

## Original Article

# The Prevalence and Determinants of Complementary Medicine Use for Nigerian Children in the Turkish Republic of Northern Cyprus

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### Received:

22-Oct-2019;

### Revision:

11-Dec-2019;

### Accepted:

03-Apr-2020;

### Published:

12-Aug-2020

## INTRODUCTION

According to WHO<sup>[1]</sup> “complementary medicine or alternative medicine refers to a broad set of healthcare practices that are part of that country’s tradition or conventional medicine and are not fully integrated into the dominant healthcare system.” CAM has also been defined by the National Center for Complementary and Alternative Medicine (NCCAM)<sup>[2]</sup> “as a group of diverse medical and healthcare systems, practices, and products that are not generally considered part of conventional medicine.”

### ABSTRACT

**Background:** Complementary and alternative medicine (CAM) is extensively used in the pediatric population. Environments and the nature of diseases have an impact on the type of CAM therapies used in children.

**Aims:** This study aims to determine the prevalence and determinants of CAM use among Nigerian children living in the Turkish Republic of Northern Cyprus (TRNC). **Subjects and Methods:** A quantitative, descriptive and cross-sectional study was conducted among 50 parents living in the TRNC. The parents were selected by the snowball sampling technique. Data were collected using a self-administered, NAFKAM International-CAM-Questionnaire (I-CAM-Q). The data were analyzed using SPSS version 20. Chi-square test was used to analyze the associations of CAM use with values of  $P < 0.05$  considered statistically significant.

**Results:** The mean ages of the parents and children were  $30 \pm 5.56$  years and  $3 \pm 2.17$  years, respectively. It was discovered that 34 (68%) out of 50 children had used CAM in the previous 12 months. The most commonly used CAM products were vitamins/minerals (82.4%) and herbs/herbal products (55.9%). While praying for health (61.8%) and relaxation techniques (50.0%) were the most used CAM practices. A majority of the parents perceived that CAM use was beneficial (85.3%). Approximately 10% of the children were prescribed CAM recommendation/treatment by physicians. The most used sources of information were relatives (36%) and friends (14.7%). Parents (58%) indicated that they did not disclose their use of CAMs for their children to a physician/nurse.

**Conclusions:** CAM is used prevalently in this population and the use of CAM is primarily focused on improving well-being. CAM usage for children increases with parental use. Further qualitative research is needed to understand the parental belief in the use of CAMs for children.

**KEYWORDS:** *Alternative medicine, complementary medicine, Nigerian children*

The use of CAM among children is prevalent around the world and it is widely used for children with chronic diseases.<sup>[3-11]</sup> Previous studies on CAM use in Nigerian children have mostly focused on children with chronic diseases such as epilepsy, asthma, sickle cell anemia, and HIV/AIDs.<sup>[12-14]</sup>

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**How to cite this article:** Christopher GO, Ozturk C. The prevalence and determinants of complementary medicine use for Nigerian children in the Turkish Republic of Northern Cyprus. *Niger J Clin Pract* 2020;23:1054-60.

### Access this article online

#### Quick Response Code:



Website: [www.njcponline.com](http://www.njcponline.com)

DOI: 10.4103/njcp.njcp\_577\_19

This study is the first of its kind carried out in the TRNC and it is focused on the usage of CAM among Nigerian children living in the country. The results of this research will provide recommendations for healthcare professionals in the TRNC to explore Nigerian parents' understanding and beliefs in CAM for their children. Besides, it will offer a global understanding regarding how people adhere to their belief system concerning CAM therapies for health when they move to another country. In addition, it will serve as a source of reference in this area for future research purposes.

## SUBJECTS AND METHODS

The research adopts a quantitative, descriptive, comparative, and cross-sectional study design carried out among Nigerian children living in the TRNC.

