



Effect of a Slow-stroke Back Massage Combination and Frangipani Essential Oils against the Comfort of Menopause Sexual Relationship

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Authors' contributions

This work was carried out in collaboration among all authors. Author ZA approved the study, conducted a statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author ASH and IW wrote managed the study analysis. Author IW wrote helped search the literature. All authors read and tried the final manuscript.

Article Information

DOI: 10.9734/JOCAMR/2020/v10i130156

Editor(s):

(1) Dr. Aditi Singh, Amity University, India.

Reviewers:

- (1) Aparna Darshan Palshetkar C. U. Shah, S.N.D.T. Women's University, India.
(2) Imran Ahmad Khan, Muhammad Institute of Medical and Allied Sciences, Pakistan.
Complete Peer review History: <http://www.sdiarticle4.com/review-history/59028>

Original Research Article

**Received 04 May 2020
Accepted 10 July 2020
Published 28 July 2020**

ABSTRACT

This study aims to analyze the effect of a combination of slow-stroke back massage (SSBM) and frangipani essential oils on the comfort of menopause women during sexual intercourse. The study with a quasi-equivalent non-control control group pre-test and post-test design. A sample of 42 married couples was recruited by purposive sampling. Samples were divided into intervention groups (SSBM with Frangipani essential oil) and SSBM control groups only, each group consisting of 21 pairs of respondents. Respondents were asked to fill in the F-scale sexual self efficacy questionnaire before and after sexual intercourse, repeated three times. The data collected was analyzed descriptively, presented in the form of mean, median and percentage. Bivariate analysis using ANOVA test. The analysis results sig value = 0.00 <0.05, meaning that there is a difference between before the pre test with the first, second and post test third. In the Probability obtained Sig = 0.00 <0.05, it means that there are differences in comfort between the control groups in the pre test with the first, second and third post test. In the interaction with the Sig value = 0.00 <0.05, it means that there is an interaction of comfort differences between the

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intervention group and the control group. The combination of frangipani essential oil with SSBM can be used by families as an aromatherapy massage to improve the sexual relations of menopausal women.

Keywords: Frangipani essential oil; slow-stroke back massage; menopause; sexual comfort.

1. INTRODUCTION

Menopause is a process of development in women characterized by permanent cessation of menstruation due to loss of ovarian follicular activity [1]. The state of menopause is characterized by changes in the hormone estrogen that result in physical complaints resulting in physical complaints and psychological. Physical complaints in menopausal women, such as hot flushes, decreased bone density, decreased skin elasticity, thinning of the vaginal wall, vaginal dryness and pain during sexual intercourse [2]. While psychological complaints include anxiety, sleep disturbance, stress, depression and anxiety. The loss of libido or decreased sexual function can be influenced by a number of factors including increased depression or anxiety and changes in comfort when having sexual relations with a partner [3].

Complementary medicine is one solution to overcome the problem of pain or discomfort during sexual intercourse in menopausal women. Noted there are 20 types of complementary medicine, divided into approaches with skills (massage, reflection), with herbs (aromatherapy, sin she), as well as spiritual and supernatural approaches (meditation, yoga) [4]. Aromatherapy is included in alternative medicine that is promotive and complementary. Therefore these two therapies are often combined to increase their effectiveness. Aromatherapy massage is a popular way to use essential oils because it works in several ways at the same time. The skin absorbs essential oils and aromatherapy also enters through breathing, plus, physical therapy from massage itself [5].

In Indonesia, Frangipani oil contains volatile compounds, which smell fragrant [6], namely the genes of ainol, citronellol, linalool [7]. The problem is the use and research with aromatherapy derived from Indonesian native plants is not so much. Although, empirically the pre-clinical studies as well as some small scope studies show that the oil can be used for aromatherapy and provides a relaxing effect. Siahaan, proves that a mixture of Indonesian

essential oils (lemongrass, cananga and patchouli) has an effective psychological and physical relaxation [8]. Slow-stroke back massage (SSBM) is one of the complementary treatments in the form of massage that can be performed on menopausal mothers, namely back massage with gentle strokes [9]. Rubbing with certain lotions gives a warm sensation that results in dilation of the local blood vessels. Warm sensations can increase comfort [10]. Empirical literature proves that aromatherapy massage has a positive effect on health to reduce anxiety and increase the confidence experienced by older women in Korea. The results prove that aromatherapy massage has a positive effect on anxiety and self esteem [11].

