



Original article

The welcoming attitude of dermatologists towards complementary and alternative medicine despite their lack of knowledge and training

Khalid M. AlGhamdi^{a,*}, Huma Khurram^b, Yousif Asiri^c^a Dermatology Department, Vitiligo Research Chair, College of Medicine, King Saud University, Riyadh, Saudi Arabia^b Vitiligo Research Chair, College of Medicine, King Saud University, Riyadh, Saudi Arabia^c Clinical Pharmacy Department, College of Pharmacy, King Saud University, Riyadh, Saudi Arabia

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ABSTRACT

Background/aim: Although complementary and alternative medicine (CAM) use is highly prevalent, there is very limited information on dermatologists' attitudes and knowledge about CAM. In this survey, we aimed to study the knowledge and attitude of dermatologists in Saudi Arabia towards CAM. Furthermore, we assessed dermatologists' intention to receive CAM education and training. **Methods and design:** We collected data through an online cross-sectional survey sent to email addresses of dermatologists in Saudi Arabia. Questions included socio-demographic data, knowledge and attitudes towards CAM practice. **Results:** A total of 93 questionnaires were returned from dermatologists in various regions of Saudi Arabia. The mean age was 41.7 ± 10.3 (range, 25–63) years. A total of 67% of dermatologists had welcoming attitudes towards CAM. We did not find any significant relationship between age, gender, experience or any other factor and positive attitudes towards CAM. More than 70% of participants reported an interest in learning about CAM. However, only 9 (9.7%) dermatologists had attended CAM courses. Sixty-one participants (65.6%) were eager to receive CAM-specific education, and 66% of dermatologists acknowledged having previously discussed CAM with their patients. The most important reason that dermatologists did not discuss CAM with their patients was a lack of studies supporting CAM (66.7%) and the belief that doctors' knowledge on CAM is insufficient (58.1%). **Conclusion:** A greater number of dermatologists have an affirmative attitude towards CAM. The willingness to improve knowledge and training indicates that the CAM field could potentially grow in dermatology.

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1. Introduction

A range of 35–69% of patients with skin disease have reportedly used complementary and alternative medicine (CAM) in their lifetime (Ernst et al., 2002; Smith et al., 2009). A 2009 study found that 49.4% of patients with skin problems had used CAM within the previous year, and 6% had specifically used it for their skin disease (Smith et al., 2009). We found that a significant number of dermatology outpatients in Saudi Arabia (40%) had used CAM (Ghamdi et al., 2015). A diverse spectrum of dermatological disorders

among Saudi Arabian population has been reported in local studies (Al-Hoqail, 2013). The use of some CAM has been associated with adverse reactions, drug interactions and low adherence to prescription drugs (Ernst et al., 2002; Ernst, 2000; Menniti-Ippolito et al., 2008; Tey et al., 2008).

A previous study included an evaluation of dermatologists' communication and attitudes about CAM and found that dermatologists had a low ability to predict CAM use in their patients, and CAM use was not discussed in the majority of cases (Ben-Arye et al., 2003). An Italian study has found important knowledge gaps regarding clinically relevant CAM information among their dermatologists (Renzi et al., 2009). Few studies have been performed with general physicians, and there are scarce data on CAM knowledge and practice among dermatologists.

Previous research has shown that dermatology patients view their physicians as important sources of information regarding the safety and effectiveness of CAM (Ghamdi et al., 2015). Our previous study (Ghamdi et al., 2015) on the prevalence of CAM among dermatology patients in Saudi Arabia identified the use of diverse

* Corresponding author. Fax: +966 14690791.

E-mail address: kmgderm@gmail.com (K.M. AlGhamdi).

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CAM methods. In view of that, the current study investigated skilled use, knowledge and attitudes towards CAM, as well as any relationships between socio-demographic factors and the use of CAM among dermatologists in this region. To our knowledge, no such study has been previously performed in the Arab world.

2. Methods

A brief online survey with closed and open-ended questions regarding CAM knowledge and attitude towards its use was conducted on dermatologists in Saudi Arabia. Ethics approval was obtained through the King Saud University Hospital Ethic committee.

