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Research Article

Determination of the Traditional and Complementary Medicine Methods Used by Parents for Their 7-14-Year-Old Children with Upper Respiratory Tract Infection and Their Attitudes

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Background: Traditional and complementary medicine methods are used by parents in children with upper respiratory tract infections, and parents should be informed about the side effects that may occur due to these methods. This study was conducted to determine the traditional and complementary medicine methods utilized by parents for their 7-14-year-old children with upper respiratory tract infections and their attitudes.

Method: A descriptive research design was used. The study was conducted between November 2023 and January 2024. Data were collected using a "Socio-Demographic Data Form" and the "Attitude towards Holistic Complementary and Alternative Medicine Scale." A total of 310 parents participated in the study online.

Results: The rate of parents' use of traditional and complementary medicine in children with upper respiratory tract infections was 91.6%. These methods that parents most frequently used were showering the child or tepid sponging in case of fever, giving the child milk with honey, ginger, molasses in case of sore throat, washing the child's nose with salt water in case of nasal congestion, putting a hot towel on the child's ear in case of earache, and giving the child honey-molasses to reduce/cut the cough. Parents' mean score on the Attitude towards Holistic Complementary and Alternative Medicine Scale was found to be 29.51±3.79. As the age of the child (β=1.258) and the economic status of the family (β=2.916) increased, parents' use of traditional and complementary medicine increased, as well.

Conclusion: The majority of parents used traditional and complementary medicine methods for their 7-14-year-old children who had upper respiratory tract infections. It was determined that parents' attitudes towards traditional and complementary medicine methods were positive and moderate.

Keywords: Child, Parents, Respiratory tract infection, Traditional medicine, Complementary medicine, Attitude

1. INTRODUCTION

Traditional and complementary medicine (TCM) practices in children are gradually becoming more common globally.[1] According to the World Health Organization, traditional medicine consists of applications that are used to prevent physical and mental diseases and diagnose and treat them, change according to cultures, and are based on the beliefs and experiences of societies. Complementary medicine is defined as various health practices that are not part of a country's tradition or conventional medicine and are not fully integrated into the health system.[2]

TCM, which is used to treat diseases in children and comfort them, is frequently used in children with upper respiratory tract infections (URTI).[3,4] URTI is among the most common childhood diseases and the most important causes of mortality and morbidity due to infectious diseases.[5,6] It has been determined that the rate of admission to hospital with URTI in children under the age of

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15 has globally increased, with the course of the disease being more severe. In addition, it has been determined that it has caused absenteeism in more than 20 million students.[6,7] According to the 2022 data from the Turkish Statistical Institute, URTI is the most common disease in children in the 0-14 age group. It ranks first in the 7-14 age group with the rate being 27.1%.[8]

Generally, parents turn to TCM methods as they think they are natural and harmless, easy to use, or cheap, do not require invasive interventions, support medical treatments, strengthen the immune system, or reduce disease symptoms. In addition, they use them when they cannot get results from modern medical practices, when they have negative experiences with healthcare personnel in the hospital, because they are afraid of the side effects of medical treatments, or because they find treatment methods painful. Apart from these, low or high socio-cultural level also affects the use of TCM methods.[1,9-13]

Although TCM methods are widely used, it has been determined that parents have inadequate knowledge about the side effects that these methods may have.[1,3] It has been determined that unconscious use of TCM methods affects the outcome of medical treatment and causes side effects.[11,14] To provide better quality and qualified care, doctors/nurses/healthcare workers need to know traditional and complementary medicine methods, their risks, and benefits, identify children using these methods, and inform society and parents.[1,15,16]

This study was carried out to determine the traditional and complementary medicine methods applied by parents for 7-14-year-old children with upper respiratory tract infections and their attitudes.

2. METHOD

2.1. Type and sample of the study

This is a descriptive type of research. The study was conducted with parents who had children aged 7-14 years and lived in the İzmir, Konya, and Hakkari provinces of Türkiye between November 2023 and January 2024. The necessary sample size for the study was calculated as the parents of 195 children on the G*Power 3.0 statistical analysis software, based on the status of children for developing a respiratory system infection, a Type I error of 0.05, a Type II error of 0.20 (a power value of 80%), and a medium effect size. In case the parametric test assumptions were not met, the sample was increased by 10% and the study was planned to be completed with 210 parents. The convenience sample method was used to select samples from the research population. In the study, data were collected using an online questionnaire created on Google Forms from parents through their social media accounts and e-mails. Inclusion criteria for parents were volunteering to participate in the research, literacy in Turkish, and having children between the ages of 7-14. A total of 310 parents participated in the study.