2. MATERIALS AND METHODS

2.1 Sample

Type of research is quasi experiment with non equivalent control group pretest and posttest design. A total of 42 married couples were taken as respondents by purposive sampling, which was divided into 21 respondents in the intervention group and 21 respondents in the control group.

2.2 Instrument

The questionnaire used to measure the comfort of respondents after sexual intercourse is a modification of the sexual self efficacy scale-F [12]. The questionnaire contained 50 questions regarding sexual relations, but researchers only made 20 questions relating to sexual relations in menopausal women. The instrument consisted of 8 positive questions and 12 negative questions. For positive questions with an answer always a value of 4, often a value of 3, sometimes a value of 2, and never a value of 1. For a negative question and answer is always a value of 1, often a value of 2, sometimes a value of 3, and never a value of 4. Then the values are added in the range of 20-80 to measure the comfort level of sexual relations. Instruments to assess the occurrence of orgasm include questions about the sign of orgasm, namely the discharge of lubrication in women. Each with one question with a yes or no answer.

2.3 Research Procedures

Research procedures: as many as 42 respondents married couples who had menopause were invited and given an explanation of the research procedures. Then screening is done, for couples who are menopausal and agree to sign informed consent and fill out a questionnaire about the comfort of sexual relations during menopause. Then the slow-stroke back massage method is trained (SSBM) until you can really massage properly. Respondents were divided into 2 groups, namely the intervention group and the control group, each with 21 respondents. The intervention group, as many as 21 respondents before having sexual intercourse first filled out a questionnaire, then conducted an SSBM massage with frangipani essential oil carried out by her husband. Each partner after sexual intercourse to fill out a questionnaire about the comfort of sex, modification of the sexual self efficacy scale.

The treatment is repeated every three or three weeks. Then the questionnaire was collected for analysis. Frangipani oil is given free to each respondent. Frangipani oil was ordered from C.V. Ratu Aroma a company engaged in the essential oil industry.

The questionnaire is a modification of the F-section self-efficacy scale, as many as 20 questions related to sexual relations in menopausal women.

All procedures in this study have followed the ethical standards applied at the Health Ministry of Health Polytechnic Semarang, with recommendations on July 17, 2018, No: HK.01.07 / 8.3 / 1634/2018. All respondents agreed and signed informed consent.

2.4 Analysis

Univariate is used to analyze descriptively based on age and duration of menopause by presenting mean, median and mode (central tendency) and percentage, 2) Bivariate Analysis, the data obtained were analyzed by ANOVA test for two groups of more than two treatments.

3. RESULTS

Table 1 it appears that the average respondent experiences menopause in the intervention group and the control group at the age of 55.10 years with the most age experiencing menopause at the age of 55 years. The youngest age experienced menopause in the intervention group of 53 years and the oldest was 57 years, while in the control group the youngest was 53 years old and the oldest was 57 years old.

Table 2 it is found that in women before treatment in the intervention group who felt comfortable only 4 people (17%). After receiving comfort treatment in women, there were an increase of 15 people (71.42%) in the first treatment, the 2nd treatment was 16 people (76.2%) and in the third treatment were 13 people (61.9%). Whereas the men (husband) before and after treatment 1, 2 and 3 all felt comfortable.

Table 3 found that the average comfort of respondents (menopausal women) in the intervention group before treatment with a value of 56.71, the most comfort at a value of 53. While the highest average comfort in the second treatment amounted to 59.14 with the most convenience at a value of 56. The increase occurred in the first treatment second and slightly decreased in the third treatment.

