



# On some aspects of alternative/complementary medicine in general practice: part of a Bulgarian study on general practitioners and patients

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**Background:** Complementary medicine is a variety of treatment and prevention practices and products that are widespread, both among patients and among physicians in different countries. For Bulgaria, this is the first study of its kind on the attitudes, attitudes and use of complementary and alternative medicine (CAM) by patients and doctors. In many countries in Europe, America, Australia, India and others, the interest and the use of different CAMs is very high, both from patients and doctors, and especially from general practitioner (GP).

**Methods:** For the purpose of the study, an anonymous questionnaire was used, containing four sections of groups of questions. Statistical processing of the obtained data was performed by descriptive analysis and nonparametric analysis  $\chi^2$  test.

**Results:** There is a large percentage of doctors and patients that are interested in and apply CAM, and that is comparable to the results of other countries around the world, where the supply of CAM is high. Patients share more with GPs when they use these methods, trust in the doctor increases when he offers, practices and trains in these methods ( $P < 0.0001$ ). Referrals to alternative therapists are low in contrast to other countries. Patients who practice CAM are most often women with higher education ( $P = 0.008$ ), employed or unemployed aged 30–44 ( $P = 0.003$ ). The results of our study show the main trends and principles, which for the most part coincide or approach the world data.

**Conclusions:** The interest and application of CAM in GPs and patients in Bulgaria is high, there is an aging among GPs, Patients using CAM are up to 45 years, more educated, employed or unemployed. Doctors are interested in and apply CAM, in a large percentage. The results of our study are very close or coincide to the world data in main trends.

**Keywords:** Complementary and alternative medicine (CAM); alternative medicine; general medicine; patients; general practitioner (GP)

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## Introduction

Complementary and alternative medicine (CAM) are a group of diverse treatment and prevention practices and products that are not considered to be included as part of conventional medicine (1). However, the list is constantly

changing and alternative therapies that have been proven, with their efficacy and safety are being incorporated as new methods into conventional medicine (2).

A study in England compared general practitioners (GPs) and hospital professionals and found that 12% of clinicians

in hospital care practiced CAM, while GPs were 20% (3). In addition to GPs, another group of specialist doctors who often practice and use alternative methods in their practice are oncologists and medical specialists working with palliative patients. A number of studies around the world show that a higher percentage of doctors who are interested in and offer CAM are women (4-6).

The age among GPs using CAM varies from country to country. In Qatar, the average age of doctors is 44 years (7), while in Italy is 50-53 years (4). In 2009, nearly 30% of doctors in European Union countries were over the age of 55 (8). Unlike European countries, in the United States doctors using CAM are under 36 years old (6), and in England under 40 (5). It turns out that students and young doctors have a more positive attitude towards this medicine than their older colleagues (9-12).

Regarding the knowledge of CAM by GPs in different countries also varies. The use of CAM varies in different countries from 8-13% in Israel (13,14), as well as in Italy (4). In England (3,5,15) and Canada, 16% to 20% of all GPs practice CAM (16). In New Zealand they are 30% (17) and in Australia 38% (18). In the USA the supply of CAM varies from 23% to 46% (19-21). In the Netherlands 47% of GP doctors offer it (22), while Germany is the country with the highest use, 95% of GPs offer CAM (23). In Qatar, 83.8% had an accepting attitude to this medicine (7).

In different countries, doctors who do not practice CAM refer to various alternative therapists (AT). In Qatar, 24.8% of all GPs referred to an AT (7), in England, referrals range from 31% (5) to 83% (15), in the USA from 48% (21), to 60% (6). In Canada 54% of GPs collaborate with such therapists, while in New Zealand they are 77% (16). In the Netherlands 90% of physicians work with therapists with medical education practicing acupuncture, homeopathy, and manual techniques (22). In Australia, 93% of GPs have referred their patients to an AT at least once (24).