2.2. Data collection

Study data were collected using a "Socio-Demographic Data Form" and the "Attitude towards Holistic Complementary and Alternative Medicine Scale."

2.2.1. Socio-demographic data form

This form was prepared by the researchers following a literature review. It consists of nine questions about parents' age, education level, economic status, number of children, the child's chronic disease, family type, parents' sources of information about the TCM method. It consists of six questions TCM applications in respiratory tract infections (status of applying TCM, application time of TCM, reasons for using TCM methods, status of

benefiting from TCM methods, considering using TCM methods again, status of recommending TCM methods to others). It consists of five questions TCM methods implemented for symptoms of respiratory tract infections (applications for fever, sore throat, nasal congestion, earache, and cough).[15,16]

2.2.2. The Attitude toward Holistic Complementary and Alternative Medicine Scale (AHCAM)

This scale was developed by Hyland et al. in 2003[17], and its validity and reliability in Turkey were tested by Erci in 2003. The scale has two subscales: complementary alternative medicine (CAM) (items 2, 4, 6, 8, 9, and 11) and holistic health (HH) (items 1, 3, 5, 7, and 10). It is a six-point Likert-type scale and consists of 11 questions (1=strongly agree, 6=strongly disagree). Scores on the scale range from 11 to 66. As scores from the scale decrease, positive attitudes toward holistic complementary and alternative medicine increase. Cronbach's alpha value of the scale is 0.72.[18]

2.3. Data analysis

Study data were analyzed on the SPSS 24.0 (IBM SPSS version 24, USA) software. Mean, standard deviation, frequency, and percentage values were used to evaluate descriptive characteristics. The distribution of the data was examined with the skewness-kurtosis normality test. The predictive power of the independent variables on parents' mean scores on the total and subscales of the AHCAM scale was evaluated using a logistic regression analysis. VIF and tolerance analysis were used to determine whether there was multicollinearity between the variables and whether the variables should be included in the regression model. Variables with a VIF value of <10 and a tolerance value of 0.2 were included in the regression model. The significance level was taken as $p<0.05$.

3. RESULTS

The mean age was found as 37.90±5.62 (min=25, max=55) for mothers, 40.15±5.96 (min=28, max=59) for fathers, and 9.88±2.95 (min=7, max=14) for children. The mean number of children was 1.64±0.66 (min=1 and max=4). It was determined that 52.3% (n=162) of the children were female and 47.7% (n=148) were male. According to the results, 69.7% (n=216) of the mothers had completed the questionnaire, and 61.9% (n=192) of the mothers and 63.2% (n=196) of the fathers had an undergraduate degree. It was found that 65.5% (n=203) of the parents had equal income and expenses, 88.1% (n=273) of the children did not have any chronic disease, and 94.2% (n=292) had a nuclear family type. The examination of parents' sources of information about the TCM methods showed that 39.7% (n=123) had learned them from doctors/nurses/healthcare workers and 34.8% (n=108) from family members/relatives (Table 1).

According to parents' statements, 91.6% (n=284) used TCM applications for their children with upper respiratory tract infections. Of the parents who used TCM methods for their children, 49.0% used them before drug treatment, 56.1% used them because they strengthened immunity, 95.8% benefited from the TCM method, 96.8% thought of using them again, and 89.0% recommended the methods to others (Table 2).

The examination of the parents' traditional and complementary medicine methods to reduce fever indicated that 62.9% of the parents showered the child/gave a tepid sponge bath. To relieve a sore throat, 39.9% of the parents gave their children milk with honey. To relieve nasal congestion, 40.0% of the parents washed the child's nose with salt water. To relieve earache, it was found that 38.4% of the parents put a hot towel on the child's ear. To reduce/cut a cough,

32.6% of the parents gave their children honey-molasses (Table 2).

Parents' mean scores on the AHCAM were 21.04±2.96 on the complementary and alternative medicine sub-dimension, 8.47±2.80 on the holistic health sub-dimension, and 29.51±3.79 on the total scale (Table 3).

