Evidence Reports of

Anma-Massage-Shiatsu 2011:

18 Randomized Controlled Trials of Japan

(EAMS 2011)

31 March 2012

Project for Systematic Review of the Efficacy, Safety and Efficiency of Traditional East Asian Medicine

Task Force for Evidence Reports of Anma-Massage-Shiatsu

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1. Background for preparing Anma-Massage-Shiatsu structured abstracts

As a result of an aging population, medical and long-term care costs have increased rapidly jeopardizing the financial bases of insurance plans in Japan. In 2006, this led to the structural reform of the healthcare system (i.e., the shift from treatment-oriented medicine to prevention-oriented medicine). In the field of long-term care, the whole nation began to address the issue of long-term care and preventive care services. It is ironic that, after the reform, the percentage of the elderly with certified need of care or support increased more rapidly than the percentage of the elderly itself. As of August 2011, the percentage of the elderly with certified need of long-term care or support was greater than 17% of all the elderly.

This fact suggests that the current reform implemented within the framework of existing medical and preventive care services has its limitations, and that medical and long-term care services may stop functioning in a super-aging society unless various medical resources including traditional therapies are fully utilized. These are urgent issues to be solved.

From this standpoint, Anma-Massage-Shiatsu can be regarded as public medical and long-term care resources, because a medical licensing system and official educational system have been established for it, and it has been practiced nationwide since the Edo era. Hopefully, Anma-Massage-Shiatsu will be systematized soon so that it can be integrated into the public health care system.

Anma-Massage-Shiatsu, however, has not been evaluated seriously in the context of evidence-based medicine (EBM), and as a result its value as a medical and long-term care resource may be underestimated and its systematization as a therapy made difficult.

Under the circumstances, comprehensive review of a wide variety of information on Anma-Massage-Shiatsu, compilation of a database that contains reliable references to this information, and establishment of a system that helps users search the database will be of benefit to those clinicians seeking information about useful treatments and of great help in increasing people's confidence in Anma-Massage-Shiatsu therapy.

As part of the Project entitled "Systematic Review of the Efficacy, Safety and Efficiency of Traditional East Asian Medicine" (Principal investigator: Kiichiro TSUTANI) using the Health and Labour Sciences Research Grants beginning in 2010, the Task Force for Anma-Massage-Shiatsu therapy was established and made systematic review of the evidence in this field.

2. Purpose

The aims are to collect papers on Anma-Massage-Shiatsu therapy, review the evidence presented by these papers comprehensively, grade the evidence of each paper, summarize the evidence from high-quality studies, and prepare structured abstracts of these studies.

3. Steps for the development of structured abstracts

The structured abstracts were prepared using the following steps: (1) Search for target journals, (2) screen unrelated references, (3) screen excluded references, and (4) prepare structured abstracts.

(1) Search for target references

To prepare a report of evidence on Anma-Massage-Shiatsu therapy, only results of relevant studies reported by Japanese to journals published in Japan were collected. For this purpose, only the database Ichushi Web Ver.4 (in Japanese) was used to search for target references. Ichushi is the abbreviation of *Igaku Chuo Zasshi* (*Japana Centra Revuo Medicina* : JCRM) and covers the period of 1983–2010.

For the selection of target references, keywords (controlled terms) were determined before the search formula were created. The search criteria for target references were as follows: 1) Papers with titles or abstracts about techniques or therapies similar to or related to Anma-Massage-Shiatsu and 2) papers describing controlled trials (meta-analysis/RD or randomized controlled trial/RD or quasi-randomized controlled trial/RD).

The search term were selected from terms used to describe Anma-Massage-Shiatsu and related techniques/therapies in the following literatures:

1) Ogata A, Yoshikawa K, Kurihara K, Togo S, Kitajima T. Massage to no Shugi ni yoru Ryoho ni kansuru Kenkyu (Dai 2 ho), Shugi Ryoho to Yugai Jisho ni Tsuite no Bunken teki Kento (Research on the manual therapy such as massage and others, Second Report: Literature survey on manual therapy and adverse event). *Riryo Kyoiku Kenkyu* (*Journal of Education and Research of Massage and Acupuncture*) 2009; 31 (1) : 35-59
2) Dai 2 ji Nihon Keiketsu Iinkai (trans.). WHO /WPRO Hyogjun Keiketus Bui. Nihon-go Koshiki-ban (2nd Japan Acupuncture Point Committe (trans.). Formal translation of WHO/WPRO Standard Acuncture Point Location) . Tokyo : Ido-no-Nippon Sha, 2009) [Original : WHO International Standard Terminologies on Traditional Medicine in the Western Pacific Region. Manila: WHO Regional Office for the Western Pacific, 2007 .

Search formula and the results of the search appeared in **Table 1**.

None of the procedures of Anma, Massage, or Shiatsu have been defined by legal acts or precedents in Japan. In this report, Anma-Massage-Shiatsu therapy is the general term for a group of manual therapies involving squeezing, pressing, and stroking. They have been handed down from generation to generation in Japan for the purpose of treatment, healthcare, prevention, or health promotion. Manual therapies (such as reduction, arthrokinematic approach [AKA], chiropractic, and Seitai) and massage with the aid of instruments or apparatus are excluded.

The levels of evidence selected are basically RCTs and quasi-randomized controlled trials, as their quality is higher than that from other types of trials, but non-randomized controlled trials are not excluded provided that they are controlled clinical trials. References are classified into the following five types: a) clinical practice guidelines (CPGs), b) meta-analyses, c) randomized controlled trials (RCT), d) quasi-randomized controlled trials (quasi-RCT, and e) clinical trials (CT).

(2) Screening unrelated references

Target references selected by the above search method may contain references about medical interventions other than Anma-Massage-Shiatsu therapy. Therefore, certain criteria were established to exclude unrelated references. For this screening, four reviewers independently determined whether or not 105 references met these criteria by evaluating their titles or abstracts in accordance with the following procedures:

For research purposes, we excluded references that met any of the primary exclusion criteria listed below (primary screening) and then those about interventions that met any of the secondary exclusion criteria (secondary screening). References excluded by these two screenings were regarded as unrelated references.

As described above, references written only by non-Japanese authors were excluded, because the focus of this evidence report was on Anma-Massage-Shiatsu clinical trials by Japanese.

Table 1　Search formula for Anma-Massage-Shiatsu study and identified number in Ichushi Web Ver.4

Date of search: 21 May 21 2010

No.	Search formula	N
#1	あんま (Anma) / AL or 按摩 (Anma) /AL or あん摩/AL or 指圧 (Shiatsu) /TH or 指圧/AL or pointillage/AL or Shiatzu/AL or shiatsu/AL or "finger pressure"/AL or Acupressure/AL or acupressurist/AL or "Zhi Ya"/AL or "Chih Ya"/AL or manipulation/AL or manipulative/AL or マニピュレーション or マニピュレイション (manipulation)	4,424
#2	マッサージ (massage) /TH or マッサージ/AL or 揉み治療 (kneading) /AL or 揉み療治/AL or もみ治療/AL or もみ療治/AL or massage/AL or masseur/AL or masseuse/AL or massagist/AL or massotherap/AL	6,304
#3	#1 or #2	9,907
#4	リフレクソロジ (reflexology) /AL or reflexolog/AL or ゾーンセラピー (zone therapy) /AL or "Zone Therap"/AL or ナプラパシー (naprapathy) /AL or naprapath/AL or カイロプラク (chiropractic) /AL or chiropractic/AL or chiropraxis/AL or 整体 (seitai) /AL	1,412
#5	#1 or #2 or #4	10,669
#6	#5 and RD=診療ガイドライン (Clinical practice guideline)	3
#7	#5 and RD=メタアナリシス (Meta-analysis) not #6	3
#8	#5 and RD=ランダム化比較試験 (Randomized controlled trial) not #6 not #7	45
#9	#5 and RD=準ランダム化比較試験 (Quasi-randomized controlled trial) not #6 not #7 not #8	19
#10	#5 and 臨床試験 (Clinical trial)/TH not #6 not #7 not #8 not #9	35
#11	#5 and RD=比較研究 (Controlled trial) not #6 not #7 not #8 not #9 not #10	354
#12	(#6 or #7 or #8 or #9 or #10 or #11)	459

* RD:　research design

1) Primary exclusion criteria

Studies that are conducted not for the purpose of evaluating the efficacy, usefulness, or safety of Anma-Massage-Shiatsu therapy and meet any of the items “a” to “d” listed below:

a. Studies to evaluate the effects of surgery, drugs, chemotherapy, or other medical interventions provided by doctors
b. Studies to evaluate the effects of hygienic measures such as bed bathing and shampooing
c. Studies to evaluate the effects of physical therapies (e.g., thermotherapy such as hand bath, phototherapy, and electrotherapy)
d. Studies to evaluate the effects of nursing or long-term care education

2) Secondary exclusion criteria

Methods of intervention that meet any of the items "a" to "f" listed below, excluding Anma, Massage, and Shiatsu. These include studies to evaluate the effects of:

a. Exercise (including stretching)
b. Manual therapies such as the arthrokinematic approach (AKA-Hakata method) performed by physical therapists
c. Manual therapies (e.g., reduction) performed by judo healing practitioners
d. Manual therapies (e.g., chiropractic, spinal manipulation) performed by quasi-medical practitioners
e. Resuscitation
f. Medical devices (e.g., massage chair, air massager, and elastic stockings)

(3) Screening excluded references (criteria for selection of references compiled as structured abstracts)

To select references to be compiled as structured abstracts, it is necessary to thoroughly evaluate all references shown by the search results and screen unrelated references to be excluded.

While a reference evaluation checklist (**Table 2**) was prepared, references to be evaluated were ordered and divided equally into two groups. Two reviewers were assigned to each of the groups so that the references would be independently reviewed.

References to be summarized as structured abstracts were required to meet two inclusion criteria and not to meet either of the two exclusion criteria shown below. References that did not fulfill these requirements were classified as excluded references. When two reviewers disagreed about whether or not a certain reference should be excluded, their disagreement was resolved by discussion.

