

Complementary and Alternative Medicine (CAM) use among Children with Asthma in the Egyptian Context

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Abstract

Background: The popularity of complementary and alternative medicine (CAM) is growing globally among adult and pediatric populations, but little is known about its use in children with Asthma in Egypt. **Aim:** The aim of this study was to explore CAM use among children with asthma in Egypt. **Sample:** The convenient sample of 550 mothers of children with asthma. **Design:** A descriptive correlational cross-sectional design was used to conduct the study. **Sitting:** The study was conducted in Cairo University Specialized Pediatric Hospital at out-patient clinic

Tools: Data were collected using a questionnaire sheet designed by the researchers. Included demographic profile, mothers were asked about CAM use including dietary supplement (DS) and non-DS remedies. **Results:** The majority of women were young with a mean age of twenty six, live in Cairo, unemployed; secondary schools educated, and were multi-gravida. The mean age of the children was three and more than half of them were male. The majority of mothers used some type of CAM remedy for their kids. The most common types used as DS including: Anise seeds & herbal cough. Only few mothers were used Non-DS remedies. The most commonly used ND remedies were massaging the child chest with olive oil and spiritual healing. Relatives, friends and neighbors were the main source of information about CAM for the majority of the mothers. Decrease the respiratory secretions, improve breathing patterns, no side effect were the most important reasons of using CAM as mentioned by the mothers. Eighty-six percent of mothers were willing to discuss the use of CAM with their doctors or nurses but were not asked. There was a significant positive correlation between's mother usage of CAM for themselves and their usage for their kids. **Conclusion:** The prevalence of reported CAM use among Egyptian children with asthma was high with dietary remedies being the most popular modalities. CAM use was associated with older child's age and perceived poor asthma control.

Key words : (Complementary and Alternative Medicine- Dietary Supplement - Non Dietary Supplement remedies - children with asthma)

1. Introduction

Bronchial asthma is a chronic disease of the respiratory tract characterized by recurrent attacks of breathlessness and wheezing that constitute a serious public health problem all over the world (WHO, 2015). Asthma is considered as one of the significant chronic disease in the world (Price & Thomas 2006, WHO (2015) mentioned that asthma affects 235 million people worldwide, with an expected increase to 400 million by 2025. Asthma causes 0.25 million deaths annually and substantial socioeconomic burden around the globe (Anandan, Nurmatov, van Schayck & Sheikh, 2010). In Egypt the prevalence of pediatric asthma was estimated to be between 7.7% in Nile delta and 9.4% in Cairo (Zedan, Elregal, Osman & Fouda, 2010).

Many factors may have contributed to the rise of bronchial asthma problem around the world and in Egypt as well. Zedan et al., (2010) stated that asthma symptoms are much more prevalent among Egyptian children who are coming from poor backgrounds and children attending Egyptian state schools. Increasing air pollution, fast modernization, and widespread construction work are some of the reasons for asthma. The situation is complicated by poor access to medical services, high price of effective drugs, and poor health education among the affected population (Ramos, Talbott, Youk, Karol, 2006).

The side effects and the cost of the conventional asthma treatment encouraged researchers to find new treatment modalities for this chronic disease. Complementary and alternative medicine (CAM) was used with or instead of the conventional treatment to treat asthma in different parts of the world (Surette, Vanderjagt, Vohra, 2013). CAM is defined by the National Center for Complementary and Alternative Medicine (NCCAM) as a "group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine" (NCCAM, 2013).

Reasons for using CAM can be divided into positive and negative motivations. Positive motivations include perceived effectiveness and safety, spiritual or holistic nature of the therapy, personal control over treatment, good relationship with the therapist, and accessibility. Negative reasons include dissatisfaction with conventional asthma treatment methods, rejection of the establishment, and desperation (Ernst 2005; Sirois 2002; Martel et al. 2005; Arush et al. 2006; Lim al. 2006; Gozum et al. 2007).