The recruitment of participants was performed using the snowball sampling technique. Consequently, initial participants provided multiple referrals for recruitment in the research. Snowball sampling is a "well-known, non-probability sampling method commonly used to recruit hidden and hard to reach populations."<sup>[15]</sup> It is also known as chain-referral sampling which involves the initial contact of a respondent with another respondent similar to rolling a snowball.<sup>[16]</sup> The snowball sampling technique was employed in this study relative as the population of Nigerian children living in TRNC is small and hard to reach.

A population of 57 Nigerian children was estimated at a 95% confidence level (CI), where the margin of error is 5%.

$$n = \frac{N \cdot X}{X + N - 1} (z_{\alpha/2} \cdot p(1 - p)) / MOE^2$$

*n* = sample size,

*p* = proportion of sample

MOE = margin of error

*N* = Population size

$z_{\alpha/2}$  = The critical value of the normal distribution at an  $\alpha/2$  (for a CI of 95%,  $\alpha$  is 0.05 and the critical value is 1.96)

Thus, *N* = 57, *P* = 0.5, MOE = 0.05, and  $z_{\alpha/2}$  = 1.96

$$X = \frac{1.96^2 \cdot 0.5(1 - 0.5)}{0.05^2} X = 384.16$$

$$n = \frac{57 \cdot 384.16}{384.16 + 57 - 1}$$

$$n = \frac{21897.12}{440.16} = 49.74 \quad 50$$

The researcher was able to reach a total of 59 participants, of which 50 of the parents responded.

Those parents who refused to participate showed no interest and some stated that they were very busy and therefore did not have sufficient time to participate. At the beginning of the study, it was determined by using statistical techniques that 50 participants were sufficient while calculating the sample. Later, an additional sample of 10% was planned because it was thought that there would be losses. For this reason, a total number of 59 people were initially included in the study but the study was completed with only 50 people due to losses. To eliminate bias, the characteristics of the individuals who refused to participate were compared with those of the main sample. It was decided that the characteristics of the main sample and the characteristics of those who refused to participate were similar and their lack of participation in the study would not adversely affect the results. Moreover, this was added to the limitations section as it was their right not to participate. Thus, efforts were made to eliminate bias.

Data were collected by interviews with structured and standardized open-ended and closed-ended questionnaires from February to April 2019. The researchers gave information about CAM therapies to the parents who participated to provide them with a better understanding of CAM, before administering the questionnaire. The questionnaire was shared by the researchers to the parents to obtain information about the use of CAM on their children. The average time taken to complete the questionnaire was only 15–20 min. Approval was obtained from Near East University/Health Sciences Institute, Ethics Review Board with the project no. (YDU/2018/63-666) on 22/11/2018.

A self-administered questionnaire was used to obtain information regarding CAM use in Nigerian children in the TRNC. The questionnaire was divided into two sections.

The first section of the questionnaire includes questions regarding the defining characteristics of both parents and children, CAM therapy used by parents, source of information on CAM use, CAM disclosure to physicians/nurse, reasons for non-disclosure, the amount spent on CAM per month, and the side effects of CAM.

The second section of the questionnaire is a standardized International-Complementary and Alternative Medicines-Questionnaire (I-CAM-Q) developed by researchers at the National Research Centre in Complementary and Alternative Medicine (NAFKAM) of the University of Tromso, Norway to measure the use of CAM and the pattern of CAM usage. The questionnaire was used since it is a common tool that provides comparisons across different populations.<sup>[17]</sup>

The second section of the questionnaire includes four major sets of questions regarding:

- Visiting healthcare providers
- Complementary treatments prescribed by physicians.
- Use of herbal medicine and dietary supplements including tablets, capsules, and liquids.
- Self-help practice.

The CAM products listed in the questionnaire included herbs/herbal medicines, vitamins/minerals, homeopathic remedies, and other supplements while the CAM practices listed included meditation, relaxation techniques, visualization, prayer, and attending traditional ceremonies. To conduct this study, permission to use the developed NAFKAM I-CAM-Q scale for data collection was obtained by the corresponding author.<sup>[17]</sup> Besides, ethical approval was obtained from Near East University/Health Sciences Institute with the project no. (YDU/2018/63-666) and informed written consent was also obtained from the parents.

