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REVIEW

The prevalence extent of Complementary and Alternative Medicine (CAM) use among Saudis

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KEYWORDS

Saudi Arabia;
Herbs;
Cupping;
Spiritual;
Integrative complementary therapies

Abstract *Introduction:* There is worldwide interest in the use of CAM. Studying CAM in Saudi population is important as it will reflect the influence of psychosocial, cultural and religious factors on health beliefs and behaviors. The objective of this study was to present an updated review on the use of CAM practices in Saudi Arabia including commonly used types, common conditions for which it has been used and who uses CAM. *Methods:* This review used data from national surveys conducted in Saudi Arabia and published between 2000 and 2015. The literature search was performed considering standards adopted such as Moose guidelines for observational studies. Two authors independently reviewed each article. The search yielded 73 articles, and a total of 36 articles were included. Further careful data extraction was carried out by two independents reviewers. *Results:* Most of the reviewed studies were cross-sectional in design and were published between 2014 and 2015, and mostly in Riyadh region. Substantial difference in the findings for the patterns of CAM use was revealed. The most commonly employed practice was of spiritual type such as prayer and reciting Quran alone or on water. Other types include herbs (8–76%), honey (14–73%) and dietary products (6–82%). Cupping (Alhijamah) was least used (4–45%). Acupuncture was more practiced among professionals. *Conclusion:* The utilization of CAM is widely practiced in Saudi Arabia. There is need for efforts to promote research in the field of CAM to address each practice individually. Population surveys should be encouraged supported by mass media to raise knowledge and awareness about the practice of different CAM modalities. The national center of CAM should play a major role in these efforts.

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1. Introduction

Complementary and Alternative Medicine (CAM) is a group of diverse medical and health-care systems, practices and products that are not presently considered to be part of conventional modern medicine (GlobalData, 2014). There is a worldwide interest in the use of CAM ranging between 9 and 70% of the population, although sufficient scientific evidence for its use is lacking (MacLennan et al., 1996; Fisher and Ward, 1994; Ernst, 2000; Eisenberg et al., 1993). CAM has been used for different diseases including dermatological problems, liver disease, diabetes and asthma, and in different age groups from children to adults (Salem et al., 2010; Mohammad et al., 2015; Al-Zahim et al., 2013; AlGhamdi et al., 2015; Bakhotmah and Alzahrani, 2010; Al Moamary, 2008; Aljaloud and Ibrahim, 2013; Gad et al., 2013). The use of CAM, however, is not limited to patients, but also to healthy individuals (Velicer and Ulrich, 2008; Gratus et al., 2009; Munshi et al., 2008). CAM practices vary widely between countries depending on their traditions and diseases prevalence (Al-Faris et al., 2008; Al Zaben et al., 2015; Suleiman, 2014; Al-Faris, 2000; Siti et al., 2009; Mathew et al., 2013; Al-Kindi et al., 2011) as well as different methodological approaches used in published studies.

The practices of CAM in Saudi Arabia are usually related to the religious beliefs of the consumers. Accordingly, the common practices were usually Holy Quran therapy, using honey, black seed, and myrrh (Al-Faris et al., 2008; Al-Faris, 2000), in addition to Alhijama (cupping) (AlBedah et al., 2011; El Sayed et al., 2014) as it is a part of the prophetic medicine. Modern practices were also introduced lately in the Saudi community through a well established clinics employing acupuncture (Al-Rukban, 2010) which is mostly practiced in private sector.

In the Western world, in contrast to Saudi Arabia, the commonly used types of CAM are relaxation technique, ginseng, chiropractic, osteopathy, massage, mineral supplements and homeopathy (MacLennan et al., 1996; Eisenberg et al., 1993; Goldbeck-Wood et al., 1996).

The Ministry of Health in Saudi Arabia provides free health care to its nationals, but this does not include CAM care. However, a center for complementary and alternative medicine was established by a ministerial decree (No. 236) date 10/8/1429 H (12/8/2008 G). The objectives of the center include a reference center for all matters related to CAM, to regulate CAM practices within the health-care services and to use evidence based CAM as complementary to conventional medicine (AlBedah, 2012).

Saudi Arabia (SA) tops the ranking of scientific research output in integrative and complementary medicine (ICM) among Arab countries according to a bibliometric analysis published in 2015 (Zyoud et al., 2015). SA was 25% followed by Egypt (16.8%) and then Morocco (16.2%) (Zyoud et al., 2015).

