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ORIGINAL ARTICLE

Use of Complementary and Alternative Medicine Practices in Patients Admitted to the Pediatric Neurology Outpatient Clinic

Pediatrik Nöroloji Polikliniğine Başvuran Hastalarda Tamamlayıcı ve Alternatif Tıp Uygulamalarının Kullanımı

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ABSTRACT

Introduction: Despite the developments in pharmacologic treatments, traditional and complementary therapies have recently gained popularity in our country, as well as around the world.
Aim: To investigate complementary and alternative medicine practices (CAMP) during clinical visits of pediatric neurology patients, to raise awareness of families and patients about the use of complementary and alternative medicine, and to prevent possible negative interactions.
Methods: This prospective survey study was conducted with the parents of 300 pediatric patients aged between 6 months and 18 years, who were being treated at the Child Neurology Clinic between March 1st and May 30th, 2020. For the study, 360 patients' parents who came to the Pediatric Neurology Clinic for treatment were randomly selected, and a face-to-face survey lasting 2 minutes was conducted with the parents of 300 patients who agreed to participate in the study. This study was approved with the decision number E-20-12-62 at the meeting dated 21.12.2020 of the Clinical Research Ethics Committee of SBU Ankara Dr Sami Ulus Gynecology and Childhood Health and Diseases Training and Research Hospital.
Results: Three hundred parents (56% women) participated in the study. Just over half (55.3%) of the patients were followed up with a diagnosis of epilepsy, 56.6% of the parents stated that they had used traditional and complementary therapy methods before, 43.4% stated that they did not use them, 46.54% stated that they said prayers and 23.9% used vitamin methods, respectively. When four different independent variables were examined separately, only the education level of the patient's fathers was statistically significant (Wald= 4.102, p=0.043)
Conclusion: This result shows that as the education level of the patient's father increases, the probability of using traditional and complementary therapies applications decreases. In neurologic diseases, parents use traditional and complementary therapies as treatment methods, creating an alternative to modern medicine. Families and patients should be informed by investigating the reasons and frequency of using traditional and complementary therapies, raising the awareness of parents, and determining the possible harm caused by traditional and complementary therapies.

Keywords: traditional medicine; complementary medicine; pediatric neurology

ÖZ

Giriş: Farmakolojik tedavilerdeki gelişmelere rağmen son yıllarda dünyada olduğu gibi ülkemizde de geleneksel ve tamamlayıcı tedaviler popülerlik kazanmıştır.
Amaç: Çocuk nöroloji hastalarının klinik ziyaretlerinde tamamlayıcı ve alternatif tıp uygulamalarını sorgulamak, aileleri ve hastaları tamamlayıcı ve alternatif tıp uygulamaları konusunda olası olumsuz etkileşimleri önlemek.
Materyal Metot: Bu prospektif anket çalışması, 1 Mart-30 Mayıs 2020 tarihleri arasında Çocuk Nöroloji Kliniği'nde tedavi gören 6 ay-18 yaş arası 300 çocuk hastanın anne babası ile yapılmıştır. Çalışma için 360 hastanın anne babası ile görüşülmüştür. Çocuk Nörolojisi Kliniği'ne tedavi için gelenler rastgele seçilmiş ve araştırmaya katılmayı kabul eden 300 hasta anne babası ile 2 dakika süren yüz yüze anket yapılmıştır.
Bu çalışma, SBÜ Ankara Dr. Sami Ulus Kadın Doğum Çocuk Sağlığı ve Hastalıkları Eğitim Araştırma Hastanesi Klinik Araştırmalar Etik Kurulu Başkanlığının 21.12.2020 tarihli toplantısında E-20-12-62 karar numarası ile onaylanmıştır.
Bulgular: Çalışmaya 300 anne baba (%56 kadın) katıldı. Hastaların yarısından biraz fazlası (%55.3) epilepsi tanısı ile takip edildiğini, anne babaların %56.6'sı daha önce geleneksel ve tamamlayıcı tedavi yöntemlerini kullandığını, %43.4'ü kullanmadığını, %46.5'ü sırasıyla dua ve %23.9'u vitamin yöntemlerini kullanmışlardır. Dört farklı bağımsız değişken ayrı ayrı incelendiğinde, sadece hastanın babasının eğitim düzeyi istatistiksel olarak anlamlıydı (Wald= 4.102, p=0.043).
Sonuç: Sonuç olarak, hastanın babasının eğitim düzeyi arttıkça geleneksel ve tamamlayıcı tedavi uygulamalarını kullanma olasılığının azaldığını gösterilmiştir. Nörolojik hastalıklarda ebeveynlerin tedavi yöntemi olarak geleneksel ve tamamlayıcı tedavileri kullanması modern tıbba alternatif oluşturmaktadır. Geleneksel ve tamamlayıcı tedavilerin kullanım nedenleri ve sıklığı araştırılarak, ailelerin bilinçlendirilmesi, geleneksel ve tamamlayıcı tedavilerin olası zararları belirlenerek aileler ve hastalar bilgilendirilmelidir.