Dermatologists were invited by email to complete an anonymous online questionnaire, which included 46 pre-coded questions on knowledge, attitudes and doctor–patient communication regarding CAM. In agreement with the definition of the American National Center for CAM (NCCAM) and the National Institute of Health, CAM was defined as healthcare systems, practices and products not currently considered part of conventional medicine. The study questionnaire was developed based on a literature review (Ben-Arye et al., 2003; Ernst, 2000; Ernst et al., 2002; Eisenberg et al., 2001; Smith et al., 2009; Talbott and Duffy, 2015) and the questions were adapted to our specific objectives and context. Dermatologists were asked to indicate CAM treatments they had recommended, selecting them from a list of 12 pre-coded questions (acupuncture, hydrotherapy, herbal medicine, homeopathy, manipulative therapies, dietary supplements not including vitamins, thermal therapies and others). Knowledge was assessed by asking 14 questions about clinically relevant information about CAM (e.g., identification of possible adverse reactions from herbal treatments described in the literature from a pre-coded list).

Groups were compared using Fisher's exact test. Significance was set to $p < 0.05$. Multivariate logistic regression was used to analyse the association between dermatologists' positive attitudes towards CAM and potential explanatory demographic variables. Statistical package SPSS, Version 22.00 (Statistical Package for the Social Sciences, SPSS Inc., Chicago, IL) was used for statistical analyses.

3. Questionnaire

A questionnaire was designed to achieve the aims of the study. The CAM therapies chosen for this study were based on a standard classification derived from five groups adopted by the National Centre for Complementary and Alternative Medicine (NCCAM, 2002). CAM therapies surveyed in this study included those that are both commonly and less commonly surveyed and therapies that are highly popular in Saudi Arabia. The preliminary list of therapies was developed by a consensus of international researchers in the CAM field based on a literature review. The questionnaire included both open-ended and closed-ended questions. The face and content validity of the questionnaire was established by a comprehensive literature review.

The questionnaire was pilot-tested among 15 dermatologists for content, language clarity, ease of use, relevance to dermatologists, and time required to fill out the questionnaire. The dermatologists were assured verbally and via information sheets that their information would be kept anonymous and confidential. Written consent was not necessary from the dermatologists because completion of the questionnaires served as consent to participate in the study.

3.1. Data collection

Upon approval by the hospitals' Ethics Committees (Project no; E-11-562), data collection began by sending the online survey to all dermatologists in the region. Responses were collected and analysed using an online survey maker.

4. Results

We emailed 93 questionnaires to dermatologist in various regions of Saudi Arabia. A total of 93 were returned, indicating a 100% response rate. The mean age of the dermatologists was 41.7 ± 10.3 (range of 25–63) years. Table 1 shows the socio-demographic characteristics of the participants. Twenty-five dermatologists were consultants and 16 were residents. We found that most of the dermatologists surveyed have knowledge about diet supplements (69, 74.2%) followed by holy water use and spiritual healing (Table 2). Almost 50% (43/93) obtained their information about CAM from the media. By examining attitudes regarding CAM, we found that 67% of dermatologists have welcoming attitude towards CAM (Table 3). The areas they are interested to learn more about are side effects and safety (82%), mechanism of action (79%), optimal combination with conventional therapy (79%) and cost effectiveness (69%) (Table 3).

As shown in Fig. 1, a large number of dermatologists expressed agreement with most attitudinal statements about CAM education listed in the questionnaire. For example, 71% agreed on the benefits of CAM and 69% showed their interest in CAM. However, only 9 dermatologists (9.7%) had attended CAM courses.

The doctors gave several reasons for their willingness to take a course in CAM, from feeling a responsibility to respond to their patients' interests and needs to develop professional skills. Two-thirds of respondents (66.7%) thought that CAM training would be beneficial to their practice. When asked about their opinions related to CAM education, 65.6% (61/93) were eager to receive CAM-specific education.

