



Use of complementary and alternative medicine in children who have no chronic disease

Tuba Tuncel, Velat Şen, Selvi Kelekçi, Müsemma Karabel, Cahit Şahin, Ünal Uluca, Duran Karabel, Yusuf Kenan Haspolat
Department of Pediatrics, Dicle University Faculty of Medicine, Diyarbakır, Turkey

Abstract

Aim: In this study, we aimed to evaluate complementary and alternative methods of medicine, determine the frequencies of usage of these methods and investigate the factors which have an impact on their usage.

Material and Methods: The study was conducted between October, the 15th and November, the 15th 2012. Approval was obtained from the local ethics committee (08.10.2012/732). The study form prepared was applied to the mothers of the children who presented to our general outpatient clinic and had no chronic disease. The data were recorded in SPSS for Windows v.16 program. Descriptive statistics, chi-square, Mann-Whitney U and logistic regression analyses were applied. A p value of <0.05 was considered significant.

Results: Two hundred and six children were included in the study. Complementary and alternative medicine was used in 83% of the patients. Wearing an evil eye (45%) bead and prayer (35%) to protect from the evil eye were the most commonly used methods. The most common medical conditions which caused to use of complementary and alternative medicine included anemia, diarrhea, constipation and cough. Belief-based application were being used in 73% of the patients and herbal methods were being used in 57%. In 18% of the patients, interventional methods including cutting had been performed. No difference was found between the patients in whom these methods were used and not used in terms of familial income, education levels of the parents, family type and residence ($p>0.05$).

Conclusions: Complementary and alternative methods of medicine are applied substantially frequently in children. Physicians should have information about these methods in terms of their effects and side effects and warn families and especially mothers about potential risks. (Türk Ped Arş 2014; 49: 148-53)

Key words: Child, traditional medicine, complementary therapies

Introduction

Alternative medicine is defined as any medical service which substitutes medical therapies and which is not accepted by the modern medicine. Complementary medicine is the treatment and care system which is applied in addition to medical treatment. These two terms are used together under the title of complementary and alternative medicine (CAM) (1). The modern medicine used currently accepts evidence-based approach. Complementary and alternative medicine applications usually are based on unproved assumptions or some beliefs as in our country. These methods may be directly harmful because of their side effects or indirectly harmful because of being inefficient or leading to delay of medical treatment (2). Although studies conducted with children are more limited, it is known that use of CAM is frequent at all ages and this frequency increases in chronic diseases (3, 4). At the same time, these applications are different for each country and region. Physicians should have knowledge about the sociocultural properties and the CAM applications used for a more qualified service (2). Although CAM applications are encountered frequently in our region, there is no study performed on this subject.

Address for Correspondence: Tuba Tuncel, Department of Pediatrics, Dicle University Faculty of Medicine, Diyarbakır, Turkey.
E-mail: ttuncel@yahoo.com.tr

Received: 08.08.2013 **Accepted:** 24.01.2014

©Copyright 2014 by Turkish Pediatric Association - Available online at www.turkpediatriarsivi.com

DOI:10.5152/tpa.2014.1498

In this study, our aim was to determine the CAM methods used in children who had no chronic disease, the frequency of usage of these methods and to examine the factors which affect use of CAM.

Material and Methods

The study was performed between October 15, 2012 and November 15, 2012 in Dicle University, Medical Faculty Hospital and Diyarbakır Children's Diseases Hospital. Approval from the Noninvasive Clinical Studies Ethics Committee of our university was obtained for the study (08.10.2012/732). It was planned to include children who presented to our general pediatrics outpatient clinic of our hospital without any chronic disease in the study. A clinical study form which contained 13 questions related with the family's sociocultural and demographic properties and 48 questions which questioned if the family applied CAM for their children before, which methods were used for what objectives and what they thought about these methods was prepared. The mothers of the patients who was compatible with the study inclusion criteria were given information about the definition of CAM applications. The questions included in the study form were asked to the participants who accepted to participate in the study after obtaining consent and the answers given were marked on the form.

