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Research Article

**COMPARISON BETWEEN SURGEONS AND INTERNISTS  
REGARDING KNOWLEDGE, ATTITUDE AND USE OF  
COMPLEMENTARY AND ALTERNATIVE MEDICINE  
(CAM) IN EASTERN SAUDI ARABIA**

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**Abstract:**

*Background: Comprehension towards the concept of complementary and alternative medicine (CAM) is variable globally, however it is progressing. It has been defined as group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of conventional medicine. Using CAM is popular as an adjuvant with medical treatment or separately among patients. Physicians' attitude and using of CAM are controversial. Unfortunately, using CAM is associated with undesirable side effect, such as interaction with prescribed drugs. Also, various news in developed countries show even life-threatening adverse effects. Objective: To assess Knowledge, attitude, influences and use of complementary and alternative medicine (CAM) in Eastern Saudi Arabia among surgeons and internist and to compare between both. Methods: Cross-sectional study by considering 200 physicians as sample from deferent hospital in Eastern province in Saudi Arabia which has been chosen randomly. Self-administrated questionnaire was made as per previous study with minimal modifications. Demographic data were included. The other questions to assess knowledge, believes and factor influencing attitude and believes regarding CAM. Direct question for the likelihood of recommending CAM for patients. Results: Response rate is 72.5, 73 surgeons (50.3%) and 72 internists (49.7%). Overall, no significant deference regarding knowledge between surgeons and internists as P value > 0.05 except for hypnosis (P value < 0.05). No significant deference in believes between both surgeons and internists (P value > 0.05). No significant deference regarding influencing of these factors between surgeons and internists as P value > 0.05 except for university training, Attitudes of Lecturers & Tutors, and Media (P value < 0.05). Around 54% of surgeons will recommend CAM to patients and 55.6% of internists will do with no significant deference between them (P value > 0.05). Conclusion: In general, Knowledge, attitude, influences and use of complementary and alternative medicine (CAM) among surgeons and internists in Eastern Saudi Arabia are variable. Overall, no significant deference between them with some exceptions.*

**Keywords:** Complementary and Alternative Medicine; CAM; Surgeons; internists; Eastern Saudi Arabia

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**INTRODUCTION:**

Comprehension towards the concept of complementary and alternative medicine (CAM) is variable globally, however it is progressing [1]. It has been defined by specific center called the U.S. National Center for Complementary and Alternative Medicine (NCCAM) as group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of conventional medicine. Using CAM is popular as an adjuvant with medical treatment or separately among patients. Physicians' attitude and using of CAM are controversial [2].

Furthermore, CAM is widely taught in medical schools all over the world [3]. Absolutely, it is growing over years, it is reported in United states that there was an obvious increase of use of CAM from 1990 to 1997 (34% to 42%). In Europe, 20 to 50% use among population has been reported and 52% in Australia as well. [4-5]. In developing countries, around 80% of population are believe on traditional medicines specially medicines from herbal origin as per World Health Organization [5].

Patients have willingness to use CAM treatments as they are natural with less side effects for better quality of life. Also, CAM therapies can be prescribed by anyone, not necessary to be physicians [6].

Definitely, traditional therapies are widely used in deferent purposes, in patients who has chronic backache, arthritis, gastrointestinal problems, eating disorders, chronic renal failure, and even with patients with acquired immunodeficiency syndrome and cancer [7].

Internal medicine physicians have their own point of view regarding CAM as in one there was one survey shows most of them agreed that some of CAM treatments are promising. In general, most of physicians are not satisfied to advice CAM to their patients [8]. On other hand, meta-analysis shows that considerable interest of physicians from deferent subspecialties regarding CAM [2].

Unfortunately, using CAM is associated with undesirable side effect, such as interaction with prescribed drugs. Also, various news in developed countries show even life-threatening adverse effects [9-10].

Our aim in this study to assess Knowledge, attitude, influences and use of complementary and alternative medicine (CAM) in Eastern Saudi Arabia among surgeons and internist and to compare between both.