We received mixed responses for different questions about the dermatologists' attitudes towards CAM, but a large number of dermatologists agreed on the need for physician supervision of CAM (82.8%). A total of 68% of respondents considered CAM to be a useful supplement to conventional medicine, and 72 out of 93 respondents (77.4%) believed that dermatologists could provide better medical care with more knowledge of CAM (Table 4).

Table 1

Demographic characteristics of respondents who completed the CAM Questionnaire. N = 93.

Demographics		Number of response
Age (years)	Mean \pm SD (Min–Max)	41.7 \pm 10.3 (25–63)
Experience (years)	Mean \pm SD (Min–Max)	11.6 \pm 8.7 (0.5–29)
GenderM:F = 1:0.6	Male	41 (44%)
	Female	26 (28%)
	Non-response (Missing)	26 (28%)
Qualifications	MBBS	19 (20.4%)
	Master/Diploma	16 (17.2%)
	Board/PHD	32 (34.4%)
	Non-response (Missing)	26 (28%)
Job level	Consultant	25 (26.9%)
	Specialist	25 (26.9%)
	Resident	16 (17.2%)
	Non-response (Missing)	27 (29%)
Practice	Government	42 (45.2%)
	Private	17 (18.3%)
	Both	7 (7.5%)
	Non-response (Missing)	27 (29%)

Table 2

Dermatologists' knowledge/awareness of CAM therapies^a (Survey Question 1: How do you rate your level of knowledge of about different CAM modalities) N = 93.

Type of CAM	Familiarity
Herbal medicine	39 (41.9%)
Acupuncture	25 (26.9%)
Massage	48 (51.6%)
Spiritual healing	54 (58.1%)
Homeopathy	17 (18.3%)
Reflexology	24 (25.8%)
Hypnotherapy	21 (22.6%)
Aromatherapy	22 (23.7%)
Diet/supplements	69 (74.2%)
Wet cupping	47 (50.5%)
ZamZam (Holy water)	61 (65.6%)
Traditional Cauterization	35 (37.6%)

^a Options are not mutually exclusive.

Table 3

Dermatologists' knowledge and attitude about different CAM modalities N = 93.

	Frequency	Per cent
<i>Source of information^a</i>		
Media	43	50
Medical journal	27	31.4
Internet	16	18.6
<i>Attitude towards CAM</i>		
Extremely welcoming	8	9.7
Welcoming	55	67.1
Not welcoming	19	23.2
<i>Areas of CAM you would like to know more about^a</i>		
Side effects and safety	76	81.7
Mechanism of action	73	78.5
Optimal combination with conventional therapy	73	78.5
Cost-effectiveness	64	68.8

^a Options are not mutually exclusive.

The questions and the respective responses about the testing practices of the dermatologists are shown in Table 5. Only half of the participants had personal experiences with CAM. No more than 17% have used CAM on their patients. In contrast, 62.4% reported that their patients asked them for information or advice regarding CAM. The common constraints for CAM use in practice are mentioned in Table 6.

Table 4

Overall frequency (%) of responses to attitude objects^a n = 93.

	Agree
There should be a scientific basis for CAM	65 (69.9%)
CAM can produce longer lasting and more complete clinical results than conventional medicine	24 (25.8%)
CAM therapies are merely a financial constraint	26 (28%)
CAM is used because it is safe and has few side effects	40 (43%)
CAM represents a confused and ill-defined approach	51 (54.8%)
CAM is a threat to the public's health	25 (26.9%)
CAM practitioners should be fully qualified and licensed by law	74 (79.6%)
CAM works largely through the placebo effect	35 (37.7%)
CAM should be included in undergraduate medical education curriculum	57 (61.3%)
There is a need for physician supervision of CAM	77 (82.8%)
CAM therapies not tested in a scientifically recognized manner should be discouraged	73 (78.5%)
CAM is a useful supplement to conventional medicine	63 (67.7%)
CAM may prevent people from getting proper treatment	54 (58.1%)
Physicians' knowledgeable of CAM can provide better medical care	72 (77.4%)

^a Non-response rate in all categories = 12.6% (Average).