The data were analyzed using IBM statistical packages for social sciences (SPSS) version 20 software. Multiple analyses were used to analyze variables with multiple responses. Chi-square tests were used to analyze the association between the parents' and child's defining characteristics and CAM use, where all levels of significance were set at  $P < 0.05$ .

## RESULTS

### Defining characteristics of both parents and children

Out of 50 parents that responded, 31 (62%) were CAM users while 19 (38%) were nonusers. The parents who were CAM users were predominantly females (54%), married parents (54%), educated up to university level (62%), self-employed (34%), Yoruba (26%), and Christians (56%). In terms of socioeconomic status, parents whose income was equal to their expenditures (24%) were mostly CAM users. The overall mean age of the parents was  $30 \pm 5.65$  years. The prevalence of CAM use among children was reported as 68% and the age range that mostly used CAM was 1–5 years, which accounted for 46%, with a mean age of  $3 \pm 2.17$  years. Male children (40%)

were reported to use CAM more than female children. It was confirmed that children without any current illnesses mostly used CAM representing (56%) and children who were in preschool (36%) were mostly CAM users.

### Prevalence and types of complementary and alternative medicine used by the parents

Vitamins/minerals were the most used CAM in the last 12 months among the children, which accounted for (82.4%), followed by herbs/herbal products (55.9%) usage and 8.8% of the children used other supplements, while the least used CAM was homeopathic remedies (2.9%). Furthermore, the results show that 57.9% of the children used herbs/herbal products to improve well-being, and 89.3% of the children used vitamins/minerals to improve well-being. However, homeopathic remedies were used for chronic illnesses (100%) and other supplements were mostly used for acute illnesses (66.7%) [Table 1]. Among the different CAM practices presented to the parents, meditation, relaxation techniques, and praying for health were reported to have been used in the last 12 months. The most used CAM practice by the parents for their children was praying for health (61.8%) followed by relaxation techniques (50.0%) and the least used was meditation, which accounted for (5.9%). The practices of meditation (50%), relaxation techniques (100%), and praying for health (85.7%) were mostly used to improve well-being [Table 2].

The most commonly used herbs/herbal products were shea butter (12%), honey (12%), ginger (12%), lemon (12%), followed by garlic (8%), turmeric (6%), aloe vera (4%), Dudu-Osun® (4%), kernel pomade (4%), anise (4%), while the least used were cinnamon (2%), oregano (2%), peppermint (2%), cloves (2%), willow bark (2%), Madam F. Kayes Bitters® (2%), and others accounted for (8%) [Figure 1].

### CAM recommendation/treatment received by physician

The parents indicated that joint manipulation (2%) and herbs (8%) were received as recommendations/treatments from a physician in the last 12 months.

**Table 1: Types of biological products, current use, the reason for use, and benefits of the use**

Biological products %	Current Use (%)		Reason for use (%)				Beneficial (%) (very and somewhat)
	Yes	No	Acute illness	Chronic illness	To improve well-being	Other	
Herbs/Herbal products 55.9%	84.2	15.8	26.3	0.0	57.9	15.8	89
Vitamins/ Mineral 82.4%	89.3	10.7	0.0	0.0	89.3	10.7	92.8
Homeopathic remedies 2.9%	0.0	100	0.0	100	0.0	0.0	100
Other supplements 8.8%	66.7	33.3	66.7	0%	33.3	0.0	100

\*Multiple responses allowed

**Table 2: Types of CAM practices, last used in 12 months, the reason for use and the benefits of the use**

CAM Practices	Used in the last 12 months (%)	Reason for use (%)				Beneficial (%) (very and somewhat)
		Acute illness	Chronic illness	To improve well-being	Other	
Meditation	5.9	50.0	0.0	50.0	0.0	100.0
Relaxation Techniques	50.0	0.0	0.0	100.0	0.0	88.3
Praying for Health	61.8	9.5	0.0	85.7	0.0	100.0