Statistical analysis

The data were recorded in the Statistical Package for the Social Sciences (SPSS) for Windows v.16 (SPSS, Inc., Chicago, Illinois, USA) program. When it was predicted that the rate of use of complementary and alternative medicine would be 50% and significant difference between the groups would be accepted as 30%, it was calculated that at least 31 patients should be included for each group for a strength of 80% and patients continued to be enrolled until the groups reached this number. In analysis of the data, frequency (%), mean, standard deviation (\pm SD), the highest-lowest values were used for descriptive statistics. In comparison of the groups, chi-square was used for categorical data and Mann-Whitney U test was used for the data which were not compatible with normal distribution. Logistic regression analysis was used to determine the factors which affected use of CAM among the possible factors determined by these tests.

Results

A total of 206 patients were included in the study. The female/male ratio was 0.7. The information related with the demographic properties of the patients is shown in Table 1.

At least one of the alternative medicine methods had been used before at any time for 171 (83%) of the patients included in the study. Generally, it was observed that 73% of the patients used methods based on traditional beliefs, 57% used

herbal methods and 18% used invasive methods. 31% of the patients used more than one method.

The most common CAM applications included applications based on traditional beliefs which were used in 73% of the patients. The most common reason for using CAM was protection from the evil eye. With this objective, wearing an evil eye bead (45%) and prayer (35%) by a special person to protect from the evil eye in the frame of certain rules, putting bread (12.4%), pouring lead (11.4%) and wearing a charm (11.4%) were applied. In addition, swaddling to keep the baby live (43.6%), binding a kerchief for the forehead to be smooth (15%), lying in earth to prevent diaper rash (7.4%) and bloodshed to clean the blood (10.4%) are the other traditional methods.

The most common medical disorder as a reason of application of alternative medicine was anemia (40.8%). In addition,

Table 1. Demographic properties who participated in the study

	n=206
Age (years) (median, the highest-the lowest)	6.2 (0.1-16)
Gender (%)	
Male	118 (57.3)
Female	88 (42.7)
Income level (%)	
Below the level of hunger	95 (46.1)
Below the level of poverty	74 (35.9)
Maternal education level (%)	
None	60 (29.1)
Literate	23 (11.2)
Primary school	76 (36.9)
Secondary school	9 (4.4)
High school	19 (9.2)
University	19 (9.2)
Paternal education level (%)	
None	10 (4.9)
Literate	16 (7.8)
Primary school	77 (37.4)
Secondary school	29 (14.1)
High school	40 (19.4)
University	34 (16.5)
Residence (%)	
City	166 (80.5)
Rural area	40 (19.5)
Family type (%)	
Nuclear family	158 (76.7)
Large family	48 (23.3)

Table 2. Medical conditions where complementary and alternative medicine is used and the methods used

Condition	n=161 (%)*	Method
Anemia	65 (40.8)	Giving molasses and locust
Diarrhea	61 (28.6)	Potato, yogurt, banana, mint-lemon, coffee, cola, sumac
Constipation	56 (26.7)	Dried fruit, herbal teas, olive oil, coffee
Cough	49 (23.8)	Herbal teas (lime, marshmallow flower, cinnamon, mint-lemon, camomile), honey, molasses, giving/applying milk and olive oil, putting newspaper
Strain	30 (18.9)	Referring to osteopaths, wrapping paste, rubbing with onion/olive oil
Upper respiratory tract infections	32 (15.5)	Herbal teas (mint-lemon, lime, sage tea), milk with honey, ginger
Jaundice	23 (14.4)	Putting yellow cloth on, wearing gold, beating/frightening, cutting the back of the ear
Strengthening immunity	16 (10.2)	Honey, fish oil, vitamin, flax seed, molasses, onion, garlic
Fever	15 (9.7)	Applying water with vinegar, giving vinegar, applying pepper, keeping away from red objects
Vomiting	21 (9.2)	Mint, lemon, lime, water with sugar
Infantile colic	11 (7.3)	
Verruca	7 (4.4)	Prayer, applying garlic, cutting verruca by horse tail, binding with a branch of mulberry tea
Urinary tract infection	3 (1.9)	Giving water of parsley, cutting the genital area with blade, giving honey and lemon

*Only the patients who used a method for a medical condition were evaluated. Since more than one method is used by some patients, the rates exceeded 100%.

tion, 28.6% of the patients used CAM for diarrhea, 26.7% used CAM for constipation and 23.8% used CAM for cough. Reasons of application of CAM for medical objective and the methods applied for this objective are shown in Table 2.