The most recommended CAM treatments by dermatologists are summarized in Fig. 2. The most commonly suggested therapy was diet/supplements, followed by religious therapies.

One of the most common reasons dermatologists have not discussed CAM is that they considered it unnecessary to inform patients about CAM (22.6%). Further exploration of the reasons revealed that they do not discuss CAM because they do not consider CAM to be effective (66.7%) and because they believed that doctors' knowledge about CAM is insufficient (58.1%). A total of 35.5% of dermatologists reported lack of time as one reason for not discussing CAM with their patients (Fig. 3).

Multivariable analysis (Table 7) did not show any statistical relationship between the variables presented in Table 1, such as gender, level of qualification, different age groups and the type of practice and a positive attitude towards CAM.

5. Discussion

The growing use of CAM in the community is anecdotally reflected in the increased number of requests for and use of CAM

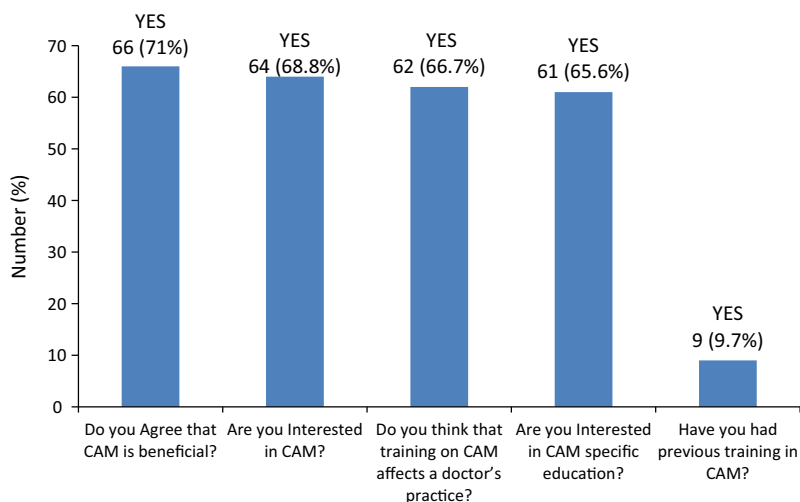


Figure 1. Opinions of dermatologists on statements related to CAM education = 93.

Table 5
Frequency (%) of all respondents who use CAM in clinical practice $n = 93$.

	Yes
Have you used CAM yourself (Have personal experience of CAM)?	38 (40.9%)
Have you used CAM with patients?	16 (17.2%)
Did you consider use of CAM with patients?	36 (38.7%)
Have you referred patients to CAM practitioner?	14 (15.1%)
Have you asked patients about their use of CAM?	61 (65.6%)
Did you observe potential adverse reactions from CAM use in your patients?	42 (45.2%)
Did patients request information on CAM from you?	58 (62.4%)

Non-response rate in all categories = 19.7% (Average).

Table 6
Frequency (%) of all responses about common constraints for use of CAM in clinical practice $n = 93$.

Constraint	Yes
Lack of knowledge and training	60 (64.5%)
Lack of studies supporting CAM	66 (71%)
Lack of license by health authority	65 (69.9%)
The high cost	14 (15.1%)

Non-response rate in all categories = 20.5% (Average).

therapies among dermatology patients. The effective practice of CAM within the hospital setting requires the support and good knowledge of CAM among dermatologists to ensure the safety and efficacy of any CAM therapies used.

Many studies have shown the use of CAM in dermatology patients, but there are very scarce data showing the attitude and practices of dermatologists about its use.

Active dermatologists reported in the Saudi Arabian population, 2007 were 3.76 per 100,000 (total = 901). Ratios were calculated using population estimates provided by the Central Department of Statistics and Information, Ministry of Economy and Planning, SA in conjunction with dermatologists' estimates provided by the Ministry of Health's statistical year-books (Bin Saif and Al-haddab, 2010).

