



Original Article

Preliminary assessment tool for Abhyanga in children- An observational pilot study

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ABSTRACT

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Introduction: Abhyanga (Therapeutic oil massage- TOM) is an external oleation therapy, when performed daily becomes an essential part of Dinacharya (daily regimen). It is performed by applying specific pressure in specific directional strokes. Oil selected for the procedure depends on various factors. TOM helps in reducing fatigue, enhancing tissue nourishment, pacifying Vata Dosha (one of bodily humors) improving sleep quality and skin tone. As a time-tested practice TOM provides preventive and supportive health benefits with very minimal adverse effects.

Materials and methods: An observational analysis was done on pediatric population aged 3-15 years, where body temperature of the subjects was analyzed before and after TOM. Tolerable oil temperature and comfortable positions of TOM were also the assessment parameters.

Results: TOM resulted in increase of body temperature after procedure with an average rise of 0.40F. The tolerance of oil temperature by the samples ranged from 100oF to 120oF, with a mean of 110.3oF. All the participants were comfortable in supine and sitting positions but uncomfortable in prone position. Lateral positioning was not performed as lateral body areas were adequately covered during supine and prone TOM. The preliminary tool was developed based on these changes observed and it contains three domains.

Discussion and conclusion: The changes in body temperature observed before and after TOM were physiological in nature without inducing fever, hypothermia or lethargy. Lukewarm oil was well tolerated by children, with no adverse effects. While, comfortable positions, particularly sitting and supine postures helps in minimizing discomfort and stress during the procedure.

Keywords: Ayurveda Pediatrics, oil temperature, Snehana, Therapeutic oil massage.

INTRODUCTION

Therapeutic oil massage (TOM) is an external *Snehana* (oleation) therapy described in Ayurveda, when performed daily becomes a component of the *Dinacharya* (daily regimen), involving systematic massage of the entire body from head to toe using medicated oils.¹ The procedure is performed with controlled pressure and specific directional strokes and is recommended across age groups, including children. Classical texts advocate daily application of herbal oils processed with *Bala* (*Sida cordifolia* Linn) during infancy.² Selection of oil is individualized based on *Dosha* (bodily humors) predominance, disease condition, *Bala* (physical strength), seasonal variation, and climatic factors, with oil temperature adjusted accordingly, typically warm in colder seasons and cooler in warmer climates.³ Following TOM, *Swedana* (sudation therapy) and *Snana* (bath) are commonly advised as part of comprehensive care.

The therapeutic effects of TOM include pacification of aggravated *Vata Dosha* (one of the body humors), reduction of fatigue, delay in aging, enhancement of physical strength, nourishment of body tissues, improvement in vision, induction

of sound sleep, and improvement in skin tone and complexion.⁴ Clinically, these outcomes can be assessed through parameters such as reduction in tiredness, improvement in sleep quality, and enhancement of skin texture and tone, particularly in pediatric populations. Oils such as *Ksheerabala Taila*, *Dhanvantaram Taila*, and *Balashvagandhadi Taila* are commonly employed in *Vata*-dominant conditions, while sesame or coconut oil is widely used for daily practice.

The duration of TOM is explained in Ayurvedic literature based on the time required for oil penetration into different body tissues, ranging approximately from 1.5 to 4.5 minutes per body region.⁵ In adults TOM is performed for about 35 minutes for whole body⁶, whereas in clinical practice TOM is performed for about 15 minutes to 30 minutes in children. However, modifications in posture and duration are required in children due to smaller body surface area. The therapy is generally administered for seven consecutive days, and the applied oil may be retained on the body for up to four hours, beyond which adverse effects may occur.⁷ TOM is contraindicated in conditions such as fever, *Ajirna* (indigestion), immediately after purification therapies, and in states of aggravated *Kapha Dosha* (one of the body humors).⁸

As a time-tested intervention, TOM has demonstrated favorable effects on physical growth and well-being in infants with minimal risk of adverse cutaneous reactions, and emerging evidence from related traditional massage therapies suggests potential physiological and psychological benefits in children.^{9,10} This study focusses on observing the tolerable oil temperature for performing TOM, changes in body temperature before and after TOM and observing the comfortable position of TOM in children. This study will help in developing similar assessment protocols and the standardization of TOM in children.