\*Multiple responses allowed

**Table 3: Association between CAM use and the defining characteristics of the parents and children**

Defining characteristics	CAM Use		Total	Chi-square Test
	Yes	No		
Parental use*	31	19	50	0.014
Socioeconomic status				0.275
Income is equal to expenditure	13	6	18	
Income is more than expenditure	6	3	9	
Income is less than expenditure	12	11	23	
Number of years spent in TRNC				0.417
Less than 1 year	4	2	6	
1-5 years	23	8	31	
More than 5 years	7	6	13	
Child's Gender				0.069
Male	20	5	25	
Female	14	11	25	
Child's age				0.261
Less than 1 year	8	6	14	
1-5 years	23	7	30	
6-10 years	3	3	6	
Child's current illness				0.106
Yes	5	0	5	
No	29	16	45	

$P < 0.05$ , \*Strength of association

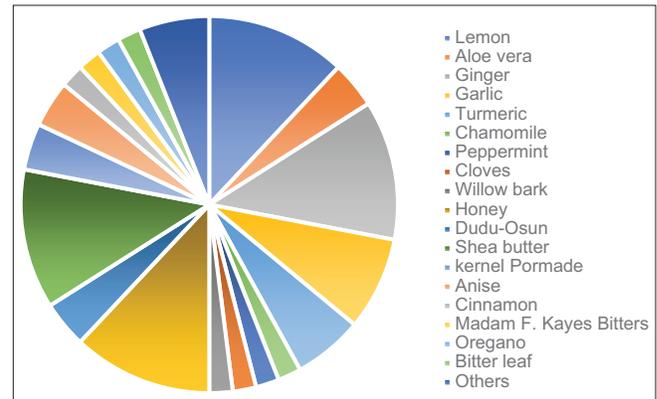
### Parents' sources of information for CAM use

The primary source of information for parents are relatives (36.0%). Other parents also stated that they received information on CAM use from friends (14.7%), neighbours (4.0%), television/radio (4.0%), CAM practitioners (4.0%), physicians (10.7%), nurses (6.7%), and newspapers (1.3%). About 9.3% of the parents responded that they used other sources of information.

### Perceived benefit and side effects of CAM use

Most parents (85.3%) perceived the benefits of using CAMs for their children. However, 14.7% of the children had experienced side effects from the use of CAMs.

The side effects perceived by the parents included skin rashes, skin discoloration, spots, skin burns, and eye infections.



**Figure 1: Different Herbs/Herbal Products used among the Children**

### Disclosure of CAM to physician/nurse

The majority of the parents (58%) had not disclosed CAM use to a physician/nurse while (42%) stated that they had disclosed CAM use for their children to a physician/nurse. Moreover, parents (74%) mostly stated that they would be willing to disclose CAM to a physician/nurse.

### The minimum and maximum amount spent on CAM monthly

It was found that the minimum and maximum amounts spent on CAM monthly were \$1 and \$33, respectively.

### CAM products bought from Nigeria and the TRNC

The parents indicated that CAM products were bought in both Nigeria (47.1%) and the TRNC (38.2%).

### Associations of CAM use among parents and the children

There was a correlation between parental use of CAM ( $P = 0.014$ ) and the child's use of CAM. Moreover, the parent's socioeconomic status ( $P = 0.275$ ), length of stay in the TRNC ( $P = 0.42$ ), child's gender (0.069), child's age ( $P = 0.261$ ), and child's current illness ( $P = 0.106$ ) had no association with the child's use of CAM [Table 3].

## DISCUSSION

This is a descriptive cross-sectional study on CAM usage among Nigerian children living in the TRNC. A self-administered NAFKAM I-CAM-Questionnaire

was used to investigate the prevalence of CAM use, types of CAM used, and the factors associated with the use of CAM among the population. The questionnaire was administered to 50 parents who provided detailed information about CAM use in their children.