Table 1. Characteristics of Respondents by Age of Menopausal Women

Group	Mean	Median	Mode	SD	Min-Max
Intervention	55.10	55.00	55	1.446	52-58
Control	55.10	55.00	55	1.044	53-57

Table 2. Comfort in the Intervention Group

Gender	Before		After					
			Treatment 1		Treatment 2		Treatment 3	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Female	4 (19)	17 (81)	15 (71.42)	5 (23.8)	16 (76.2)	6 (28.58)	13 (61.9)	8 (38.1)
Men	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)

Table 3. Leisure respondents in intervention group

Treatment	Mean	Median	Mode	SD	Min-Max
Before	56.71	57.00	53	4.474	48-67
Treatment 1	59.00	58.00	56	3,162	54-65
Treatment 2	59.14	58.29	56	4,953	54-68
Treatment 3	58.29	58.00	53	4.209	53-68

Table 4. Comfort in the control group

Gender	Before		After					
			Treatment 1		Treatment 2		Treatment 3	
	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
Female	4 (19)	17 (81)	10 (47.6)	11 (52.4)	9 (42.9)	12 (57.1)	8 (38.1)	13 (61.9)
Men	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)	21 (100)	0 (0)

Table 5. Comfort of respondents in the control group

Treatment	Mean	Median	Mode	SD	Min-Max
Before	57.48	58.00	58	4.854	44-67
Treatment 1	41.29	41.00	43	3.498	34-49
Treatment 2	41.71	41.00	39	2,969	37-48
Treatment 3	42.24	41.00	40	4.265	35-57

Table 6. Differences in the comfort of sexual relationships for menopausal women before and after treatment and differences in comfort between the Intervention and Control Groups

Source	df	F	Sig.
Corrected Model	7	96,432	0,000
Intercept	1	28745,727	0,000
Treatment	3	30,939	0,000
Group	1	422,709	0,000
Treatment and Group	3	53,168	0,000

R Squared = , 808 (Adjusted R Squared = , 800)

Table 4 it was found that in women before treatment who felt comfortable only 4 people (19%). After receiving treatment in women increased by 10 people (47.6%) in the first treatment, the second treatment was 9 people (42.9%) and in the third treatment were 8 people (38.1%). Whereas the men (husband) before and after treatment 1, 2 and 3 all felt comfortable.

Table 5 found that the average comfort of respondents in the control group before treatment with a value of 57.48 with the most comfort with a value of 58. The average increase in comfort in first, second and third treatment with not too much difference, namely 41.29, 41.71 and 42.24.

Table 6 obtained intervention has Sig. = 0.00 <0.05, meaning that there is a difference between before the treatment (test) to one, the second test and the third test. In Probability, the

value of Sig = 0.00 <0.05 means that there are differences in comfort between the pretest control groups and the first, second and third tests. Table 6 also shows that the interaction with the Sig value = 0.00 <0.05, means that there is an interaction (differences in comfort) between the intervention group and the control group.

4. DISCUSSION

This discussion will describe the characteristics of respondents based on age and duration of menopause and the comfort of having sexual relations before and after treatment. The results showed that the average age of menopausal women in both the intervention group and the control group was 55.10 years with the most age experiencing menopause at the age of 55 years. Menopause occurs in women entering the age of 48 years to 60 years [13]. Women who enter the

age of 45 years, ovaries will experience aging, which causes the need for the hormone estrogen is reduced, so that the entire body's hormonal system will experience a decline in hormone production. Especially the thyroid gland that produces the thyroxin hormone and the parathyroid gland that produces calcium [14].

The results obtained the average comfort of respondents in the intervention group before treatment with a value of 56.71 and increased in the first treatment by 59 and the second by 59.14, the third 58.29. In the intervention group who felt comfortable only 4 people (17%). After receiving comfort treatment in women, there were an increase of 15 people (71.42%) in the first treatment, the 2nd treatment was 16 people (76.2%) and in the third treatment were 13 people (61.9%).

Whereas the husbands before and after treatment 1, 2 and 3 all felt comfortable. Increased comfort is suspected that the respondents who received aromatherapy treatment (SSBM and frangipani essential oil) had the scent effect of relaxant essential oils so as to help menopausal respondents increase sexual comfort with their husbands. In addition, SSBM is a back massage that is done by gentle stroking aimed to reduce stress and produce a comfortable feeling [15,16].

