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ORIGINAL ARTICLE

# The Evaluation of use of Complementary and Alternative Medicine Practices in the Treatment of Children with Chronic Neurological Disease

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## Abstract

**Introduction:** The aim of present study was to search the use of complementary and alternative medicine practices in children with chronic neurological disorders and associated factors.

**Methods:** The prepared questionnaire was applied to parents of children admitted to the pediatric child neurology unit.

**Results:** A total of 832 parents participated in the search. Twenty-five per cent of parents stated that they had been using complementary and alternative medicine for the treatment of their children over the past year. It has been found that the incidence of complementary and alternative medicine increases with increasing maternal education level and income level of the family. The religious methods were most frequent modality. Only 5.8% of parents informed their doctors who managed follow-up and treatment.

**Discussion and Conclusion:** One of every 4 children is using complementary and alternative medicine practices. Considering the possible side effects, we think that this question should be asked during routine visits to the outpatient clinic and pediatricians.

**Keywords:** Children; chronic; complementary and traditional medicine; neurologic.

Complementary and alternative medicine (CAM) applications define a set of treatments in addition to or in place of basic medical treatment. Herbal products, acupuncture, honey, bioenergy, diet, homeopathy, massage and religious methods are the main CAM applications [1]. The frequency of CAM usage is increasing worldwide [2]. Childhood diseases have been also used in CAM applications [2, 3]. Orhan et al.[4] found that the incidence of CAM use among our country children increased from 38% to 49%. Complementary and alternative medicine applications can be used in the treatment of chronic diseases [5-8].

The frequency of use of CAM among children with neurological complaints has been reported at incidence rates ranging from 13 to 78% [7, 9]. Complementary and alternative medical practices may cause side effects, just as modern treatment methods [10]. For this reason, it is vital for patients using CAM practices to share follow-up and treatment plans with their doctors. However, investigations have determined

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that many patients do not have this information [9-11].

In the light of these information, in this study, we evaluated the frequency of use of complementary and alternative medicine in children with chronic neurological complaints who were followed up and treated in pediatric neurology clinic.

## Materials and Methods

This study was conducted by face-to-face interviews with the parents of the patients who applied to the pediatric neurology clinic between March 2017-June 2017. The questionnaire consisted of three parts. In the first part, the sociodemographic characteristics of the parents and the child were questioned and in the second part, the information about the medical condition of the child who was followed up and treated was tried to be obtained.

The final part of the questionnaire was designed to question parents' attitudes about complementary and traditional medical practice and their applications for the treatment of sick children. Statistical analyzes were performed using the Statistical Package for Social Sciences Program (SPSS) 13.0 statistical program. Chi-square and Student t-tests were used. Smaller results than $p<0.05$ were evaluated statistically. The study was approved by Eskişehir Osmangazi University Ethics Committee.

## Results

A total of 1000 parents were invited to participate in the survey and 832 (82.3%) of them agreed to participate in the survey. The study group consisted of 480 (57.7%) male and 352 (42.3%) women. The mean age was 38.75±7.21 for men and 34.57±6.11 years for women. When parents' educational status was assessed, 25% of the fathers, and only 11.5% of the mothers were university graduates. Most (71.2%) of the respondents stated that their monthly family income was below 3000 TL. The sociodemographic characteristics of the research group are listed in Table 1.

The mean age of the children who were followed-up and treated in the pediatric neurology clinic was 8.64±4.39 years. While 67.3% (560) of the sick children were followed and treated with the diagnosis of epilepsy (Table 2).

Most (84.6%) of the patients were still on medication prescribed for the treatment. Two hundred and eight (25%) parents who participated in the study stated that they had used complementary and alternative medicine for the treatment of their children within the last year.

There was no correlation between the diagnoses of the patients and the frequency of use of complementary and traditional medical practices ($p>0.05$). Only 5.8% of the parents using CAM practices reported benefit from the methods they used. When detailed and traditional medical practices were questioned in detail, 69.2% (576) of the parents stated that they resorted to religious practice. It was found that the most used religious practices were praying and usingt amulets.

Two hundred and eight parents used a herbal treatment regimen for their child. Table 3 contains complementary and traditional medical practices applied by parents to their children.

**Table 1.** Sociodemographic characteristics of the research group

| Characteristics | n (%) |
|---|---|
| Gender | |
| Male | 480 (57.7) |
| Female | 352 (42.3) |
| Mean age (mean±SD) | |
| Male | 38.75±7.21 |
| Female | 34.57±6.11 |
| Male-Educational level | |
| Primary | 352 (42.3) |
| Lycée | 272 (32.7) |
| University | 208 (25) |
| Female-Educational level | |
| Primary | 560 (67.3) |
| Lycée | 176 (21.3) |
| University | 96 (11.5) |
| Monthly income | |
| <1500 TL | 320 (38.5) |
| 1501-3000 TL | 272 (32.7) |
| 30001- 6000 TL | 144 (17.3) |
| >6000 TL | 96 (11.5) |

**Table 2.** Diagnosis of the patients followed up, and treated in the polyclinic of pediatric neurology

| Diagnosis | n (%) |
|---|---|
| Epilepsy | 560 (67.3) |
| Febrile convulsion | 80 (9.6) |
| Neuromotordevelopmental delay | 48 (5.8) |
| Neuromuscular disease | 16 (1.9) |
| Cerebral palsy | 64 (7.7) |
| Other | 64 (7.7) |

**Table 3.** Complementary, and traditional medicine practices used by parents for their children

| Applications | n (%)* |
|---|---|
| Religious methods (Prayer, amulet) | 576 (69.2) |
| Herbal | 208 (25) |
| Acupuncture | 16 (1.9) |
| Bioenergy | 96 (11.5) |
| Honey and related products | 272 (32.7) |

*Parents might use these applications for their children more than once.