Table 2　Reference evaluation checklist

Prepared by: _____
Reference No.: _____

- **Inclusion criteria:** Both of the following two criteria are met
  1. Intervention includes Anma, Massage, or Shiatsu (title, purpose, method). ☐ ○ or ×
  2. The trial has control group(s) (e.g., parallel group, crossover). ☐ ○ or ×
- **Exclusion criteria:** Either of the following two criteria is met
  1. The purpose of the trial is not evaluation of the efficacy, usefulness, safety, etc. of Anma, Massage, or Shiatsu. ☐ ○ or ×
  2. The purpose of the trial is not evaluation of Anma, Massage, or Shiatsu (manual therapy), but evaluation of a device or machine (e.g., massage chair, air massager, elastic stockings). ☐ ○ or ×

The second inclusion criterion, "The trial has control group(s)," means that the trial is a randomized controlled trial (RCT), quasi-randomized controlled trial (quasi-RCT), crossover trial, clinical practice guidelines (CPGs), or trials included in meta-analyses. Trials without clear-cut randomization and crossover trials were regarded as RCTs.

(4) Preparation of structured abstracts

1) Target references

A search of the database of Ichushi Web for target references found 105 references, 72 (71.4%) of which had abstracts. **Table 3** shows 94 references arranged by time period but not those references without information on the year of publication. Most (96.8%) of the references were published after 2000. When the 105 references were grouped by level of evidence, 3, 3, 45, 19, and 35, respectively, contained clinical practice guidelines (CPGs), trials included in meta-analyses (MA), randomized controlled trials (RCTs), quasi-randomized controlled trials (quasi RCTs), and clinical trials (CTs) (**Table 1** #6–9).

2) Unrelated references

As a result of screening the 105 target references for unrelated references, 40 references met the primary exclusion criteria, 25 met the secondary exclusion criteria, and 1 was found to be written by non-Japanese authors. That is, 66 references (62.9% of the target references) were excluded.

Table 3 References related to Anma-Massage-Shiatsu grouped by study design and year of publication

1983～1989	0	0	1	0	0	1	1.1%
1990～1999	0	0	1	0	1	2	2.1%
	2	3	36	16	34	91	96.8%
	2	3	38	16	35	94	
	2.1%	3.2%	40.4%	17.0%	37.2%	100%	

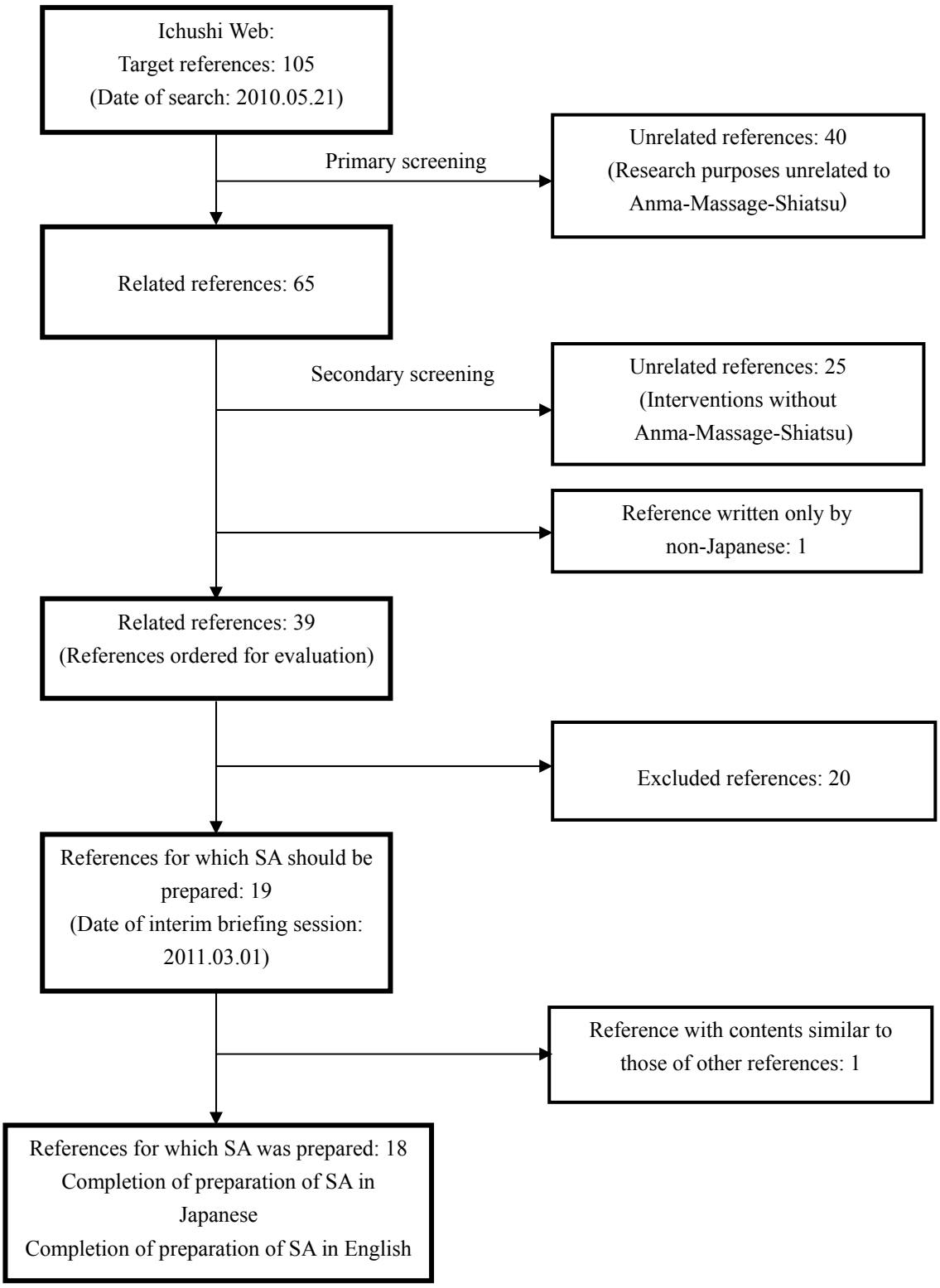
3) Excluded references

Excluding the 66 unrelated references from the 105 target references, 39 references were evaluated using the reference evaluation checklist and 19 of them met the criteria for preparation of structured abstracts. Excluding one reference with contents similar to those of other references (No. 12 on the list of references for preparation of structured abstracts), structured abstracts were prepared for 18 references.

All of these references were about the evaluation of efficacy and none of them were about safety or cost effectiveness. For the remaining 20 references (excluded references), their bibliographic items and reasons for exclusion were described on the excluded reference list (see below).

The process of selecting references for preparation of structured abstracts is shown in **Fig. 1**.

Fig. 1 Flowchart showing the process of reference selection for structured abstract (SA) preparation



4) ICD-10 and disease classification of structured abstracts

The 18 studies included in the reports were compared against the ICD 10 disease names and were found to correspond to only three of those: “Diseases of the Musculoskeletal and Connective Tissue” “Symptoms and Signs” and “Others” (**Table 5**). “Disease classification names” used in EKAT 2010 by JSOM were used in EAMS 2011.

Table 4 ICD-10 and disease classification of structured abstracts

Chapter no.	ICD-10 code	Chapter title	Disease classification names in EKAT and EAMS 2011	EAMS
1	A00-B99	Certain infectious and parasitic diseases	Infections (including viral hepatitis)	0
2	C00-D48	Neoplasms	Cancer (condition after cancer surgery and unspecified adverse drug reactions of anti-cancer drugs)	0
3	D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	Blood diseases including anaemia	0
4	E00-E90	Endocrine, nutritional and metabolic diseases	Metabolism and endocrine diseases	0
5	F00-F99	Mental and behavioural disorders	Psychiatric/behavioral disorders	0
6	G00-G99	Diseases of the nervous system	Nervous system diseases (including Alzheimer's disease)	0
7	H00-H59	Diseases of the eye and adnexa	Eye diseases	0
8	H60-H95	Diseases of the ear and mastoid process	Ear diseases	0
9	I00-I99	Diseases of the circulatory system	Cardiovascular diseases	0
10	J00-J99	Diseases of the respiratory system	Respiratory diseases (including influenza and rhinitis)	0
11	K00-K93	Diseases of the digestive system	Gastrointestinal, hepato-biliary-pancreatic diseases	0
12	L00-L99	Diseases of the skin and subcutaneous tissue	Skin diseases	0
13	M00-M99	Diseases of the musculoskeletal system and connective tissue	Diseases of the muscloskeletal and connective tissue	2
14	N00-N99	Diseases of the genitourinary system	Genitourinary tract disorders (including climacteric disorders)	0
15	O00-O99	Pregnancy, childbirth and the puerperium	Ante/Post-partum Diseases	0
16	P00-P96	Certain conditions originating in the perinatal period	Certain conditions originating in the perinatal period	0
17	Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities	Congenital malformations, deformations and chromosomal abnormalities	0
18	R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	Symptoms and signs	12
19	S00-T98	Injury, poisoning and certain other consequences of external causes	Post-anesthesia and postoperative pain	0
20	V00-Y98	External causes of morbidity and mortality	External causes of morbidity and mortalitys	0
21	Z00-Z99	Factors influencing health status and contact with health services	Others	4
22	U00-U99	Codes for special purposes	Codes for special purposes	0

A structured abstract basically contains 11 of the 12 elements utilized by the "Evidence Reports of Kampo Treatment 2010" (EKAM 2010)　All of the following headings except "From Kampo medicine perspective" in EKAT are present: 1) Objectives, 2) design, 3) setting, 4) participants, 5) intervention, 6) main outcome measures, 7) main results, 8) conclusions, 9) safety assessment in the article, 10) abstractor's comments, and 11) abstractor and date.