This makes studying CAM in the Saudi population of special importance as it will allow the documentation of the influence of psychosocial, cultural and religious factors on health beliefs and behaviors (Jazieh et al., 2012).

Therefore, the objectives of this study was to present an updated review on the use of CAM practices in Saudi Arabia including common types and common conditions for which it is being used and also who uses CAM.

We are presenting a review of the use of integrative and complementary medicine use in Saudi Arabia (SA). The data presented were collected from national surveys published between 2000 and 2015.

2. Methods

This review is based on data obtained from national surveys conducted in Saudi Arabia, and published between 2000 and 2015.***Data sources:*** The surveyed publications were identified using MEDLINE database, PubMed, Google Scholar, WHO InfoBase, CENTRAL, EMBASE, COCHRANE LIBRARY and cross references from retrieved articles. A complete list of the abbreviations used in this paper is provided at the end.

The keywords used for the search were "Saudi Arabia" National, and then complementary medicine, unconventional

Table 1 Free text search terms and Mesh-terms used to search databases.

Search (last update 20 April 2016)
PubMed (2000–2015)
Saudi Arabia* "Saudi Arabia"[Mesh]
AND
(herbs OR herbal* OR cupping OR spiritual OR unconventional OR integrative "Complementary Therapies"[Mesh])
AND (prevalence* OR utilization OR utilization OR use OR practice "Epidemiologic Factors"[Mesh])
Embase (2000–2015) InfoBase (2000–2015) Google Scholar (2000–2015)
Saudi Arabia*
AND
(herbs OR herbal? OR cupping OR spiritual OR complementary OR unconventional OR integrative)
AND (prevalence? OR utilization OR utilization OR use OR practice)

therapy, integrative as described in Table 1. No language limit was set for the publications. The last search update was performed on 20 April 2016. In addition, the reference lists of relevant articles were checked for further relevant literature. Full-text copies of all the identified publications were obtained.

Study selection: Exclusion criteria were for studies that were experimental on subjects other than humans such as basic science research on animals, studies that are not on CAM practices or behaviors related to CAM, or on communities other than Saudi Arabia. We identified only one study published in Chinese but we were able to utilize the abstract.

Data extraction and reporting of findings: The literature search was performed considering the standards adopted such as Moose guidelines for observational studies (Stroup et al., 2000). Two authors independently reviewed each article to determine whether they should be excluded according to criteria; any differences in determination of exclusions were discussed and agreement was reached on its inclusion or exclusion.

The search yielded 73 articles, of which 36 articles met the inclusion criteria. Further carful data extraction was carried out by two independents reviewers. The extracted data included year of publication, author name, city where the study was carried out, study type, sample size, age range, percent of CAM users i.e. prevalence rates (as a percentage of the whole study), specific type of CAM used, the reason for CAM used, satisfaction with CAM and sources of information. All were extracted directly from the text.

3. Results

The design of most of the surveyed studies was cross-sectional, with nationally representative, community-based sample. As shown in Fig. 1 the majority of the studies were published between 2014 and 2015 and mostly in Riyadh region (Fig. 2). The findings with respect to prevalence, type used, age range, indications/reasons, satisfaction and source of information are summarized in Table 2.

4. Discussion

Although the definition of CAM varies in different countries, the most accepted definition is "practices of patient treatment that is not integral parts of conventional or orthodox medicine that is taught in medical schools."(Eisenberg et al., 1998).

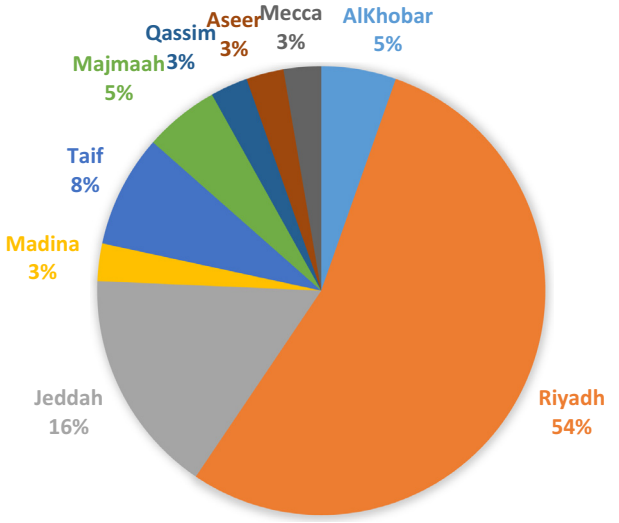

Figure 2 Publications About CAM in Saudi Arabia Divided By City Which Study Undertaken. N.B. (Alghmdi KH, 2015) study that includes 5 areas of SA were not included in the pie chart.