MATERIALS AND METHODS:

Objectives:

The primary objective of this study was to develop the preliminary guidelines for TOM with respect to the tolerable oil temperature, changes in the body temperature before and after TOM and the comfortable position of TOM among the study participants.

Eligibility criteria:

Children aged between 3 and 15 years were selected for the study irrespective of religion, gender or socioeconomic status. Participation was contingent upon the willingness of parents or legal guardians to provide written informed assent, along with consent from the child wherever appropriate.

Exclusion criteria:

Children who were clinically unfit for TOM based on the indication of TOM and Ayurveda health parameters and who were non-cooperative or unable to tolerate the procedure were excluded from the study.

Withdrawal criteria:

Participants will be withdrawn from the study if they/their parents are unwilling to continue the study for any reason and if there are any serious adverse events during the study period or any other health ailments necessitating immediate/emergency medical care.

Intervention:

There was no direct intervention involved in this study, but observations during the whole-body TOM. The TOM was performed using the herbal oil which was processed with *Sida cordifolia* Linn. indicated in Pediatric age group.

Trial design:

This study was designed as a prospective, single arm, observational pilot study conducted to evaluate the selected indicators in pediatric participants.

Study setting and participants:

The study was carried out at the inpatient department (IPD) of Ayurveda Pediatrics in a teaching hospital of Mysuru. Subjects included were indicated for TOM and who met the predefined inclusion criteria. Before enrollment, the parents/guardians received a detailed explanation of the study, including details of procedures, benefits, and risks.

Study procedure:

Axillary temperature was noted for assessment of the body temperature before and after TOM. The oil was heated to the comfortable temperature then checked by applying it over the dorsal aspect of the hand of the subjects followed by the assessment of the temperature of the oil using the lab thermometer. The assessment of comfortable position was noted on the feeling of comfort by study participants.

Assessment timeline:

Participant timeline was divided for objective and subjective parameters. Timelines for outcome assessment of objective parameters along with the instruments used and other details are depicted in table no.1.

Table no. 1: Table showing assessment timeline of objective parameters

Sl. No.	Assessment parameters and time of assessment	Instrument used	Part/ Area checked
1	Body temperature- Before and after TOM	Clinical thermometer	Axilla of subjects
2	Oil temperature- Before TOM	Lab thermometer	Oil used for therapy

Subjective parameter was on the position of TOM performed and the comfortable position of TOM among the subjects.

Data analysis:

The mean of body temperature was calculated using the data recorded before and after TOM. The difference between the means was calculated to assess the change in body temperature following TOM. The significance of change is analyzed using the paired t test. value less than 0.05 was considered as significant. The mean value of oil temperature was noted only before the treatment. The details of statistical analysis are depicted in table no. 2. to note the significance of data before and after TOM.

Table no. 2: Table showing statistical analysis.

Sl. No.	Parameter	N	df	Mean		SE	t-value	p-value
				Before TOM	After TOM			
1	Body temperature in Fahrenheit	10	9	98.33	98.75	0.09	-4.8908	0.000005

RESULTS:

This observational preliminary study was carried out in a sample size of 10 subjects; the TOM was performed for a minimum of 3 days to maximum of 7 days. In this present study it was noted that the minimal and maximum body temperature noted before TOM was 97.5°F and 98.6°F respectively. The difference in body temperature before and after TOM ranged from 0.3°F (minimum) to 0.6°F (maximum) and the mean difference was found to be 0.4°F. The mean of the observations of the body temperature was 98.33°F and 98.75°F, before and after treatment respectively. At the 0.05 significance level, the data provides sufficient evidence to conclude that there is a real difference between the means of the observations noted in the body temperature before and after TOM.

The comfortable oil temperature reported by the subjects ranged from 100°F to 120°F and the mean comfortable temperature was 110.3°F. None of the subjects reported discomfort, burning sensation, or irritation, suggesting that the oil temperature used was safe and appropriate.

It was observed that the most of the subjects were comfortable in supine and sitting positions and uncomfortable in prone position. It was also observed that the TOM was not conducted in lateral position due to the lesser surface area on the lateral part of the body. The lateral aspects of the body were adequately covered by performing massage in both supine and prone positions. The preliminary tool is developed based on these changes observed during the study. The assessment tool is depicted in table no.3.

