospital in 2012 is considered as the aim of this study.

2- Methods:

In this clinical trial study, after continuous easy sampling from out patient department of Shahin Shahr Goldis Hospital, 36 collected patients who decided to participate in this study were randomly divided into 2 groups (group 1 and 2) with 18 patients in each group. Inclusion criteria were age limitation between 25 and 60 years, absence of disease or physical condition with massage interdict and full consent of participating in study. On the other hand, exclusion criteria included diagnosis of the situation with massage contraindication, and lack of patient consent in order to continue to participate in the study. This study was done during 12 weeks that were divided into to three periods (4 weeks each period). In the first and the third period of the study the patients received massage while in the second period they did not receive massage to wash out. For the first group in the first round of the study, massage of the Back, Neck, and Chest[1] (BNC) was used while for the second group, the Lower and Upper extremities and face[2] (LAF)

[1] - BNC = Abbreviation use to refer site of massage : BACK, NECK, CHEST

[2] - LAF = Abbreviation use to refer site of massage : LEG, ARM, FACE

massage was performed. After performing 4 weeks of rest for both groups in the second period of study, groups were changed in their kind of massage by the commence of the third period of weeks. In order to control the meddlesome variables, both groups have received massage every other day and were conducted between 9 AM to 12 MD. Moreover, massage places in terms of light, temperature and color were similar. During massage, a similar type of relaxation music was used for both groups. All massages were done by researcher and 5 male nurses who passed Swedish massage courses under Sports Medicine Federation of the Islamic Republic of Iran. The participants` blood pressure was measured by an average of three times per cycle. For determining the participants` blood pressure a digital blood pressure measurement which was made in Germany (mark Bush) is used, calibrated by a standard mercury blood pressure measurement. Primary blood pressure was measured from left arm on all participants in the supine position. The blood pressure of patients was measured before and 5 minutes after the massage. To measure participants' blood pressure before the massage, they were asked to lie down on a massage bed for 5 minutes. Whereas the participants were asked to remain motionless on the massage bed, their blood pressure was measured again 5 minutes after the massage. All massage time was lasted to 20 minutes and divided into 8 minutes for back, 6 minutes for neck and 6 minutes for chest in BNC group, while in LAF group massage time was divided into 4 minutes for each leg and arm and 4 minutes for face. For all participants in this study standard massage oil produced by Gol Daru Company under license of Ministry of Health of the Islamic Republic of Iran was used. The data were analyzed by SPSS-V 20, and paired t-test at a significance level of 0/05.

3- Results:

The mean age of the participants were 37/2 ± 9/2 years old. 53 % of them (n = 19) were high school graduates. 19% (n = 7) had higher diploma degree, and the rest were under high school degree. In terms of marital status, 78 % of participants (n = 28) were married. 83 % (n = 30) were employed. 30/5 % used to smoke cigarettes. 16 patients had diabetes, 12 patients had a history of hypertension and the rest suffered from other diseases, including depression, kidney and gastrointestinal diseases. The mean systolic blood pressure of patients in Group 1 (BNC) before massage in the first period was 133/2 ± 11/2 mm Hg and after the massage was 113 ± 8/2 mm Hg, showed a significant difference (P value < 0/005) with about 15% decline. In the second group (LAF), mean systolic blood pressure in the first period before the massage was 136/4 ± 6/5 mm Hg and after massage was 130/2 ± 2/4 mm Hg, showed a significant difference (P value< 0/002) and represent 4/5 % decrease in systolic blood pressure. Diastolic blood pressure in the first group during the first period of study was 87/4 ± 4/4 mm Hg and 86/2 ± 2/8 mm Hg before and after the massage respectively, which no significant difference were shown (P value< 0/62). In the second group, diastolic blood pressure during the first period of study was78/6 ± 8/6 and 76/2 ± 6/2 mmHg before and after the massage respectively, this did not show a significant difference (P value< 0/68). After a four week break to washout and switching groups in terms of area of massage, results were determined as follows: in the first group which receiving (LAF) massage now, systolic blood pressure before massage was 144/2 ± 16/2 mm Hg and after massage was 126/2 ± 2/2 mmHg, showed a significant difference (P value< 0/005) while diastolic blood pressure in this group of massage was 72/1 ± 4/2 mm Hg before massage

and then was 66/4 ± 3/4 mm Hg after massage which showed no significant difference (P value< 0/005). In the second group that have received (BNC) massage, systolic blood pressure before massage was134/7 ± 8/6 mm Hg and after massage was 136/3 ± 10/3 mm Hg , which was corroborated by an increase in systolic blood pressure in this group (P value< 0/05) and diastolic blood pressure in this group before the massage was 70/3 ± 6/8 mmHg and after massage with 66/8 ± 8/3 mm Hg, showed a significant difference in this group (P value< 0/005). (Table A1)

period / Group	First period			Third period		
	Before massage	After massage	P value	Before massage	After massage	P value
Systolic Blood Pressure						
1st group	133/2 ±11/2	113 ± 8/2	< 0/005	144/2 ± 16/2	126/2 ± 2/2	< 0/005
2nd group	136/4 ± 6/5	130/2 ±2/4	< 0/002	134/7 ± 8/6	136/3 ± 10/3	< 0/05
Diastolic Blood Pressure						
1st group	87/4 ± 4/4	86/2 ± 2/8	< 0/62	72/1 ± 4/2	66/4 ± 3/4	< 0/005
2nd group	78/8 ± 8/6	76/2 ± 6/2	< 0/68	70/3 ± 6/8	66/8 ± 8/3	< 0/005

(Table A1) Measured blood pressure in both group in 1st and 3rd period

4- Conclusion:

In recent years, the use of complementary therapies such as massage therapy has increased in medical and nursing units (15), since the studies have shown the impact of massage on some physiologic aspect such as blood pressure in patient with diseases like diabetics, elderly and patient with normal or high blood pressure (16). Based on the results of this study, systolic blood pressure in both group during the first period of the massage and in first group during the second period of massage, showed a significant decrease. Similarly, Aourell, M. et al (2005) showed that massage could reduce systolic blood pressure (12). Cambron, J.A. et al (2006) and Mok, E. and Woo, C. (2004) have reached similar results and revealed that massage therapy could reduce the systolic blood pressure (17, 18) as well as MacNamara, M.E. et al (2003) and

Hollland, B., Polcarney, M.E., (2001) (19,20). Diastolic blood pressure in both groups during the first and third periods of study, decreased after massage. Hernandez-Rief, M.J.et al (2000) in their study showed that massage therapy reduced diastolic blood pressure of patients (21). Also Sahbaee, F. et al (2008) and Rahmani Anaraki, H. et al (2001) had reached similar conclusions in their studies (22, 23). In this study, however, in the third period of massage for the second group, systolic blood pressure after massage showed a slight increase while several studies indicate a decreasing effect on systolic blood pressure after the massage. Since this group had received LAF massage first, this slight increase in systolic blood pressure can be a reflex increase in systolic blood pressure due to lack of experience of decreasing blood pressure according to parasympathetic nerve roots which can be stimulated during BNC massage (24).

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