"From Anma-Massage-Shiatsu perspective" was not added in EAMS because even if the item was added under the conditions in which the evidence of the efficacy of each technique of Anma-Massage-Shiatsu or theory of its therapeutic effect had not been well established, it would be difficult to standardize the criteria for evaluating contents to be described. It remains to be seen whether adding the heading is appropriate and the format should be uniform with that used in other evidence reports series.

5. Conflicts of interest

None of the members of the Task Force for Anma-Massage-Shiatsu have COI during the project (June 2010 – March 2012).

6. Acknowledgements

Special thanks to Kiichiro Tsutani (Department of Drug Policy and Management, Graduate School of Pharmaceutical Sciences, The University of Tokyo), Koki Tsuruoka (Division of Community and Family Medicine, Center for Community Medicine, Jichi Medical University), and Ichiro Arai (Department of Pharmacognosy, School of Pharmaceutical Sciences, Toho University) for showing us how to gather references and select RCTss, ASCA Corporation for translating the evidence reports, and Sunmedia Co., Ltd., for helping us gather references.

This study was supported by Health and Labour Sciences Research Grants (fiscal year2010-11)**.**

7. Contact point

We would appreciate your comments on this report. Please send your comments to the address below. Comments from the authors of the included references would also be welcome. If you find references that you think should be included but are not included, please inform us. We will include your comments in the final report.

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7. Lists of Structured Abstracts

The list below indicates the 18 studies (structured abstracts) with 1) ICD-10 code, 2) Research question, 3) References, 4) Study design, 5) Sources, and 6) Page. As shown in the **Table 4**, Page 8, regarding the ICD-10 disease classification with no RCTs found, we decided not to indicate the corresponding chapter numbers of ICD-10 and disease classification names in the list below.

Note: Original English titles assigned by authors were used in this list and the structured abstracts. When references had no English titles, the Task Force translated the original Japanese titles into English ones (*).

Abbreviations: "I" indicates Ichushi Web Ver. 4

Structured Abstracts describing RCTs and the References Reporting Them (18 abstracts, 19 references)

13. Diseases of the Musculoskeletal and Connective Tissue (2 abstracts, 3references)

ICD-10	Research Question	References	Study Design	Sources	Page
M06-9	To evaluate the effect of manual therapy on quality of life (QOL) in chronic rheumatoid arthritis (RA) patients.	Yamamoto K. A clinical study of manual therapy for chronic rheumatoid arthritis*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*) 2001; 12(1): 7–15 (in Japanese).	quasi-RCT	I	21
M79.1	To evaluate the effectiveness of manual therapy for delayed onset muscle soreness (DOMS)	Ikeuchi T, Sumiya K, Odahara Y, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Toho Igaku* (*Eastern Medicine*) 2009; 24(4): 11–18 (in Japanese with English abstract).	RCT	I	22
		Ikeuchi T, Kimura A, Sumiya K, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Nihon Toyo Igakkai Shorokushu* (*Proceedings of the Japan Society for Oriental Medicine*). 2008; 25: 46 (in Japanese).			

18. Symptoms and Signs (12 abstracts, 12 references)

ICD-10	Research Question	References	Study Design	Sources	Page
R19.4	To evaluate the effectiveness of sole massage for facilitation of defecation in post-partum constipated women.	Kimura S, Aso Y. An investigation into the effects of sole massage on facilitation of defecation in post-partum constipated women – Using bowel sounds as an indicator. *Bosei Eisei* (*Japanese Journal of Maternal Health*). 2009; 50(2): 352–9 (in Japanese with English abstract).	RCT cross over	I	23

ICD-10	Research Question	References	Study Design	Sources	Page
R53.6	To evaluate the effectiveness of effleurage for muscle fatigue and muscle endurance recovery.	Irie T, Tokutake T, Yoshikawa K. The effects of effleurage on muscle fatigue and muscle endurance recovery*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*) 2001; 12(1): 29–33 (in Japanese).	RCT cross over	I	24
R53.6	To evaluate the physiological and subjective effects of back rub massage and their dependence on massage duration.	Noto Y, Sato T. The effect of back rub massage in healthy subjects. *Hirosaki Daigaku Igakubu Hokengakka Kiyo* (*Bulletin of Health Science Hirosaki)*. 2005; 15: 97–102 (in Japanese with English abstract).	quasi-RCT	I	25
R53.6	To verify the effects of aromatherapeutic massage using citrus fruit essential oil for deepening relaxation and increasing refreshment.	Ogasawara E, Shiihara Y, Koitabashi K, et al. The relaxing and refreshing effects of aromatherapeutic massage using citrus fruit essential oil — evaluation using skin conductance and a mood adjective check list. *Nihon Kango Kenkyu Gakkai Zasshi* (*Journal of Japanese Society of Nursing Research*) 2007; 30 (4): 1726 (in Japanese with English abstract).	RCT cross over	I	26
R53.6	To verify that physiological and psychological change occurs with stepping massage.	Uebaba K, Xu FH, Wang HB. Physiological and psychological change with stepping massage*. *Nihon Toho Igakkai Shorokushu* (*Japan Eastern Medical Association Abstracts*). 2008; 25: 54 (in Japanese).	RCT	I	27
R53.6	To evaluate the effects of back massage for relaxation in postpartum mothers.	Nakakita M, Takenoue K. Relaxing effects of back massage on relaxation in normal postpartum mothers*. *Nihon Josan Gakkaishi* (*Journal of Japan Academy of Midwifery*) 2009; 22(3): 362 (in Japanese).	quasi-RCT	I	28
R53.6	To evaluate the efficacy of aromatherapeutic hand and foot massage (AM) using two kinds of essential oils.	Kimura M, Watanabe E, Watanabe S, et al. Psychosomatic effects of aromatherapeutic hand and foot massage on healthy women using two kinds of essential oils*. *Josei Shinshin Igaku* (*Journal of Japanese Society of Psychosomatic Obstetrics and Gynecology*) 2009; 14(1): 62.	RCT cross over	I	29
R53.6	To evaluate the effects of back massage on relaxation in puerperant women.	Sato K, Ebata Y, Sayama S. A study of the relaxation effect of back massage in puerperants. *Bosei Eisei* (*Japanese Journal of Maternal Health*). 2008; 49(3): 169 (in Japanese).	quasi-RCT	I	30
R53.13	To evaluate the efficacy of press tack needle treatment and massage on elbow flexor low-load isotonic repetitions.	Furuya E, Kaneko Y, Uehara A, et al. The effects of press tack needle treatment and massage on elbow flexion and extension repetitions*. *Zen Nihon Shinkyu Gakkai Zasshi* (*Journal of the Japan Society of Acupuncture and Moxibustion*) 2008; 58(3): 487 (in Japanese).	RCT cross over	I	31

ICD-10	Research Question	References	Study Design	Sources	Page
R53.13	To compare petrissage massage applied immediately after the first exercise bout and immediately before the second bout as a means of recovering from fatigue between two successive bouts of exercise.	Ogai R, Matsumoto T, Kosaka M. Petrissage massage applied during resting period between two successive bouts of intense leg exercise improves performance during second bout. *Nihon Undo Seirigaku Zasshi* (*Journal of Exercise and Sports Physiology*) 2009; 16(1): 1–7 (in Japanese with English abstract).	RCT cross over	I	32
R54.8	To evaluate the effectiveness of massage for mid and low back pain caused by prolonged lying in the prone position.	Nishida T, Tachiyama R, Ping PY, et al. Effects of back massage for pain caused by prolonged lying in prone position*. *Nihon Kango Gakkai Ronbunshu Kango Sogo* (*Japanese Nursing Association Articles – General Nursing*). 2006; 37: 182–4 (in Japanese).	RCT	I	33
R60.0	Nagata H, Tanaka E, Takefu M, et al. Effects of Lower Limb and Dorsolumbar Massages on Edema in Postpartum Women, *Biomedical Soft Computing and Human Sciences* 2009; 14(1): 109–15.	Nagata H、 Tanaka E、 Takefu M、 et.al. Effects of Lower Limb and Dorsolumbar Massages on Edema in Postpartum Women. *Biomedical Soft Computing and Human Sciences* 2009; 14(1): 109-15.	RCT	I	34

21. Others (4 abstracts, 4 references)

ICD-10	Research Question	References	Study Design	Sources	Page
Z00.6	To evaluate heat retention effectiveness of massage immediately after foot bath.	Tonegawa Y, Uchizaka S, Takemura E, et al. Changes in leg skin temperature after foot bath — Comparison of the effects of massage and no massage*. *Nagano Sekijuji Byoin Ishi* (*Medical Journal of Nagano Red Cross Hospital)*. 2004; 17: 116–8 (in Japanese).	RCT	I	35
Z00.6	To evaluate the effects of full-body massage and unilateral upper-limb Anma on peripheral circulation.	Ichida K, Ye H, Ogura Y, et al. A comparison of full-body Anma and local Anma — Using skin temperature and deep temperature as indicators*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*). 2004; 15(1): 13–7 (in Japanese).	RCT cross over	I	36
Z00.6	To compare and verify low back skin temperature responses to pressure stimulation at the sole and low back.	Wada T, Usuda Y, Fukushima M, et al. Does sole pressure stimulation increase low back skin temperature? Comparison of the effects of sole stimulation with low back stimulation on low back skin temperature*. .*Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*). 2004; 15(1): 18–22 (in Japanese).	RCT	I	37
Z51.5	To evaluate the efficacy of aromatherapy for	Ueda N, Maruta T, Uno I. Trial of aromatherapy for dialysis patients – A strategy for discomfort*. *Yodogawa Christian Byoin*	RCT	I	38

ICD-10	Research Question	References	Study Design	Sources	Page
	treating discomfort due to dialysis.	*Gakujutsu Zasshi* (*Y.C.H. Medical Bulletin*) 2004; 17–19 (in Japanese).			