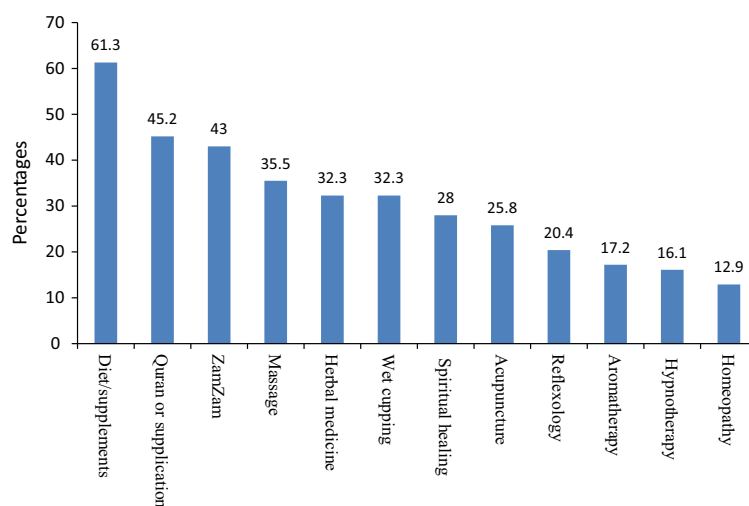
Our study shows that dermatologists generally feel that they do not have sufficient knowledge about CAM. Their lack of knowledge is justified by the fact that dermatology education programs do not sufficiently include the theoretical and practical aspects of CAM therapies. Several CAM therapies that dermatologists reported in the current study can potentially endanger patient safety, such as non-herbal supplements (61%) and herbal/botanical supplements (32%). There is a need for strategies to improve the knowledge and confidence of dermatologists in using CAM.

Importantly, 66/93 (71%) of dermatologists had positive attitudes towards CAM use, and two-thirds of them (66.7%) considered CAM training to be an essential aspect of their medical practice. These findings indicate that dermatologists are ready to respond to the public's preference for CAM use and to assist patients to make informed decisions about its use. This is reinforced by the dermatologists' agreement with the statement that 'Physicians knowledgeable of CAM can provide better medical care' (77%).

We found that only 16% of dermatologists use CAM in their clinical practices. The literature on dermatologists' CAM practice reveals that the incidence of professional use of CAM by dermatologists widely varies between studies. For instance, Renzi et al. (2009) studied the prevalence of personal CAM use among Italian dermatologists, which was reported to be 26.7% and included dietary supplements (37.5%), manipulative therapy (37.5%), acupuncture (31.3%), homeopathy (12.5%) and herbal treatments (6.3%). In contrast, we found the frequency of personal use of CAM among dermatologists to be 38/93 (41%). However, only 17% of dermatologists acknowledged the use of CAM with their patients.

The present study shows that the most commonly practised CAM therapies were diet/supplements and religious measures. The use of these interventions more frequently than other CAM domains may be related to cultural and religious influences. Our results did not show any significance in certain age groups or levels of practice.

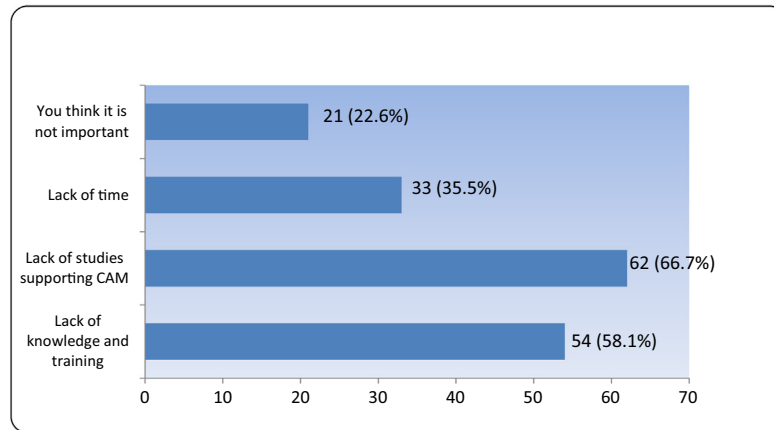
Our study has shown vital gaps about clinically relevant CAM information among the surveyed dermatologists. A significant proportion of dermatologists (66%) is interested in learning more about CAM, which is consistent with previous surveys that reported that 60% of physicians were interested in CAM education (Winslow and Shapiro, 2002). Overall, dermatologists' attitudes



Non-Response Rate (Missing) in all categories = 24.5%

*Options are not mutually exclusive.