Whereas in the third treatment the comfort experienced a slight decrease compared to the first and second treatments. It is suspected that in the third treatment the respondents had experienced aromatherapy massage compared to the first treatment which had only recently experienced aromatherapy massage experience (SSBM and essential oils). Besides that, one's comfort when having sex with a partner is also influenced by other factors such as the condition of the body (health) at the time of intercourse, and one's nutrition. The results of this study prove that the respondents after receiving aromatherapy treatment (SSBM and a mixture of citronella essential oils, frangipani) increased sexual comfort compared to before getting treated.

The results showed that the average comfort of respondents in the control group before treatment with a value of 57.48 with the most comfort with a value of mean 58. The average increase in comfort in the first, second and third treatment with not too much difference, namely 41.29; 41.71 and 42.24. Increased comfort in the control group is thought to be the effect of SSBM.

SSBM is a back massage with a gentle stroke of which aims to reduce stress and produce a feeling of comfort, thus making the body more pleasant [15,16]. The gentle touch of a husband to his wife gives rise to a relaxation response thereby increasing comfort. In women before treatment who felt comfortable only 4 people (19%). After receiving treatment in women increased by 10 people (47.6%) in the first treatment, the second treatment was 9 people (42.9%) and in the third treatment were 8 people (38.1%). Whereas the husbands before and after treatment 1, 2 and 3 all felt comfortable.

Increased comfort is suspected that the respondents who received aromatherapy treatment (SSBM and frangipani oil) had the scent effect of relaxant essential oils so as to help menopausal respondents increase sexual comfort with her husband. In addition, SSBM is a back massage with treatments that aim to reduce stress and produce a comfortable feeling, thus making the body more pleasant [9]. Whereas in the third treatment the comfort experienced a slight decrease compared to the first and second treatments. It is suspected that in the third treatment the respondents had experienced aromatherapy massage compared to the first treatment which indeed had just experienced aromatherapy massage experience (SSBM and essential oils). Besides that, one's comfort when having sex with a partner, is also influenced by other factors such as the release of individuals from guilt and anxiety [17].

The results of this study prove that the respondents after receiving aromatherapy treatment (SSBM and a mixture of citronella essential oils, cananga and frangipani) increased sexual comfort compared to before receiving treatment. The results of the study on the treatment of having Sig. = 0.00 <0.05, meaning that there are differences in the comfort of sexual relations between before (pre-test) with an average of 56.71 treatment one with an average of 59, a second test with an average of 59.14 and a third test with an average of 58, 29.

This improvement in comfort is suspected that respondents who received aromatherapy treatment (SSBM and frangipani essential oil) had the scent effect of relaxant essential oils so as to help menopausal women improve sexual comfort with their husbands. SSBM is a back massage with gentle stroking which aims to reduce stress and produce a comfortable feeling, thus making the body more pleasant [9].

In Probability, the Sig value = 0.00 <0.05 means that there is a difference in comfort between the control groups (pretest) with the first, second and third tests. Increased comfort in the control group is thought to be the effect of SSBM. SSBM is a back massage with a gentle stroke of [15,16], which aims to reduce stress and produce a feeling of comfort, thus making the body more pleasant. The gentle touch of a husband to his wife gives rise to a relaxation response thereby increasing comfort.

It is also known that the interaction with the Sig value = 0.00 <0.05, means that there are interactions (differences in comfort) between the treatment group (intervention) with the control group.

This research proves that aromatherapy massage (SSBM and frangipani essential oil) is very useful in adapting the comfort of menopausal female sexual relations. Sexual problems that occur in postmenopausal women are decreased sexual desire, discomfort during intercourse, because the vagina is dry so it causes pain during sexual intercourse with her husband.

Massage using scented oils provide physical effects that help blood circulation and oxygen to the brain, so that body skin and face look fresh. Breathing more regularly, body posture becomes better, the body feels fresh and relaxes tense body muscles. The psychological effects of scented oils help reduce stress and make the mind calmer, so that it can improve comfort during sexual activity [18].

Cananga oil, citronella oil, contains alcohol monoterpenes, namely linalool and geraniol which have functions as analgesics, calming, balancing, stimulation, vasodilator and hypotensive effects [19]. While frangipani oil (Frangipani) contains triterpenoid and amyriin compounds which are relaxants [20]. The relaxant properties caused by frangipani oil can help improve comfort during sexual intercourse [21].