Information about complementary and alternative medicine applications was obtained mostly from family elders (57.1%). This was followed by the environment (33%), television/newspapers (7.7%), internet (1.1%) and physician (1.1%). The decision of application was made by the mother with a rate of 77.3%, by family elders with a rate of 17.5% and by the father with a rate of 5%. The application was performed by the mother with a rate of 88% and by family elders with a rate of 12.5%.

The ways of application of these methods in the families who used complementary and alternative medicine are shown in Table 3.

When the properties of the families who used and did not use complementary and alternative medicine were compared, no difference was found between the two groups in terms of gender, income level, residence, the size of the family and the education level of the parents ($p > 0.05$). The mean age of the patients in the group who used complementary and alternative medicine was found to be higher compared to the group who did not use complementary and alternative medicine ($p < 0.001$) (Table 4). The effect of gender, the education level of the father and the child's age on CAM was investigated by logistic regression analysis. It was found that use of CAM increased by 17-fold as the child's age increased (1.06-1.29) (95% confidence interval) ($p = 0.002$). No relation was found between the education lev-

Table 3. Properties of complementary and alternative medicine applications

	n=161 (%)*
Time of application	
Before referring to a physician	108 (67.0)
After referring to a physician	53 (33.0)
Reason of usage	
Treatment failure	57 (35.4)
Partial success	57 (35.4)
Despite success	47 (29.2)
Mode of application	
In combination with treatment	152 (94.9)
After discontinuing treatment	9 (5.1)
Benefit	
Full	37 (22.9)
Partial	94 (58.3)
None	30 (18.8)
Side effect	
Yes	18 (11.3)
No	143 (88.7)

*Only the patients who used a method for a medical condition were evaluated.

el of the father and gender and use of CAM ($p > 0.05$) (Table 5). When the groups who used and did not use belief-based applications and invasive methods were compared, no difference was found between the groups in terms of demographic properties ($p > 0.05$).

Table 4. Comparison of the demographic data of the patients who used and who did not use complementary and alternative medicine

	Group who used CAM (n=171)		Group who did not use CAM (n=35)		p
	Number	%	Number	%	
Gender					
Male	94	55.0	24	68.6	0.138*
Female	77	45.0	11	31.4	
Paternal education level					
Below high school	114	66.7	18	51.4	0.087*
High school and above	57	33.3	17	48.6	
Maternal education level					
Below high school	141	82.5	27	77.1	0.460*
High school and above	30	17.5	8	22.9	
Residence					
Rural area	34	19.9	6	17.1	0.709*
City	137	80.1	29	82.9	
Family type					
Nuclear family	129	24.6	29	17.1	0.344*
Large family	42	75.4	6	82.9	
Age (years)	7.13±4.65		4.16±4.06		<0.001†
Income (TL)	2200±2960		2772±1790		0.325†

*Chi-square test was used.

†Mann-Whitney test was used.

Discussion

The data of our study showed that CAM was used at any time in 83% of the children who had no chronic disease in the province of Diyarbakır and its surroundings.

Studies related with use of complementary and alternative medicine applications in children have generally been conducted with children with chronic diseases (5-7). There is a lower number of studies investigating CAM applications in children without chronic disease. In a study performed in a general pediatrics outpatient clinic in Canada which included a patient group with chronic disease, the rate of use of CAM was found to be 56% (8). In an article which compiled the studies performed in European countries, the mean rate of use of CAM in children in the last one year was found to be 56% (9). In our country, the rate of use of CAM was found to be 56.5% in a study performed in İzmir (10). In another study conducted in İzmir with families of moderate and low income, the rate was reported to be 75.8% (11). In Ankara, it was found that CAM was used with a rate of 87% in children of families with low income (12). In a study performed in Gaziantep, the rate of use of CAM was found to be 58.6% in the last one year (13). As the results of all these studies show, the rate of use of CAM is generally high in our country.