Figure 2. CAM therapies that dermatologists have used or would consider to use (Survey question: "Do you ever recommend any of the following for dermatology patients?"). $n = 93$.



Non-Response Rate (Missing) in all categories = 22.1%,

Figure 3. Reasons of not discussing the CAM with patients $n = 93$.

Table 7

Factors associated with dermatologists having a positive attitude about CAM: results from logistic regression. Survey question: Do you agree that CAM is beneficial?

Demographics	Is CAM beneficial?	
	Agreed	Adjusted ORs 95% CI
<i>Age (years) (Mean \pm SD = 40.5 \pm 9.9)</i>		
≤ 30 ($n = 15$)	13 (86.7%)	Reference value
> 30 ($n = 52$)	43 (82.7%)	0.827 (0.16–4.4)
<i>P-value</i>	0.7	
<i>Experience (years) (Mean \pm SD = 10.6 \pm 8.3)</i>		
≤ 10 ($n = 34$)	31 (91.2%)	Reference value
> 10 ($n = 33$)	25 (75.8%)	0.346 (0.08–1.5)
<i>P-value</i>	0.08	
<i>Gender</i>		
Female ($n = 26$)	24 (92.3%)	Reference value
Male ($n = 41$)	32 (78.1%)	0.34 (0.07–1.7)
<i>P-value</i>	0.12	
<i>Qualifications (degree)</i>		
MBBS ($n = 19$)	15 (78.9%)	0.5 (0.12–2.5)
Master/Diploma ($n = 16$)	13 (81.3%)	0.9 (0.15–5.7)
Board/PHD ($n = 32$)	28 (87.5%)	Reference value
<i>P-value</i>	0.5	
<i>Job description (level of physicians)</i>		
Consultant ($n = 25$)	20 (80%)	0.9 (0.2–4.5)
Specialist ($n = 25$)	22 (88%)	2.5 (0.4–17)
Resident ($n = 16$)	13 (81.3%)	Reference value
<i>P-value</i>	0.6	
<i>Practice</i>		
Private ($n = 22$)	17 (77.3%)	Reference value
Government ($n = 44$)	38 (86.4%)	1.2 (0.3–5.7)
<i>P-value</i>	0.3	

towards CAM were mixed. However, the majority of dermatologists (62.4%) reported that patients asked them for information on CAM and many had observed possible CAM-associated adverse reactions (45%).

Notably, regardless of the high interest in CAM, 39% of dermatologists had considered use of CAM in their patients, primarily because they consider CAM to be ineffective and because they believe that doctors lack the knowledge about CAM. These results are consistent with other studies that included general practitioners and other specialists and found no inclination to discuss CAM use with patients due to similar concerns (Eisenberg et al., 2001; Mildred, 2004). The attitudinal questions demonstrated that dermatologists believe that CAM is beneficial and must become a greater

research priority. Respondents also believe that CAM should be subjected to more scientific testing, and it is as therapeutically powerful as conventional medicine. A small minority of respondents feels that CAM is a financial constraint.

It has been reported that only 16.9% of people using CAM for skin problems informed their physician (Smith et al., 2009). In our study, 62.4% patients requested information about CAM from the dermatologists. There is a gap between reported CAM use by patients and the education and support of CAM use by health professionals. Most health professionals and patients are uncomfortable discussing CAM and seldom have access to robust information about CAM. If increased integration of CAM into clinical practice is expected, then consideration must be given to increasing the knowledge of dermatologists about CAM, for which they can either practise or provide referrals to CAM practitioners. Evidence-based medicine and risk-benefits should also be discussed with patients when considering treatment choices (Pucci et al., 2004).