Table no. 3: Table showing preliminary assessment tool for *Abhyanga* in children.

Preliminary assessment tool for *Abhyanga* in children

Vital data:			
Name:		Date:	
Age:		Oil used in TOM:	
Gender:		Duration of TOM:	
Domain 1: Assessment of body temperature		Domain 2: Assessment of oil temperature	
Parameter	Observation	Parameter	Observation
Body temperature before TOM (°F)		Oil temperature before application(°F)	
Body temperature After TOM (°F)		Comfortable to child	Yes/No
Difference of body temperature (°F)		Burning sensation	Yes/No
		Irritation	Yes/No
Interpretation- Temperature range		Interpretation- oil temperature	
0-0.4°F	Optimum physiological response	100-120°F	Comfortable and safe

>0.4°F	Hyper responsiveness	>120°F	Chances of discomfort and complications such as burn
Domain 3: Assessment of comfortable position (7 positions are not necessary due to difference in body surface area)			
Position	Comfortable	Uncomfortable	
Sitting			
Supine			
Prone			
Lateral			
Signature of clinician			

DISCUSSION:

TOM is an Ayurveda therapeutic procedure mentioned in classical Ayurveda texts performed by applying manual pressure all over the body surface using various techniques and by usage of medicated oils which helps in inducing physical relaxation also helps in pacification of several disease conditions. Through TOM, the nervous system is stimulated, which in turn activates the muscular system, blood vessels, and glands supplied by the respective nerves, thereby contributing to overall health maintenance.¹¹ The mechanism of action of TOM can be explained through subcutaneous absorption, relaxation of muscle groups, and stimulation of tactile receptors.¹² These mechanisms help modulate pathological changes within the body and gradually facilitate their reversal.

In this present observational study, the changes observed in body temperature of children before and after TOM were physiological in nature, with no evidence of pathological rise or fall in temperature. The post-procedure temperature values were recorded within physiological limits, without causing any constant rise in body temperature or making the subjects to feel lethargy, indicates that TOM does not induce fever or hypothermia when performed appropriately.

In this present observational study, the mild increase in body temperature observed after TOM can be attributed to increased peripheral circulation, cutaneous vasodilatation, and heat generated due to friction during TOM. These mechanisms promote improved blood flow to the skin and superficial tissues, leading to a transient rise in surface temperature without disturbing core thermoregulation. Thus, TOM can be considered as the thermally safe procedure when it is conducted with standard precautions.

The tolerability of oil temperature is a crucial safety parameter in pediatric TOM. The temperature of the oil used for TOM was assessed based on the comfort level of the subjects. In this study, oil heated to a lukewarm temperature was well accepted by children and did not result in discomfort, skin irritation, or burns. Excessively heated oil poses a potential risk of thermal injuries including burns or erythema, particularly in children due to their thinner skin and increased sensitivity. Conversely, oil applied at a lower temperature might lead to discomfort and shivering.

In this present study the assessment was also done on the comfortable position of the child during TOM. Comfortable positioning helped in better cooperation of the child and smooth conduct of the procedure. It was observed that the subjects were more comfortable in the sitting and supine position, the subjects felt discomfort in prone position. It was also observed that the TOM of the lateral aspects of the body was covered by the procedure, while performing over the supine and prone position due to lesser body surface of subjects on the lateral aspect. Comfortable positioning minimizes anxiety and excessive movement especially in the child suffering with ASD, ADHD etc. This supports the concept that TOM should always be performed in a comfortable position, especially in children, to avoid unnecessary physiological stress.

Limitation of the study:

Most of the parameters were assessed manually, so there are possible chances of errors. Wide variations in the study age group of the participants might have influenced the results. No biochemical investigations were performed in this study.

Future research:

This study will serve as an initiation in standardization of TOM and other therapeutic procedures of Ayurveda in children.

CONCLUSION:

The findings of this observational study indicate that TOM produces only physiological alterations in body temperature, without causing any pathological thermal changes. The mean of temperature difference before and after TOM was within the range of 0.4°F, emphasizing the safety of TOM in children. The comfortable oil temperature reported by the subjects ranged from 100°F to 120°F. Proper monitoring of oil temperature, contribute in minimizing risks such as burns or undue

thermal stress. These observations reinforce the role of TOM as a safe external therapeutic and preventive measure in pediatric Ayurveda.