Table 5. Factors which increase the use of complementary and alternative medicine

	Odds ratio (95% confidence interval)	p
Age	1.17 (1.06-1.29)	0.002
Gender (Female and Male)	0.6 (0.27-135)	0.220
Paternal education level (high school and above and below high school)	1.87 (0.88-4.02)	0.107

Logistic regression analysis enter model was used

In our study, it was observed that the most common reason for applying non-medical, traditional belief-based CAM was protection from the evil eye. The majority of the patients applied one or more methods with this objective. It was observed that applications including wearing an evil eye bead, prayer, pouring lead and wearing a charm with the aim of protection from the evil eye were used in approximately 70% of the patients. The rate of using these methods have been found to be approximately 7.4% and 12.4% in the other studies conducted in our country (10, 12). As is seen, these methods are being used with a considerably higher rate in our region compared to the other regions. Similarly, CAM applications because of non-medical reasons including swaddling

and lying on earth are also used frequently in our region. Although 73% of our patients used traditional belief-based applications, this rate was found to be approximately 23-39% in the other studies conducted in our country (11, 12). We think that physical difficulties of patients to reach physicians and the tendency to refer to traditional medicine practitioners which continues in the context of the cultural structure of our region contribute to this high rate.

In our study, it was observed that CAM was applied most commonly for anemia among medical disorders. This was followed by constipation, diarrhea and cough. In other studies performed in our country, it was reported that CAM was applied most commonly for constipation, upper respiratory tract infections, cough and colics (10, 12, 13). In the studies conducted abroad, it was found that CAM was applied most commonly for musculoskeletal disorders (27%), psychological problems (24%) and infections (20%) (8). It was observed that the reasons for use of CAM were considerably different in our country and abroad and CAM applications were used in our country even for diseases which could be treated with medical methods simply and easily. Similarly, the methods used were also different. In studies conducted abroad, the most commonly used CAM methods included homeopathy, manual therapy and natural medicine (8, 9). In our country, it was observed that these methods were never heard of or used and traditional belief-based methods were used with the highest rate. Wearing an evil eye bead, prayer, wearing a charm and putting on red clothes have been accepted among these applications. Although the majority of these applications seem to be innocent, they may cause delay in medical treatment which is necessary. Herbal therapy methods follow traditional belief-based applications. When herbal teas and applying herbs are classified in this group, it was observed that herbal products were used for 57% of our patients. In other studies performed in our country, herbal applications are performed with a rate ranging between 26.1% and 76.7% (10, 14). In studies performed abroad, the frequency of usage of herbal therapies varies between different countries, but it has been reported that traditional Chinese herbal therapy is used generally (5). It was observed that the herbs used in our study were the ones which were traditionally known in our country and partially similar to the ones used in the other regions of our country (10-14). In 18% of our patients, applications which could be defined as invasive applications were performed. Cutting and bloodshed performed by traditional medicine practitioners for disease including jaundice and constipation or for cleaning the blood were examined in this group. We think that the finding that the rate of these applications which carry a high risk of infection and might lead to aesthetic problems later was high in our region, though it was below 1% in other regions of our country (12), was related with the culture of referring to traditional medicine practitioners which still continues in our region.

In our study, it was found that 67% of the CAM applications were performed before referring to a physician and 33% were performed following referring to a physician. The reason that the patients used CAM applications before referring to a physician may be presence of some physical and social difficulties in reaching healthcare service and the availability of CAM applications. In 33% of the patients, it was observed that CAM applications were used following referral to a physician. It has generally been reported that patients are directed to CAM applications, since they do not benefit from the medical treatment given (15). In our study, 70% of the patients reported that they used CAM, since they did not benefit from medical treatment at all or they had partial benefit. Although use of CAM following referral to a physician is related with treatment failure, 30% of patients continue CAM applications, though they get benefit from medical treatment. According to the literature, fear of the side effects of medical treatment and the thought that CAM applications have no side effects are among the reasons of use of CAM (15). Although no question related with this subject was directed to our patients, we think that our patients referred to CAM applications with similar reasons, though they got benefit from medical treatment.

It was observed that information complementary and alternative medicine methods was obtained mostly from family elders and from the environment. Similar results have been obtained in the other studies conducted (8, 10, 12). The decision of application of CAM is usually made by the mother and the mother herself applies the method. Therefore, mothers should primarily be educated about diseases, CAM methods, potential effects and side effects. However, considering that mostly family elders provide information about CAM methods and even make the decision for application, it should be kept in mind that educating the mother alone would not be sufficient and family elders should also be included in the process of treatment.