Anahtar Kelimeler: Geleneksel Tıp; Tamamlayıcı Tıp; Pediatrik Nöroloji

Introduction

The understanding of treatment in today's medicine includes contemporary treatment, which includes evidence-based, preventive, and therapeutic applications. Despite the developments in pharmacologic treatments, traditional and complementary therapies have recently gained popularity in our country and around the world (1). Although there are differences between regions, the use of traditional and complementary therapies in pediatric neurology practice is estimated to vary

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between 24% and 78% (2, 3). The use of traditional and complementary therapies for various neurologic conditions including epilepsy, headache, traumatic brain injury, neuromuscular disorders, developmental delay, and degenerative brain diseases has been reported in several studies (2, 4-8).

Considering the reasons for using complementary and/or traditional medical practices, the most important reasons seems to be the lack of health insurance systems, adverse effects that may be caused by drugs, complications that may arise in medical interventions, high costs required for these medical treatments, the thought that body resistance will increase with complementary and alternative medicine practices, the relief from the despair of patients who cannot be treated with modern methods, and the strengthening of healthy behaviours.

The study aimed to question complementary and alternative medicine practices during clinical visits of pediatric neurology patients, to raise awareness of families and patients about the use of complementary and alternative medicine, and to prevent possible negative interactions.

Material and Methods

This study was approved with the decision number E-20-12-62 at the meeting dated 21.12.2020 of the Clinical Research Ethics Committee of SBU Ankara Dr. Sami Ulus Gynecology and Childhood Health and Diseases Training and Research Hospital.

This prospective survey study was conducted with the parents of 300 pediatric patients aged between 6 months and 18 years who were being treated at Ankara SBU Dr. Sami Ulus Gynecology, Pediatrics, Child Health and Diseases SUAM, Child Neurology Clinic, between March 1st and May 30th, 2020.

The survey was conducted face-to-face when the patient and parents presented to the clinic. The relevant population for the study includes volunteer parents of patients aged between 6 months and 18 years who were followed up in the neurology outpatient clinic. For the study, 360 patients' parents who came to the Pediatric Neurology clinic for treatment were randomly selected, and a face-to-face survey lasting 2 minutes was conducted with the parents of 300 patients who agreed to participate in the study. After informing the parents of the patients about the purpose of the research, a survey was conducted by physicians who were the investigators in the study.

As a data collection tool, 11 questions formed as a result of a literature review were directed to the participants. Questions prepared by the authors in this study were inspired by the study of Kenney et al. (9).

A total of 15 questions were asked in the questionnaire. Four questions were aimed at collecting information about demographic characteristics and 11 gathered information about the patients' neurologic status and complementary medicine treatments.

The survey questioned the diagnosis of the neurologic problem in the child, the presence of the drug used for the neurologic treatment of the child, whether a drug was used, whether the child's neurologic problem had been treated, whether the child had used complementary and alternative treatment to treat the neurologic problem, what kind of complementary medicine and treatment they had used before, from where the parents learned about complementary and alternative treatments, how effective the complementary and alternative treatment was, whether they wanted to continue the complementary and alternative treatment after the treatment in our hospital, and whether they had recently stopped their conventional treatment and continued with only complementary alternative treatment. It was asked whether the patient/parent had shared information with the physician about any complementary treatment used, and if they did, what the attitude of the physician was. If they did not, what the reason was.