The mean age of the children was  $3 \pm 2.17$  years with a range of 1 month–9 years of age. CAM was used more prevalently in the 1–5 age group than in the other age groups. Concurrently, Oren-Amit *et al.*<sup>[18]</sup> confirmed that CAM use is more common in children of 2–5 years of age than other age groups and he further explained that the disorders commonly experienced in infancy were the main motivation for the use of CAM. However, in the present study, “health maintenance” was the main motivation for use in this age group (1–5 years).

In this study, CAM use among children was determined to be prevalent, which is similar to other studies.<sup>[8,11,12,19]</sup> Children who had acute and chronic illnesses were all CAM users, although most children who used CAM were reported to have no illness. Most studies in the literature have reported the use of CAM in children with diseases.<sup>[3,5,8,20-22]</sup> However, no difference was found in terms of the rates of CAM use in children who had no disease and those with diseases. This study shows that among the Nigerian children researched, the male children used more CAM than their female counterparts, which is similar to studies carried out among the pediatric population in Nigeria.<sup>[12,13]</sup> Cultural values and belief systems were influential in the frequency of CAM usage among Nigerians.<sup>[23]</sup> Moreover, this finding supports previous studies suggesting that male children use CAM more than female children<sup>[11,24]</sup>; however, in other studies, female children were found to use CAM more than male children.<sup>[19,25]</sup>

The most commonly used CAM products in the last 12 months were vitamins/minerals followed by herbs/herbal products. Besides, praying for health was found to be the most used CAM practice in the last 12 months, followed by relaxation techniques. Most of the parents stated that they were currently using CAM products for their children. In Nigeria, biological and herbal CAM products are mostly used for children while the CAM practice of spiritual healing is mostly employed.<sup>[12-14,26,27]</sup> Nigerians are completely dependent on prayers and faith for their health, and the prevalence of prayer among Nigerians is due to their spiritual and supernatural beliefs.<sup>[28]</sup> There are variations in the type of CAM usage, which shows that environments and the nature of diseases have an impact on the type and pattern of CAM that is frequently used for children in different countries. The commonly used CAM therapies can be grouped under natural products, special diets,

and mind and body therapies.<sup>[21]</sup> In Iran, children who have hepatogastrointestinal diseases mostly use herbal remedies, followed by spiritual therapy as the most commonly used CAM practice.<sup>[8]</sup> In Western and Central Canada, the CAM products mostly used for children are multivitamins/minerals and herbal products, while the most frequently used CAM practices for children are “massage, chiropractic, relaxation, and aromatherapy.”<sup>[25]</sup> In another study on children with cancer, it was found that multivitamins/minerals (zinc) are the most used CAM products and faith healing is the most frequently used CAM practice.<sup>[3]</sup> Among Finnish children, vitamins/minerals were mostly used, while fatty oils/fatty and probiotics were also mentioned to be used, while the least used products were homeopathic medicines.<sup>[9]</sup> In Saudi Arabia, reciting of Quran (Muslims’ holy book) was the most commonly used CAM type for children followed by honey and ferula asafotida.<sup>[7]</sup> Studies in the United States have shown that children frequently use prayer, exercise, vitamin/mineral, supplements, massage, and physical therapy.<sup>[11]</sup> In Israel, the type of CAMs that are mostly used for colic and teething are herbal products, homeopathy, nutritional supplement.<sup>[18]</sup> In Turkey, an investigation revealed commonly used CAMs for children with epilepsy were herbs, special diet/nutritional supplements, and spiritual healing/prayer.<sup>[19]</sup> Besides, it was observed that wearing an evil eye bead, prayer, pouring lead, and wearing a charm as a traditional belief-based application for protection from the evil eye are the primary reasons for CAM application.<sup>[29]</sup> Ozturk *et al.*<sup>[24]</sup> reported that herbal therapy is used most often by parents for their children to treat respiratory and digestive problems. Nevertheless, Hartmann and colleagues<sup>[20]</sup> reported in their study that the most commonly used CAMs for children with epilepsy are homeopathy and osteopathy. However, homeopathy was found to be the least commonly used in the present study.