Types of CAM reported in the literature are varied by cultural and geographical groups (Al-Qudimat et al. 2010, Gomez-Martinez et al. 2007, Gozum et al. 2007, Hamidah et al. 2008). Examples of dietary based CAM therapies

used by Saudi patients are Zamzam water, honey, different types of herbal, black seed, water with the Quran recited over it. Dietary supplements come in many forms, including extracts, concentrates, tablets, capsules, gel caps, liquids, and powders. Acupuncture, aromatherapy, ayurveda, Chiropractic, electromagnetic fields, homeopathic, massage, osteopathic, therapeutic touch and mind body interventions are examples of non dietary CAM therapies (NCCAM, 2013). McCarney (2004) found that allergies and lung problems ranked as some of the most frequently reported medical conditions that CAM is used for, and the most popular forms of CAM for these conditions were herbs, relaxation and spiritual healing. Also, there is increasing evidence that parents of are using CAM for their asthmatic children. A review of literature by Slader et al. (2006) noted that higher quality studies estimated the prevalence of CAM use among children with asthma to be 50-60% and the prevalence of its use among adults to be 20-30%. In a Turkish study the researchers found that almost 49% of the children had used some form of CAM. The most widely CAM used was herbal medicines (31%), quail eggs (79%), and Turkish wild honey (26%) (Orhan et al. 2003). One of the positive motivations for using CAM is perceived safety. However there are risks with the use of some dietary remedies including drug interactions, inconsistent dosing, contamination and natural toxicity (Graham 2000). Drug interactions could be a particular concern as a survey of herbal therapy users found that 81% also used conventional medicines to adverse effects of the herbal remedies. In fact, herbal therapy users tend to self-medicate or take the advice of a friend or relative so are unlikely to consult any practitioner at all on the use of herbal products (Clement 2005).

There is a lack of information regarding CAM use in children with asthma in Egypt. In the only study identified of CAM use in Egyptian with asthmatic, the researchers evaluated the effect of massage therapy on the pulmonary function of 30 Egyptian children with stable asthma. The results indicated that after 5 weeks of massage therapy at home, there was a significant improvement in the pulmonary function of the study group in comparison to the control group. Small sample size was one of the limitations of the study (Fattah, 2011). Because of the previous studies in other countries that suggest a high percentage of children with asthma use CAM therapies, it is essential that health care professionals question the Egyptian mothers about their interest in and current use of CAM to treat their children's asthma. Understanding this provides an opportunity for the health care professional to assess the unmet needs that may be motivating the parents to use CAM for their children. So the aim of this study was to explore CAM use among children with asthma in Egypt.

2. Material and Methods

2.1 Design

A descriptive correlational cross-sectional design was used to conduct the study.

2.2 Setting

The study was conducted in the asthma outpatient clinic at Cairo University Specialized Pediatric Hospital (CUSPH)

2.3 Research questions

The study tried to answer the following research questions:-

1. What is the prevalence of CAM use in asthmatic children?
2. What types of CAM are used?
3. For what reasons are CAM used?
4. Form where the parents got their information regarding CAM?
5. What factors influence CAM use in asthmatic children?

2.4 Sample

Non probability Convenience sample of Egyptian mothers were included in the study. The inclusion criteria are: (1) mothers of a child who have asthma (2) children have no other chronic disease. Those who met inclusion criteria and accept to participate were included in the study.

550 mothers were recruited from the asthma clinic. The study was conducted during the period of January 2012 to end of June 2012. The sample size was estimated using sample size calculator, with a confidence level of 95 and confidence interval of 4.3, the sample size was computed to be 519 subjects and it was increased to 550 to insure representativeness of the sample.

2.5 Ethical considerations:

All participants were informed about the aim of study and verbal agreement (consents) was taken before data collection. The subjects were informed that the data will be anonymous and confidential. The researchers also informed the mothers about their rights to withdraw from the study at any time without giving any reason and without any effect on their children care.