Our search in the literature did not reveal any review on CAM use in Saudi Arabia and the current review represents the first one addressing CAM use among Saudis. Although the search covered the period between 2000 and 2015, most publications appeared in the year 2008 onward. This is coincident with the establishment of the national center of complementary and alternative medicine in August 2008, which may have triggered the interest in research in CAM.

The number of publications during this period was 36 publications, and the majority appeared in the years 2014 and 2015. More than half of the publications were from the central region of Saudi Arabia ($n = 23$), few ($n = 9$) from the Western Region, Eastern Region ($n = 2$), and Southern Region ($n = 1$), and one study combined different regions. The higher number of publications in the Central Region came from Riyadh, the capital city of the country. Besides, the National Center for CAM is allocated in Riyadh city. It is also worth adding that our search include studies in English language

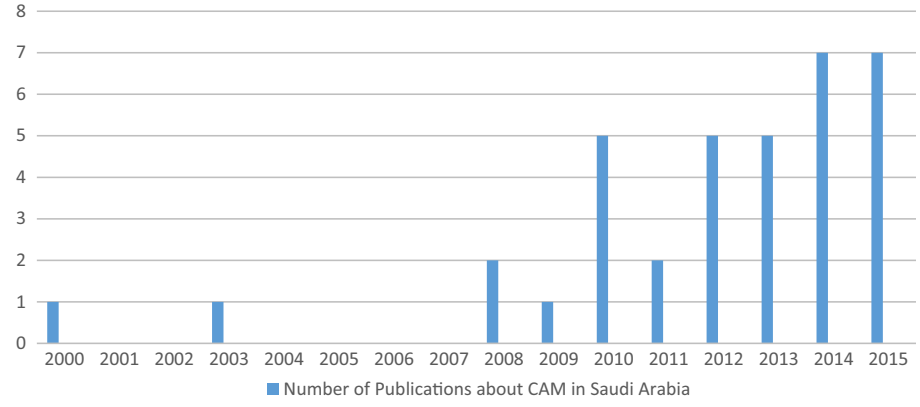

Figure 1 Publications about CAM in Saudi Arabia (2000–2015). N.B. (Alghmdi KH, 2015) study that includes 5 areas of SA were not included in the pie chart.

Table 2 Publications in Saudi Arabia about CAM uses (2000–2015).

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
Al-Faris (2000)	Riyadh	Cross-sectional	310 Age ⩾ 18 years	46%	Sheikh[a] (17%) Herbalist (6.1%) Herbal (8.7%) Honey (4.5%) Nigella sativa (3%) Cautery (5.8%)	Headache Irritable bowel syndrome Back pain	Safe (48%) Beneficial (57%) No side effects (92%)	Relatives (77%) Neighbors (48%) Friends (39%) Media (8.3%)
Al-Saeedi et al. (2003)	Mecca	Cross-sectional	1039	33%	Traditional remedies	Diabetes	Safe and effective (15.6%)	NA
Al-Faris et al. (2008)	Riyadh	Cross-sectional	1408 Age 35.5 ± 13.9	68%	Quran (50.3%) Honey (40.1%) Black seed (39.2%) Myrrh or helteet (35.4%) Fenugreek (25.4%) Cautery (6.9%) Alhijama (cupping) (2.1%) Acupuncture (.003%)[j]	NA	Adverse effects (6.6%)	NA
Al Moamary (2008)	Riyadh	Cross-sectional	200 Age 52.3 ± 18.7	34.5%	Quran (9%) Honey (24.5%) Herbs (23.5%) Cautery (12%) Black seed (10%)[j]	Bronchial Asthma	(57%) Benefits (98.5%) Continue (85.5%) modern medicine is more effectives	(66.7%) friends
Jan et al. (2009)	Jeddah	Cross-sectional	79 Age 20–51 Mean 34	42%	Spiritual 82% Herbs 30% Cautery 12% Alhijama (cupping) 9%	Acute (47%) Chronic (53%) Treatable (84%) Progressive severe medical disorder (6.5%) Neurological (25%) with mental retardation (14%) Cerebral palsy (19%) Epilepsy (17%)	18% Side effects	Family 24% Friends 24% Other 7%
Al-Rukban (2010)	Riyadh	Cross-sectional	183 acupuncture centers attenders Age 21–40	Acupuncture	Physical therapy[b] (23.5%) Herbs (20.2%) Quran (12.6%) Alhijama (cupping) (7.7%) Cautery (2.2%)	Joint pain (22.4%) Headache (18.6%) Lower back pain (15.8%) Chronic neck pain (14.8%) Obesity (13.7%)	94.5% Effective 41% Few Side Effects	Family and Friends (65%) Internet (32.8%) handbills from acupuncture centers (26.8%) media (21.3%)