It was confirmed in the current study that the parents used herbs/herbal products such as Dudu-Osun®, Madam F. Kayes Bitters®, kernel pomade, shea butter, and bitter leaf, and these products were bought from Nigeria. Also, parents were mostly motivated to use CAM for enhancing well-being and the majority confirmed that the use of CAMs was somewhat helpful. However, in previous studies, parents were motivated to use CAM to treat diseases and to relieve the side effect of the conventional medicine used for their children.<sup>[30]</sup> Besides, due to the perception of the natural component of CAMs,<sup>[7]</sup> most parents said they used CAM to treat chronic diseases.<sup>[5,14,20]</sup>

The parents stated that CAM was primarily recommended by relatives and friends, while they also

received information from physicians and nurses. Other studies have confirmed that relatives and friends are the main sources of information.<sup>[10,13,14]</sup> Parents mostly knew about CAM from family and relatives because in Nigeria, “The culture and tradition of using CAM are handed from generation to generation, which was found to be associated with high use of CAM.”<sup>[31]</sup> In one study, it was reported that CAM use is also recommended to parents by physicians and other healthcare professionals including pharmacists and nurses.<sup>[18]</sup> In another study, the internet was found to be the primary source of information.<sup>[20]</sup>

In this study, few parents had received CAM treatment/recommendations from physicians to treat acute illness compared with improving well-being. On the contrary, Jenkins *et al.*<sup>[11]</sup> concluded that pediatricians mostly recommend CAM therapies to their pediatric patients because they believe that CAM is effective for reducing negative health symptoms in children. Mosavat *et al.*<sup>[8]</sup> discovered that pediatric patients who receive a recommendation for CAM by healthcare providers are more likely to use it.

Moreover, most parents stated that they had not disclosed the use of CAM to their physicians. When asked the reason for their non-disclosure, some of the responses included “they did not ask,” “most physicians do not accept the use of CAM,” “it is not safe to disclose the use of CAM,” “due to their negative response,” and “I feel the physicians do not know CAM.” Anigilaje *et al.*<sup>[13]</sup> and Adams *et al.*<sup>[25]</sup> showed that few parents disclose CAM to physicians. The findings of the present study are contrary to those of Hartmann *et al.*,<sup>[20]</sup> who revealed a high percentage of CAM disclosure to physicians. However, 74% of the parents in this study reported that they were willing to discuss CAM usage with physicians/nurses, which conforms to the findings of Oshikoya *et al.*<sup>[12]</sup> that most parents were willing to discuss CAM usage, but they were not asked.

The majority of parents (85.3%) perceived the benefits of CAM and 14.7% of the parents reported side effects. Bordbar *et al.*<sup>[3]</sup> reported similar findings, where 60.6–88.9% of respondents said there were benefits and 10.3% observed adverse effects. In this study, the side effects perceived by parents included skin rashes, skin discoloration, spots, skin burn, and eye infections. These findings are similar to those reported by other studies carried out on Nigerian children, which reported side effects of aspiration, eye damage, and burns/contractures.<sup>[26]</sup> Other studies have reported adverse effects such as the risk of bleeding,<sup>[30]</sup> drug interaction when used concurrently with conventional medicine,<sup>[18]</sup>

urticaria, abdominal pain, and nausea.<sup>[22]</sup> The monthly amount spent on CAM for chronic diseases is less than the monthly amount spent on CAM therapies in other studies<sup>[12,20]</sup> It was found in the present study that CAM is mostly used for improving well-being rather than treating diseases, which might be the reason for the low expenditure on CAM therapies.