8. Lists of Excluded References (20 references)

Note: Original English titles assigned by authors were used in this list and the structured abstracts. When references had no English titles, the Task Force translated the original Japanese titles into English ones (*).

Abbreviation: "I" indicates the Ichushi Web Ver.4.

Reasons for exclusion were classified as follows:

(1) Interventions other than Anma, Massage, or Shiatsu are included.

(2) The trial is not controlled (e.g., it is not an RCT).

(3) The purpose of the trial is not to evaluate the efficacy or safety of Anma, Massage, or Shiatsu.

(4) The purpose of the trial is not to evaluate manual therapy but rather therapy involving the use of devices or machines.

(5) A structured abstract cannot be prepared because details in the reference are not well described or missing.

5. Psychiatric/behavioral disorders（1 reference）

No.	Research Question	Reference	Reason for Exclusion	Source
F06.9	Evaluation of the effects of aromatherapy on the psychology of the elderly	Ando M, Ogasawara E. Effects of aromatherapy on psychology of the institutionalized elderly*. *Nihon Aromaserapi Gakkaishi* (*Journal of Japanese Society of Aromatherapy*) 2004; 3(1): 52–7 (in Japanese).	(3)	I

6. Nervous system diseases (including Alzheimer's disease)（3 references）

No.	Research Question	References	Reason for Exclusion	Source
G90.9	Evaluation of changes in skin temperature induced by acupressure	Wada T, Usuda Y, Terada K. Changes in skin temperature induced by acupressure - Evaluation of subjective and objective changes in temperature –*. *Toyo Igaku to Pain Clinic* (*Oriental Medicine and the Pain Clinic*) 2007; 17: 368–72 (in Japanese).	(2)	I
G90.9	Evaluation of the effects of music and massage on emotional reactions and autonomic nervous system responses	Fukada M. Responses of feeling and the autonomic nervous system produced by music and massage. *Nihon Seiri Jinrui Gakkaishi* (*Japanese Journal of Physiological Anthropology*) 2007; 12(4): 177–82 (in Japanese).	(1)	I
G90.9	Evaluation of the effects of massage of the feet on autonomic nervous activity	Igusa R, Aoki K, Kameda M, et al. Assessment of autonomic nervous activity during and after foot massage for nursing care. *Nihon Kango Kenkyu Gakkai Zasshi* (*Journal of Japan Society of Nursing Research*) 2008; 31: 21–7 (in Japanese).	(5)	I

8. Ear diseases（1 reference）

No.	Research Question	Reference	Reason for Exclusion	Source
H81.9	Evaluation of the effects of acupuncture and acupressure on equilibrium	Nagura M, Miyamae K, Takaoka H, et al. Evaluation of effects of acupuncture and acupressure on equilibrium*. *Toyo Ryoho Gakko Kyokai Gakkaishi* (*The Journal of Japan College Association of Oriental Medicine*) 2009; 32: 127–9 (in Japanese).	(1)	I

13. Diseases of the Muscloskeletal and Connective tissue（5 references）

No.	Research Question	References	Reason for Exclusion	Source
R11.2	Evaluation of the effects of acupressure on nausea and vomiting after gynecologic surgery	Kawauchi Y, Hayashida M, Takeuchi C, et al. Efficacy of acupressure on prevention of postoperative nausea and vomiting*. *Rinsho Masui* (*Journal of Clinical Anesthesia* [*Japan*]) 2000; 24(1): 21–4 (in Japanese).	(1)	I
M17.9	Effect of aromatherapy on knee osteoarthritis	Shiba N, Homma S. The effect of aromatherapy on knee osteoarthritis. *Nihon Aromatherapy Gakkaishi* (*Journal of Japanese Society of Aromatherapy*) 2008; 7(1): 28–35 (in Japanese).	(3)	I
M50.1	Application of aroma massage at pain clinics	Kaneko T. Application of aroma massage at pain clinics*. *Pain Clinic* 2008; 29: 1507–12 (in Japanese).	(3)	I
M62.4	Evaluation of the effects of tactile pressure on the small intestine meridian of hand-taiyang	Ejiri Y, Uchida N, Utsumi Y, et al. Effect of tactile pressure on sit-and-reach flexibility when applied to the small intestine meridian of hand-taiyang*. *Toyo Ryoho Gakkai Kyokai Gakkaishi* (*The Journal of Japan College Association of Oriental Medicine*) 2004; 28: 33–6 (in Japanese).	(1)	I
M79.8	Evaluation of psychological and immunological effects of Anma therapy	Donoyama N, Munakata T. Psychological and immunological effects of traditional Japanese massage (Anma therapy)*. *Nihon Onsen Kikou Butsuri Igakukai Zasshi* (*The Journal of the Japanese Society of Balneology, Climatology and Physical Medicine*) 2005; 69: 36–7 (in Japanese).	(5)	I

18. Symptoms and Signs（10 references）

No.	Research Question	References	Reason for Exclusion	Source
R19.4	Evaluation of the effects of abdominal aromatherapy massage on constipation in terminally ill cancer patients	Miyauchi T, Yamase H, Kohara H, et al. Effect of abdominal aromatherapy massage for constipation in terminally ill cancer patients. *Kanwa Care* (*The Japanese Journal of Hospice and Palliative Care*) 2007: 17: 368–72 (in Japanese).	(1)	I
R52.9	Evaluation of the effects of massage on intramuscular injection pain	Morishita A, Nakata Y, Sakamoto C, et al. Effect of massage to reduce the pain of the intramuscular injection. *Kango Kenkyu* (*The Japanese Journal of Nursing Research*) 2002; 35(3): 205–12 (in Japanese).	(3)	I

No.	Research Question	References	Reason for Exclusion	Source
R53.5	Evaluation of the effects of foot bathing with aromatherapy on malaise	Miyauchi T, Ito T, Sasaki T, et al. Effect of aromatherapy on fatigue in terminally cancer patients. *Gan Kango* (*Japanese Journal of Cancer Care*) 2007; 12(7): 745–8.	(3)	I
R53.6	Evaluation of the effects of ice massage on muscle fatigue	Kondo H, Aoki H, Miyamoto T, et al. The effect of ice massage against fatigued muscle of former arm on skin temperature*. *Biomedical Thermology* 2001; 21(3): 102–7 (in Japanese).	(3)	I
R53.6	Evaluation of the effects of hand bath on the mind and body of adolescents	Ohba Y, Kudo S, Kitamiya C, et al. Effects of hand bath on the mind and body of adolescents*. *Kango Gijutsu* (*The Japanese Journal of Nursing Arts*) 2006; 52(11): 990–5 (in Japanese).	(1)	I
R53.6	Evaluation of the effects of backrubs in patients undergoing upper GI endoscopy	Tani A, Tsutsumi R, Kuniyasu N, et al. Effects of backrubs in patients undergoing upper GI endoscopy *. *Nihon Kango Gakkai Ronbunshu* (*Journal of Japanese Nursing Research*) 2007; 37: 165–7 (in Japanese).	(2)	I
R53.6	Physiological and psychological changes induced by foot massage (Rakken method or stepping massage)	Uebaba K, Xu FH, Bao YC, et al. Physiological and psychological changes induced by foot massage (Rakken method or stepping massage)*. *The Annual Journal of Ayurveda Society in Japan, Supplement* 2008; Proceedings: 32–3 (in Japanese).	(5)	I
R53.6	Comparison of the effect of stroking the skin on the low back and both forearms	Ito Y, Motohashi M, Kudo M. A comparison: Relaxation effect of stroking to the trunk back and to the fore-arms. *Igaku to Seibutsugaku* (*Medicine and Biology*) 2009; 153: 363–8 (in Japanese).	(1)	I
R53.13	Evaluation of the effects of Tuina stimulation on recovery from fatigue	Tsubouchi S, Matsuura Y, Li Q, et al. The effect of Tuina stimulation on fatigue recovery by physiological index. *Toho Igaku* (*Eastern Medicine*) 2006; 22(2): 53–60 (in Japanese).	(1)	I
R79.8	Evaluation of the effects of acupuncture and effleurage on blood lactate levels	Hayashi K, Fujinami T, Morita Y, et al. Effects of acupuncture and effleurage on blood lactate levels*. *Toyo Ryoho Gakkai Kyokai Gakkaishi* (*The Journal of Japan College Association of Oriental Medicine*) 2004; 28: 80–2 (in Japanese).	(1)	I

9. Structured Abstracts

(18 abstracts describing RCTs)

- Note: Original English titles assigned by authors were used in this list and the structured abstracts. When references had no English titles, the Task Force translated the original Japanese titles into English ones (*).

- Each bibliographic item is followed by its ID No. from a particular searched database (Ichushi web ID).

13. Diseases of the Musculoskeletal and Connective Tissue

Reference

Yamamoto K. A clinical study of manual therapy for chronic rheumatoid arthritis*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*) 2001; 12(1): 7–15 (in Japanese). Ichushi Web ID 2003139616

1. Objectives

To evaluate the effect of manual therapy on quality of life (QOL) in chronic rheumatoid arthritis (RA) patients.

2. Design

Quasi-randomized controlled trial (quasi-RCT).

3. Setting

Outpatients clinics (the University of Tokyo Hospital), Japan.

4. Participants

Twenty adult patients with RA (at least two years since onset, treated with steroids [10 mg/day [prednisolone equivalent] or less]).

5. Intervention

Arm 1: Combined group: Drug therapy and manual therapy (once a week, n=10).
Arm 2: Control group: Drug therapy (n=10).

6. Main outcome measures

American College of Rheumatology (ACR) Core Set (RA activity score).
Arthritis Impact Measurement Scales 2 (AIMS-2) (disease-specific QOL scale).
The study observation period was one year.

7. Main results

Of the ACR Core Set measures, the tender and swollen joint counts improved by 20% or more in both groups, and the improvement in patient-assessed pain and physician-assessed pain scores was significantly different between groups. QOL tended to improve in both groups. The improvement in QOL measures including hand and finger function, pain, and tension was similar in both groups.