(*continued on next page*)

Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
Bakhotmah and Alzahrani (2010)	Jeddah	Cross-sectional	1634 Age 49 ± 17	CAM alone 21.7% CAM with Rx 31.2%	Honey (56.6%) Myrrh (37.4%) Black seed (35.1%) Lawsonia inermis (Henna)[f] (12.1%) Fenugreek (12.5%) Saber (Cactaceae) Helba (2.3%)[j]	Diabetic foot	NA	Friends and relatives (70.8%) Traditional healers (38.4%) Physicians (24.9%)
Alkharfy (2010)	Riyadh	Cross-sectional	115 Age 33 ± 7	63% Pharmacists receiving requests daily	Ginseng (47%) Ginkgo (23%) Valerian (17%) St John's wort (3.5%)	Boosting energy 49% Poor mental alertness 19% Insomnia 17% anxiety 5% Low mood 1%	30% harmless	NA
Al-Rowais et al. (2010)	Riyadh	Cross-sectional	1408	42% in life 24% in a year	Traditional healers 42% Quran 62.5% herbs 43.2% Cautery 12.4% Alhijama (cupping) 4.4%[j]	Abdominal pain Flatulence Low back pain Sadness and depression Headache	2% reported the death of one of their relatives or friends due to CAM use	Friends (33.5%) Relatives (32.8%) Mothers (22.3%) Fathers (16.6%)
Salem et al. (2010)	Al-Khobar	Randomized control trial RCT	88 Age 40.8 ± 11.9	N. Sativa seeds possess clinically useful anti-H. Pylori activity, comparable to triple therapy	Nigella sativa	H pylori non-ulcer dyspepsia	NA	NA
Al Sudairy et al. (2011)	Riyadh	Cross-sectional	41 Age Median 4.4 (0.1–13.4)	Quran (100%) Duaa (87.8%) Dietary supplements (95%)	Honey (73%) Black seed (61%) Olive oil (external use) (68%) Zamzam water[c] (76%) Water with Quran[c] (48.8%) Herbal mixtures (29%)	Pediatric oncology patients	Helps in cure (100%) Comfort (80.5%)	NA
Al-Omar and Al-Arifi (2011)	Riyadh	Cross-sectional	133 Age 21–27	39%	Herbal 63.49% Nutrition 59.62% Massage 42.31% Relaxation 42.31 Movement therapy 28.85% Mega dose vitamin 25%	Minor ailment 36.54% Acute illness 32.69% Nutrition 32.69% Chronic illness 23.08%	40.39% natural and safe	Family 62% Friends 40% Self 42%
Aldahash et al. (2012)	Riyadh	Cross sectional	399 Mean Age 37.97 ± 14.49	87.4%	NA	Abdominal pain (48.9%) Common cold (48.9%) Evil eye (27.6%) Fever (23.3) Acne (9.5%) Headache (24.6%) Wound (26.6%)	(71.7%) CAM helps conventional medicine	Internet (74.19%) TV (56.89%) Printed materials (45.61%) Patients in waiting area in hospital

Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
						Back pain and sciatica (17.8%) Asthma (15.8%) Impotence (12.8%)		(38.35%) Physician (37.84%) CAM provider (34.09%) Family and Friends (25.56%)
Elolemy and Albedah (2012)	Riyadh	Cross-sectional	518 Age $\geqslant$ 18 years	85%	Medical herbs 58.9% Prayers 54.6% Honey 54.2% Alhijama (cupping) 35.7% Cauterization 22.01% Medical massage 21.18% Camel milk and urine 11.78% Acupuncture 9.85%[j]	NA	Cheap (74.5%) Safe (86.9%) effective (93.7%)	Mass media (46.5%) Family, relatives and friends (46.3%) educational organizations (3.8%)
Albedah et al. (2012)	Riyadh	Cross-sectional	306 health professionals Mean Age 36.73 $\pm$ 9.91		Prayers 90.5% Honey 85% Medical herbs 76.9% Alhijama(cupping) 70.6% Supplements 61.4% Cauterization 55.9% Camel milk and urine 52.5% Medical massage 61.8% Acupuncture 55%[j]	NA	NA	Mass media (60.1%) Family, relatives, and friends (29.08%) health educational organizations (14.71%)
Jazieh et al. (2012)	Riyadh (2006–2008)	Cross-sectional	453 Age 14.7–94.6 Median 53.5	90.5%	Quran (74.8%) Prayer (16%) Supplication (13%) Zamzam water[c] (59.8%) Honey (54.3%) Black seed (35.1%) Water with Quran[c] (29.8%)[j]	Cancer patients (oncology)	NA	NA
Al-Rowais et al. (2012)	Riyadh 2010	Cross-sectional	1113 PHC Physicians	51.7%	Spiritual healing (40.3%) honey and bee products(38.3%) dietary supplements (34.9%) massage therapy(34.4%) relaxation(25.8%) herbal medicine (22.8%) Alhijama (cupping) (21.4%)	NA	75.7% physicians' knowledge about CAM leads to better patient outcome	8% Lectures

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Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
Al-Zahim et al. (2013)	Riyadh 2012	Cross sectional	232 Age 46.9 ± 15.1	55.6%	Honey (39.0%) Herbs (31.8%) Bloodletting[g] (13.5%) Cautery (3.4%) Camel milk (6.4%) Camel urine (3.4%)	Liver disease	76.6% satisfied with CAM to help control their disease	Family 41.6% Friends 17.5%
AlBedah et al. (2013)	Qassim 2011	Cross-sectional	1160 Age 18–90 40.69 ± 15.9	74%	Spiritual healers (26.7%) Herbalists (23.2%) honeybee products (14.9%) Alhijama (cupping) (13%) Cauterization (9.4%) Chiropractic (4.1%) Acupuncture (2.2%) Homeopath (0.1%) Herbs (75%) Almurrah (myrrha) (33.4%) Helba (Trigonella foenumgraecum) (12.8%) Yanson (Anise) (15.4%)[j]	Chronic illnesses Acute illness Well-being	50% satisfied	NA
Gad et al. (2013)	Riyadh	Cross-sectional	426 families about their children	(37.3%)	Quran (26.1%) Honey (21.5%) Ferula asafetida (Helteet) (18.8%) Black seed (17.2%) Recited Quran on water[c] (15.4%) Recited Quran on oil (11.2%) Herbs (7.8%)	NA	NA	NA
Abd El-Mawla et al. (2013)	Taif	Cross-sectional	300 Age 1.6–10.8 years	58%	Anise (24.7%) Fenugreek (14.7%) Chamomile (13.0%) Fennel (11.3%) Clove (8.3%) Black seed (8.0%) Sesame Oil (5.3%) Cumin (4.7%) Cinnamon (4.4%) Olive Oil (2.7%) Mint (2.6%)	Gastrointestinal upset Immune-stimulant or as anthelmintic Diarrhea Sedative and carminative nutrient and hypoglycemic Acute cough Moisturize the skin	Side effects (3%)	NA
Aljaloud and Ibrahim (2013)	Riyadh	Cross-sectional	105 Athletes Age 20–30 years	93.3%	Sports drinks (88.7%) Vitamin C (82.6%) Multivitamins (52.0%) Omega 6 (18.6%) Creatina[h] (16.3%) Ginkgo biloba (10.2%)[j]	32.6% Improve health 3.8% improve performance	NA	NA

Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
Alosaimi et al. (2014)	Riyadh	Cross-sectional	321 Age ⩾ 18 years Mean 35.1 ± 10.8	74.1%	Quran (95.6%) Blessed water[c] (84.7%) Blessed olive oil (60.1%)	Psychiatric disorders Depressive and anxiety disorders	NA	Religious reasons, effectiveness, or family wishes
Abd El-Mawla et al. (2014)	Taif	Cross-sectional	300	83%	(A) anise (14.74 %), chamomile (10.26%), peppermint (8.68%) cumin (6.58%) (B) fenugreek (5.6%) and senna (3.95%) (C) cinnamon (3.68%) and ginger (6.84%) (D) pomegranate (8.95%), fennel (6.1%)	(A) As carminative and spasmolytic (B) Constipation associated with IBS (C) Stomachic and carminative (D) Abdominal colic, flatulence, dyspepsia and constipation	No side effects recorded	NA
Aleyeidi et al. (2015)	Jeddah	RCT pilot study	18 Age Intervention 52 ± 7.2 Control 49 ± 9.5	NA	Alhijama (cupping)	Hypertension	Not significant No side effects	NA
Abd El-Mawla et al. (2014)	Taif	Cross-sectional	480 pharmacists	NA	Ivy products 17.1 % (A)[e] Senna 9.4% (B) Ginseng 8.1%(C) Ginkgo biloba 7.3% (D) Seeds of oenothera biennis[i] 5.2% (E) Fennel 5% (F)	(A) Cough (B) Constipation (C) Tonic (D) Cerebral circulation (E) Dysmenorrhea (F) Digestive	NA	NA
Al-Binali et al. (2014)	Aseer	Case-control study	Infants' parents 0–12 months Cases 150 Control 134	NA	Cautary	Abdominal distension (28%) Prolonged cough (27.3%) Persistent vomiting (22%) and excessive crying (14%)	4% Wound infection 6.7% hospitalized after cautery	NA
Sait et al. (2014)	Jeddah	Cross-sectional	137	21.6 %	CAM (21.6%) Herbal (54%) Rakia[d] (21%) nutritional supplements/ vitamins (7.0%) and Zamzam water[c] (18.0%)	Cancer Breast cancer (26%) Gastrointestinal (23.0%) Gynecological (18.0%) Urological (12.0%) Leukemia and lymphoma (10.0%) Lung (7.0%) Soft tissue (2.0%) Head and neck (2.0%)	NA	NA
Suleiman (2014)	Riyadh	Cross-sectional	294 Pharmacies attenders Age ⩾ 18 years	91.1%	Variable[j]	Variable[j]	81.2% harmless	(2.5%)physicians (6.4%) pharmacists (66.2%) friends or relatives (24.9%) internet

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Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
AlBedah et al. (2015)	Riyadh, Madinah & Jeddah	RCT	Total 80 (Control 40/ Intervention 40) Age 18–60 years Mean 36.4 ± 9	NA	Alhijama (cupping)	Non specific low back pain	Reduce pain proven by several validated pain scoring tool	NA
Al Mansour et al. (2015b)	Majmaah	Cross-sectional	65 Age 20–27 years	NA	Prayers (66.7%) herbal products (60.9%) massage (46.4%) nutritional supplements (42.0%) acupuncture (34.8%) aromatherapy (24.6%)	NA	NA	NA
Mohammad et al. (2015)	Riyadh	Cross-sectional	292 Age ⩾ 18 years	67%	Alhijama (cupping) (45.4%) Herbs (42.3%) Cauterization (33.7%) Quran (20.4%) Massage (16.3%) Vitamins and minerals (6.1%) Acupuncture (2%) Relaxation (3.1%)	Chronic, disabling and incurable nature of the neurology diseases.	64% CAM can cure diseases	NA
Al Zaben et al. (2015)	Jeddah	Cross-sectional	310 Mean Age 46.4	Religious practice	CKD Dialysis patients	NA	Religious practices were inversely related to depressive disorder	NA
AlGhamdi et al. (2015)	Various regions of Saudi Arabia	Cross-sectional	1901 Mean age 31.6 ± 12 years	40%	Vitamins, prayers, natural products, and herbs. 50–70% Spiritual and Herbs Massage: eczema (37.1%) Dermatitis (40.4%) Alhijama (cupping) (32%) Acupuncture (18%) sanoot (mugwort) skin infections (35%) Scars (31%) Urticaria (46%) Myrrh (20–55%). Vitiligo: Black seeds, honey, and Zamzam water[c]	Dermatology	40% safer 30% effective 83% will continue using CAM in future	NA
Al Mansour et al. (2015a)	Majmaah	Cross-sectional	65 Mean age 21.13	CAM is not a threat to public Health ($P = 0.039$)	NA	NA	NA	Health care providers should be able to advise their patients about commonly used CAM therapies