CAM use in children increased if their parents were CAM users and this is similar to other findings.<sup>[7,24]</sup> There is no relationship between the parental socioeconomic status, number of years spent in the TRNC, child’s gender, child’s age, child’s current illness, and CAM use. In this population, children in the age group of 1–5 years mostly used CAM, but it cannot be concluded whether older children or younger children used CAM more because the age distribution was not proportionate. There was no association between the child’s age and the use of CAM, which was also revealed by Goker *et al.*<sup>[19]</sup> On the contrary, age was found to be significantly associated with CAM in the studies carried out by Mosavat *et al.*<sup>[8]</sup> and Oren-Amit *et al.*<sup>[18]</sup>

### Limitations

A self-administered questionnaire was used to evaluate CAM use for children, which is a significant limitation. The sampling technique was multiple-referral due to the difficulties encountered by the authors while estimating and recruiting the population of Nigerian children in the TRNC.

### CONCLUSION

CAM is used prevalently among the study population, with male children having the highest percentage of use. In this study, vitamins/minerals were the most widely used biological products used for Nigerian children in the TRNC while the parents also used herbs/herbal products for their children. Besides, it was discovered that some of the herbs/herbal products were bought from Nigeria. Due to the parent’s spiritual beliefs, prayer was the most used CAM practice in this population and CAM therapies were mostly used to improve the well-being of the children. It was also found that CAM use in children increased with parental use.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