Scented oils work through the circulation system, through hormonal functions in the body. The hormonal system works together with the nervous system to control and coordinate the activities of the human organs [21], so that it can improve blood circulation and improve mind health.

Massage can reduce stress-causing hormones in the body of menopausal women. Touch is very

important both to the physical, also to the emotions of menopausal women. Touch can increase vitality and reduce the fatigue experienced by postmenopausal women due to the aging process and help improve thought processes [22,23].

Scented oil applied to the back affects the body for several hours, days or weeks, depending on one's health condition. Absorption of essential oils into the circulation system takes 30 minutes. Before being released again through the lungs, skin, and urine within 6-14 hours, leaving no toxic taste [24].

The use of scented oils is not dangerous because it will not settle to the organs of the body. Aromatherapy massage provides physiological benefits by increasing blood and lymph circulation which can help eliminate toxins from the body, slow down the pulse frequency, lower blood pressure, relax tense muscles.

If through the epidermis and nerves, sweat glands, follicles, collagen, fibroblasts, mast cells and elastin, essential oils will be carried through the blood circulation to every cell in the body [24].

While SSBM will stimulate the nerves in the superficial skin which is transmitted to the brain in the hypothalamus. The descending nervous system releases endogenous opiates, such as the endorphin hormone. Expenditures of endorphins result in increased levels of endorphins in the body resulting in an increase in the production of the hormone dopamine [15]. The hormone dopamine functions to influence eosin, the immune system, and sexual [25]. This will increase the activity of the parasympathetic nervous system. The parasympathetic nervous system functions to control the activities that take place during body calming and work while relaxing, so that menopausal women perceive touch as a stimulus for a relaxation response and increase comfort.

These results are interesting, apparently massage has a strong positive effect due to physical safety with hand massage techniques, which provide feedback to the brain and reduce mental stress, then the brain transfers signals to the adrenals to release stress hormones and send relaxed muscle signals. The feedback loop between mental and physical manifestations of stress explains how massaging one area of the body can produce relaxation throughout the body [26,27].

When the body is in a state of relaxation can be seen from a decrease in blood pressure and pulse [15]. Massage is a sensory integration technique that affects the activity of the autonomic nervous system by decreasing the activity of the sympathetic nervous system and increasing the parasympathetic nervous system. The work of the parasympathetic nervous system causes the heart rate to slow down, blood pressure to fall, the instinctual response of rest and relaxation conditions [15].

Researchers conclude the influence of SSBM in menopausal women, due to the perception of touch as a stimulus to calm so that a relaxation response appears to increase comfort. Slow-stroke back massage when combined with essential oils increases its effectiveness. Aromatherapy massage is a popular way to use essential oils because it works in several ways at the same time. The skin absorbs essential oils and aromatherapy also enters through breathing, plus, physical therapy from massage itself.

5. CONCLUSION

Research on the combination of SSBM and Frangipani essential oil has been carried out on 42 respondents of menopausal married couples. The intervention group were 21 respondents and the control group were 21 respondents. The combination of SSBM and frangipani essential oil increases the comfort of sexual relations in menopausal women.

CONSENT

All authors state that: written informed consent was obtained from patients for publication of this case report.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