A number of studies conducted in many countries involving patients in primary health care have shown, different percentage of CAM use by patients.

Data from the United States show that 50% to 62% of the adult population have used CAM in the previous 12 months (25). In European countries 20-50% of the European population use complementary medicine (26) in the Netherlands and Germany 40% (23,27). The percentage of patients using CAM in England is relatively higher and varies in the different studies from 47.3% to 85% (28,29). In other countries outside Europe, such as the United Arab Emirates, more than half of the population

uses CAM (63%) (30), a value close to Australia, where up to 68.9% of the population use it (24). It is also widely used in eastern Turkey.

Patients' attitudes toward this type of medicine also vary from country to country. In Qatar, 97.5% of patients have an accepting attitude, 2.5% a non-accepting (7) in Singapore, 76% of patients have used some alternative method (31). India is also a country with a high use of CAM, 67.7% of the population (32).

Patients who use CAM are more often women (19,30,33), in Australia they are at age 18 to 34 year (33), in England 30-60 years (1,19), while in Pakistan patients are often over 50 years old (2). The financial security of the seekers of CAM is also important. It is noted that most of them are well educated and financially secured (1,2,33).

The majority of patients (40.4%), prefer alternative treatment to be performed by a doctor who is trained in CAM. Patients who want AT working in collaboration with their GP were 26.9%, while patients who preferred to receive CAM from therapists (acupuncturist, herbalist, etc.) were 18.9% (34), as in Denmark, more than half of patients prefer an alternative therapist or other doctor trained in CAM, according to them there is no need for a GP to be a specialist in CAM (35).

The trust in the doctor-patient relationship is extremely important. Australia is one of the countries where the majority of patients (41.8%) prefer to share with their GP, while the remaining 27.8% share with a hospital specialist when using CAM (35), which indicates greater patient support in their general practitioner. In Denmark, 30% of patients report to GPs that they use CAM (35), while in Turkey 84% of patients do not tell GPs that they use CAM (36), data for the US are similar—less than 30% of patients share and discuss with their GPs, the use of alternative methods (37). In some parts of America, however, patient confidence reaches 53% (38). Patients in Pakistan often do not disclose to the GP about their use of CAM (39), as do patients from the United Arab Emirates (30). Half of the patients in England do not share that they use complementary methods (40), the same values are in Malaysia (2).

For Bulgaria, this is the first study of its kind on the attitudes, knowledge and use of CAM by patients and doctors.

We present the following article in accordance with the SURGE reporting checklist (available at <http://dx.doi.org/10.21037/lcm-20-15>).

The aim of the present study is to analyze and evaluate

the attitude and use of patients and GPs in Bulgaria, to alternative/complementary methods and where our data are, compared with the rest of the world.

## Methods

The object of the observation are 418 persons divided into two target groups: GPs of individual and group practices (n=171); patients from pre-hospital care (n=247).

The methods we used are (I) sociological method: documentary method: official documents issued by National health insurance company, containing permission to conduct the survey among GPs in their region, as well as email addresses for correspondence of GPs; (II) survey method: direct individual survey with observance of the principle of anonymity.

Two types of questionnaires were developed to examine attitudes towards alternative medicine in two target groups: GPs and patients.

Statistical processing of the data was performed by descriptive analysis—to estimate frequency distributions for qualitative variables, with absolute frequencies and relative share  $\pm$  standard error (Sp). As with nonparametric analysis  $\chi^2$  test to evaluate hypotheses for the relationship between the studied variables with an accurate Fisher test. Significance level used  $P < 0.05$ . The data were entered and statistically processed using the IBM SPSS Statistics V 19.0 software package.

Ethical approval was obtained, from the ethics committee of the Trakia university and Medical faculty in city Stara Zagora, Bulgaria, as a mandatory part of the PhD procedure. The questionnaires were anonymous and all participants participated voluntarily.