Statistical Methods

Statistical analyses of the study data were made using the SPSS computer program. Descriptive statistics are given as categorical variables as numbers and percentages, and continuous variables as mean +/- standard deviation and median (smallest-largest) values. The Mann-Whitney U test was used for data that were not normally distributed. Pearson's Chi-square test and Fisher's Chi-square test were used for categorical variables between independent groups. If the factors that might affect the development were determined, the effective factors in the univariate logistic regression analysis were put into the multivariate logistic regression analysis model and the most effective factors were investigated. Binary logistic regression analysis was used to investigate mother's/father's education level, patient's sex, and whether the patients' current treatment was effective in their use of complementary and alternative medicine practices. Using logistic regression analysis, the probability of realization of one of the values of a dependent variable that takes a discrete value can be estimated. This analysis requires no conditions regarding the distribution of the independent variables. $P<0.05$ was accepted as the level of significance.

Results

Three hundred parents (56% women) participated in the study. Parental age was 31.6 (±8.3) (min-max: 22-40) years, and the mean age of the patients in the study was 8.62 ± 4.9 years.

When the education level of the parents was examined, 36.48% of the mothers were primary school graduates, 29.25% were secondary school graduates, 25.16% were high school graduates, and 9.12% were university graduates, and 23.58% of the fathers were primary school graduates, 24.21% secondary school, 37.11% high school, and 15.1% were university graduates.

Just over half (55.3%) of the patients were followed up with the diagnosis of epilepsy. The diagnoses of the patients are given in Table 1.

Table 1. Diagnoses of the patients included in the study.

Diagnosis	n	%
Headache	17	12.30
Brachial plexus injury	3	0.94
Chronic inflammatory demyelinating polyneuropathy	1	0.31
Cerebral palsy	17	6.29
Down syndrome	1	0.31
Epilepsy	156	55.35
Epilepsy+Cerebral palsy	14	4.72
Febrile convulsion	1	0.94
Growth retardation	5	1.57
Movement disorder	4	1.89
Muscle disease	4	1.57
Speech disorder	1	0.31
Microcephaly	1	0.31
Multipl sclerosis	1	0.31
Neurofibromatosis Type-1	2	0.63
Autism spectrum disorder	8	2.83
Prematurity	7	2.20
Idiopathic intracranial hypertension	1	0.94
Transverse myelitis	1	0.31

Three-quarters (75.4%) of the patients were using medication related to their current disease, the others were not using medication. During the treatment, 52.5% of the patients stated that they found the drugs effective, 20.5% mildly effective, and 2.2% ineffective. Around one-quarter (24.5%) of the patients preferred not to respond.

Some 56.6% of the parents stated that they had used traditional and complementary therapies before, and 43.4% stated that they did not use them. Of the patients who stated that they had used traditional and complementary therapies before, 55% stated that they used belief, 33% used radio/television, 11% the internet, and 1% used scientific books and journals as sources of information while learning about traditional and complementary therapies.

Of the patients who stated that they used traditional and complementary therapies before, 148 stated that they said prayers and 76 used vitamin methods, respectively. The methods used by the patients are given in Figure 1.

Of the parents that used traditional and complementary therapies, 43% stated that they were not sure about the effect of the method they used, 23% found it effective, 22% found it mildly effective, 5% found it very effective, and 7% did not find it effective at all. Just under half (49.37%) of the parents stated that they talked to their physician about traditional and complementary therapies, 50.63% did not talk to their physician about traditional and complementary therapies methods, and 34% stated that their physician was unresponsive on this subject.

Binary logistic regression analysis was performed to investigate whether the parents' complementary and alternative medicine practices, mother/father's education level, patient's sex, and whether the patient's current treatment was sufficient, were effective in the use of complementary and alternative medicine practices. Among the four independent variables (sex, mother's education level, father's education level, the effect level of the drug used in the treatment) that were examined individually in four different models, only the education level of the patient's father was statistically significant (Wald= 4.102, p=0.043) (Table 2).