2.6 Instruments:

Data collected through face to face interview to be able to include illiterate participants, insure higher response rate and to clarify misunderstood questions. Each interview took about 15-20 minutes. Data was collected by using two sets of questionnaires developed by the researchers: The Socio-demographic Data Questionnaire and the Complementary and Alternative Medicine (CAM) use Questionnaire. The Socio-demographic Data Questionnaire was designed by the researchers. It covers the following: Mother's Personal Information: age, education, marital status, employment status, number of children, CAM usage and the Child's information: age, gender, duration of the illness, asthma severity. The Complementary and Alternative Medicine (CAM) use Questionnaire

starts with the following question "did you ever used CAM for your child?" Mothers who answered yes will proceed to the rest of the questionnaire. Mothers who answered no will file the socio-demographic part of the questionnaire only and thanked for participation. Parents who say "yes" will be asked to complete the rest of the questionnaire. The questionnaire have 18 questions inquired about types of CAM use, reasons of using CAM, perceived benefits and side effects, sources of information about CAM, cost of CAM, if they use CAM for themselves and whether they have disclosed CAM usage to their primary physician. The data collection tools were developed by the researchers after extensive review of the related recent literature such as Ozturk and Karayagiz (2008) and Spigelblatt et al. (1994).

The content validity of the questionnaire was assessed by a panel of three experts' two Phd holders in the field of pediatric nursing and a peditriation. Modifications of the tools were done according to the panel judgment on clarity of sentences, appropriateness of content to the culture and sequence of items. Test retest method was used to determine the reliability of the tool, by applying this tool twice on 10 subjects. The cronbach alpha reliability was 0.78. A pilot study was carried out on 10 mothers of children with asthma in the outpatient at the CUSPH to test the applicability and clarity of the questions of the study tool, estimate the time needed to complete the questionnaire, and to add or omit questions. Some modifications for the questions were done. That sample was excluded from the total of study sample.

2.7 Statistical Analysis

Data was coded, entered and analyzed using the statistical package for social Sciences (SPSS) version 17. Data was presented using descriptive statistics in the form of frequencies and percentages. Interval and ratio variables were presented in the form of means and standard deviations. The Pearson r test was employed to determine the correlation between the study variables. Regression analysis was used to determine which factors were independently associated with mother's use of CAM. The significance level was chosen as $p < 0.05$.

3. Results

3.1 Mother's and Children's Socio-demographic Characteristics

Mothers and children socio-demographic characteristics are described in Table 1. Mother's age ranged from 18 to 49 years old with a mean of 26.2 (± 8.6), years. Almost half of the mothers had a secondary school education (51.7%), unemployed (61.6%) and live in urban (89.8%). The majority of the participants (68.9%) have two or more children. The children's age ranged from 3 to 10 years with a mean of 3.1 and more than half of them were males (52%).

Table 1: Demographic Characteristics of the Participant (N=550)

Demographic Characteristics	N (%)
Mother's age	
17 -27	243 (44.1%)
28 – 38	180 (32.7%)
39 – 49	127 (23.2%)
Mean ± SD	26.2± 8.6
Marital Status	
Married	490 (89.09%)
Divorced	40 (7.2%)
Widowed	20 (3.6 %)
Educational Level	
Illiterate	148 (26.9%)
Primary	127 (23.1%)
Intermediate	50 (0.9%)
High school	200 (36.5%)
University	70 (12.7%)
Employment Status	
Not Employed	339 (61.6%)
Employed	211 (38.4%)
Number of children	
One	170 (30.9%)
Two	190 (34.5%)
Three	100 (18.1%)
Four or more	90 (16.3%)
Child's gender	
Male	286 (52.0%)
Female	264 (48.0%)
Child 's age	
3-5 years	339 (61.6%)
6-10years	211 (38.4%)
Mean ± SD	3.1±4.17
Resident	
Urban	494 (89.8%)
Rural	56 (10.2%)
Asthma Control	
Well controlled	100 (18.1%)
Poorly controlled	450 (81.8%)

3.2 Research question 1: What is the prevalence of CAM use?

Descriptive statistics were used to answer this research question. Almost 90.5% of the participant in this study used some forms of CAM to treat their kids' asthma.

3.3 Research question 2: What types of CAM are used?

Mothers reported that they tried several different CAM treatments, sometimes not at the same time. Out of the 498 participants who used CAM for their kids, the majority of them used dietary CAM therapy. The most dietary therapy used was herbal therapy. Herbal therapy used most often included anise seeds (46.1%), herbal cough (28.7%), ginger (12%), black seed (8%) and Gawafa leaves (5%).participants used also a non dietary CAM therapy, as messaging the child's chest with olive oil was used by 40.3% of the participants. Spiritual healing such as prayer and reading Quran was used by 18.2% of the participants, while Hujamah was used by 20% of the mothers.

