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Use of Complementary Alternative Treatments in Pediatric Neurology: Experience of Pediatric Neurologist in Saudi Arabia.

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Abstract

Complementary and alternative treatments (CATs), in widespread use all over the world, are broadly defined as any treatments which do not follow standard medicinal practice. However, much international research has shown that the prevalence of using CATs as a treatment is increasing, especially in neurological diseases. Unfortunately, published data estimating the prevalence and spectrum of neurological disorders and that studied the usage of CATs in Saudi Arabia are very limited. To assess the CAT prevalence among pediatric neurology disorder and determine its effectiveness. A cross-sectional study targeted Saudi Arabia pediatric neurologists were conducted through an electronic questionnaire in July 2017. A total of 62 physician out of 75 (83%) participated. The result showed that the commonest CAT is Multivitamins (83.9%), omega-3 (66.1%) and Nootropil (33.9%). (6.5%) of participating patient's use CAT always while (93.5%) sometimes. Regarding the benefits, 40.3% noticed sometimes, and 58.1% chose no benefit. 78.1% never encounter side effects while 12.9% experienced sometimes. The CAT consumption reasons were 80.6% developmental delay, 46.8% no definitive treatment and 43.5% epilepsy. In conclusion, the usage of CAT is common in almost all countries with the higher percentage in neurology than in other pediatric specialties. The most commonly used CAT in Saudi Arabia are the Multivitamins, omega 3, and Nootropil. As CATs are tremendously popular among neurological cases, physicians are encouraged to question their patients about its use and gain more information with the goal being to be able to give evidence-based advice. Physicians should also review their consumer files to ensure minimal to no side effects. Finally, more studies are recommended aimed at parents to discover any correlations between the usage of CATs and any notable effects.

Keywords: Complementary and alternative treatments, Pediatric neurology, Epilepsy, Developmental delay, Multivitamins, Omega 3, Nootropil.

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Introduction

Complementary and alternative medicine (CAM) or Complementary and alternative treatments (CATs), in widespread use all over the world, are broadly defined as any treatments which do not follow standard medicinal practice. CATs include many products, agents and practices that vary from country to country according to their specific beliefs and cultures. However, much international research has shown that the prevalence of using CATs as a treatment is increasing, especially in neurological diseases. This is because the majority of such illnesses require long-term therapy, with no definitive management or cure.

Unfortunately, published data estimating the prevalence and spectrum of neurological disorders in Saudi Arabia is very limited. Currently, the most recent community-based study of the prevalence of neurological diseases in Saudi Arabia was published as long ago as 2011. This study was done by screening a total of 45,682 Saudi children and reported 313 of these had a chronic major neurologic disorder, an overall prevalence of 68.5 per 10,000 children, the highest incidence among all chronic diseases in children. Within this group, mental retardation and cerebral palsy were the most common neurologic disorders with a prevalence of 26.3/10,000 and 23.4/10,000 respectively [1].

As there are few studies of the prevalence of neurological disorders in Saudi Arabia, and little research conducted about the prevalence and effectiveness of CATs there, new research was timely. In order to assess the use of CATs among pediatric neurological patients in Saudi Arabia, only the most common CATs have been considered to determine if they were responsible for improvements or side effects.

Methodology

Following approval by the Institution board of King Abdulaziz University (KAU), a cross-sectional study, using a self-designed electronic questionnaire, was conducted in July 2017 among pediatric neurologists in Saudi Arabia. The target population included all pediatric neurologists in Saudi Arabia but excluded any caregivers who were not pediatric neurologists.

The questionnaire consisted of 15 questions divided into two groups. The first group concerned the neurologists socio-

demographic characteristics (gender, age, working location, type of hospital, years of practice, postgraduate training country), while the second group of questions asked about their perception of CAT users (the type of CAT used by their patients, its frequency, the benefits, the side effects, and the medical reasons for using those treatments in the first place, along with the doctors original recommendations for using it). A survey expert validated the test before it was sent to our study population on 1st July 2017.

Sample size was 62. The data was entered in an Excel spread sheet and a statistical analysis was performed using the SPSS21 statistical package (SPSS Inc., Chicago, IL, USA).

For descriptive statistics, frequencies and percentages were used to describe qualitative variables. A chi-square test was used to test the association between qualitative items, with a threshold of 5% used for statistical significance ($p \leq 0.05$).

Results

A total of 62 out of 75 pediatric neurologist consultants participated in this study. Table 1 will shows the different characteristics of the participants while Table 2 will presents a summary of participants' answers regarding the use of CATs. A chi square test was used to test for a relationship in Tables 3-5.