8. Conclusions

Combining manual therapy with standard treatment limits reduction of physical functioning, improves activities of daily living, and contributes to improved QOL in RA patients.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The author has designed the study well: the observation period spans the relatively long period of one year, and standard measures are used for the outcomes. The author's institution demonstrates its potential as a research institute. Regrettably, the study has flaws, including its use of the odd-even ID number method of randomization. Such problems could be rectified by using the university's clinical trial center.

11. Abstractor and date

Tsukayama H, 17 December 2011.

13. Diseases of the Musculoskeletal and Connective Tissue

References

Ikeuchi T, Kimura A, Sumiya K, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Nihon Toyo Igakkai Shorokushu* (*Proceedings of the Japan Society for Oriental Medicine*). 2008; 25: 46 (in Japanese). Ichushi Web ID 2008255553

Ikeuchi T, Sumiya K, Odahara Y, et al. Effect of manipulation therapy on delayed onset muscle soreness (DOMS). *Toho Igaku* (*Eastern Medicine*) 2009; 24(4): 11–18 (in Japanese with English abstract).

1. Objectives

To evaluate the effectiveness of manual therapy for delayed onset muscle soreness (DOMS).

2. Design

Randomized controlled trial (RCT).

3. Setting

Not described, Japan.

4. Participants

Twelve healthy male students (mean age ± SE: 18.8±1.3 years).

5. Intervention

Participants repeated 3 sets (30-second intervals) of 10 eccentric elbow flexor contractions (angular velocity: 60 deg/sec) at a maximum force of 100%.

Arm 1: Manual therapy group: One-minute effleurage of the elbow flexors, then 10-minute petrissage and one-minute effleurage (n=6).

Arm 2: Control group: No treatment (n=6).

6. Main outcome measures

Visual Analogue Scale (VAS) pain score, tenderness (algometer), muscle rigidity (Venustron).

7. Main results

VAS pain scores from day 3 to day 6 were 19.5, 13.7, 8.2, and 2.8 in Arm 2 and high (54.2, 44.8, 27.3, and 12.5) in Arm 1. Mean tenderness threshold scores were lower in Arm 1 than Arm 2 from day 3, and muscle rigidity scores were slightly higher in Arm 1.

8. Conclusions

Manual therapy for DOMS after exercise intensifies pain.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This very interesting study suggests the possibility that manual therapy (effleurage and petrissage) for DOMS after exercise intensifies pain. The study was well designed, particularly the outcome measures, which included subjective (VAS) and objective (tenderness threshold score, etc.) measures over a long enough period to detect changes over time. Yet, the sample size was small, and the authors did not indicate the intensity of DOMS, the methods or extent of the manual treatment, or any significant differences in tenderness thresholds. Although the abstract form may limits the amount of detail that can be presented, the authors should have described the manual therapy methods because the effects on intramuscular circulation and the amount of stimulation depend on whether the thumb or grasping is used in the petrissage, and whether the petrissage movements are linear or circular. Possibly, pain was intensified in this trial because excessive force was used in the effleurage and petrissage. The authors do not discuss these parameters, so it is difficult to find adequate evidence for their thesis that manual therapy for DOMS is harmful (i.e., causes microscopic tissue damage and increases inflammation). On the other hand, given the current lack of articles presenting a high level of evidence that manual therapies for DOMS are effective or harmful, the findings suggested in this study are highly significant. Hopefully researchers will investigate this topic and follow-up this study to provide better treatment and better protection of people who participate in sports.

11. Abstractor and date

Fujii R, 8 December 2010.

18. Symptoms and Signs

Reference

Kimura M, Watanabe E, Watanabe S, et al. Psychosomatic effects of aromatherapeutic hand and foot massage on healthy women using two kinds of essential oils*. *Josei Shinshin Igaku* (*Journal of Japanese Society of Psychosomatic Obstetrics and Gynecology*) 2009; 14(1): 62. Ichushi Web ID 2009228467

1. Objectives

To evaluate the efficacy of aromatherapeutic hand and foot massage (AM) using two kinds of essential oils.

2. Design

Crossover randomized controlled trial (RCT - cross over).

3. Setting

Not described, Japan.

4. Participants

Sixteen healthy women.

5. Intervention

Arm 1: massage with lavender and geranium (LA/GE) oils (n=16).
Arm 2: massage with peppermint and lemongrass (PE/LE) oils (n=16).
Arm 3: massage with carrier oil only (control) (n=16).

6. Main outcome measures

Heart rate variation, electroencephalogram (EEG), salivary cortisol (CS) level, salivary IgA level, scores on psychological questionnaire (Profile of Mood States [POMS]/Mini Mental State [MMS] Examination).

7. Main results

The heart rate variation high frequency (HF) value increased after AM with LA/GE, while the LF/HF values increased after AM with PE/LE. The EEG power percentage increased the most after AM with PE/LE. CS concentration decreased greatly after AM with LA/GE and after AM with PE/LE. Salivary IgA increased the most after AM with PE/LE. Although the scores for negative emotions in the psychological questionnaire increased after AM with LA/GE, scores for positive emotions increased after AM with PE/LE. Fatigue decreased the most after AM with PE/LE, while relaxation increased.

8. Conclusions

A short period of aromatherapeutic hand and foot massage not only has psychological effects, it changes physiological indicators and, depending on the type of essential oil used, achieves various psychosomatic effects.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

Previous research has indicated that massage using essential oils has certain psychological and physiological effects: the significance of this study is that it used RCT methods and various stress markers to investigate the distinctive effects of particular oils. However, the design of this study employs the cross over method, and considering salivary indicator stimulus-response time,[1] it would appear that setting the interval between AM applications to 10 minutes was too short for an assessment of the differences between the effects of LA/GE and PE/LE. In addition to the lack of safety evaluation of the oils, neither the number of subjects in the control group nor the trial procedure was specified. The psychological and physiological effects of the AM massage itself, not just the essential oils, are considerable. Further evaluation using a design that takes those points into account would increase its scientific value.

[1] Kirschbaum C, Hellhammer DH. Salivary cortisol in psychobiological research: an overview. *Neuropsychobiology* 1989; 22: 150–69.

11. Abstractor and date

Fujii R, 21 December 2010, 28 February 2011.

18. Symptoms and Signs

Reference

Irie T, Tokutake T, Yoshikawa K. The effects of effleurage on muscle fatigue and muscle endurance recovery*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*) 2001; 12(1): 29–33 (in Japanese). Ichushi Web ID 2003139621

1. Objectives

To evaluate the effectiveness of effleurage for muscle fatigue and muscle endurance recovery.

2. Design

Crossover randomized controlled trial (RCT-cross over).

3. Setting

Acupuncture and Physical Therapy Teacher Training School, University of Tsukuba, Ibaraki, Japan.

4. Participants

Twelve healthy adults.

5. Intervention

The laboratory temperature and humidity were 26°C and 60%. Participants were instructed to repeatedly squeeze a hand dynamometer at 50% of their maximum handgrip strength until exhausted. Fatigued muscles received 5 minutes of effleurage before measurement. This process constituted one phase, which was repeated five times.

Arm 1: Efferent effleurage group (n=12).
Arm 2: Afferent effleurage group (n=12).
Arm 3: Control group (no treatment, n=12).

6. Main outcome measures

Muscle fatigue graded on a visual analogue scale (VAS), muscle endurance, heart rate, finger-tip plethysmogram.

7. Main results

VAS score was significantly lower in Arm 1 (P=0.022) and Arm 2 (P=0.020) than in Arm 3, but not significantly different between Arm 1 and Arm 2. No significant difference was observed between the effleurage groups and the control group for muscle endurance (squeeze repetitions), heart rate, or finger-tip plethysmogram peak values (treatment side and non-treatment side), which reflect blood flow. Also, no significant correlation was observed between change in muscle fatigue and change in peak pulse wave values on the treatment side.

8. Conclusions

Both efferent and afferent effleurage promotes recovery from muscle fatigue, but not recovery of muscle endurance. Increased blood flow does not correlate with recovery from muscle fatigue.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This study elucidates the effectiveness of massage (effleurage) as treatment for muscle fatigue and loss of muscle endurance. Irie et al. demonstrate ingenuity in basing this study on their previous study, which indicated that afferent effleurage promotes blood flow. The sophistication of the fatigue inducement, treatment, and measurement methods strengthens the reliability of the evidence showing that effleurage promotes recovery from muscle fatigue. However, unlike their previous study, the study did not find that effleurage promotes blood flow. The authors will need to verify whether or not the degree of mechanical stimulation provided by the effleurage employed in this trial affected blood vessels in deep muscle. As the manual treatment to investigate the relation between massage and muscle endurance, given that this study found no such change, it might have been better to use the grasp and squeeze technique or the grasp and knead technique, which have a stronger muscle pump action than effleurage. The knowledge base related to manual therapy for recovery from muscle fatigue has many gaps, so hopefully the authors will continue their research, building on the outcomes and issues raised by this study, for the sake of improving occupational health and sports medicine.

11. Abstractor and date

Fujii R, 8 December 2011.

18. Symptoms and Signs

Reference

Noto Y, Sato T. The effect of back rub massage in healthy subjects. *Hirosaki Daigaku Igakubu Hokengakka Kiyo* (*Bulletin of Health Science Hirosaki)*. 2005; 15: 97–102 (in Japanese with English abstract). Ichushi Web ID 2006303302

1. Objectives

To evaluate the physiological and subjective effects of back rub massage and their dependence on massage duration.

2. Design

Quasi-randomized controlled trial (quasi-RCT).

3. Setting

Not described (the authors belong to the Hirosaki University), Japan.

4. Participants

Sixty-seven healthy adults (gender ratio and ages not described).

5. Intervention

Participants' backs were massaged while seated and leaning forward.
Arm 1: Ten-minute oil massage group (n=13).
Arm 2: Three-minute oil massage group (n=16).
Arm 3: Control group (rest) (n=13).
Additional experiment: Same as control group (rest) (n=25).