The probability of using complementary and alternative medicine practices for the patient group whose fathers had high school or higher education level was 0.63 times lower than the probability of using complementary medicine methods for the patient group whose fathers had a primary or secondary education level [odds ratio (OR) = 0.63]. This result shows that as the education level of the patient's father increases, the probability of using traditional and complementary therapies applications decreases. The education level of the father of the patient was statistically important, but the education level of the mother was not (Wald=1.84, p=0.175). Likewise, it was concluded that sex (Wald= 0.295, p=0.196) and whether the drug used in the treatment of the patient was effective by the patient's parents (Wald=0.001, p=0.976) were not statistically significant in affecting the probability of using traditional and complementary therapies.

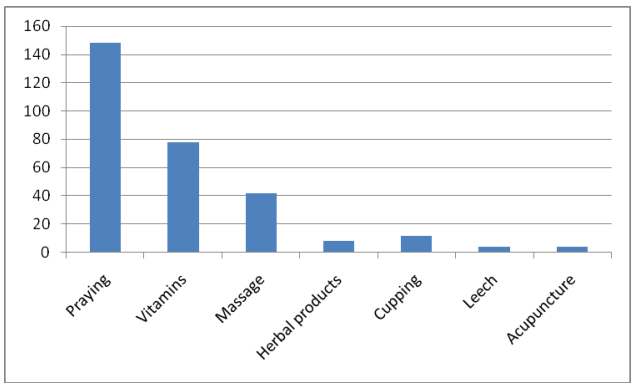

Figure 1. Traditional and complementary therapies methods used by the patients participating in the study.

Table 2. Results of Binary Logistic Regression analysis

Model	Independent variable	B	Standard Error	Wald Statistics	p-value	Odds ratio	95% CI
1	Sex (female: 1, male: 0)	0.295	0.228	1.675	0.196	1.344	(0.859-2.102)
2	Mother Education Status (High school or higher: 1, primary or middle school: 0)	-0.323	0.238	1.84	0.175	0.724	(0.454-1.154)
3	Father's Education Level (High School or above: 1, primary or secondary school: 0)	-0.463	0.228	4.102	0.043	0.630	(0.402-0.985)
4	Effectiveness Level of the Drug Used (0: Ineffective or mildly effective, 1: Effective)	0.009	0.287	0.001	0.976	1.009	(0.575-1.77)

Discussion

Although current developments in the diagnosis and treatment of diseases have developed rapidly in the last century thanks to modern medicine, people are much more interested in traditional and natural treatment methods. Today, with the increase of antibiotic resistance, the helplessness of modern medicine in various diseases, and the pandemic experienced in 2020 due to the SARS-CoV-2 virus, people integrate natural methods into their lives for preventive and therapeutic purposes. Traditional and complementary medicine methods are being used with increasing momentum both in underdeveloped countries and places where access to health services is difficult and in modern societies (1, 10-11). According to the World Health Organization (WHO), traditional and complementary medicine "is the whole of knowledge, skills, and practices that can be explained or not, based on theories, beliefs and experiences specific to different cultures, which are used in the prevention, diagnosis, improvement or treatment of physical and mental diseases, as well as in maintaining good health".

The Regulation on Traditional and Complementary Medicine Practices in Turkiye entered into force by being published in the Official Gazette on 27.10.2014. In the regulation, the application principles and the situations, centers, and units where 15 traditional and complementary therapies such as chiropractic, mesotherapy, and apitherapy can/cannot be used are clearly stated (12). The main reason why traditional and complementary medicine practices are of great importance in our lives is the perception that 'if it is natural, it will not harm health.' It is thought that parents primarily benefit from traditional and complementary therapies, which they think are less harmful with fewer adverse effects, instead of using drugs to protect the development and health of their children. Philosophical/religious approaches, low cost, and the perception that it is safer are other reasons for preferring the more intensive use of traditional and complementary therapies (13-15).

