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Research Article

Complementary and Alternative Medicines (CAM) Used Among Children and Adolescents with Asthma in Benghazi, Libya

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Abstract

Background and Objective: Complementary and Alternative Medicine (CAM) use has become a common practice worldwide. Despite its popularity, there is a dearth of information about the prevalence of such practice in Libya. In addition, there is little or no study in the literature about the use of CAM among asthmatic children and adolescents in Libya. This study was, thus, conducted to determine the prevalence of CAM use in asthmatic children and adolescents as well as its associated factors. **Materials and Methods:** A cross-sectional study was carried out on parents of 100 asthmatic children visiting Benghazi Asthma Centre, Libya. A Chi-square test was used to identify any association between the study variables and the use of CAM. **Results:** About 88% of the respondents were found to use CAM. The main reasons for CAM use were due to tradition (48%), perception towards the safety of CAM (43%) and parents' dissatisfaction with medical treatment outcomes (18%). The most common CAM approaches were aromatic oils (63%), black seeds (51%) and anise seeds (36%). Family members (72%), friends (41%) and pharmacists (20%) were the main sources of information and advice during CAM use. **Conclusions:** The bivariate analysis showed that the occupation of parents ($p = 0.039$) and the availability of health insurance ($p = 0.036$) were significantly associated with the use of CAM. The prevalence of CAM use in this study was found to be high in Benghazi, Libya. Additionally, family members, friends and pharmacists were found to recommend the use of CAM for asthmatic children and adolescents.

Key words: Complementary, alternative medicine, aromatic oils, asthma, bivariate analysis, prevalence, adolescents

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Complementary and Alternative Medicine (CAM) includes different practices and therapies such as homeopathic medicine and acupuncture. It was reported that CAM is associated with practitioners who believe that the body has its healing powers and that they can promote healing and wellness by influencing the body's healing powers. Such belief is referred to amongst CAM practitioners as a natural cure. The body healing power has been long established and employed since the 1850s when vast numbers of familiar CAM healers were practicing in New York City¹.

Numerous researchers have reported the use of supplements, high nutrient intakes from food^{2,3}, high fruits and vegetable intakes^{3,4}, low dietary fat and high dietary fiber consumption⁵. People living with a chronic disease such as asthma for more than one year are skeptical about conventional medicine, thus, they are unsatisfied with their physicians and more likely to use CAM⁶.

Asthma is a chronic inflammatory syndrome characterized by airway hyper-responsiveness, variable airway airflow limitation, recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night and early morning. Though studies have shown that the preventive treatment of asthma is cost-effective, especially in more severe and uncontrolled instances⁷, the fact that asthma is a chronic disease and therefore requires longer treatment may also be a predictor for those affected to seek alternative therapies such as the use of medicinal plants⁸.

On the other hand, the use of complementary and alternative medicine is common in Libya. Very few studies, however, have been reported about such practice. Moreover, there is a dearth of information in the literature about the use of CAM in the treatment and management of asthma among children and adolescents in Libya⁹.

Therefore, the present study aims to examine and evaluate the prevalence of the use of complementary and alternative medicine by children and adolescents for the treatment and management of asthma in Benghazi, Libya and to identify factors associated with its use.

MATERIALS AND METHODS

Study area: This study was conducted in Benghazi Asthma Centre (BAC), located in coastal road Benghazi city, Libya. This research project was conducted from 6th August 2018 to 24th December 2019.

Methodology: A cross-sectional study was carried out on parents of 100 asthmatic children and adolescents visiting Benghazi Asthma Centre, located in the coastal road Benghazi city, Libya. A questionnaire containing open-ended and closed-ended questions were adopted from another study⁸ with few modifications to suit the objectives of this study. The questionnaire includes seventeen different questions divided into four parts. The first part of the questionnaire was about the socio-demographic characteristics of the participants. The second part was about the reasons for the use of complementary and alternative medicine during asthma. In the third part, the participants were asked about the type of complementary and alternative medicine used during treatment and management. The fourth part was about the source of information and/or advice during asthma treatment and management.

Statistical analysis: All data obtained from the questionnaire were coded, entered and analyzed by using SPSS statistical software version 21. A Chi-square test was used to identify any association between the study variables and the use of CAM.

RESULTS

Socio-demographic characteristics: From a total of 100 respondents in this survey, the age group 26-33 had the highest frequency in the distribution. The result also revealed that 41.0% of respondents were males and 59.0% were females. The majority (91.0%) of the respondents for the current study were of the Libyan nationality. Besides, the majority of all respondents were found to be married (91.0%) and only 9.0% were reported to be widowers. Based on the result of the educational level, it was found that 2.0% only were illiterate, 14.0% had primary education, 17.0% had secondary education, 40.0% had high school education and 27.0% had a degree. These results demonstrated that participants who had high school education scored the highest in the distribution. On the other hand, it was reported that the majority of respondents (67.0%) were living in urban areas and only 33.0% were reported to be living in rural areas.