It was determined that 76% of the parents using herbal products use these products on the recommendation of their neighbours or another patient, and 27% of them believed that herbal medicines were natural without side effects. The statistical analysis revealed that the level of maternal education and the monthly income of the family increased as the frequency of complementary and traditional medical practice increased (Table 4 ). Only 5.8% of the parents stated that they informed their physicians who were performing their follow-up and treatment about their treatment methods that they had been currently practicing.

## Discussion

In Eskişehir, the province where this study was carried out, the incidence of CAM use among adults was determined as 60% [12]. For the treatment of children with chronic neurological disease, the frequency of use of complementary and alternative medicine applications was lower and 25% was detected in our study. In a survey conducted in our country, this rate was reported as 27.2%. Many studies on children have focused on children with chronic illness or inadequacy.

Mc Cann and Newell found that the frequency of use of CAM in healthy children was 12%, but it increased to 40% in children with chronic health problems [13]. It has been determined that indicated percentages of children with asthma (52%), attention -deficit hyperactivity disorder (68%), cancer (65%), or cerebral palsy (56%) stated that they had used various CAM practices at least once [14-17].

We conducted our research with children with neurological disease. In a study conducted in the United States, the use frequency of CAM was determined as 12.6% in healthy children, and in 24% of those with neurological complaints [7].

There are variety of treatment modalities defined as complementary and alternative medical practices. Most frequently used CAM practice in our study was prayer and use of amulets. Similarly, investigations conducted in Islamic countries, as in our country have demonstrated that most frequently religious applications are being used [18]. In Western countries, the types of practices vary. In the United States, homeopathy-like applications are predominantly practiced, while in Korea, herbal products are more frequently used [8,10].

In our study, one-fourth of the participants were using herbal products and relatives of neighbors or other patients were the most frequently used information source for use of herbal products. In a studyon the frequency of complementary and alternative medical practices in pediatric epilepsy patients in Germany, the Internet was identified as the most frequent source of information among parents [8]. It is thought that differences among information sources stem from differences in internet usage habits in countries.

Most complementary and alternative medicine implementations are initiated by parents. For this reason, we realized our survey with parents. While there was no relationship between educational levels of fathers and frequency of CAM use, it was determined that the rate of CAM usage in-

**Table 4.** The effect of educationallevel of parents, and monthly income of the family on the frequency of CAM use

| Characteristics | The last drug use | | | Test value $X^2$; p |
|---|---|---|---|---|
| | 1 year n (%)[a] | 2 years n (%)[a] | Total year n (%)[b] | |
| Mother Educational Level | | | | |
| Primary | 112 (20.0) | 48 (80.0) | 560 (67.3) | 39.952; <0.001 |
| Lycée | 48 (27.3) | 128 (72.7) | 176 (21.2) | |
| University | 48 (50.0) | 48 (50.0) | 96 (11.5) | |
| Father-Educational Level | | | | |
| Primary | 80 (227) | 272 (77.3) | 352 (42.3) | 4.976; 0.083 |
| Lycée | 64 (23.5) | 208 (76.5) | 272 (32.7) | |
| University | 64 (30.8) | 144 (69.2) | 208 (25.0) | |
| Monthly income | | | | |
| <1500 TL | 80 (24.6) | 245 (75.4) | 325 (39.1) | 295.923; <0.001 |
| 1501-3000 TL | 16 (5.8) | 262 (94.2) | 278 (33.4) | |
| 3001-6000 TL | 32 (21.5) | 117 (78.5) | 149 (17.9) | |
| >6000 TL | 80 (100.0) | 0 (0.0) | 80 (9.6) | |
| Total | 208 (25.0) | 624 (75.0) | 832 (100.0) | |

creased as the educational level of mother increased.

Different results have been reached concerning the effects of education levels on parents [18]. In a study conducted by Aburahma et al. [19] in a pediatric neurology clinic, frequency of CAM use was reported as 56%, and low maternal education level was an effective factor on the frequency of CAM applications.

In a study conducted in the pediatric neurology clinic, 88.5% of the parents were found to be university graduates [20]. Similar results were detected in investigations realized in our country. The results of researches in the eastern parts of our country showed that CAM was being used more frequently among people with lower educational levels, whereas in the western provinces contrary results were obtained [21, 22]. In our study, we found that as the monthly income of the family increases, the frequency of use of CAM increases.

Complementary and alternative medicine applications are not disease but patient-based approaches. We think that it is useful for patients to be informed about the possible side effects of such treatments and to specify the importance of information sharing. For this reason, only 5.8% of the patients shared their knowledge of CAM usage with the physician who conducted the treatment. In a study conducted in Germany with pediatric epilepsy patients the frequency of CAM was 76% [8].

Not only patients should share information, but also their physicians who plan and carry out treatment are required to their patients about use of CAM. Beattie et al. [23] reported that 68% of physicians treating epileptic children were not questioning the use of CAM. As a result; we found that 25% of children with chronic neurological complaints who were followed up and treated in the pediatric neurology clinic used CAM, but only 5.8% of their parents shared this information with their physicians.

In consideration of potential side effects during routine polyclinic visits, use of CAM should be also inquired, and pediatricians should be kept this important issue in mind.

**Ethics Committee Approval:** The study was approved by Eskişehir Osmangazi University Ethics Committee.

**Peer-review:** Externally peer-reviewed.

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**Conflict of Interest:** None declared.

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