Table 2: Types of CAM

Used CAM therapy from Dietary Source		Used CAM therapy from Non- dietary source	
Name	*N(%)	Name	*N(%)
Anise seeds	226(46.1%)	Massaging the child chest with olive oil	24 (40.3%)
Herbal cough	141(28.7%)	Spiritual healing	11 (18.2%)
Ginger	58(12%)	Hujamah (Cupping)	12 (20%)
Black seed	39 (8%)	Special exercises	10 (16.5%)
Gawafa leaves	24(5%)	Acupuncture	3 (6%)

*Mothers mentioned more than one type of CAM that is why the total of the percentages are more than 100%

3.4 Research Question 3: For what reasons are CAM used?

Mothers reported they used CAM for several reasons. Most mothers reported that among the important considerations for choosing CAM were their effect in decreasing their kids respiratory secretions (60.6%), the ability of CAM to improve the child’s breathing patterns (66.2%) and most mothers used CAM because they believe that it has no side effect and cheap compared to the prescription medication (65.3%).When the parents asked whether CAM use was beneficial to their child, the majority of the parents (89%) answered ‘yes’ (table 3).

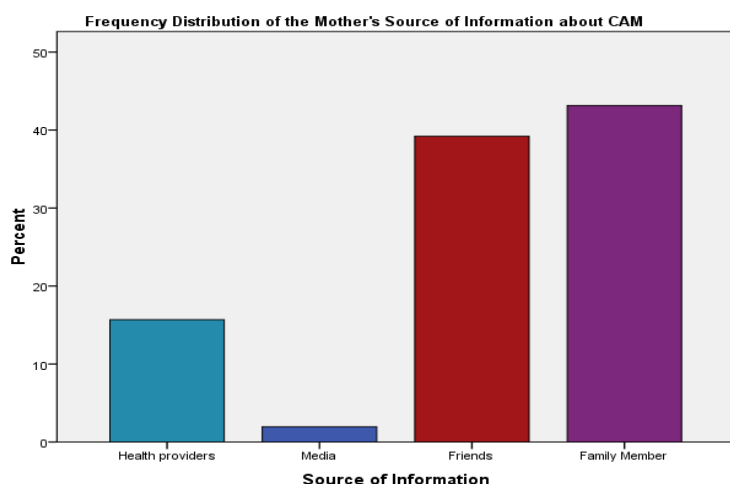
Table 3: Reasons of Using CAM

Reasons	*N (%)
Improve breathing patterns	364 (66.2%)
No side effects & Cheap	359 (65.3%)
Decrease the respiratory secretions	333 (60.6%)
Not satisfied from the medical treatment	224 (40.7%)
Cultural tradition/family tradition	112 (20.3%)
Physician recommended	96 (17.2%)

*Mothers mentioned more than one type of CAM that is why the total of the percentages are more than 100%

3.5 Research Question 4: Form where the parents got their information regarding CAM?

Relatives, friends and neighbors were the main source of information about CAM for the majority of the participants (80.8%), while the health care providers were the source of information for only 15.4% of the participants. Eighty-five (86%) parents were willing to discuss the use of CAM with their doctors or nurses but were not asked.



3.5 Research Question 5: What factors influence CAM use in asthmatic children?

Correlation analyses were conducted to answer this research question. Mothers who were younger and had less education were more likely to use CAM for their children ($r = .87$; 0.43 respectively). CAM use was significantly related to mother's perception of asthma control. Mothers who perceive poor control and used more CAM therapy ($r = .92$). Mothers who use CAM for themselves use also CAM for their children ($r = .55$) also CAM use was associated with older child's age ($r = 0.56$).

Table 4: Factors significantly correlated with CAM usage:

Variable	CAM usage	
	r	P
Mother's age	0.87	0.00
Mother's years of education	0.43	0.00
Mother's own use of CAM	0.55	0.05
Poor asthma control	0.92	0.00
Child's age	0.56	0.05

4. Discussion

This study was the only study exploring CAM use in Egyptian children with asthma. We used a face to face interview to eliminate the limitations that have been observed in other studies in other countries such as incomplete filling of the questionnaires and poor response rates (Martel, 2005). The results of this study indicate that 90.5% of mothers of asthmatic children have used CAM. The rates observed are higher than the 13- 71% rates seen in other published studies (Babayigit,2008, ; Sidora-Arcoleo, 2008; Oshikoya, 2008; Orhan et al,2003). The reasons for the variability in CAM use between our study and other studies may be due to differences in CAM definition, survey methods, patients' eligibility criteria, and types of CAM therapies that assessed.