6. Main outcome measures

Blood pressure, heart rate, respiration rate, saturation of peripheral oxygen (SpO_2) level, body temperature, back skin temperature, State-Trait Anxiety Inventory (STAI) score (Japanese edition), stress and relaxation visual analogue scale (VAS) score.

7. Main results

Back skin temperature increased significantly immediately after the 10-minute massage compared to Arm3 (P<0.001). STAI, Stress VAS, and relaxation VAS scores decreased significantly after both the 3- and 10-minute massage (P<0.001). There were no significant changes in blood pressure, heart rate, respiration rate, SpO_2, or body temperature.

8. Conclusions

Back massage (rub) increases back skin temperature. Massage duration affects the magnitude of the temperature increase. Back massage has a relaxation effect but no effect on vital signs.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

Efficient use of time in the nursing workplace is an important matter. For the sake of patients, it is important to know the duration to produce favorable results in a timely manner. The authors do not fully understand the method of measuring back skin temperature, which was the only parameter to change in this study. The authors used a thermography device, but their room temperature setting differed from the one specified by the Japanese Society of Thermology, and they did not describe how they use the oil. Skin temperatures in the control group did not remain stable because the room temperature and humidity fluctuated.

11. Abstractor and date

Tokutake T, 9 December 2011.

18. Symptoms and Signs

Reference

Ogasawara E, Shiihara Y, Koitabashi K, et al. The relaxing and refreshing effects of aromatherapeutic massage using citrus fruit essential oil — evaluation using skin conductance and a mood adjective check list. *Nihon Kango Kenkyu Gakkai Zasshi* (*Journal of Japanese Society of Nursing Research*) 2007; 30 (4): 1726 (in Japanese with English abstract). Ichushi Web ID 2007310111

1. Objectives

To verify the effects of aromatherapeutic massage using citrus fruit essential oil for deepening relaxation and increasing refreshment.

2. Design

Crossover randomized controlled trial (RCT – cross over).

3. Setting

Gunma University, Japan.

4. Participants

Thirty-five healthy female students, excluding students who dislike citrus fruit aroma.

5. Intervention

Arm 1: Aromatherapy group (essential oil; n=20, average age 20.6 years).

Arm 2: Control group (no essential oil; n=15, average age 21.2 years).

6. Main outcome measures

Skin conductance (SC); abbreviated Japanese UWIST Mood Adjective Check List (JUMACL) questionnaire: tense arousal (TA) and energetic arousal (EA) scores.

7. Main results

1) There was no between-group difference in SC.

2) There was a significantly smaller decrease in EA in Arm 1 than in Arm 2 ($P<0.05$).

8. Conclusions

Massage decreases SC and TA and has a relaxing effect whether or not the massage oil contains essential oil.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

There are many difficulties in evaluating the effects of essential oils and in identifying their effects in an experimental study. However, this trial deserves credit for investigating the question and for maintaining conditions as rigorously as possible. The authors need to verify the effects of essential oils more objectively by including brain waves and electrocardiogram (frequency analysis) as indicators because there was only one objective outcome measure (skin conductance), no safety assessment, and a sample consisting exclusively of female students.

11. Abstractor and date

Ogata A, 24 December 2010, 18 March 2011.

18. Symptoms and Signs

Reference

Uebaba K, Xu FH, Wang HB. Physiological and psychological change with stepping massage*. *Nihon Toho Igakkai Shorokushu* (*Japan Eastern Medical Association Abstracts*). 2008; 25: 54 (in Japanese). Ichushi Web ID 2008255561

1. Objectives

To verify that physiological and psychological change occurs with stepping massage.

2. Design

Crossover randomized controlled trial (RCT–cross over).

3. Setting

Miyuki Hospital, Japan.

4. Participants

Fifty-nine healthy adults (18 males, 41 females, mean age 40±12 years).

5. Intervention

Arm 1: Massager group (participants doing the massage, n=15, mean age not specified).
Arm 2: Massaged group (participants receiving massage, n=15, mean age not specified).
Arm 3: Control group (n=29, no treatment).

6. Main outcome measures

Psychological (anxiety level) testing; salivary Na, K, IgA, and cortisol concentration; urinary catecholamine, serotonin, and creatinine concentration; mood (massage questionnaire).

7. Main results

1) Anxiety decreased in both Arm1 and Arm 2. There was no change in Arm 3. (No statistical analysis.)
2) Salivary cortisol decreased, and urinary catecholamine decreased significantly in Arm 2. (No statistical analysis.)

8. Conclusions

Giving or receiving massages decreases anxiety. Decrease in salivary cortisol and urinary catecholamine suggests a relaxation effect. More widespread use of methods described as “touch communication” techniques for families may have value.

9. Safety assessment in the article

Not mentioned.

10. Abstractor’s comments

This study evaluated the before-after effects of stepping massage, which family members can readily give each other without the need for training. Massage was effective even though administered by different massagers, indicating that stepping massage is a simple and effective technique and that the authors achieved the goal of their study. The study (abstract) includes only limited information. The results of between-group comparison with the control group are not described, meaning the reliability of the results is not robust.

11. Abstractor and date

Ogata A, 17 December 2011.

18. Symptoms and Signs

Reference

Nakakita M, Takenoue K. Relaxing effects of back massage on relaxation in normal postpartum mothers*. *Nihon Josan Gakkaishi* (*Journal of Japan Academy of Midwifery*) 2009; 22(3): 362 (in Japanese). Ichushi Web ID 2009204026

1. Objectives

To evaluate the effects of back massage for relaxation in postpartum mothers.

2. Design

Quasi-randomized controlled trial (quasi-RCT).

3. Setting

Obstetrics and gynecology clinics (number of clinics not indicated), Japan.

4. Participants

Forty-five puerperants at the third day after normal delivery.

5. Intervention

Arm 1: a 20-minute massage using back oil (odorless) (n=22).

Arm 2: control (20-minute supine rest) (n=23).

No significant between-group differences in patient background including age, childbirth delivery time, blood loss, multiparous condition, episiotomy history, and baby's birth weight. Perineal tears were frequent in the control group with statistical significance.

6. Main outcome measures

Heart rate and its frequency components analyzed as relaxation indicators.

7. Main results

Treatment significantly decreased heart rate in both groups. Variability in frequency varied but did not change significantly.

8. Conclusions

Considering heart rate and frequency components as relaxation indicators, back massage had no effect on postpartum mothers.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

Maintaining good physical and mental health in postpartum mothers is necessary for building good maternal bonds with the child, so evaluation of health maintenance strategies is extremely important. The relaxation indicator used in this study (heart rate or autonomic nervous function) can be affected by a range of factors, so the trial environment must be carefully managed. In future evaluations, it would be preferable to use subjective sensations, brain waves, and other outcome measures as relaxation indicators.

11. Abstractor and date

Tokutake T, 19 December 2010, 28 February 2011.

18. Symptoms and Signs

Reference

Kimura M, Watanabe E, Watanabe S, et al. Psychosomatic effects of aromatherapeutic hand and foot massage on healthy women using two kinds of essential oils*. *Josei Shinshin Igaku* (*Journal of Japanese Society of Psychosomatic Obstetrics and Gynecology*) 2009; 14(1): 62. Ichushi Web ID 2009228467

1. Objectives

To evaluate the efficacy of aromatherapeutic hand and foot massage (AM) using two kinds of essential oils.

2. Design

Crossover randomized controlled trial (RCT - cross over).

3. Setting

Not described, Japan.

4. Participants

Sixteen healthy women.

5. Intervention

Arm 1: massage with lavender and geranium (LA/GE) oils (n=16).
Arm 2: massage with peppermint and lemongrass (PE/LE) oils (n=16).
Arm 3: massage with carrier oil only (control) (n=16).

6. Main outcome measures

Heart rate variation, electroencephalogram (EEG), salivary cortisol (CS) level, salivary IgA level, scores on psychological questionnaire (Profile of Mood States [POMS]/Mini Mental State [MMS] Examination).

7. Main results

The heart rate variation high frequency (HF) value increased after AM with LA/GE, while the LF/HF values increased after AM with PE/LE. The EEG power percentage increased the most after AM with PE/LE. CS concentration decreased greatly after AM with LA/GE and after AM with PE/LE. Salivary IgA increased the most after AM with PE/LE. Although the scores for negative emotions in the psychological questionnaire increased after AM with LA/GE, scores for positive emotions increased after AM with PE/LE. Fatigue decreased the most after AM with PE/LE, while relaxation increased.

8. Conclusions

A short period of aromatherapeutic hand and foot massage not only has psychological effects, it changes physiological indicators and, depending on the type of essential oil used, achieves various psychosomatic effects.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

Previous research has indicated that massage using essential oils has certain psychological and physiological effects: the significance of this study is that it used RCT methods and various stress markers to investigate the distinctive effects of particular oils. However, the design of this study employs the cross over method, and considering salivary indicator stimulus-response time,[1] it would appear that setting the interval between AM applications to 10 minutes was too short for an assessment of the differences between the effects of LA/GE and PE/LE. In addition to the lack of safety evaluation of the oils, neither the number of subjects in the control group nor the trial procedure was specified. The psychological and physiological effects of the AM massage itself, not just the essential oils, are considerable. Further evaluation using a design that takes those points into account would increase its scientific value.

[1] Kirschbaum C, Hellhammer DH. Salivary cortisol in psychobiological research: an overview. *Neuropsychobiology* 1989; 22: 150–69.

11. Abstractor and date

Fujii R, 21 December 2010, 28 February 2011.

18. Symptoms and Signs

Reference

Sato K, Ebata Y, Sayama S. A study of the relaxation effect of back massage in puerperants. *Bosei Eisei* (*Japanese Journal of Maternal Health*). 2008; 49(3): 169 (in Japanese). Ichushi Web ID 2009035542

1. Objectives

To evaluate the effects of back massage on relaxation in puerperant women.

