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## Short Communication

## A community-based survey on massage therapy in Saudi Arabia

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## ABSTRACT

Massage therapy (MT) is the physical manipulation of the soft tissues. It primarily consists of manual or hands-on techniques such as applying fixed or movable pressure, holding, and moving muscles and body tissues. MT is beneficial for pain relief, sport-related injury rehabilitation, stress reduction, and to address psychological disorders. MT is the most prevalent form of complementary and alternative (CAM) therapy worldwide. The aim of this study was to evaluate the knowledge, attitudes, and perceptions regarding MT among the Saudi community. A cross-sectional online survey using WhatsApp®, Google Forms®, Facebook®, and Twitter® was conducted among the general community of the Kingdom of Saudi Arabia (KSA) to assess the knowledge, attitudes, and perceptions regarding MT. Data was collected using a 20-item, self-administered questionnaire consisting of a series of both closed-ended and Likert-type questions. A total of 436 respondents completed the survey. Most of the respondents were female 84.2% (n = 367). Approximately 65% resided in the central region of KSA. The majority of the respondents, 81.4%, believed that MT is effective, 27.7% thought that MT leads to complications, and more than half of the residents, 55.7%, believed that patients should consult with their physicians prior to MT. The most common reasons for MT were to treat muscle pain, for relaxation purposes, to treat bone and joint pain, and backache relief, which were reported by 49%, 20%, 19%, and 16% of the participants, respectively. The knowledge, attitudes, and perceptions of the Saudi population towards MT are insufficient in some aspects. The establishment of community-based health education programs to improve knowledge of MT is recommended.

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## 1. Introduction

Advancements in the use of traditional and alternative medicine in healthcare sectors have managed to improve morbidity, mortality, and quality of life [1,2]. Previous studies reported that massage therapy (MT) is beneficial to relieve pain, rehabilitate sports injuries, reduce stress, increase relaxation, and address psychological disorders including depression and anxiety [3–6]. MT is the most prevalent form of complementary and alternative (CAM) therapy in the United States (US) and many other countries. According to national health statistics and reports, the utilization of MT has increased from 10.1 million to 18.1 million in the adult population from 2002 to 2007 [7].

Evidence-based research concerning the efficacy of MT is inadequate [8,9]. Ang et al. reported that MT can benefit newborns and infants by enhancing immunity and stimulating weight gain due to increase in parasympathetic activity during MT, which stimulates the production of hormones such as insulin and gastrin [10]. Additionally previous studies indicated that systematic MT can yield numerous benefits including a relaxation effect encompassing the entire body, diminishing stress, and improving balance, pain, and fatigue [11].

Massage therapy (MT) is the physical manipulation of the soft tissues, with the purpose to provide individuals with feeling of relaxing and improve their wellbeing [12]. There are number of MT available depending on the mechanism involve on it (hand movements used, amount of pressure applied, instruments and parts of the body that the massage therapist used) [12,13]. However, the most common massage therapies were Classic massage which involves direct contact of the skin and muscles in the affected area also known as Swedish massage [12]. Connective tissue massage

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aimed to treat illnesses by relieving tension and positively influencing organs elsewhere in the body [12]. Another most commonly used massage therapy is Manual therapy which is an active technique, which involves the application of an accurately determined and exactly applied manual force to the body, in order to improve flexibility in areas that are restricted in joints, tissues or in skeletal muscles [13,14].

Alrowais et al. determined that the prevalence of MT in the Kingdom of Saudi Arabia (KSA), according to previously published data, ranged from 16.3% to 61.8% [15]. Hamayun et al. performed a questionnaire-based online study among physical therapists in KSA and reported that 31% of the respondents reported occasional use of therapeutic massage, while 55% reported to have received formal training for MT [9]. Due to the heightened interest regarding MT among the Saudi population, the present study aimed to evaluate the knowledge, attitudes, and perceptions of general public about MT in KSA.

## 2. Methods

### 2.1. Study design, settings and sampling

A cross-sectional, descriptive electronic survey was conducted in KSA among the Saudi population over a period of 4 months from February to May 2018. Data collection was completed using a structured, self-administered questionnaire.