Conventional healthcare providers have reportedly limited open discussion of CAM use among patients of all ages (Ramsay et al., 1999). However, one study found that the majority of nurses and physicians did not feel comfortable discussing CAM with patients, (Fearon, 2003) but did not offer reasons why. The lack of discussion about CAM by conventional healthcare providers with patients and families raises questions about the safe and effective care of patients using CAM. There is a significant gap in the published literature on how personal attitudes and knowledge of CAM influence discussions with patients about CAM use.

A study in the UK showed that physicians with more knowledge and positive attitudes towards CAM were more likely to have experience in CAM, such as proposing CAM treatment or receiving CAM education. These results are consistent with earlier studies (Berman et al., 1998; Rosenbaum et al., 2002). Another national survey in Germany reported that primary care physicians were more inclined to use CAM than specialists (Stange et al., 2008).

At least one in ten UK physicians has some interest in CAM. It is concerning that many physicians were apparently personally practising CAM with inadequate training (Lewith et al., 2001). Time limitations may render the discussion and integration of CAM therapies into mainstream practice difficult. For example, there is some evidence that incorporating discussion of CAM may double consultation time (Adams, 2001). These results are consistent with our study, as we found that reasons for not discussing CAM with patients included the lack of studies supporting CAM and lack of

knowledge and training (67% and 58%, respectively), along with lack of time (35.5%).

Knowledge about CAM among GPs in Qatar is not as extensive as stipulated by the public (Al et al., 2010). Out of 119 participants of a cross-sectional study, 39.1% reported to have poor knowledge about CAM. While 83.8% described their attitude to CAM as welcoming and 97.5% were interested to learn more about it, few (30.1%) had previously practised, referred patients (24.8%) or asked patients about their CAM use (34.8%). Fifty per cent had experience in personal CAM use. The common constraints facing their own CAM use were analogous to our findings, as 60% of GPs noted lack of training and knowledge (Al et al., 2010).

The prevalence of CAM use among patients with skin disease makes it a subject worth reviewing for the practising dermatologist, both for exposure to available therapeutic options and for awareness about toxicity. However, a literature search on the topic reveals that more evidence and better studies are needed for each major CAM modality. Given the current level of evidence, these treatments should primarily be used in combination with conventional treatment and rather than independently, particularly in severe or life-threatening conditions. Moreover, dermatologists must weigh the known risks and benefits of a certain drug or treatment.

The disparities between reports on CAM use in dermatology practice might be predominantly due to, although not limited to, differences in the following: CAM definitions, inclusion of CAM therapies, methodologies used, beliefs in CAM in the society in which the study has been performed and the extent of CAM integration into conventional practice. Caution must be exercised in generalizing the results of this study. One limitation of this study is the measurement of knowledge and attitudes by means of self-administered questionnaires. It is undeniable that a questionnaire cannot cover all aspects of knowledge and attitudes towards CAM, specifically because there are a multitude of CAM therapies; however, the study does show that dermatologists themselves acknowledge that they have a lack of confidence about their knowledge. Moreover, there is a need to address common skin diseases for which CAM would be used or recommended by dermatologists. This valuable question would be added in future expanded survey.

In addition, the quality of data gathered by questionnaires is dependent on recall and the respondents' perceptions of questions, which can generate biased results. Another potential limitation relates to the fact that our study included a limited number of CAM therapies, though respondents may have used other types of CAM therapies not listed in the questionnaire. Despite these limitations, our study draws attention to dermatologists' knowledge, attitude, and professional use of CAM, and it is the first study of its kind among dermatologists in the Arab world.

6. Conclusions

Dermatologists have limited knowledge of CAM, but they remain open towards CAM use. In view of the general belief of dermatologists that CAM has fewer side effects, there is a need for physician-patient discussions and epidemiological and laboratory research to ensure safe CAM practice. Dermatologists' positive attitudes towards CAM use could be an indication that they are willing to integrate clinically approved CAM into skin care and management. Taken together, CAM represents interesting and relatively unexplored territory within medicine, and further investigation may help define its role within dermatology.

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