2. Design

Quasi-randomized controlled trial (Quasi-RCT).

3. Setting

Obstetrics clinic, Japan.

4. Participants

Fifty puerperant women on the first postpartum day (n=50, ages not described).

5. Intervention

Arm 1: Jojoba oil massage group (10 minutes, n=25).

Arm 2: Control group (10 minutes of rest lying down, n=25).

6. Main outcome measures

Blood pressure, pulse, salivary amylase activity, State-Trait Anxiety Inventory (STAI).

7. Main results

1) There was a significant between-group difference in STAI state anxiety score but not in blood pressure, pulse, salivary amylase activity, or STAI trait anxiety score.
2) Salivary amylase activity decreased in both groups.

8. Conclusions

Back oil massage decreases STAI state anxiety in puerperant women one day after delivery.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The subject of this study is extraordinarily important. Yet, given that the authors indicate why puerperant women one day after delivery need relaxation and what relaxation methods are commonly used, they should have compared the target therapy to the commonly used methods and a control. Since the recruitment of 50 participants is a positive aspect of the study, this sample size could have been utilized in the study design. Since the study is an RCT, data from both groups should have been presented. The back oil massage techniques used in the study should be described. Furthermore, while the authors conclude that massage decreased state anxiety, the premises underlying the relation between relaxation and anxiety should be stated.

11. Abstractor and date

Tokutake T, 9 December 2011.

18. Symptoms and Signs

Reference

Furuya E, Kaneko Y, Uehara A, et al. The effects of press tack needle treatment and massage on elbow flexion and extension repetitions*. *Zen Nihon Shinkyu Gakkai Zasshi* (*Journal of the Japan Society of Acupuncture and Moxibustion*) 2008; 58(3): 487 (in Japanese). Ichushi Web ID 2008280629

1. Objectives

To evaluate the efficacy of press tack needle treatment and massage on elbow flexor low-load isotonic repetitions.

2. Design

Crossover randomized controlled trial (RCT-cross over).

3. Setting

Not described, Japan.

4. Participants

Fifty healthy adult males.

5. Intervention

Arm 1: press tack needle treatment (number of subjects not indicated).
Arm 2: sham treatment group (number of subjects not indicated).
Arm 3: massage treatment (number of subjects not indicated).
Arm 4: control (number of subjects not indicated).

6. Main outcome measures

Maximal strength, number of repetitions, Visual Analog Scale (VAS) score for pain intensity.

7. Main results

There was no significant difference in maximal strength among groups. The number of exercise 2 elbow flexion and extension repetitions was significantly higher in arm 1 than arm 2 (103.2±48.2 *vs* 80.9±34.9; $P<0.01$). The numbers were similar in arm 3 (75.5±31.0) and arm 4 (71.8±41.6). There was no significant difference in VAS score between arm 1 and arm 2. It was significantly decreased ($P<0.01$) in arm 1 compared to arm 4.

8. Conclusions

Press tack needle treatment facilitates performance of higher numbers of exercise repetitions, suggesting its potential in muscle training and rehabilitation.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This study is interesting as it suggests that the use of neck and shoulder press tack needles increase exercise endurance and that brachial biceps massage reduces pain during elbow flexion and extension. This trial appears to have compared and verified the effectiveness of press tack needles in Arms 1 and 2, and the effectiveness of massage in Arms 3 and 4 by cross-over experiments; however, a clear description of the study design including the numbers of subjects in the intervention groups and the control group is needed. This may, however, be a limitation of structured abstracts. The effect of massage on endurance capacity was not ascertained in this trial, and thus remains an issue for future studies. More specifically, employing petrissage with gripping—which should have a greater effect on muscle circulation—as an intervention rather than minimal pressure effleurage, may have allowed for more accurate verification of the effects of massage. I hope that a future study focuses on massage, including the ideal interventions and stimuli.

11. Abstractor and date

Fujii R, 21 December 2010, 28 February 2011.

18. Symptoms and Signs

Reference

Ogai R, Matsumoto T, Kosaka M. Petrissage massage applied during resting period between two successive bouts of intense leg exercise improves performance during second bout. *Nihon Undo Seirigaku Zasshi* (*Journal of Exercise and Sports Physiology*) 2009; 16(1): 1–7 (in Japanese with English abstract). Ichushi Web ID 2009259007

1. Objectives

To compare petrissage massage applied immediately after the first exercise bout and immediately before the second bout as a means of recovering from fatigue between two successive bouts of exercise.

2. Design

Crossover randomized controlled trial (RCTcross over).

3. Setting

Females from a university physical education department, who exercise regularly, Japan.

4. Participants

Eleven healthy females.

5. Intervention

Arm 1: massage group (immediately after exercise, n=11).
Arm 2: massage group (immediately before exercise, n=11).
Arm 3: control group (resting seated, n=11).

6. Main outcome measures

Mechanical power output, lower-limb fatigue, muscle stiffness.

7. Main results

Mechanical power output increased significantly under Arm 1 and Arm 2 conditions(P<0.05). VAS scores increased for lower-limb fatigue with the first exercise bout, but at 15 minutes after massage in Arm 1, it decreased significantly in comparison to other conditions. Muscle stiffness increased after the first exercise bout, but 15 minutes after exercise it decreased significantly in Arm 1 only (P<0.05), and at 30 minutes after exercise, it decreased significantly with Arm 1 and Arm 2 in comparison to the control group (P<0.05).

8. Conclusions

Petrissage massage improved exercise performance, muscle stiffness, and lower-limb fatigue, but its timing does not affect subsequent exercise performance.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The material on petrissage massage is detailed and describes the involvement of expert practitioners. Use of a control group (rest) helped confirm that the effects were due to petrissage massage. While objective outcome indicators including blood lactate and muscle stiffness were measured, it appears that changes in muscle stiffness are linked to lower-limb fatigue, yet the changes in blood lactate level are difficult to explain. Some consideration has been given to psychological factors, but there is no data, so no conclusions can be made. If psychological factors are included in a future study, the protocols would need to incorporate objective data, and markers such as psychological parameters (subjective) and stress.

11. Abstractor and date

Tsukayama H, 27 December 2010, 18 March 2011.

18. Symptoms and Signs

Reference

Nishida T, Tachiyama R, Ping PY, et al. Effects of back massage for pain caused by prolonged lying in prone position*. *Nihon Kango Gakkai Ronbunshu Kango Sogo* (*Japanese Nursing Association Articles – General Nursing*). 2006; 37: 182–4 (in Japanese). Ichushi Web ID 2007145532

1. Objectives

To evaluate the effectiveness of massage for mid and low back pain caused by prolonged lying in the prone position.

2. Design

Crossover randomized controlled trial (RCT–cross over).

3. Setting

Nursing laboratory at a university (university name not specified), Japan.

4. Participants

Nine average adult females during the low temperature phase of the menstrual cycle (age range: 21~23 years).

5. Intervention

The trial was run in a laboratory with the temperature at 27.2±0.9°C and humidity at 58.2±5.6%. After lying in the prone position for 20 minutes, participants received massage of the low back, mid back, neck, and shoulders for 5 minutes, and were then instructed to stay in the prone position for a further 60 minutes. Participants in the control group stayed in the prone position for 85 minutes.

Arm 1: Massage group (number of participants not specified).

Arm 2: Control group (no treatment, number of participants not specified).

6. Main outcome measures

Electrocardiogram (heart rate variability), brain waves, and visual analogue scale (VAS) scores for comfort, pain intensity, and low/mid back pain intensity.

7. Main results

1) Brain waves: the amount of α_1 and α_2 waves, which increase with relaxation, was significantly greater at the time of massage and 30 minutes after massage compared to the control group. However, no significant difference was found in the amount of δ or θ waves, which increase with drowsiness, or β_1 or β_2 waves, which increase when alert.

2) Heart rate variability: low frequency (LF), high frequency (HF), and LF/HF, which reflect sympathetic and parasympathetic activity, showed no significant difference.

3) Subjective evaluation: Comparing scores before and after lying in the prone position, comfort showed a significant increase in the massage group compared to the control group, while low/mid back pain intensity decreased significantly in the massage group.

8. Conclusions

Low/mid back massage is an effective intervention for relieving pain and for relaxing patients who lie in the prone position for prolonged periods.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The study objectively demonstrates that massage effectively reduces pain intensity and relieves low/mid back pain caused by prolonged lying in the prone position. Hopefully it will be integrated into the care of patients forced to lie in the prone position for long periods, for example, after retinal detachment surgery. The study is of great interest to those seeking to improve the quality of nursing care. The integrity of the design is high: the low/mid back pain model, the massage treatment, and the outcome evaluation methods are well devised. The study cannot, however, be rated as a high quality randomized controlled trial, because of the small sample size, the failure to specify the numbers of subjects in the massage or control groups and failure to specify the method of allocation. In addition, no change was observed in heart rate variability, which correlates with brain wave findings (α wave increase), suggesting that issues remain around the parameter settings for capturing parasympathetic activity. Yet, the study has great significance in that its support of the effectiveness of massage is based on brain wave findings as well as subjective evaluation. Hopefully the authors will verify their results through clinical practice and will further deepen and develop their study into research which can build up qualitative evidence of patient satisfaction.

11. Abstractor and date

Fujii R, 3 December 2011.

18. Symptoms and Signs

Reference

Nagata H, Tanaka E, Takefu M, et al. Effects of Lower Limb and Dorsolumbar Massages on Edema in Postpartum Women, *Biomedical Soft Computing and Human Sciences* 2009; 14(1): 109–15. Ichushi Web ID 2010097338

1. Objectives

To compare the effects of dorsolumbar and lower-limb massage on edema in postpartum women.

2. Design

Crossover randomized controlled trial (RCT-cross over).

3. Setting

Obstetrics clinics in Kumamoto City, Japan.

4. Participants

Women who had given birth 2–5 days previously.

5. Intervention

Arm 1: lower limb massage (n=9).