The effect of sociodemographic data on the use of traditional and complementary therapies has been discussed in studies conducted in our country and other countries (16-20). There are studies stating that sociodemographic characteristics do not affect the use of traditional and complementary therapies, and there are also publications stating that age, sex, belief, and cultural differences affect the use of traditional and complementary therapies (16-20). In the literature, it has been determined that the use of traditional and complementary therapies may differ according to age, sex, educational status, income, and disease type and duration. In our study, 56% of the parents surveyed were female and 44% were male. Noiesen et al. (23) reported that women used traditional and complementary therapies more frequently than men in their study on 485 patients. Durusoy et al. (24) and Göker et al. (25) reported that women resorted to these practices more frequently. In the study by Hartmann et al. (26), 129 of the 164 participants were girls and 35 were boys. The mean age of the parents participating in our survey was 31.6 years, and the mean age of the patients was 8.62 years. The age distributions of studies in which the use of traditional and complementary therapies differed vary according to the groups in which the studies were performed. Islamoglu et al. (27) found that the ages of individuals using traditional and complementary therapies were younger than those who did not; however, in other studies, it was determined that older individuals used it more, and the studies were not conducted according to age, but rather according to diseases, and the age group of the determined disease was evaluated within itself. In our study, it was observed that the age distribution did not affect the use of traditional and complementary therapies.

In our study, 36.48% of the mothers of the patients were primary school graduates, 29.25% secondary school, 25.16% high school, and 9.12% were university graduates. Although it was reported in the literature that mothers' use of traditional and complementary therapies was high, the educational status of the mothers did not affect the use of traditional and complementary therapies. Özkaya et al., Akcay and Yıldırımlar and, Sait et al. (28-30) reported that there was no correlation between the use of traditional and complementary therapies and age and educational status in their studies. Similarly, no correlation was found between the use of traditional and complementary therapies and the educational status of the mothers in our study.

In our study, 23.58% of the fathers of the patients who participated in the survey were primary school graduates, 24.21% secondary school graduates, 37.11% high school graduates, and 15.09% were university graduates. Among the independent variables examined in our study, only the education level of the patient's father was found statistically significant (Wald=4.102, p=0.043). The probability of using complementary and alternative medicine practices for the patient group whose fathers had high school or higher education level was 0.63 times lower than the probability of using complementary medicine methods for the patient group whose fathers had a primary or secondary education level (OR=0.63). Again, this result differs from the results of Akcay and Yıldırımlar et al. (29), Sait et al. (30), Ozkaya et al. (28), and Şimşek et al. (31), who stated that there was no correlation between traditional and complementary therapy use and education level. It is thought that this result is due to the increase in the level of knowledge with education and the orientation towards evidence-based modern medicine.

In our study, 55.35% of the patients were followed up with a diagnosis of epilepsy. Although there are sufficient data on the use of traditional and complementary therapies in adults, information on the use of these treatments in children is more limited. The use of traditional and complementary therapies is more common in chronic diseases. In studies on the use of traditional and complementary therapies in children, children with asthma, attention-deficit/hyperactivity

problems, cancer, rheumatologic problems, those requiring special care, and children with epilepsy were evaluated individually. In our study, we evaluated the participants in terms of all neurologic diseases mentioned in the questionnaire and we found that the rate of using traditional and complementary therapies in children diagnosed with epilepsy was 55.35%.

About 56.60% of the parents in the study stated that they used the CAMP method before, and 43.40% stated that they did not. Simsek et al. (31) reported that the rate of traditional and complementary therapy use in Turkiye was 60.5%. This ratio shows that one out of every two patients uses traditional and complementary therapies. Again, Çetin (32) reported that traditional and complementary therapies was used at a rate of 60%. The use of traditional and complementary therapies in our country varies between 22.1% and 84.1% (28,33) . Studies have reported that the use of traditional and complementary therapies in neurologic diseases is between 44-50% (34-36). It has been reported that this rate is between 24-78% in pediatric neurology (2-3), and our study is consistent with these studies.

In our study, of the patients who stated that they had used traditional and complementary therapies before, 55% used belief, 33% used radio/television, 11% the internet, and 1% used scientific books and journals as sources of information while learning the (CAMP) methods. In their study on patients with cancer, Berretta et al. (37) reported that the sources of CAMP information were media (47.7%), friends 19.2%, other patients 11.9%, and physicians 5.9%. The fact that traditional and complementary therapy information sources and rates are different is attributed to the economic, cultural, and social structures of the living environment.