- WHO. WHO Traditional Medicine Strategy 2014-2023. Available from: <http://www.who.int/medicines/areas/traditional/definitions/en/>. [updated 2019 September 25; Cited 2019 Mar 06].
- NCCAM. The use of Complementary and Alternative Medicine in the United States. Available from: <https://nccih.nih.gov/sites/nccam.nih.gov/files/camuse.pdf>. [updated 2019 September 25; cited April 17].
- Bordbar M, Kamfiroozi R, Fakhimi N, Jaafari Z, Zarei T, Haghpanah S. Complementary and alternative medicine in pediatric oncology patients in South of Iran. *Iran J Ped Hematol Oncol* 2016;6:216-27.
- Yeon G, Nam SO. The use of complementary and alternative medicine in children with common neurologic diseases. *Korean J Pediatr* 2016;59:313-8.
- Diorio C, Lam CG, Ladas EJ, Njuguna F, Afungchwi GM, Taromina K, *et al*. Global use of traditional and complementary medicine in childhood cancer: A systematic review. *J Glob Oncol* 2017;3:791-800.
- Ozturk C, Karatas H, Langler A, Schutze T, Bailey R, Zuzak TJ. Complementary and alternative medicine in pediatrics in Turkey. *World J Pediatr* 2014;10:299-305.
- Gad A, Al-Faris E, Al-Rowais N, Al-Rukban N. Use of complementary and alternative medicine for children: A parents' perspective. *Complement Ther Med* 2013;21:496-500.
- Mosavat SH, Heydari M, Hashempur MH, Dehghani SM. Use of complementary and alternative medicine among pediatric patients with hepatogastrointestinal diseases. *East Mediterr Health J* 2018;24:1018-25.
- Hameen-Anttila KP, Niskala UR, Siponen SM, Ahonen RS. The use of complementary and alternative medicine products in preceding two days among Finnish parents: A population survey. *BMC Complement Altern Med* 2011;11:107.
- Sharbatti SA, John LJ, Muttappallymyalil J, Sreedharan J, Arifulla M, Moussavi M, *et al*. Parent's opinion about the use of complementary an alternative medicine for their children: A cross-sectional study in Ajman, UAE. *Gulf Med J* 2013;S2:S113-6.
- Jenkins BN, Vincent N, Fortier MA. Differences in referral and use of complementary and alternative medicine between pediatric providers and patients. *Complement Ther Med* 2015;23:462-8.
- Oshikoya KA, Senbanjo IO, Njokanma OF, Soipe A. Use of complementary and alternative medicines for children with chronic health conditions in Lagos Nigeria. *BMC Complement Altern Med* 2008;8:1-8.
- Anigilaje EA, Olutola A, Dabit OJ, Akpan UM, Agbedeh AA, Bitto TT. The prevalence and the predictors of complementary and alternative medicine among children on highly active antiretroviral therapy in Makurdi, Nigeria. *Br J Med Res* 2014;4:5262-83.
- Oshikoya KA, Oreagba IA, Ogunleye OO, Hassan M, Senbanjo IO. Use of complementary medicines among HIV-infected Children in Lagos, Nigeria. *Complement Ther Clin Pract* 2014;20:118-24.
- Etikan I, Alkassim R, Abubakar S. Comparison of snowball sampling and sequential sampling technique. *BiomBiostat Int J* 2016;3:1-2.
- Jung M. Probability sampling method for a hidden population using respondent-driven sampling: Simulation for cancer survivor. *Asian Pac J Cancer Prev* 2015;16:4677-83.
- Quandt SA, Verhoef MJ, Arcury TA, Lewith GT, Steinsbekk A, Kristoffersen AE. Development to measure use of complementary and alternative medicine (I-CAM-Q). *J Altern Complement Med* 2009;15:331-9.
- Oren-Amit A, Berkovitch M, Bahat H, Goldman M, Kozer E, Ziv-Baran T, *et al*. Complementary and alternative medicine among hospitalized pediatric patients. *Complement Ther Med* 2017;31:49-52.
- Goker Z, Serin HM, Hesapcioglu S, Cakir M, Sonmez FM. Complementary and alternative medicine use in Turkish Children with epilepsy. *Complement Ther Med* 2012;20:441-6.
- Hartmann N, Neining MP, Bernard MK, Syrbes S, Nickel P, Merkschlager A, *et al*. Use of complementary and alternative medicine (CAM) by parents in their children and adolescents with epilepsy: Prevalence, predictors and parents' assessment. *Eur J Paediatr Neurol* 2016;20:11-9.
- Nath D. Complementary and alternative Medicine in the school-age child with autism. *J Pediatr Health Care* 2017;31:393-7.
- Yonekura S, Okamoto Y, Sakurai D, Sakurai T, Iinuma T, Yamamoto H, *et al*. Complementary and alternative medicine for allergic rhinitis in Japan. *Allergol Int* 2017;66:425-31.
- Busari AA, Mufutau MA. High prevalence and complementary and alternative medicine use among patients with sickle cell disease in a tertiary hospital in Lagos, South West, Nigeria. *BMC Complement Altern Med* 2017;17:299.
- Ozturk C, Karayagiz G. Exploration of the use of complementary and alternative medicine among Turkish children. *J Clin Nurs* 2008;17:2558-64.
- Adams D, Dagenais S, Clifford T, Baydala L, King WJ, Hervas-Malo M, *et al*. Complementary and alternative medicine use by pediatric specialty outpatients. *Pediatrics* 2013;131:225-32.
- Anigilaje EA, Anigilaje OO. Childhood convulsion: Inquiry about the concerns and home management among mothers in Tegbesun, a Periurban community in Illorin, Nigeria. *ISRN Pediatrics* 2012;2012:209609.
- Nwaiwu O, Oyelade OB. Traditional herbal medicines used in neonates and infants less than six months old in Lagos Nigeria. *Niger J Paed* 2016;43:40-5.
- Aliyu UM, Awosan KJ, Oche MO, Taiwo AO, Jimoh AO, Okafor EC. Prevalence and correlates of complementary and alternative medicine use among cancer patients in Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. *Niger J Clin Pract* 2017;20:1576-83.
- Tuncel T, Sen V, Kelekci S, Karabel M, Sahin C, Uluca U, *et al*. Use of complementary and alternative medicine in children who have no chronic disease. *Turk Pediatr Ars* 2014;49:148-53.
- Stubblefield S. Survey of complementary and alternative medicine in pediatric inpatient settings. *Complement Ther Med* 2017;35:20-4.
- Duru CB, Diwe KC, Uwakwe KA, Duru LA, Merenu IA, Iwu AC, *et al*. Combined orthodox and traditional medicine use among households on Orlu, Imo State, Nigeria: Prevalence and determinant. *World J Prev Med* 2016;4:5-11.