## Results

### Doctors

Two thirds of the doctors in our study were women (63.8%). This may be a result of the predominance of women among GPs. It is known that women are nearly half the workforce in the medical profession.

The majority of doctors in our study (75.4%) are in the age group 45–65 years, 9.9% are aged between 30 and 44 years, and those over 65, also 9.9%. The smallest is the group of young doctors up to 29 years, they are 4.7%. From doctors who are over 65 years old, there are those who continue to work as GPs as substitute or hired doctors.

This trend towards aging of GPs is valid for the whole European Union in 2009, one third of the doctors in the countries of the European Union were over 55 years old (41), our data are close to the data from Italy, where the average age is 50–53 years (4).

Individual practices are predominant, 83% among Bulgarian GPs, in studies conducted in other countries there is a tendency for GPs in individual practices more often to practice CAM (15,16). In our study, no such statistical dependence was found, as the surveyed physicians work mainly in individual practices.

More than half of the doctors (66.7%), have over 10 years of work experience in the general medicine, doctors with experience of 6–10 years in general practice are 19.3%, and the lowest percentage are doctors with experience up to 5 years they are 14%.

More than half of the doctors (65.5%) participate in scientific forums and conferences, as 60.4% at least once a year, while the other 33.1% less often than once a year.

The majority of GPs (72.5%), are interested in CAM, 71% of them attend scientific forums and there is a statistical relationship between interest in CAM and attendance at scientific forums ( $P = 0.019$ ). Women are more interested in CAM than men, statistically significant dependence ( $P = 0.008$ ). Our data coincide with those of other countries such as England, Italy, USA (4-6), where women GPs are the leading group interested in CAM.

Regarding the application of CAM and gender, we do not find a statistical difference ( $P > 0.05$ ), as well as between their interest and age ( $P > 0.05$ ), while in other countries women are leading CAM practitioners (4,6).

The attitude towards this medicine is mostly acceptable (68.4%), 13.5% are enthusiastic, 5.3% are unacceptable, and 12.9% of the doctors are indifferent to the topic of CAM. Our data coincide with those in Qatar, where the majority of GPs have an accepting attitude towards CAM (7). When GPs have an interest in CAM, their attitude is also better ( $P < 0.0001$ ), and the application is higher ( $P < 0.0001$ ). All 13.5% of doctors who are enthusiastic about CAM are interested in it, and 12.3% of them use it. Of the doctors who have an accepting attitude 57.3% of them are interested and 49.1% apply. From all GPs in the survey, in the past 1 year 62.5% of them have applied some CAM method.

Our data according global data from different countries, indicate a high use of CAM, compared to countries such as England, Israel, Italy, Canada, New Zealand and Australia (4,15-17,24), where the practice varies from 13% to 38%,

while in the United States and the Netherlands (19,22), nearly half of GPs offer this type of medicine. Our data is among the leading countries in the use of CAM by GPs, however, the country that is leader in offering alternative methods is Germany, with 95% of GPs (23).

Our GPs who are interested in this medicine, have used it in the past 1 year  $P < 0.0001$ . Doctors who report that they do not use CAM in general, 19.6% from them have used it in the last year.

Only 18.1% of doctors referred to an alternative therapist. Compared to other countries, our referral rates are relatively low. We find lower percentages only in Qatar (7), our data are close to some parts of England (5) about referral to an alternative therapist.

76% of GPs have patients, who have asked them for advice about CAM, and 8.2% of these doctors have an alternative therapist with whom they work together. Our data coincide with data from Germany, where 75% of physicians are sought for advice on CAM (23). The highest demand rate is in Denmark 92% (35), and slightly lower in England and America (21,42).

90.1% of all GPs in the survey report that they have patients who are using CAM. Of all GPs surveyed, only 23.6% said that patients shared with them when they are using CAM, the majority of these doctors did not recommend CAM during consultations. Physicians who have trained patients in CAM report that their patients share more  $P < 0.0001$ . When the doctor offers CAM to patients, its use by them increases ( $P = 0.007$ ).