**METHODOLOGY:**

At the beginning and after literature review and reviewing around twenty five articles we agreed to make cross-sectional study by considering 200 physicians as sample from deferent hospital in Eastern province in Saudi Arabia which has been chosen randomly self-administrated questionnaire was made as per previous study with minimal modifications has been made to facilitate answering and to save participants' time [11]. Electronic questionnaire typed by using Google forms (docs.google.com). Direct link for our electronic questionnaire has been made and sent through direct message by phone or through WhatsApp applications in smart phone after taking direct permission from participant to send.

Demographic data were included in our questionnaire in form of gender, nationality, institution, specialty and job status.

The second part was containing fifteen questions to assess knowledge of participants regarding CAM by including fifteen examples of CAM therapies and ask participants directly about their knowledge.

The third part was ten questions assessing participants believes regarding CAM.

The fourth part was containing eight questions asking about factors that influencing attitude and believes regarding CAM.

Finally, direct question for the likelihood of recommending CAM for patients.

**Statistical Analysis:**

The computer program IBM SPSS Statistics Version 24 has been used to enter and Analyze all data. comparison between answers for surgeons and internist has been made for each question with considering P value < 0.05 as significant.

**Ethical consideration:**

As mentioned before, all participants have been asked to agree before sending our questionnaire in additions to guarantee that given to participant about their personal data as it well be secret, and all result will be used for research purpose.

**RESULT:**

In regard to response rate, as we sent the questionnaire to 200 physicians ( 100 surgeons and 100 internists ), we got back 145 answers ( response rate is 72.5% ), 106 male and 39 female ( 73.1% vs 26.9% respectively ), 73 surgeons (50.3%) and 72 internists (49.7%), 4 consultant (2.8%), 28 specialist (19.3%), 113 residents ( 77.9%).

First part of questionnaire which assessing the knowledge regarding CAM shows the following: that percentage of physicians who the Spirituality / Prayer known to them are 37% and 38.9% from surgeons and internist respectively, Nutritional therapy 42.5% and 33.3%, Chiropractic 24.7% and 23.6%, Homeopathy 21.9% and 20.8%, Naturopathy 19.2 and 22.2%, Acupuncture 45.2% and 48.6%, Meditation / Relaxation 46.6 and 41.7%, Therapeutic Touch / Reiki 28.8 and 29.2%,

Tai Chi / Qi Gong 20.5% and 11.1%, Osteopathy 20.5 and 18.1%, Hypnosis 27.4% and 44.4%, Ayurveda 13.7% and 12.5%, Biofeedback 35.6% and 27.8%, and Yoga 50.7% 40.3%.

Overall, no significant deference regarding knowledge between surgeons and internists as P value > 0.05 except for hypnosis (P value < 0.05).  
Table 1

**Table 1 Knowledge**

Please Describe your current knowledge concerning each of the following:

		Surgeons	Internists	P Value
Spirituality / Prayer	Known	37.0%	38.9%	.813
	Not Known	63.0%	61.1%	
Nutritional therapy (incl. herbal medicine, supplements)	Known	42.5%	33.3%	.257
	Not Known	57.5%	66.7%	
Chiropractic	Known	24.7%	23.6%	.883
	Not Known	75.3%	76.4%	
Homeopathy	Known	21.9%	20.8%	.873
	Not Known	78.1%	79.2%	
Naturopathy	Known	19.2%	22.2%	.651
	Not Known	80.8%	77.8%	
Acupuncture	Known	45.2%	48.6%	.354
	Not Known	54.8%	51.4%	
Meditation / Relaxation	Known	46.6%	41.7%	.552
	Not Known	53.4%	58.3%	
Therapeutic Touch / Reiki	Known	28.8%	29.2%	.958
	Not Known	71.2%	70.8%	
Tai Chi / Qi Gong	Known	20.5%	11.1%	.120
	Not Known	79.5%	88.9%	
Osteopathy	Known	20.5%	18.1%	.704
	Not Known	79.5%	81.9%	
Hypnosis	Known	27.4%	44.4%	.032
	Not Known	72.6%	55.6%	
Ayurveda	Known	13.7%	12.5%	.831
	Not Known	86.3%	87.5%	
Biofeedback	Known	35.6%	27.8%	.311
	Not Known	64.4%	72.2%	
Yoga	Not Known	50.7%	40.3%	.208
	Known	49.3%	59.7%	