Use of complementary and alternative medicine during asthma treatment: Based on the severity of asthma, the majority of children (60.0%) were reported to have moderate asthma, 33.0% have mild asthma and only 7.0% of all children were reported to have severe asthma. When the respondents were asked about the control of their children's asthma, 86.0% of all respondents reported that the asthma condition was well controlled and only 14.0% reported their children's

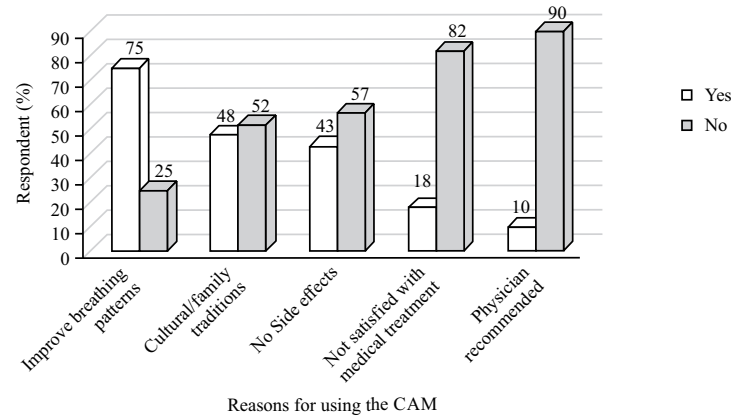


Fig. 1: Reasons for using the CAM during asthma treatment

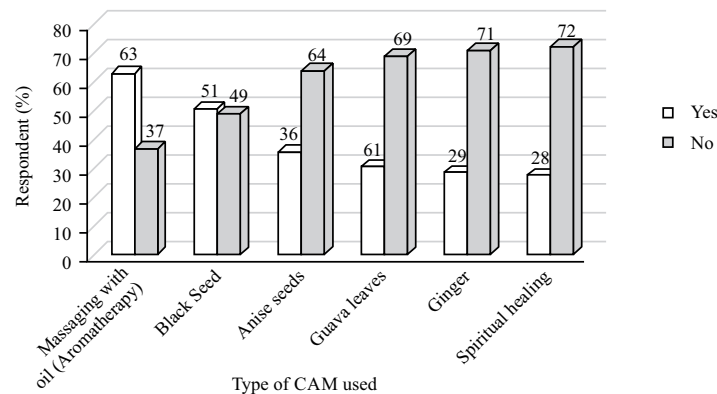


Fig. 2: Types of CAM used during asthma treatment

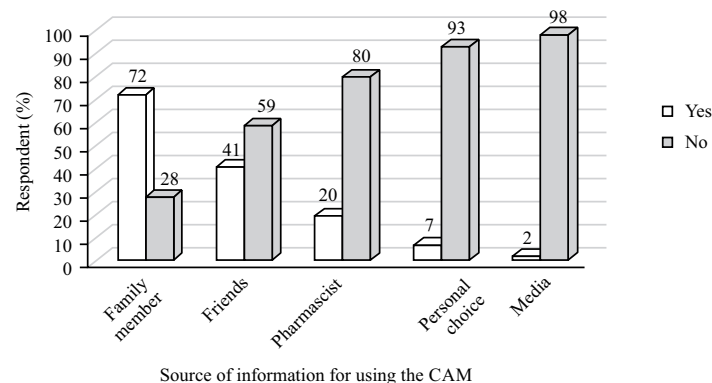


Fig. 3: Source of information for using the CAM during asthma treatment

asthma to be poorly controlled. Furthermore, the majority (88%) of the respondents were found to use the CAM. The main reasons for CAM use were due to tradition (48%), perception towards the safety of CAM (43%) and parents' dissatisfaction with medical treatment outcomes (18%) as shown in Fig. 1.

Types of complementary and alternative medicine used during asthma treatment: According to Figure 2, the most

common complementary and alternative medicine approaches used were the aromatic oils (63.0%), black seeds (51.0%), anise seeds (36.0%), guava leaves (31.0%) and ginger (29.0%) while only 28.0% of all respondents reported the use of spiritual healing during asthma treatment.

Source of information for using complementary and alternative medicine during asthma treatment: Figure 3 shows the source of information for using complementary and

Table 1: Multivariate Analysis (multiple logistic regression model)

Variables	B	S.E.	Wald	Sig.	Exp (B)	95% C.I for EXP(B)	
						Lower	Upper
Occupation	1.531	1.129	1.839	0.175	4.622	2.463	11.662
Availability of health insurance	0.830	0.674	1.514	0.219	2.292	1.292	6.870
Constant	-3.561	1.016	12.289	0.000	0.001		

The B weights give the linear combination of the explanatory variables that best predict the log odds, while the odds ratio is given in the SPSS output for both variables [indicated as Exp(B)]

alternative medicine during asthma treatment among respondents. It was found that 72.0% of all respondents used complementary and alternative medicine after being recommended by a family member. Other sources of information include friends (41.0%), pharmacists (20.0%), personal choice (7.0%) and media (2.0%) were reported by the respondents as well.