In our study, 46.54% (148) of the parents who stated that they had used CAMP methods before, 23.9% (n=76) used vitamins, 24.25% (n=45) used massage, 5.97% (n=19) used amulets, 2.83% (n=9) used cupping, 1.89% (n=6) used herbal products, 0.94% (n=3) used acupuncture, 0.63% (n=2) used leeches, and 0.31% stated that they used meditation. Tuncel et al. (38) found that the most common traditional and complementary therapies were belief-based with a rate of 73%. Winkler et al. (39) in their study on patients with epilepsy in Tanzania, reported that the traditional and complementary therapies used were traditional herbal treatment (9.6%), traditional spiritual treatment (7.2%), making the patient vomit (3.6%), expelling/ removing the disease (1.8%), and praying (34.1%).

In our study, 43% of parents who used traditional and complementary therapies stated that they were not sure about the effect of the method they used, 23% found it effective, 22% found it mildly effective, 5% found it very effective, and 7% did not find it effective at all. Gulhan et al. (40) reported that 75% of patients benefited from traditional and complementary therapies in their study.

In the study of Kaya et al. (17) on the use of traditional and complementary therapies, approximately 13% of the participants stated that they did not benefit from these methods. Tuncel et al. (38) reported that 22.9% of the patients found the method effective, 58.3% benefited partially, and 18.8% did not benefit from the traditional and complementary therapies used. Hartmann et al. (26) reported that 10% of families using traditional and complementary therapies in children with epilepsy benefited fully from the effect of the method they used, 62% reported that it was mildly effective, and 29% did not find it efective. Our study is also similar to these studies.

About half (49.37%) of the parents stated that they talked to their physician about traditional and complementary therapies, and 50.63% did not talk to their physician about this issue. Sonmez et al. (41) reported that 58.2% of the parents who used traditional and complementary therapies did not discuss this issue with their physicians. Ozkaya et al. (28) found that 13.6% of patients were informed about traditional and complementary therapies by their physicians.
Among the parents who participated in the study, 66% who talked to their physician about traditional and complementary therapies methods stated that they were supportive, and 34% stated that they were unresponsive in this regard. Ozkaya et al. (28) reported that 21.4% of their patients talked to their physicians about traditional and complementary therapies, but they could not gain approval on this subject. According to the results of the same study (28), 63.6% of the patients reported that they consulted their physician before using traditional and complementary therapies. In the study performed by Hartmann et al. (26) in children with epilepsy, 76% of their patients informed their physicians about using traditional and complementary therapies, 12% of these children used traditional and complementary therapies given by the treating physician, and 6% reported that their physician's traditional and complementary therapies were used and that they did not approve, and 24% did not inform their physicians about the traditional and complementary therapies they used.

The limitation of this study is that a high rate of epilepsy patients applied to the pediatric neurology outpatient clinic because it was conducted during the COVID19 pandemic.

In neurologic diseases, parents use traditional and complementary therapies as treatment methods, creating an alternative to modern medicine, for such reasons as long and slow-progressing treatment and often not being able to go a long way with treatment, easy access, adverse effects not being known exactly, being used in close quarters, not getting approval from an authority, and being frequently influenced by advertisements in the media. Families and patients should be informed by investigating the reasons and frequency of using traditional and complementary therapies, raising the awareness of parents, and determining the possible harm caused by traditional and complementary therapies.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethical aspects of the research

This study was approved with the decision number E-20-12-62 at the meeting dated 21.12.2020 of the Clinical Research Ethics Committee of SBU Ankara Dr. Sami Ulus Gynecology and Childhood Health and Diseases Training and Research Hospital.

Author contributions

N.C. and H.C, contributed to the conception and design of the study, and analysis and interpretation of data. E.A. participated in the design and conceptualization of the study, including the selection and development of the clinical rating scales. E.A., U.O., D.Y. and, F.M.A.O contributed to the conduct of the study and data collection. N.C. wrote the manuscript. All the authors have agreed to be accountable for all aspects of the study and have approved the final version of the manuscript.

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