Arm 2: dorsolumbar massage (n=10).

6. Main outcome measures

Circumference (lower limb, big toe), cutaneous blood flow (tibialis anterior muscle), lower limb volume.

7. Main results

Both groups showed reduction in the lower limb volume as well as the circumference of the lower leg and big toe, and an increase in the cutaneous blood flow in the tibialis anterior muscle.

8. Conclusions

Lower limb and dorsolumbar massage with elevation of the lower limbs both reduce lower limb edema.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

The evaluation used objective measures, which compensates for the weakness in the study design that the patients were not masked to the group or treatment assignment. Regrettably, the evaluator was also not masked to the group or treatment assignment, which would have given the data even greater reliability. In both groups, lower limb edema was effectively reduced. However, both groups also employed 30-minute lower limb elevation, so it is difficult to determine whether the improvement was due to the massage or the lower limb elevation. Overcoming these difficulties and masking the evaluator could be expected to achieve results of even higher reliability.

11. Abstractor and date

Tsukayama H, 27 December 2010, 18 March 2011.

21. Others

Reference

Tonegawa Y, Uchizaka S, Takemura E, et al. Changes in leg skin temperature after foot bath — Comparison of the effects of massage and no massage*. *Nagano Sekijuji Byoin Ishi* (*Medical Journal of Nagano Red Cross Hospital)*. 2004; 17: 116–8 (in Japanese). Ichushi Web ID 2004208587

1. Objectives

To evaluate heat retention effectiveness of massage immediately after foot bath.

2. Design

Randomized controlled trial (RCT).

3. Setting

Nagano Red Cross Hospital, Japan.

4. Participants

Six healthy adults (age range: 20 to 21 years, mean age not described).

5. Intervention

Arm 1: Massage group. Combination of massage and footbath (n=3, mean age not specified).

Arm 2: No-massage group. Footbath alone (n=3, mean age not specified).

6. Main outcome measures

Skin temperature measured by infrared thermography.

7. Main results

1) All skin temperature measurements (up to 5 hours after treatment) at the toes (third toe) and anterior surface of the leg were elevated by foot baths in both groups. Third-toe skin temperatures (°C) at rest and at 5 hours after treatment were 18.4 and 21.1, 18.1 and 24.3, and 19.7 and 28.3, respectively, in the three Arm 1 participants and 22.0 and 24.2, 20.3 and 24.1, and 20.8 and 22.6, respectively, in the three Arm 2 participants. Similarly, the anterior leg surface temperatures (°C) were 28.6 and 32.5, 27.2 and 30.7, and 28.6 and 32.2 in Arm 1 and 31.4 and 33.1, 30.8 and 32.8, and 31.0 and 32.1 in Arm 2. The sample size was too small for statistical analysis.

2) A stronger heat-retention tendency was found in Arm 1 than Arm 2.

8. Conclusions

Massaging the feet for 10 minutes after a foot bath tends to improve heat retention.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This study investigates the heat retention effects of combining foot bath with massage, and is commendable for having investigated the effects up to 5 hours after a foot bath. However, sample size (only three participants per group) is insufficient for definite outcomes. In addition, the authors should have had the no-massage group keep their legs horizontal for 10 minutes, to control for the effect of treatment in the horizontal in the massage group. Furthermore, simultaneous measurement of skin blood flow and temperature at nearby sites would have increased the reliability of the study.

11. Abstractor and date

Ogata A, 12 December 2011

21. Others

Reference

Ichida K, Ye H, Ogura Y, et al. A comparison of full-body Anma and local Anma — Using skin temperature and deep temperature as indicators*. *Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*). 2004; 15(1): 13–7 (in Japanese). Ichushi Web ID 2006259812

1. Objectives

To evaluate the effects of full-body massage and unilateral upper-limb Anma on peripheral circulation.

2. Design

Crossover randomized controlled trial (RCT – cross over).

3. Setting

Acupuncture and Physical Therapy Teacher Training School, University of Tsukuba, Ibaraki, Japan.

4. Participants

Thirteen healthy adult males (mean age: 29.4±5.7 years).

5. Intervention

Anma included effleurage, petrissage, and pressure in the prone position.

Arm 1: Full-body Anma group (20 minutes, excluding upper limb on one side, n=13).

Arm 2: Unilateral upper limb Anma group (20 minutes, n=13).

Arm 3: Control group (resting in the prone position, 20 minutes, n=13)

6. Main outcome measures

Hand skin temperature and deep temperature, blood pressure, heart rate.

7. Main results

Skin temperature increased in both hands with full-body Anma and in only the hand on the side treated with unilateral upper-limb Anma. There were no significant changes in hand deep temperature, blood pressure, or heart rate.

8. Conclusions

Full-body Anma increases skin temperature in both hands, but unilateral upper-limb Anma increases skin temperature in only the hand on the treated side.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

This is an interesting trial that compared the effectiveness of full-body and local Anma. However, the study failed to pay sufficient attention to reproducibility: the Anma techniques are described only as effleurage, petrissage, and pressure. While temperature data are used as an indicator of peripheral circulation, room temperature settings or records are not mentioned. The authors attribute the change in skin temperature to an effect on sympathetic nerve function, but they also have good grounds for attributing the lack of any significant difference in blood pressure or heart rate to data collection timing, something that should also be considered in terms of design.

11. Abstractor and date

Fujii R, 9 December 2011.

21. Others

Reference

Wada T, Usuda Y, Fukushima M, et al. Does sole pressure stimulation increase low back skin temperature? Comparison of the effects of sole stimulation with low back stimulation on low back skin temperature*. .*Nihon Shugi Ryoho Gakkai Zasshi* (*The Journal of Japanese Association of Manual Therapy*). 2004; 15(1): 18–22 (in Japanese). Ichushi Web ID 2006259813

1. Objectives

To compare and verify low back skin temperature responses to pressure stimulation at the sole and low back.

2. Design

Crossover randomized controlled trial (RCT–cross over).

3. Setting

Not described, Japan.

4. Participants

Sixteen healthy adult males (mean age 29.9±5.4 years).

5. Intervention

Arm 1: Sole stimulation group (n=16, mean age not specified).

Arm 2: Low back stimulation group (n=16, mean age not specified).

6. Main outcome measures

Infrared thermography, thermocouple.

7. Main results

Right sole stimulation significantly increased skin temperatures of the low back (areas A, B, C; $P<0.05$, or $P<0.01$, or $P<0.001$), buttocks, popliteal area, and sole (left/right) ($P<0.01$ or $P<0.001$, or $P<0.001$,). Low back (medial edges of L5 erector spinae muscles) stimulation significantly increased skin temperatures of the low back (areas A, B, C, D, E; $P<0.05$, or $P<0.01$, or $P<0.001$), buttocks, popliteal area, and sole (left/right; $P<0.01$, or $P<0.001$).

The effect of sole stimulation differed from that of low back stimulation in only two parts of the body: skin temperature in the low back (area E) was significantly increased by low back stimulation, while skin temperature of the left sole (treatment side) was significantly increased by sole stimulation. There was no significant difference in effects on skin temperatures of other parts of the body.

8. Conclusions

Pressure stimulation to the sole and low back increases skin temperature in the low back and leg, not only in the stimulated areas, suggesting that another factor besides the spine has that effect.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

While this trial was conducted according to a systematic protocol, skin temperature increases were observed from the low back to the sole after pressure stimulation at the low back and sole, which suggests the possibility that a systemic response was triggered, and therefore there is a need to measure upper body skin temperature. In addition, outcome measures including autonomic indicators, such as blood flow should be added, if the authors are to observe the specific effects of low back and sole stimulation.

11. Abstractor and date

Ogata A, 17 December 2011.

21. Others

Reference

Ueda N, Maruta T, Uno I. Trial of aromatherapy for dialysis patients – A strategy for discomfort*. *Yodogawa Christian Byoin Gakujutsu Zasshi* (*Y.C.H. Medical Bulletin*) 2004; 17–9 (in Japanese). Ichushi Web ID 2005292837

1. Objectives

To evaluate the efficacy of aromatherapy for treating discomfort due to dialysis.

2. Design

Crossover randomized controlled trial (RCT–cross over).

3. Setting

Kidney clinic (Yodogawa Christian Hospital), Japan.

4. Participants

Forty-three patients undergoing dialysis three times per week at a kidney clinic.

5. Intervention

Arm 1: Aromatherapy oil group (7 males, 8 females, mean age 62, dialysis 21 months, n=15).

Arm 2: Olive oil group (8 males, 5 females, mean age 64, dialysis 16 months, n=13).

Arm 3: Control (no treatment) group (no oil; 9 males, 6 females, mean age 65, dialysis 17 months, n=15).

Approximately eight minutes of massage, mainly of the lower limbs, three times per week for one week.

6. Main outcome measures

Questionnaire, 4-point scale discomfort assessment.

7. Main results

(1) Limb itchiness (P=0.001), puncture site itchiness (P=0.012), and soreness due to restricted movement during dialysis (P=0.000) improved in Arm 1 after massage. Lower limb coldness (P=0.041) and soreness due to restricted movement during dialysis (P=0.002) decreased in Arm 2.

(2) There was no significant change in any measure in Arm 3.

(3) Total score for discomfort in Arm 1 was significantly different (P<0.05) after treatment from that in Arm 2 and Arm 3.

8. Conclusions

Aromatherapy oil massage relieves discomfort in dialysis patients.

9. Safety assessment in the article

Not mentioned.

10. Abstractor's comments

Assessment of discomfort in dialysis patients has important clinical implications. There is a need to evaluate the efficacy of aromatherapy massage for relief of discomfort. The trial is commendable for systematically comparing the aromatherapy oil group, the oil group to an olive oil group and control group. However, the authors do not mention whether the same masseur was used, so that point is unclear. The authors need to investigate the influence of communication during massage and the use of aromatherapy oil alone.

11. Abstractor and date

Ogata A, 24 December 2010, 18 March 2011.