When the factors which increase use of complementary and alternative medicine were examined, different results were obtained compared to the other studies conducted before. In addition to publications which report that the education levels of the mothers who use CAM methods are low, there are also publications which report the contrary or find no relation (10, 11, 13). When all CAM application were examined in our study, it was found that there was no difference between the groups who used and did not use CAM applications in terms of family income, education level of the parents, familial structure and residence. There was a difference between the two groups only in terms of the age of the children and it was observed that the use of CAM increased, as the age advanced. It was thought that the reason of this relation was the fact that not only the current methods used, but also all methods which had been used until the current age of the child were questioned in our study. When belief-based or in-

vasive procedures were considered separately, no difference was observed again between the two groups. This finding suggests that use of CAM in our region is independent of the sociocultural and economical properties of the family.

Conclusively, CAM applications are used considerably frequently in pediatric diseases in our region. It should be kept in mind that some side effects may occur even in the most innocent CAM applications and all family members including mainly mothers should be educated about these methods and their possible effects.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Dicle University Faculty of Medicine.

Informed Consent: Written informed consent was obtained from the parents of the patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - T.T., S.K.; Design - S.K., M.K.; Supervision - T.T., V.Ş.; Data Collection and/or Processing - Ü.U., D.K., C.Ş., V.K.; Analysis and/or Interpretation - T.T., M.K.; Literature Review - T.T.; Writer - T.T.; Critical Review - T.T., M.K., Y.K.H.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

References

1. Defining and describing complementary and alternative medicine. Panel on definition and description, CAM Research Methodology Conference, April 1995. *Altern Ther and Health Med* 1997; 3: 49-57.
2. Muslu GK, Öztürk C. Tamamlayıcı ve alternatif tedaviler ve çocuklarda kullanımı. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2008; 51: 62-6.
3. Kemper KJ. Complementary and alternative medicine for children: does it work? *Arch Dis Child* 2001; 84: 6-9. [CrossRef]
4. Gottschling S, Gronwald B, Schmitt S, et al. Use of complementary and alternative medicine in healthy children and children with chronic medical conditions in Germany. *Complement Ther Med* 2013; 21: S61-9. [CrossRef]
5. Babayigit A, Olmez D, Karaman O, Uzuner N. Complementary and alternative medicine use in Turkish children with bronchial asthma. *J Altern Complement Med* 2008; 14: 797-9. [CrossRef]
6. Friedman T, Slayton W, Allen S, et al. Use of alternative therapies for children with cancer. *Pediatrics* 1997; 100 : E1. [CrossRef]
7. Hagen LE, Schneider R, Stephens D, Modrusan D, Feldman BM. Use of complementary and alternative medicine by pediatric rheumatology patients. *Arthritis Rheum* 2003; 49: 3-6. [CrossRef]
8. Jean D, Cyr C. Use of complementary and alternative medicine in a general pediatric clinic. *Pediatrics* 2007; 120: e138-41. [CrossRef]
9. Zuzak TJ, Boňková J, Careddu D, et al. Use of complementary and alternative medicine by children in Europe: published data and expert perspectives. *Complement Ther Med* 2013; 21: S34-47. [CrossRef]
10. Ozturk C, Karayagiz G. Exploration of the use of complementary and alternative medicine among Turkish children. *J Clin Nurs* 2008; 17: 2558-64. [CrossRef]
11. Giray Bozkaya Ö, Akgün İ, Birgi E, Çinkoğlu A, Gög K, Karadeniz D. Anne babaların çocuklarında uyguladıkları alternatif tıp yöntemleri. *DEÜ Tıp Fakültesi Dergisi* 2008; 22: 129-35.
12. Taşar MA, Potur ED, Kara N, Bostancı İ, Dallar Y. Düşük gelir düzeyine sahip ailelerin çocuklarına tamamlayıcı veya alternatif tıp uygulamaları: Ankara hastanesi verileri. *Türkiye Çocuk Hastalıkları Dergisi* 2011; 5: 81-8.
13. Araz N, Bulbul S. Use of complementary and alternative medicine in a pediatric population in southern Turkey. *Clin Invest Med* 2011; 34: E21-9.
14. Bülbül SH, Turgut M, Köylüoğlu S. Çocuklarda tıp dışı alternatif uygulamalar konusunda ailelerin görüşleri. *Çocuk Sağlığı ve Hastalıkları Dergisi* 2009; 52: 195-202.
15. Ernst E. The role of complementary and alternative medicine. *BMJ* 2000; 321: 1133-5. [CrossRef]