Table 1. *Demographic characteristics of physicians participating in the study.*

Demographic characteristics	Frequency	Percent
Gender		
Male	44	71
Female	18	29
Age		
<35	7	11.3
35-45	25	40.3
45-55	20	32.3
>55	10	16.1
Working location		
Riyadh	25	40.3
Jeddah	15	24.2
Dammam	9	14.5
Other	6	9.7
Makkah	2	3.2
Taif	2	3.2
Jazan	1	1.6
Qasseem	1	1.6
Madina	1	1.6
Hospital type		
University	7	11.3
Ministry of health	27	43.5
Military/National Guard	16	25.8
King Faisal specialist hospital	6	9.7
Private	5	8.1
Other	1	1.6
Years of practice		
<5	11	17.7
5-10	16	25.8
10-20	20	32.3
>20	15	24.2

Table 2. *Summary of the answers of the participants presented in number and percentages.*

Summary	Frequency	Percent
Complementary treatments are often taken		
Multivitamins	52	83.9
Speak	6	9.7
Tanakan	12	19.4
Cerebrolysin	3	4.8
Jenssa	6	9.7
Hypol	10	16.1
Encephapol	4	6.5
Omega 3	41	66.1
Nootropil	21	33.9
Hyperbaric Oxygen	19	30.6
Others		
Traditional and Herbal therapy	5	8.1
Bee sting	1	1.6
Mitochondrial coktail	1	1.6
Vitamin D3	2	3.2
Frequency of use by patients		
Always	4	6.5
Sometimes	58	93.5
Top 3 agents		
Multivitamins	51	82.3
Speak	6	9.7
Tanakan	7	11.3
Cerebrolysin	1	1.6
Jenssa	2	3.2
Hypol	4	6.5
Encephapol	1	1.6
Omega 3	47	75.8
Nootropil	21	33.9
Hyperbaric Oxygen	14	22.6
Others	3	4.8
Source		
KSA	49	79
Egypt	23	37.1
USA	4	6.5
Others	11	17.7
Benefits		
Always	1	1.6
Sometimes	25	40.3
Never	36	58.1
Side Effect		
Sometimes	8	12.9
Never	54	87.1
Mentioned side effects		
Loss of weight, headache, constipation, polyuria	1	1.6
Pseudotumor cerebri from hypervitaminosis	1	1.6
Hyperbaric oxygen caused respiratory distress	1	1.6
Seizures after hyperbaric oxygen	1	1.6

Polyuria and loss of weight	1	1.6
Reason for Use		
Epilepsy	27	43.5
Developmental Delay	50	80.6
Disorders with no available treatment	29	46.8
Other reasons		
Autism	1	1.6
Anxiety	1	1.6
As extra supplement	1	1.6
Cerebral palsy/HIE	1	1.6
Stroke	1	1.6
Autism, Cerebral palsy, mental insufficiency	1	1.6
Where they know		
Other doctors	18	29
Family and friends	26	41.9
Internet and social media	17	27.4
Other	1	1.6
Recommendation		
Discontinue	15	24.2
Keep the decision to the patient	36	58.1
Recommend continuing	4	6.5
Other	7	11.3

The relationship between the top three elements used and the opinion of the doctors about benefits and side effects is shown in Table 3.

Table 3. *The relationship between the top 3 elements used and the opinion of the doctors about benefits and side effects.*

Elements		Benefits		p value	Side effects		p value
		Sometimes	Never		Sometimes	Never	
Multivitamin	Yes	45.10%	54.90%	0.33	15.70%	84.30%	0.33
	No	27.30%	72.70%		0.00%	100.00%	
Omega 3	Yes	34.00%	66.00%	0.03	10.60%	89.40%	0.39
	No	66.70%	33.30%		20.00%	80.00%	
Nootropill	Yes	19.00%	81.00%	0.01	4.80%	95.20%	0.25
	No	53.70%	46.30%		17.10%	82.90%	

Table 4 shows the relationship between doctors' recommendations and their opinions about benefits and side effects.

Table 4. *The relationship between the doctors recommendations and their opinions about benefits and side effects.*

Recommendation	Benefits		p value	Side Effect		p value
	Sometimes	Never		Sometimes	Never	
Discontinue	6.70%	93.30%	0.001*	6.70%	93.30%	0.45
Keep the decision to the patient	44.40%	55.60%		11.10%	88.90%	
Recommend continuing	100.00%	0.00%		25.00%	75.00%	
Other	71.40%	28.60%		28.60%	71.40%	

The relationship between the reasons for using the elements and doctors' recommendations is shown in Table 5. The key finding is that there is no significant association between the reason for using the elements and doctors' recommendations, with p value >0.05.