A large percentage of GPs (72.5%) believe that if they practice CAM, patients' trust in them will increase, and yet 21.1% do not practice, and 17% do not want to be trained in CAM, and 8 (9%) of doctors not only do not practice, but also do not approve of working with an alternative therapist. Doctors believe that when they have interest ( $P < 0.0001$ ), and apply CAM, the trust in them increases ( $P < 0.0001$ ).

### **Patients**

The CAM interest by patients in Bulgaria is great (72.1%) of patients are interested in it. More than half of them (66.9%) have used some CAM in the past 1 year. The more patients are interested, the more they apply this medicine ( $P < 0.0001$ ).

The predominant gender in our study were women 62.8%. In terms of gender, studies in most countries indicate that CAM users are predominantly women (30,33,40). In our study, women are also majority according

interest and use, but there is no statistically significant difference to be able to say that women in Bulgaria use CAM more than men, as in other countries.

Patients are divided into four age groups from 18 to 29 years (38.5%), followed by the age group 30–44 years, which were 32.4%, the group 45–64 years were 23.1%, the smallest is the group of people over 65 years of age (6.1%). There was a statistically significant relationship between the use of CAM and age ( $P = 0.003$ ), patients aged 30–44 years used CAM more, while age group 18–29 years less, our data match those from England where the most common users of alternative methods are from 30 to 60 years (19,26). Nearly half of the surveyed 49.8% have some permanent job, the unemployed patients are 10.9%, and patients who are in some training are 32%, retirees are 7.3%. Nearly two thirds of the respondents have primary or secondary education 62.3%, and the remaining 36.4% have completed higher education. Studies from other countries have found that patients who are wealthy and well-educated use more CAM (1,2,33,40). Our data do not reflect to the financial condition of patients, but in relation to employment there is a pattern, patients who are employed and the unemployed use more CAM, compared to students and retirees ( $P = 0.003$ ). This may be an indirect indicator that confirms the global trends that this type of medicine is used more by patients with more funds, as students and retirees in most cases are not well funded in Bulgaria. Our data support the worlds that people with higher education are interested ( $P = 0.008$ ) and have applied more CAM ( $P < 0.0001$ ).

When patients were asked how they assessed their health, half thought they were healthy, 17% said they were completely healthy and 23.5% said they were slightly ill, 3.2% are seriously ill, and 1.2% are very ill. Health is often one of the leading reasons to use CAM, patients in other countries those with chronic diseases, seriously ill, cancer patients use CAM more (20,26,42). Our data confirm this trend, patients with more than one chronic disease are more interested in CAM, the more patients' diseases increase, and the severity of the disease, the more they tend to use this type of medicine ( $P = 0.032$ ).

More than half of all patients (53.8%) have used at least one alternative method in the past 1 year.

Our data coincide with those of the USA (25), and with the countries in Europe, where from 20% to 50% of the population is using CAM (23,26,27), in contrast to the countries with higher use, such as England (29), United Arab Emirates (30), India (32), Australia (24), Pakistan (39) and Singapore (31).



No statistically significant relationship was found between marital status and use of, these methods ( $P>0.05$ ) there is no data about these aspect in other countries, also.

The attitude about CAM is acceptable 66.8%, those who are enthusiastic are 17%, and for 14.2% of patients this topic is indifferent and only 2% have an unacceptable attitude.

All patients with an enthusiastic attitude are interested in this medicine and most of them apply it. This is 17% and 15% of the group of interested and applying patients, respectively.

The majority who have acceptable attitude are interested in and apply alternative medicine. They make up 54.7% of all interested patients, and 36% of all CAM patients.

Of those who were indifferent to this medicine, 14.3% had used it in the previous year.

The patients who share with their GP, that they use CAM are 44.5%.