In second part: Only 45.2% of surgeons and 44.4% of internists are agreed that the physical and mental health is maintained by an underlying energy or vital force. Around 49.3% of surgeons and 45.8% of internists are agreed that Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces. More than 60% of surgeons and 56% of internists agreed that the body is essentially self-healing and the task of a health care provider is to assist in the healing process. Moreover, 63% of surgeons and 54.2% of internists are agreed that A patient's symptoms should be regarded as a manifestation of a general imbalance or dysfunction affecting the whole body. Also, around 64% of surgeons and 62.5% of internists are agreed that A patient's expectations, health beliefs and values should be integrated into the patient care process. Overall, most of surgeons (54.8%) and half of internists (50%) disagreed that Complementary and alternative therapies are a threat to public health. As well, nearly half of physicians agreed that Effects of complementary and alternative therapies are usually the result of a placebo effect. In the other hand, around 60.3% of surgeons

and 59.7% of internists agreed that Complementary and alternative therapies include ideas and methods from which conventional medicine could benefit. Also, about 52% of surgeons and 48% of internists agreed that Most complementary and alternative therapies stimulate the body's natural therapeutic powers. Overall, no significant deference in believes between both surgeons and internists (P value > 0.05). Table 2

**Table 2 Believes**

Please answer regarding your believes		Surgeons	Internists	P Value
The physical and mental health is maintained by an underlying energy or vital force.	Disagree	54.8%	55.6%	.927
	Agree	45.2%	44.4%	
Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces.	Disagree	50.7%	54.2%	.675
	Agree	49.3%	45.8%	
The body is essentially self-healing and the task of a health care provider is to assist in the healing process.	Disagree	37.0%	43.1%	.456
	Agree	63.0%	56.9%	
A patient's symptoms should be regarded as a manifestation of a general imbalance or dysfunction affecting the whole body.	Disagree	37.0%	45.8%	.279
	Agree	63.0%	54.2%	
A patient's expectations, health beliefs and values should be integrated into the patient care process.	Disagree	35.6%	37.5%	.814
	Agree	64.4%	62.5%	
Complementary and alternative therapies are a threat to public health.	Disagree	54.8%	50.0%	.563
	Agree	45.2%	50.0%	
Treatments not tested in a scientifically recognized manner should be discouraged.	Disagree	42.5%	40.3%	.789
	Agree	57.5%	59.7%	
Effects of complementary and alternative therapies are usually the result of a placebo effect.	Disagree	49.3%	50.0%	.934
	Agree	50.7%	50.0%	
Complementary and alternative therapies include ideas and methods from which conventional medicine could benefit.	Disagree	39.7%	40.3%	.946
	Agree	60.3%	59.7%	
Most complementary and alternative therapies stimulate the body's natural therapeutic powers.	Disagree	47.9%	51.4%	.678
	Agree	52.1%	48.6%	

Regarding factors that influence attitudes and believes: Personal experience is influential for 43.8% for the surgeons and 29.2% for internists, University Training 50.7% and 30.6%, Attitudes of Lecturers & Tutors 45.2% and 29.2%, cultural Background 47.9% and 37.5%, Fellow Students Attitudes 49.3% and 33.3%, Media 54.8 and 37.5%, Previous Training / Course in CAM 41.1% and 30.6%, and Scientific Evidence 49.3% and 40.3%. Overall, no significant deference regarding influencing of these factors between surgeons and internists as P value > 0.05 except for university training, Attitudes of Lecturers & Tutors, and Media (P value < 0.05). Table 3