### 2.2. Questionnaire development, design and validation

To explore the knowledge, attitudes, and beliefs regarding MT among the general public of Saudi Arabia, a questionnaire was established by members of the research team, who had previous experience in questionnaire development and validation, on the basis of the enclosed items of previously used questionnaires related to MT [16]. A 20-item questionnaire consisting of a series of both closed-ended and Likert-type questions was used. The first six questions solicited information about the participant's demographics including gender, age, marital status, employment status, and the region of KSA in which they currently reside. Ten subsequent questions addressed participant knowledge, attitudes, and perceptions towards MT. The remaining questions were related to the most common types of MT, reasons for use, commonly used massage oils, and places for MT. Since most of the published literature was in the English language, the questionnaire was modified and translated to Arabic local language, then translated back to English to ensure consistency in meaning before data collection. In order to check the validity of the questionnaire pilot study was initially conducted among 20 participants who met the eligibility criteria on the King Saud University female campus. After explaining the study details and the pilot nature of the survey, informed consent was provided in the Arabic language. Based on these results, the questionnaire was used with some minor modifications. The study employed a simple random sampling approach. All regions of KSA (north, south, east, and west) were targeted in the data collection. The final questionnaire was sent to the participants through social media (WhatsApp®, Google Forms®, Facebook®, and Twitter®). After approximately one week, slow or non-respondents were reminded by social media and telephoned, emailed or personally visited to encourage them to complete and return their questionnaires. All questionnaires were completed anonymously. Appropriate informed consent was administered for each participant in a language they understood and they were assured of the confidentiality of the information that they would provide. The study received ethical approval from the research

committee and head of the Department in the College of Pharmacy on the female campus at King Saud University.

### 2.3. Eligibility criteria

Literate males and females (able to read and write Arabic or English) aged 18 years and above were included in the study. Individuals outside of KSA were excluded from the study.

### 2.4. Recruitment

A simple convenient sampling was applied in the distribution of the survey questionnaire to the study participants. A list of workplaces/organizations (including schools, colleges, and universities) was compiled to be initially targeted as well as requesting that they send the survey to their relatives and friends.

### 2.5. Sample size

A previous study by Zafar et al. [11] reported that the prevalence of massage therapy among the Saudi population was 31%. Based upon the reported prevalence of this study, it was estimated that a sample size of 329 participants (completed questionnaires) would be required to have a two-sided 95% confidence interval of width  $\pm 5\%$ .

### 2.6. Data extraction and management

Manual data entry was performed for each completed survey questionnaire. A unique identifier was associated with each questionnaire and was used to identify individual responses for data analysis in the absence of personal information from the respondents.

### 2.7. Data analysis

Descriptive statistics including numbers and percentages, distribution were calculated for each variable. Statistical Package for Social Sciences version 22.0 (SPSS Inc., Chicago, IL, USA) was used for statistical computations.

## 3. Results

Participant demographics are provided in Table 1. A total of 436 respondents completed the survey. Most of the surveyed respondents who participated in the survey were female and over 40% were aged between 26 and 45 years old. Approximately half of the respondents were married, 38.5% were employed, and 39.6% were students. The majority of the respondents, 65.3%, were residents of the central region of KSA and 67.4% were considered to be living in good economic conditions.

Sixty-five percent of the respondents reported for not asking their physician about the use of MT, and half the participants did not disclose the use of MT to their healthcare provider. The most common sources of information for using MT was through family and friends (60%) followed by the internet (social media and advertisement), 20%, and books and periodicals (11.7%). The majority of the respondents, 72.7%, believed that manual massage is better than autonomic massage. Over 80% believed that MT is effective, 27.7% thought that MT leads to complications, and 55.7% believed that patients should be counseled by their physicians prior to MT. The most common conditions in which participants recommended seeking physician consultation prior to MT were spinal cord and bone-related damage (7.1%) followed by muscle injury

**Table 1**  
Demographics of study participants.

Characteristic	Number (n = 436)	Percentage (%)
Gender		
Male	69	15.8
Female	367	84.2
Age (in years)		
18–25	179	41
26–35	95	21.7
36–45	82	18.8
46–60	78	17.8
Marital status		
Married	216	49.5
Single	220	50.4
Employment status		
Employed	168	38.5
Unemployed	93	21.3
Students	173	39.6
Region		
Central	285	65.3
Western	31	7.1
Eastern	75	17.2
Southern	30	6.8
North	13	2.9
Economic status		
Excellent	133	30.5
Average	294	67.4
Poor	7	1.6

(2.2%). The knowledge, attitudes, and perceptions, regarding MT are depicted in Table 2.

The most common types of MT used among study participants were deep tissue massage for muscles and tendons, 29.5%, followed by massage with the use of the fingers (also known as shiatsu treatment), 27.7%, and Swedish massage, 20%, (Healing Hands Massage, Heart Blood Movement MT). The most common reasons for the use of MT were to treat muscle pain (49%) followed by relaxation and mood elevation (20%), bone and joint pain relief (19%), and backache treatment (16%). The most common places to visit for MT was reported by study participants were, unqualified practitioner (38%), clinics (31%) and commonly used massage oils among respondents were olive oil (59%), almond oil (13.8%) respectively.