Table 2 (*continued*)

Author/Year	City	Study type	Sample description (Size/sex/Age) if available	Prevalence	Therapy prevalence (%)	Reason	Satisfaction	Encouraging factor (%)
Musaiger and Abahussain (2015)	Al-Khobar	Cross-sectional	736 Age 15–19 years	NA	Dietary supplements (59.4%) Honey (58.6%) Quran (47.3%) Black cumin (40.4%) Medicinal herb (37%) Acupuncture (1.6%)	Abdominal pain (47%) Cold and flu (37.6%) Cough (31.3%)	34% Male −42% Female CAM is safe ($P = 0.013$)	Family members and friends (67.7%) Television (10%) Internet (8%)

[a] Sheikh is an honorific term in Arabic and may refer to religious man who recite Quran on patient.

[b] Physical Therapy: it is a professional career and commonly includes prescription or assistance with specific exercise, manual therapy and manipulation, mechanical device such as traction, physical agents such as cold and heat and prescription of assistive device, prostheses and other intervention.

[c] Blessed water: Water on which Quran was recited. As per difference between Zamzam water, Blessed water and water on which Quran is recited, Zamzam water is the water from Zamzam well in Makkah, Saudi Arabia. There is no difference between the blessed water and water on which Quran was recited, but we prefer to use the same term which was mentioned in original papers.

[d] Rakia, Rokia or Roqia: It is an Arabic term which refers to a traditional therapy in which Quran is recited on the painful area of the body and also blowing air from the mouth. It was practiced by Prophet Mohammad peace be upon him.

[e] Ivy product: it is a plant that is popular in cultivation for evergreen foliage. Their berries are moderately toxic and can cause contact dermatitis. Ivy leaf extract is used to treat cough and cold symptoms.

[f] Lawsonia inermis (Henna): A dye prepared from plant and is used to dye skin, hair and finger nails.

[g] Bloodletting: Alhijama (cupping). Both terms of Alhijama and cupping have to be mentioned as Alhijama the Arabic term may not well be known to non-Muslims specifically.

[h] Creatina: Athletic aids used to increase high intensity athletic performance.

[i] Seeds of oenothera biennis: seeds used to treat some medical conditions and are considered a diet supplement rather than a drug.

[j] For CAM types, the most frequent types were documented however a variable extended list available for some studies mentioned in its full text.

and those with English abstract only, although attempts were made to find any studies in Arabic language but none was found.

All of the published researches were cross-sectional studies, except three studies which were randomized controlled trials (RCTs), addressing different types of CAM, i.e. wet cupping and low back pain, wet cupping and hypertension and Nigella Sativa (black seeds) in non-ulcer dyspepsia.

The results of these three studies cannot be an evidence to support the use of CAM, as all were experimental studies. Only seven studies were community-based surveys while others were either hospital based or in primary care centers based or conducted in schools or colleges, which makes it difficult to generalize and legitimize the CAM use in the community as a whole.

The prevalence of CAM use, in general, varies from 21.6% to 90.5%. Others found lower prevalence of 9–65% (Ernst, 2000). This high prevalence obtained in this study may be related to either the differences in CAM types or the differences in the local traditions and customs of the Saudi community which is conservative and deeply religious (Silbermann and Hassan, 2011).

However, the remarkable difference in the findings for the patterns of CAM practices can in part be the result of the difference in objectives, study design and methodology, characteristics of the population and sample size, and it makes comparison between the studies quite difficult.

It is known that the types of CAM use vary within and between different countries (Barnes et al., 2004). However, CAM types did not seem to vary from area to area in Saudi Arabia. Alghamdi et al. studied five different areas in Saudi Area but the published results did not differentiate between each area (AlGhamdi et al., 2015). Alqhamdi et al. study revealed significant variation in the practice of CAM between male and females users; females are the predominate (55%- P value .0003) (AlGhamdi et al., 2015).