**Table 3 Influential factors**

The following have influenced my attitudes and believes regarding CAM

		Surgeons	Internists	P Value
Personal Experience:	Not influential	56.2%	70.8%	.067
	Influential	43.8%	29.2%	
University Training:	Not influential	49.3%	69.4%	.014
	Influential	50.7%	30.6%	
Attitudes of Lecturers & Tutors:	Not influential	54.8%	70.8%	.046
	Influential	45.2%	29.2%	
My cultural Background (incl. Family influences):	Not influential	52.1%	62.5%	.204
	Influential	47.9%	37.5%	
Fellow Students Attitudes:	Not influential	50.7%	66.7%	.051
	Influential	49.3%	33.3%	
Media (incl. Social Media, TV, Internet):	Not influential	45.2%	62.5%	.037
	Influential	54.8%	37.5%	
Previous Training / Course in CAM:	Not influential	58.9%	69.4%	.186
	Influential	41.1%	30.6%	
Scientific Evidence:	Not influential	50.7%	59.7%	.274
	Influential	49.3%	40.3%	

When we asked physicians about the likelihood of recommending CAM to future patient, around 54% of surgeons will do and 55.6% of internists will do with no significant deference between them (P value > 0.05).

### DISCUSSION:

The main aim in this study is to study and evaluate Knowledge, attitude, influences and use of CAM among surgeons and internists in Eastern Saudi Arabia and to compare between physicians from both specialties. Either to approve that they are deferent and the one of them has more interest in CAM or both are that same.

As result of knowledge assessment, Hypnosis is the only therapy that has significant deference (p value < 0.05), as physicians from internal medicine are better in knowledge in hypnosis (44.4%). Overall, knowledge regarding CAM therapies are variable; total percentage of participant who knows Spirituality / Prayer therapy are 62.1% which could be related with Islamic culture of Saudi Arabia. Regarding knowledge of Nutritional therapy (incl. herbal medicine, supplements), around 62% of participants knows this therapy and physicians with same percentage know Massage. Only 24.1%, 31.7% and 35.9% of participants know Chiropractic, Biofeedback and Hypnosis respectively. Similarly, around 20% know Homeopathy, Osteopathy and Naturopathy. Also, nearly 45% of participants has knowledge about Acupuncture and Meditation / Relaxation. Participants has good knowledge about Yoga therapy as 54.5% of them know it. However, participants have least knowledge about Ayurveda and Tai Chi / Qi Gong, as around 13.1% and 15.9% respectively of participants know them.

In the Aim of assessing believes regarding CAM, apart from the variability of answers regarding believes, no significant deference of answers between surgeons and internists (p value > 0.05).

Regarding influential factors that affect believes and attitude towards CAM, we found that university training is influential for only 30.6% of internists in compare to 50.7% of surgeons. the same comparison has been applied for Attitudes of Lecturers & Tutors and shows that it is influential for surgeons (45.2%) more than internists (29.2%), and media for surgeons is influential (54.8%) more than internists (37.5%). That means, any of these factors can be directed to change believes and attitude of physicians and they are maybe effective more in surgeons than internists (p value < 0.05). In general, most influential factor to participants' attitude and believes towards CAM is Media (46.2%), then Scientific Evidence (44.8%), cultural Background (incl. Family influences) (42.8%), Fellow Students Attitudes (41.4%), University Training (40.7%), Attitudes of Lecturers & Tutors (37.2%), Personal Experience (36.6%) and the least influential factor is Previous Training / Course in CAM (35.9%).

In general, once we asked participant about whether they will recommend CAM for their patients, around 55% of them will do, and no significant difference between surgeons and internists (P value > 0.05).

Unfortunately, selecting sample including residents more than 77% from total participants is seemed to be one of the weakness points, in which there as high difference between residents and consultant by looking at years of experience which may totally change answers.

### CONCLUSION:

In general, Knowledge, attitude, influences and use of complementary and alternative medicine (CAM) among surgeons and internists in Eastern Saudi Arabia are variable. Overall, no significant deference between them with some exceptions.

Internal medicines physicians have better knowledge regarding hypnosis. University Training, Attitudes of Lecturers & Tutors and Media are influential to attitude and believes regarding CAM for surgeons more than internists

From all CAM therapies, participants have best knowledge in Spirituality / Prayer therapy, Nutritional therapy and massage therapies and least knowledge in Ayurveda and Tai Chi / Qi Gong. The top of influential factor to attitude and believes regarding CAM is media, and Previous Training / Course in CAM is the least influential factor.

Our recommendation is to have clear idea about CAM and to improve knowledge about it at least to answer patients' questions and conflicts.

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