#### 4. Discussion

The multiple physical and psychological benefits of MT have been well documented in previous studies [3–6]. This study found that 29.7% of the general public in KSA preferred manual massage therapy for the purpose of physical and mental wellbeing. In contrast, a similar study conducted in KSA among healthcare professionals reported that therapeutic, rather than manual, massage is the most commonly used method [9].

This ancient alternative method of healing gained its popularity due to its self-reported positive outcomes based on experience since there is no clear evidence about its effectiveness [8]. The majority of surveyed respondents who reported using MT use it for muscle, bone, and joint pain. These results were comparable to previous studies published locally in KSA [17]. A systematic review by the American Pain Society on Nonpharmacological therapies for acute and chronic low back pain reported that MT is a very effective option in the treatment of acute back pain, chronic back pain, and muscle pain [18].

Similarly, Konrad and colleagues reported that patients receiving MT three times per week for a duration of four weeks reduced their analgesic medication consumption, and the intensity and severity of pain was decreased [19]. On the contrary, it was

**Table 2**  
General knowledge, attitudes, and perceptions regarding Massage Therapy (MT).

Massage therapy	Number (N)	Percentage (%)
Has this type of treatment been requested by a physician?		
Yes	151	34.6
No	285	65.3
Did you tell your doctor about your use of this treatment?		
Yes	220	50.4
No	216	49.5
What are your sources of information for using this type of treatment?		
Internet (social media)	89	20
Media (T.V, podcasting, magazines etc.)	31	7.1
Books/periodicals	50	11.4
By Family and friends used	266	61
In your opinion, what type of massage is the best?		
Manual massage	317	72.7
Autonomic massage	37	8.4
I don't know	82	18.8
Do you believe that MT is effective?		
Yes, Strong believe	355	81.4
No, not believe	81	18.5
Do you think MT has complications?		
Yes <sup>a</sup>	121	27.7
No	262	60
Did you consider consulting your doctor before MT?		
Yes	243	55.7
No	192	44
Which medical condition(s) do you recommend that one consult their physician before MT?		
During pregnancy	5	1.1
Heat problem	5	1.1
After surgery	4	0.9
Spinal and bone problems	31	7.1
Muscle injury	10	2.2
Physical disability	1	0.22
I don't know	2	0.4
Do you think that MT clinics are available in your area?		
Yes	179	38.6
No	263	56
Do you buy the instruments for MT that available in the market?		
Yes	126	27
No	316	68

<sup>a</sup> Examples of complications mentioned to the respondents included: An unqualified person, increased pain, muscle tension, sliding cartilage, bone fractures, nerve damage.

reported that the efficacy of MT for lower back pain has not been established yet [20]. In this study, nearly half of the respondents (49%) were using MT to treat muscle pain. Ernst and Fialka reported that massaging muscles could help normalize muscular function [21]. Furthermore, they mentioned that it is believed that MT reduces muscular tone and decreases muscular fatigability.

The overwhelming majority of respondents in this study were female. This result is consistent with a study conducted locally in KSA that reported that MT was more popular in females compared to males [9]. One possible explanation is the variety of symptoms women experience during premenstrual syndrome (PMS) and pregnancy [22]. Some studies reported that MT relieves headaches, improves circulation, promotes fluid balance in the body, and eases PMS symptoms such as abdominal cramps and pain. MT also induces relaxation that can help prevent mood swings commonly associated with PMS. In addition, MT helps pregnant women manage circumstances that are commonly encountered during pregnancy. MT can help with complaints such as nausea, swollen joints, and muscle aches in specific areas such as the hips, lower back, and neck.

The study results indicated that most of the respondents (81.4%) believed that MT was effective in treating some complications associated with injuries and muscle ailments. Earlier data reported that using massage therapy is important for providing relaxation for the mind and body along with some additional healing effects

such as the removal of blood lactate. Elevated lactate levels can result in anaerobic metabolism which can cause a burning sensation, soreness and/or fatigue in the muscles [8,9,19].

## 5. Conclusion

In conclusion, the knowledge, attitudes, and perceptions of general Saudi population toward MT are insufficient in some aspects. Therefore, we recommend the establishment of health education programs to improve knowledge about MT and encourage the discussion of massage practices between physicians and patients. Government regulation and promotion of evidence-based MT studies are needed in order to further promote and support the mass media in investigating claims related to MT.

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## Conflict of interest

None.

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