A community-based survey on massage therapy in Saudi Arabia

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A B S T R A C T
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 form 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...
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 ± 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 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...
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 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, malignant and pregnancy complications, nausea, and swelling commonly experienced by females during pregnancy [22]. It was also reported that MT decreases 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.

(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 bone, joint, 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.

### 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            |

### 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 (TV, 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                                                   | 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             |

*Examples of complications mentioned to the respondents included: An unqualified person, increased pain, muscle tension, sliding cartilage, bone fractures, nerve damage.*
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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References

[1] American Massage Therapy Association. Standards of Practice — American Massage Therapy Association [WWW Document]. URL, http://www.amtamassage.org/About-AMTA/standards.html [accessed on 21 October 2019].

[2] Kennedy AB, Cambron JA, Sharpe PA, Travillian RS, Saunders RP. Process for massage therapy practice and essential assessment. J Bodyw Mov Ther 2016;20(3):484–96. https://doi.org/10.1016/j.jbmt.2016.01.007.

[3] Sherman KJ, Ludman EJ, Cook AJ, Hawkes RJ, Roy-Byrne PP, Bentley S, et al. Effectiveness of therapeutic massage for generalized anxiety disorder: a randomized controlled trial. Depress Anxiety 2010;27(5):441–50. https://doi.org/10.1002/da.20671.

[4] Bauer BA, Cutshall SM, Wentworth LJ, Engen D, Messner PK, Wood CM, et al. Effect of massage therapy on pain, anxiety, and tension after cardiac surgery: a randomized study. Complement Ther Clin Pract 2010;16(2):70–5. https://doi.org/10.1016/j.ctcp.2009.06.012.

[5] Moyer CA. Affective massage therapy. Int J Massage Bodyw 2008;1(2):3.

[6] Ahles TA, Tope DM, Pinkson B, Walsh S, Hahn D, Whedon M, et al. Massage therapy for patients undergoing autologous bone marrow transplantation. J Pain Symptom Manag 1999;18(3):157–63.

[7] Barnes PM, Bloom B, Nahin RL. Complementary and alternative medicine use among adults and children; United States. Natl Health Stat Rep 2007;(12):1–23. 2008 Dec 10.

[8] Hemmings B, Smith M, Graydon J, Dyson R. Effects of massage on physiological restoration, perceived recovery, and repeated sports performance. Br J Sports Med 2000;34(2):109–14.

[9] Zafar H, Oluseye K, Alghadir A, Iqbal ZA. Perception about the importance and use of therapeutic massage as a treatment modality among physical therapists working in Saudi Arabia. J Phys Ther Sci 2019;31(6):1827–31. https://doi.org/10.1589/jpts.27.1827.

[10] Ang JY, Lua JL, Mathur A, Thomas R, Asmar BI, Savasan S, et al. A randomized placebo-controlled trial of massage therapy on the immune system of preterm infants. Pediatr 2012 Dec;130(6):e1548–58. http://doi.org/10.1542/peds.2012-0196.

[11] Sefton JM, Yarac C, Berry JW. Six weeks of massage therapy produces changes in balance, neurological and cardiovascular measures in older persons. Int J Ther Massage Bodywork 2012;5(3):28–40.

[12] Field T. Yoga clinical research review. Complement Ther Clin Pract 2011 Feb 1;17(1):1–8. https://doi.org/10.1016/j.ctcp.2010.09.007.

[13] Korr IM. The neurobiologic mechanisms in manipulative therapy. Springer Science & Business Media; 6 December 2012, ISBN 978-1-4684-8902-6.

[14] Monteiro ER, Wakefield B, Ferreira de Melo Fiuzza GM, de Oliveira Muniz Cunha JC, Corrêa Neto VC, da Silva Novaes J. Self-massage and autonomic response: future direction. J Exerc Sports Orthop 2017;4(2):1–3.

[15] Alrowais NA, Alyousef M. The prevalence extent of complementary and alternative medicine (CAM) use among Saudis. Saudi Pharm J 2017;25(3):106–18.

[16] College of Massage Therapists of British Columbia. Further commentary on the risk of harm associated with the practice of massage therapy. A supplementary response to the health professions council’s February 1999 preliminary report on the massage therapists scope of practice. July 6, 2000.

[17] Callaghan MJ. The role of massage in the management of the athlete: a review. Br J Sports Med 1993;27(1):28–33.

[18] Chou R, Huffman LH. Nonpharmacological therapies for acute and chronic low back pain: a review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. Ann Intern Med 2007;147(7):492–504.

[19] Konrad K, Tatrai T, Hunka A, Vereckei E, Korondi I. Controlled trial of balneotherapy in treatment of low back pain. Ann Rheum Dis 1992;51(6):820.

[20] Ernst E. Massage therapy for low back pain: a systematic review. J Pain Symptom Manag 1999;17(1):65–9.

[21] Ernst E, Faika V. The clinical effectiveness of massage therapy—a critical review. Complement Med Res 1994;1(5):28–39.

[22] Street physical medicine and rehabilitation. How women benefit form massage therapy, available at: http://43rdmedical.com/women-can-benefit-massage-therapy/. [Accessed 21 October 2019].