It was also observed that the subjects were comfortable in sitting and supine position and uncomfortable in prone position during the procedure of TOM. Proper positioning helps in the smooth performance of TOM especially in children by giving equal importance to all body parts. The preliminary assessment tool developed contains 3 domains i.e. assessment on body temperature, tolerance of oil temperature and comfortable positioning during the procedure. The tool also contains the respective reference ranges of the domain.

TOM did not cause and adverse effects on the subjects. The absence of any pathological temperature change confirms the safety of TOM in children, especially considering the sensitive thermoregulatory mechanisms in pediatric age groups. This was pilot study conducted in 10 subjects, the author recommended large sample study for better evidence.

CRedit author statement: **JKB:** conceptualization, supervision, study design, editing. **JNJ:** clinical study, assessment, writing original draft, writing review and editing, data analysis. **NJ:** assessment, writing review and editing. **CMR:** Assessment, writing review and editing.

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Usage of AI: AI- assistance was used to check and correct the grammatical mistakes.

REFERENCES:

1. Vriddha Vagbhata. Astanga Samgraha Shashilekha Sanskrit Commentary by Indu. Edited by Shivaprasad Sharma, Prologue in Sanskrit and English by Jyotirmitra. Chaukhambha publications, 3rd edition 2012. Sutrasthana Chapter 3, verse-28. p-20.
2. Prof. Dr. Vasanth C. Patil, Dr. Rajeshwari N.M. Susrutha Samhitha of Maharsi Susrutha with English translation of text and Dalhana commentary with critical notes. Chaukamba publications, 1st edition 2018. Volume 2, Sarirasthana, chapter 10. Verse 13. p-244.
3. P.V.Sharma. Susrutha Samhitha, volume 2, Nidana, Sharira and Chikitsa Sthana. Chaukamba publications, reprint 2010 edition. Chikitsasthana, chapter 24. Verse-34. p-495.
4. Vagbhata. Astanga Hrudaya, translated by Dr B Rama Rao. Volume 1 Sutrasthana and Sarirasthana. Chaukamba publications. Sutrasthana, chapter 2. Verse-8. p-30.
5. Susrutha. Susrutha Samhitha, Nibandhasangraha commentary of Sri Dalhanacharya edited by Vaidya Jadavji Trikamji Acharya. Chaukamba publications, reprint 2016. Chikitsasthana Dalhana Teeka chapter 24. verse-30. p-488.
6. Dr. B.A. Lohith. A textbook of Panchakarma. Chaukamba publications. 2016. P-52.
7. Acharya Kaiyyadeva. Kaiyyadeva Nighantu edited and translated by P.V. Sharma and Dr. Guruprasad Sharma Kaiyyadeva Nighantu. Chaukamba publications, reprint 2009. Chapter 29 Viharavarga. Verse-176. p-511.
8. Dr Deepak Yadav Premchand, foreword by Dr S D Kamat, Vagbhata Astanga Hrudaya including Maulika Siddhanta Sutrasthana original text with the authentic English translation. Chaukamba publications, reprint 2021. Sutrasthana chapter 2. Verse-9. p-35.
9. Mir Mohammad Ali M, Hosseini-Baharanchi F, Raisi Dehkordi Z, Bekhradi R, Delaram M. The effect of massage with oils on the growth of term infants: a randomized controlled trial. *Open Journal of Pediatrics*. 2015;5(3):223-231. doi:10.4236/ojped.2015.53034.
10. Ruan H, Eungpinichpong W, Wu H, Aonsri C. Physiological and psychological effects of parent-delivered traditional Thai massage in children with autism: protocol for a randomized controlled trial. *JMIR Res Protoc*. 2023;12: e41839. doi:10.2196/41839. PMID: 36753320.
11. Rapaport MH, Schettler P, Bresee C. A preliminary study of the effects of repeated massage on hypothalamic-pituitary-adrenal and immune function in healthy individuals: A study of mechanisms of action and dosage. *J Altern Complement Med*. 2010;16(10):1079-88.
12. Weerapong P, Hume PA, Kolt GS. The mechanisms of massage and effects on performance, muscle recovery and injury prevention. *Sports Med*. 2005;35(3):235-56.