Table 5. *The relationship between the reason for using the elements and doctors recommendations.*

Relationship		Doctors Recommendation				p value
		Discontinue	Keep the decision to the patient	Recommend to continue	Other	
Epilepsy	Yes	18.50%	59.30%	3.70%	18.50%	0.33
	No	28.60%	57.10%	8.60%	5.70%	
Developmental delay	Yes	28.00%	58.00%	6.00%	8.00%	0.25
	No	8.30%	58.30%	8.30%	25.00%	
Disorders with no available treatment	Yes	17.20%	65.50%	6.90%	10.30%	0.64
	No	30.30%	51.50%	6.10%	12.10%	

The relationship between reasons for using the elements and frequency of use is shown in Table 6.

Table 6. *The relationship between the reason for using the elements and frequency of using.*

Relationship		Frequency of use		p value
		Always	Sometimes	
Epilepsy	Yes	11.10%	88.90%	0.31
	No	2.90%	97.10%	
Developmental delay	Yes	6.00%	94.00%	1
	No	8.30%	91.70%	
Disorders with no available treatment	Yes	13.80%	86.20%	0.04
	No	0.00%	100.00%	

Using Fisher's exact test, it is apparent that there is no association between the frequency of use and the reason for use when the reasons were 'epilepsy' and 'developmental delay'. There was an association with p=0.04 between doctors always choosing a CAT when the reason for use was 'disorders with no available treatment'.

Discussion

This study investigated both the experience of pediatric neurologist consultants in SA with CATs utilization as treatment among their patients and their own opinion and attitude toward CAT. A total of 62 physicians participated in this structured survey to assess the prevalence of CAT among patients with pediatric neurological illness in Saudi Arabia. Although we were unable to compare our result directly with concurrent published studies due to the difference in the sample along with inadequate equivalent studies among the same sample and populations. Approximately 100% of the pediatric patients with neurological illness treated with our consultant sample generally seemed to have experienced CAT.

A comparable survey was developed to inquire about use of CAM products and therapies in Pediatric Neurology at two academic centers in Canada by Elaine Galicia-Connolly et al. [2]. CAM use at the Stollery Children's Hospital in Edmonton, Alberta, Canada was 78%, compared to 48% at Children's Hospital of Eastern Ontario (CHEO) in Ottawa, Canada. The most common CAM products used were multi-vitamins (84%), vitamin C (37%), homeopathic remedies (24%), and fish oil/ omega 3 (22%). They concluded that CAM use is common in pediatric neurology patients and most respondents felt that it was helpful, with few or no harmful side effects reported. The use of CAT in general pediatric cases was also reported in a study of Irish pediatric patients [3]. This showed that 57% of parents reported using CAM for their child. The commonest CAM used were vitamins (88%) and fish oils (27%). The use of CAM varied between pediatric specialties, with the lowest (40%) in gastroenterology and allergy patients, and the highest reported in neurological patients (92%). Parents gained information and encouragement regarding CAM use from friends (31%) and grandparents (20%). A good proportion of parents (25%) had heard about CAM [4] from other sources such as television, antenatal clinics or local health shops. A similar result was reached in a cross-sectional survey of CAMs used by children and adolescents attending the University Hospital of Wales [5]. This reported that 41% had used at least one type of CAM in the past year. The most common medicinal types of CAM were non-prescribed vitamins and minerals (23%) and herbal therapies (10%).

Moreover, in our survey, one doctor said that there was always a benefit in using CAT, 40.3% answered that there was sometimes a benefit, while the majority 58.1% agreed that there was no benefit. 12.9% of the participants in our survey noticed that there are side effects sometimes, while 87.1% said that there are never side from these CAT. These results of doctor opinion regarding CAT prone and cons are similar to Families opinion in a study [4] of the consumption of CAM in Canadian families containing pediatric neurology patients. Over half (59%) of families reported seeing benefits with CAM, and side effects were restricted to just one patient.

Furthermore, in our study only 12.9% of the physicians experienced side effects sometimes. Among that group, sporadic cases of sides effects documented and its seems to be most likely from hyperbaric oxygen which cause Respiratory distress in (1.6%) and seizure in one patients. Although CAT considered to be safe medicinal option neither of these CAT results in complete resolution of symptoms, so future researches addresses safer and more effective options should be done.

In our Saudi study, the reason for use was given as 'developmental delay' in 80.6% of cases, with 46.8% citing 'disorders with no available treatment', and 'epilepsy' accounting for 43.5%. This mirrors results seen in other countries: among families with an epileptic child, a special diet and vitamins were practiced by 17.1% of Turkish families [6], and by 14% in Tehran [7]. CAM is also commonly used to treat children with autism. A survey of 3,100 pediatric and family medicine physicians in the USA about CAM use amongst children having Autism [8] found CAM modalities most frequently encouraged by physicians were: multi-vitamins (49%), and essential fatty acids (25%).