Multiple logistic regression was used to identify the most important risk factors related to the use of complementary and alternative medicine among asthmatic children and adolescents (Table 1). The odds ratio [indicated as Exp(B)] showed that the parents' occupation is 4.622 as likely to impact on the use of CAM while the availability of health insurance, on the other hand, is 2.292 as likely to impact on the use of CAM. Though occupation and the availability of health insurance were found to have a significant association with the use of complementary and alternative medicine among asthmatic children and adolescents, no association between the two variables and the use of CAM was found.

DISCUSSION

In this investigation the bivariate analysis showed that the occupation of parents ($p = 0.039$) and the availability of health insurance ($p = 0.036$) were significantly associated with the use of CAM which agreed by other studies have reported^{9,10}. This study analysis showed that there was no significant difference between the use of regular asthma treatment, the severity of asthma, the frequency of emergency admittance, hospitalizations due to asthma, education of parents and settlements between CAM users and non-CAM groups. However, a significant inverse association was found in terms of family income and CAM usage which reported¹⁰. Similarly, the factors that were positively associated with children CAM use were found to include parents' use of CAM, parents' age, child's age and complaints of frequent respiratory illnesses, asthma, headaches and nosebleeds. Moreover, CAM use was associated with perceived poor asthma control. However, ethnicity and parental education were not associated with child CAM use as mention by another study¹¹. Many studies

showed similar results where no association between study variables and the use of CAM was found and reported by several studies¹²⁻¹⁷. On the other hand, other studies showed some association. Applications of CAM was found in the age younger than six years, episodic asthma and poor asthma control were the most common predictors for the use of complementary and alternative medicine¹⁸. In another study, current asthma treatment, the severity of asthma, emergency admittances and hospitalizations, parents' education status, residential locations, family income and parental use of complementary and alternative medicine were found to be the predictors of CAM use similar to other study¹⁰. The sources of information for the use of CAM found in the current study were family members, friends, pharmacists, personal choice and media. Implications of CAM in children especially with some chronic diseases such as diabetic and hypertensive patients' concerns about the complications of their diseases make them aware bout using CAM and they talk openly to their health providers about that. The healthcare providers have a low influence on asthmatic patients' information about CAM since there was a high rate of non-disclosure among some of our patents. Unlike asthmatic patients, diabetic and hypertensive CAM users in Benghazi, Libya, reported that healthcare providers were the main source of information about CAM^{19,20}. Recommendations of this study as; first this study highlight the important role of physicians and healthcare providers to educate their patients and their family about the proper use of CAM during asthma treatment. Second, the preventive measures may increase the overall health of the population and decrease the potential for hazardous consumer use of CAM with decrease costs related to diseases for which CAM may be beneficial. Third recommendation to establish educational programs that enhance the potential of CAM as a complement to allopathic medicine in Libya. However, we acknowledge the following limitations. First, the cross-sectional design precluded any conclusion regarding the causal and temporal relationship with CAM use²¹. Second, missing data are a common problem with the use of health records, which raises the possibility of recording bias and/or inaccurate estimation of association in

less frequently documented variables. Third, the subjectivity associated with the physicians' prescribing patterns and their assessment of asthma phenotype, severity and control would tend to underestimate any true association, thus reinforcing the significance of our findings. Fourth, without the specific documentation of purchase or alternative practitioner encounters, there is a possibility of misclassification or underreporting of CAM use by parents^{21,22}.

CONCLUSION

The prevalence of CAM use in this study was found to be high in Benghazi, Libya. Parent's occupational status and the availability of health insurance were found to be significantly associated with the use of CAM. Additionally, family members, friends and pharmacists were found to recommend the use of CAM among their asthmatic children and adolescents. CAM use among asthmatic patients is relatively high, particularly among females. They used it as complementary rather than alternative medicine. The majority of the asthmatic patients valued the use of CAM. Non-disclosure was a major concern in this study. The main reason for non-disclosure was that doctors and healthcare providers did not ask their patients about the use of CAM. This finding indicates low awareness about the use of CAM among healthcare providers or their ignorance of this important issue. Awareness about the use of CAM should be raised among healthcare providers and they should be encouraged to be involved in open communication with their patients about the use of CAM

SIGNIFICANCE STATEMENT

This study discovers a positive association between children CAM use and parents' use of CAM, parents' age, child's age and complaints of frequent respiratory illnesses, asthma, headaches and nosebleeds. This study will help the researcher to know the prevalence of use of complementary and alternative medicine, especially in Benghazi, Libya. Thus, a new theory on the factors affecting the use of complementary and alternative medicine and possibly other confounding variables, may be arrived at.

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