The most commonly used practice in Saudi Arabia were spiritual practices such as reciting Quran, prayer, and reciting Quran on water and Zamzam water which varies between 9% and 95%, when compared to other countries, 76% in Turkey (Araz et al., 2009) and 67.4% in the United States (Barnes et al., 2004).

The other CAM types used were herbs (8–76%), honey (14–73%) and dietary products (6–82%). Cupping (Alhijamah) was less commonly used (4–45%), and this may be related to regulation enforced by the Ministry of Health preventing this practice for sometime because of its invasive nature and the need for strict aseptic procedures, which is lacking in most of the settings and malpractice associated with this type of traditional treatment was widespread. It is worth to add that therapeutic benefits of Alhijamah (cupping) were studied in light of modern medicine and prophetic medicine. It was found to be superior to acupuncture and other types of cupping therapy in treating a large number of diseases of different etiologies and pathologies (El Sayed et al., 2014). A review attempted to find evidence to support Alhijamah (cupping), identified a randomized controlled trials on the effectiveness of cupping, but it turned out to be of low quality and has many limitations (AlBedah et al., 2011).

Acupuncture is practiced locally in some areas with prevalence between 1.6 and 34%. It is more popular among professional communities including medical students (Al-Rukban, 2010). This relatively low rate may be attributed to its recent introduction to Saudi population.

The most frequent reasons to resort to CAM by patients were failure of medical treatment, perceived success of CAM, preference of natural substances, perceived failure of modern medical treatment, long appointment intervals to see physicians, long time waiting on health services and inconvenience with physician diagnosis (Gad et al., 2013; Al-Faris et al., 2008). Reasons such as expensive drugs, expensive consultation fees and health services are far away were also reported in low percentages (Gad et al., 2013; Al-Faris et al., 2008).

The most common complaints for which CAM was used vary widely; some studies were conducted among patients with specific diseases while others were addressing only symptoms of diseases, which make it difficult to categorize or classify. Alghamdi et al. found that patients with acute skin diseases were more likely to use CAM (P = .027) (AlGhamdi et al., 2015).

As to the cost of CAM, spending on complementary and alternative medicine was assessed in Qassim province to be 1,2 billion Saudi Riyals (≈325 million US $) which, if generalized to all Saudi Arabia, will be 8.2 billion US $, compared to 13.9 billion US $ in the United States (AlBedah et al., 2013; Davis and Weeks, 2012).

As the use of CAM in general and herbs, in particular, on the increase, the Saudis enthusiasm to CAM and their views on integrating these practice into medical services were assessed, and they have showed a very favorable attitudes toward the integration of herbal medicine into primary care services and reflect their strong concern about the safety of the marketed herbal remedies (Allam et al., 2014).

Although forty-seven percent of CAM users did not consult their physician before using CAM, 30% also did not obtain sufficient answers regarding CAM use from their physicians (AlGhamdi et al., 2015). Alrowais et al. found positive attitude regarding the concept of CAM, but reluctance to refer or to initiate discussion with patients on CAM practices, which may be attributed to a lack of knowledge (Al-Rowais et al., 2012).

Despite the worldwide interest in CAM, it is not adequately represented in medical education in Saudi Arabia (Al-Rukban et al., 2012) and even in developed countries (Wetzel et al., 1998). There are promising changes in some medical school curricula in SA as they start to offer courses on CAM with some integration of CAM in curriculum (Al Mansour et al., 2015a). Besides, medical students agree that CAM practices need to be included in their medical school curriculum (Al Mansour et al., 2015a). In other study, 43% of interviewed students were satisfied with studying CAM (Al Mansour et al., 2015b).

Only four studies could be identified addressing traditional healers (Al-Rowais et al., 2010; Al-Habeeb, 2003, 2002; Alosaimi et al., 2014). About 25% of these healers were illiterates. Their sources of information were the Holy Quran, treated patients, personal experiences, and mass media. Some were non-Saudis. Most CAM users have obtained their knowledge either from family and friends or from mass media. The medical professional should engage with CAM practices because on some occasions it leads patients refusing, delaying, or stopping medically indicated therapy.

5. Conclusion

The utilization of CAM is widely practiced in Saudi Arabia. There is need for efforts to promote research in the field of CAM to address each practice individually. Population surveys should be encouraged supported by mass media to raise knowledge and awareness about the practice of different CAM modalities. The national center of CAM should play a major role in these efforts.

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