ACKNOWLEDGEMENTS

Thank you, the author, to the Director and Head of the Research and Community Service Center of the Poltekkes Kemenkes Semarang, who have provided financial support and recommendations. Thank you also to all respondents.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kim MJ, Cho J, Ahn Y, Yim G, Park HY, Association between physical activity and menopausal symptoms in perimenopausal women. *BMC Womens Health*. 2014;3(14): 122.
2. Baziad, *Menopause and Andropause*. Jakarta: Yayasan Bina Pustaka Ali. 2003; 1(2).
3. Nugroho Y. The relationship between menopausal stage and change Sexual menopause women in Posyandu elderly Srikandi village sumbersari of Malang City, J. *Keperawatan*. 2015;4:75–86.
4. Azwar. *Efforts to Arrange Alternative Medicine for Menopause*; 2004.
5. Sundari. W. *Massage in Aromatherapy. The Duties of Herbal Concepts in Indonesia*. Program Magister Herbal Universitas Indonesia; 2011.
6. Zaheer Z, Konale AG, Patel KA, Subur KW, Dan Farooqui MN. *Plumeria rubra* Linn. an Indian medicinal plant. *International Journal of Pharmacy and Therapeutics*. 2010;1(2):116-119.
7. Farooque AMD, Mazunder A, Shambhawe S, Dan Mazumder R. *Review on Plumeria acuminata*. *International Journal on Research in Pharmacy and Chemistry*. 2012;2(2):467-469.
8. Siahaan. *Effectiveness of Indonesian essential oils mixtures: Lemongrass fragrant cananga, and patchouli against relaxation, inhalation. A Clinical Trial of Healthy Women who Have Stress Risks*. Tesis, Fakultas Farmasi Universitas Indonesia; 2013.
9. Potter PA, Perry AG, Asih Y. *Nursing Fundamentals: Concepts, Processes, and Practices*. Subtitles, et al. EGC, Jakarta. 2005;4(1).
10. Kenworthy N, Snowley G, Dan Gilling C. *Common foundation studies in nursing*. Australia: Elsevier Health Sciences. 2001; 8(4):44.
11. Rho Kook-Hee. *Effects of aromatherapy massage on anxiety and self esteem in Korean elderly women: A pilot study*. *Intern. J. Neuroscience*. 2006;116:1447–1455.

12. Bailes S, Creti L, Fichten CS, Libman E, Brender W, Amsel R. Sexual self-efficacy scale for female functioning (SSES-F). Handbook of sexuality-related measures. New York: Routledge. 2011;3:551-554.
13. North American Menopause Society, Estrogen and progesterone use in peri- and postmenopausal women. North Am. Menopause Soc. 2007;14:168–182
14. Speroff L, Glass RH, Kase NG. Menopause and postmenopausal hormone therapy. In: Clinical Gynecologic Endocrinology and Infertility. 5th Baltimore: Williams and Wilkins. 1994;583–650.
15. Nani Avianti, Desmaniarti Z. Hotma Rumahorbo. Progressive Muscle Relaxation Effectiveness of the Blood Sugar Patients with Type 2 Diabetes. Open Journal of Nursing. 2016;6(3).
16. Primadiati R. Aromatherapy: Natural treatments for healthy and beautiful. Jakarta: Gramedia Pustaka Utama; 2002.
17. Taylor Lillis, Le Mone, Fundamentals of nursing: The art and science of nursing care Philadelphia, PA: Lippincott-Raven. 1997;3.
18. Bowels E. Joy. The chemistry of aromatherapeutic oils. 3rd Edition. Adelaide Australia: Griffin Press; 2003. [ISBN 174114051x; 2003]
19. Price Shirley. (Aromatherapy for Health Professionals. Philadelphia Elsevier Science; 2007. Available: <https://www.amazon.com/Aromatherapy-Health-Professionals-Price>. [4th Edition] [ISBN-13: 978-0702035647]
20. Hariana A. Medicinal Plants and Their Benefits. Yogyakarta: Penebar Swadaya. 1st Edition. ISBN. 2008;10:979-002-613-7.
21. Dean S. Aromatherapy (Guidelines for Being Healthy for Busy People). Jakarta: Karisma Publishing Group; 2005.
22. Field Diego M, Sanders CE. Adolescent suicidal ideation. Touch Research Institutes, University of Miami School of Medicine, Department of Pediatrics, Florida, USA; 2001.
23. Kaina. Aromaterapi. Grafindo Litera Media, Yogyakarta; 2006.
24. Buckle KA, Edwards RA, Fleet GH, Wootton M. Ilmu Pangan. Penerjemah Purnomo dan Adiono. Universitas Islam; 1985.
25. Sulistyawati E, Proverawati. Menopause dan Sindrom Premenopause. Yogyakarta Nuha Medik; 2010.
26. Levine AS, Levine VJ. The Bodywork and Massage Source Book. Amerika: Lowell House; 2004.
27. Karen J Sherman, Daniel C Cherkin, Janet Kahn, Janet Erro, Andrea Hrbek, Richard A Deyo, and David M Eisenberg A survey of training and practice patterns of massage therapists in two US states. BMC Complement Altern Med. 2005;5:13.

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Peer-review history:
The peer review history for this paper can be accessed here:
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