Bulgarian patients more often share with their GP when using alternative methods compared to the results of some countries, such as Denmark (35), Turkey (36), Pakistan and the United Arab Emirates (30,39), where the share percentage is 20–30%. Our data are close to those in Australia 41.8% (43), while half of the patients in the USA (38), England and Malaysia (2,40) share with their doctor when they use these methods. This high level of sharing shows that patients in Bulgaria have a relatively high level of trust in their general practitioners, they are interested in their opinion.

Half of our patients who share with their doctor about complementary medicine are interested and apply it. Patients who are interested and use CAM, are patients that share it with their GP ( $P<0.0001$ ). These people also have higher education ( $P=0.046$ ).

When patients were asked if the GP had offered them a CAM, the majority of them 71.7% answered negative and only 28.3% reported that the doctor had offered them this type of treatment.

There are few patients (8.5%) who have been trained by their GP to use complementary method.

Nearly half of the patients (45.7%), believe that those who offer complementary medicine should be a doctor trained in it, and 15.8% of patients think that it is right to be a GP, while in Pakistan (44) and Denmark (35) most patients prefer CAM providers who are not doctors. This means that patients in Bulgaria have more confidence in the medical community, and prefer alternative methods to be offered by qualified doctors.

We do not find a statistically significant relationship between gender, age, education, health status to opinion who should provide the service CAM ( $P>0.05$ ).

The majority of patients (73.3%) want their GP to offer such an opportunity for prevention and treatment in their practice. Most of this patients have secondary/primary education ( $P=0.007$ ), they mostly rely on the knowledge and skills of their GP to solve their health problem, as comprehensively as possible. Also they are interested in CAM ( $P<0.0001$ ). Bulgarian patients like e patients from Texas, Germany and Denmark (23,34,35) want their GP to offer CAM in his practice.

Patients are also willing to pay extra for this service if it is not covered by the NHIF ( $P<0.0001$ ), and those who have been trained by their doctor in CAM prefer him to offer this service ( $P=0.026$ ).

It turns out that very few, only 7.7% of all patients were referred for treatment or consultation with an alternative therapist.

When asked if they approve team work of their GP and alternative therapist to solve their health problem, 78% say they agree, 16.7% do not agree to be treated that way, and 5.3% prefer to go to an alternative therapist without their GP knowing about it.

Patients who wish their GP to work with an alternative therapist in solving their health problem are people who have used CAM, their disease has responded well, and their health has improved ( $P<0.0001$ ). These are patients who are fond of a healthier lifestyle and like alternative methods ( $P<0.0001$ ), consider CAM to be relatively safe ( $P=0.002$ ), and do not want to take medication ( $P=0.001$ ). The fact that their doctor practices CAM also contributes to their approval of the co-operation of the GP and such a therapist ( $P<0.0001$ ).

According to 65.6% of patients, their confidence in their GP increases when he practices such medicine, this is the opinion of every one third of each age group (excluding patients over 65) ( $P<0.0001$ ), and these are patients with secondary/primary education ( $P=0.002$ ).

The majority of patients who want their GP to practice complementary medicine say that their trust in him will increase ( $P<0.0001$ ), and confidence increases when the GP trains his patients in CAM ( $P=0.002$ ) and offers it in his practice ( $P<0.0001$ ).

## Conclusions

The interest and application of CAM in GPs and patients

in Bulgaria is high, as women GPs are the main interested in this type of medicine. There is an aging among GPs, young doctors are very few. Patients using CAM are up to 45 years, more educated, employed or unemployed. More seriously and often sick patients are interested and apply more CAM. GPs have patients who are using it and sought advice about it. Offering, practicing and training in CAM leads to increased trust in the GP-patient relationship, both according to doctors and patients. Patients who use alternative methods are more likely to share with their GP. Doctors are interested in and apply CAM, in a large percentage, which is comparable to the results of other countries around the world, where the supply of CAM is large. The results of our study are very close or coincide to the world data in main trends.

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