In another US study [9], almost all parents (95%) indicated some use of CAM therapies amongst children on the autism spectrum, with most of the self-reported referrals generated from a physician or nurse (44%).

A study of CAM use in Australian children with attention deficit hyperactivity disorder (ADHD) [10] found 67.6% of families used modified diet, vitamins and/or minerals, and dietary supplements.

In our study, the percentage of physicians who think that CAT treatments have no benefit is higher within the group who chose omega 3 and Nootropil than the group who did not choose them Of the doctors who recommended continuing use of the treatment, all of them saw at least some benefits, while most doctors who recommend stopping (93.3%) believe that no benefits are occurring.

Some other modalities of non-medicinal CAM are also commonly used. In a study [11] of other modalities used by all patients in Riyadh, Saudi Arabia, around one-third of parents used CAM for their children, and parents' own use of CAM for

self-treatment was the most important predictor of its use for children.

The percentage using other modalities is also higher in neurological cases. Parents of children attending a pediatric neurology clinic in North Jordan reported [12] 56% having used CAT for their child's specific neurological illness. The most common modalities included massage with olive oil (32%), and consumption of honey products (29%).

In a study that administered to patients or their parents/ guardians at the Stollery Children's Hospital in Edmonton and the Children's Hospital of Eastern Ontario (CHEO) in Ottawa [2] over 40% of patients did not discuss concurrent drug-CAM use with their physicians. Which encourage the physicians to dig more in questioning their patients about its use.

Conclusion and Recommendation

The usage of CAT is common in almost all countries, with a higher percentage seen in neurology than in other paediatric specialties. The most commonly used CATs in Saudi Arabia are multivitamins, omega 3, and Nootropil. The majority of doctors either recommend continuing to consume the CAT, or to let the family decide.

As CATs are tremendously popular among neurological cases, physicians are encouraged to question their patients about its use with the goal being to be able to give evidence-based advice. Physicians should also review their consumer files to ensure minimal to no side effects. Finally, more studies are recommended aimed at parents to discover any correlations between the usage of CATs and any notable effects.

Compliance with Ethical slandered

This study was not funded by any source.

Ethical Approval

This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of Interest

The authors declare no competing financial interests and the work was not supported or funded by any drug company.

References

1. Al-Salloum AA, El-Mouzan MI, Al-Omar AA, et al. The prevalence of neurological disorders in Saudi children: A community-based study. J Child Neurol. 2011; 26: 21-24.
2. Galicia-Connolly E, Adams D, Bateman J, et al. CAM use in pediatric neurology: An exploration of concurrent use with conventional medicine. PloS one. 2014; 9: e94078.
3. Low E, Murray DM, O'Mahony O, et al. Complementary and alternative medicine use in Irish paediatric patients. Irish Journal of Medical Science. 2008; 177: 147-150.
4. Crawford NW, Cincotta DR, Lim A, et al. A cross-sectional survey of complementary and alternative medicine use by children and adolescents attending the University Hospital of Wales. BMC Complement Altern Med. 2006; 6: 16.
5. Soo I, Mah JK, Barlow K, et al. Use of complementary and alternative medical therapies in a pediatric neurology clinic. Can J Neurol Sci. 2005; 32: 524-528.
6. Ekici B, Tatli B, Abali S, et al. Application of complementary and alternative medicine in epileptic children at a tertiary pediatric neurology center in Turkey. Eur J Integr Med. 2012; 4: e71-e75.
7. Tonekaboni SH, Naeini SJ, Khajeh A, et al. Use of complementary and alternative medicine for epileptic children in tehran: A cross-sectional study (2009-2011). Iranian Journal of Child Neurology. 2014; 8: 26.
8. Golnik AE, Ireland M. Complementary alternative medicine for children with autism: A physician survey. J Autism Dev Disord. 2009; 39: 996-1005.
9. Harrington JW, Rosen L, Garnecho ANA, et al. Parental perceptions and use of complementary and alternative medicine practices for children with autistic spectrum disorders in private practice. J Dev Behav Pediatr. 2006; 27: S156-S161.
10. Sinha D, Efron D. Complementary and alternative medicine use in children with attention deficit hyperactivity disorder. J Paediatr Child Health. 2005; 41: 23-26.
11. Gad A, Al-Faris E, Al-Rowais N, et al. Use of complementary and alternative medicine for children: A parents' perspective. Complement Ther Med. 2013; 21: 496-500.
12. Aburahma SK, Khader YS, Alzoubi K, et al. Complementary and alternative medicine use in a pediatric neurology clinic. Complement Ther Clin Pract. 2010; 16: 117-121.

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