The study results indicated that mothers who used CAM for their own care were much more likely than nonusers to use CAM for their children, which is similar to other researches who conducted studies in Turkey (Ozturk and Karayagiz, 2008) USA (Spigelblatt et al. 1994) and Canada (Ottolini, 200;). Age of the child was significant factor in CAM use in our study similar to other studies who reported that parents were more likely to administer CAM to older children (Davis and Darden ,2003; Loman; 2003). The results showed that children who have had uncontrolled asthma symptoms had higher rates of CAM use. This may suggest that as children continue to have severe asthma symptoms and attaches after a number of years of conservative asthma treatments modalities, mothers turn to other treatments in the hopes of finding symptom relief. Our findings is consistent with previous studies that reported CAM use was more common among patients who have poor asthma control, mild or

moderate persistent asthma and had difficulty sleep because conventional asthma medication didn't relieve their symptoms (Shaw et al., 2008; Shen and Oraka, 2012; Torres-Llenza, 2010; Babayigit et al., 2008).

The most widely cited reasons for choosing therapies in this study were related to mother's concerns with safety and side effects of prescription drugs and their perceived effectiveness of the CAM to improve the child's breathing patterns and decrease the respiratory secretions. Orhan et al. investigated 304 Turkish children with asthma with a questionnaire-based survey and found that 49% of them had used CAM previously. Herbal products were the most frequently used for children in this study similar to the usage for asthmatic children in other studies (Babayigit et al, 2008; Wen et al 2005 ; Oshikoya, 2008; Blanc 2001). Herbal agents differ by geographical area and culture. In this study the participants used traditional Arabic herbal therapy for their children. In a UK survey of National Asthma Campaign members, the most popular forms of CAM in the study population were breathing techniques, homeopathy and herbalism (British Thoracic Society, 2012).

Our results showed that most of the participants didn't disclose their CAM usage to their health care providers. The reason given was because they were not asked. This result is parallel with what has been reported in the literature that about 54% to 75% of the parents did not disclose their CAM use to their physician or nurse (Sidora-Arcoleo, 2008; Sleath et al., 2001). One explanation that given in the literature may be that parents are unsure about what therapies are considered CAM; they may be unaware that prayer, massage, herbal, and breathing exercises are all types of CAM. Non disclosure also may be resulted because of the parent's perception of the safety of these measures (Sidora-Arcoleo, 2008). The mother's perception of safety might be wrong especially they are using herbal medicines for their children adjunct with their regular medications. These children might be at risk for drug-herb interactions. Izzo, 2001; Fugh-Berman, 2000 indicated that there might be 52% risk of adverse herb-drug interaction in the patients who use more than one CAM product or using both herbal CAMs and prescribed medications. That is why it's crucial that CAM usage should be reported to the health care provider. The influence of family members, relatives and friends and neighbors on the mother's decision to use CAM has been reported in several studies (Oshikoya, 2008). The high percentage (80.8%) of parents influenced in this study by family members and friends to use CAMs for their children is comparable to the 60%–86% previously reported (Oshikoya, 2008). In conclusion, CAM usage among Egyptian children with asthma was higher than the rate reported in other studies from different countries. Herbal therapies were most frequently used CAM therapy. Mothers considered CAM beneficial to their children and were willing to discuss it with their health care providers. The study findings have implications for health care providers including nurses. Health care providers should ask the child's caregiver about CAM use to make sure it is not harmful to their children and to design a health education program about CAM use when necessary.

5. Limitations

This survey relied on the mothers reporting of CAM use, therefore there might be a bias in the study results. The study was limited to one city in Egypt and one hospital where mothers were bringing their children because they are sick it would be useful to repeat this study in other cities in Egypt and at a time when mothers are not seeking medical care.

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