Logistic regression analysis was used to determine which variables predicted the use of traditional and complementary medicine. The result of the Hosmer and Lemeshow test showed that the model was appropriate and significant. Twelve variables in the model explained 34% of parents' use of traditional and complementary medicine. When the variables were examined one by one, it was determined that the significant variables affecting the parents' use of traditional and complementary medicine were the child's age, the income level of the family, and the scores of complementary alternative medicine and holistic health sub-dimensions. It was determined that the age of the child (β=1.258) increased parents' use of traditional and complementary medicine by 1.258 times, that is, as the age of the child increased, parents' use of traditional and complementary medicine increased. It was determined that the economic status of the family (β=2.916) increased parents' use of traditional and complementary medicine by 2.916 times, that is, as the economic status of the family increased, parents' use of traditional and complementary medicine increased, as well. It was found that the complementary alternative medicine sub-dimension of the AHCAM scale increased parents'use of traditional and complementary medicine by 0.629 times (β=0.629), that is, the use of traditional and complementary medicine by parents who had positive attitudes toward the use of complementary alternative medicine increased. The mean score of the holistic health sub-dimension increased parents' use of traditional and complementary medicine by 0.788 times (β=0.788), that is, the use of traditional and complementary medicine by parents who had positive attitudes toward holistic health increased (Table 4).

Table 1.

Participants' Descriptive Characteristics

Descriptive characteristics	**M±SD**	**Min-Max**
Child's age	9.88±2.95	7-14
Mother's age	37.90±5.62	25-55
Father's age	40.15±5.96	28-59
Number of children	1.64±0.66	1-4
	n	%
The questionnaire respondent		
Mother	216	69.7
Father	88	28.4
Other (caregiver, family member)	6	1.9
Gender		
Female	162	52.3
Male	148	47.7

Mother's education level		
Non-literate	1	0.3
Elementary school	2	0.6
Middle school	11	3.5
High school	74	23.9
Undergraduate	192	61.9
Master's degree/PhD	30	9.7
Father's education level		
Elementary school	4	1.3
Middle school	1	0.3
High school	52	16.8
Undergraduate	196	63.2
Master's degree/PhD	57	18.4
Level of income		
Income=expenses	203	65.5
Income>expenses	86	27.7
Income<expenses	21	6.8
Presence of chronic disease in the child		
Yes	37	11.9
No	273	88.1
Family type		
Core	292	94.2
Extended	18	5.8
Parents' information sources about TCM methods		
Doctor/nurse/healthcare worker	123	39.7
Family members/relatives	108	34.8
Neighbor/friend	28	9.0
TV-Radio	1	0.3
Internet	41	13.2
Book/newspaper/magazine	9	2.9

Table 2.

Parents' Attitudes, Behaviors, and Methods Regarding the Use of Traditional and Complementary Medicine for Children with Upper Respiratory Tract Infections

Traditional and complementary medicine attitudes and behaviors	n	%
Status of applying TCM methods		
Yes	284	91.6
No	26	8.4

Time of applying TCM		
Before medication treatment	152	49.0
With medications	93	30.0
When there is no response to medications	65	21.0
Reasons to use TCM methods		
No benefit of medical treatment	11	3.5
Fearing that medications may have side effects	44	14.2
Having to wait longer times in hospitals	4	1.3
The method is cheap and easily accessible.	13	4.2
It is harmless.	64	20.6
It strengthens immunity.	174	56.1
Status of benefitting from TCM methods		
Yes	297	95.8
No	13	4.2
Considering using TCM methods again		
Yes	300	96.8
No	10	3.2
Status of recommending TCM methods to others		
Yes	276	89.0
No	7	2.3
No knowledge of the methods	27	8.7
Traditional and complementary medicine methods	n	%
Applications to reduce fever		
Shower/tepid sponge bath	195	62.9
Wiping the body with vinegar water	89	28.7
Applying ice to the body	1	0.3
Applying a mixture of aspirin and lemon to the body	25	8.1
Applications to relieve a sore throat		
Using herbal tea (mint-lemon, linden, etc.)	105	33.9
Giving milk with honey, honey with ginger, molasses	121	39.9
Rinsing the mouth with apple vinegar	84	27.1
Applications to relieve nasal congestion		
Washing with salt water	124	40.0
Using vapor	81	26.1
Applying Vicks, thyme oil, or peppermint oil to the sides of the nose	96	31.0
Dropping olive oil into the nose	9	2.9

Applications to relieve earache		
Dropping glycerin/clean water into the ear	43	13.9
Dropping breast milk	50	16.1
Dropping onion juice	63	20.3
Dropping salt water	16	5.2
Dropping olive oil, ozone oil	19	6.1
Putting a hot towel on the ear	119	38.4
Applications to reduce/cut a cough		
Using herbal tea/herbal mixtures	99	31.9
Using honey and molasses	101	32.6
Applying vicks to the body	68	21.9
Massage or keeping warm (placing a towel on the back, etc.)	42	13.5

Table 3.

Mean Scores on the Attitude towards Holistic Complementary and Alternative Medicine Scale (AHCAM) and Its Sub-Dimensions

Scores	Minimum	Maximum	Mean±SD
Complementary and alternative medicine	9.0	30.00	21.04±2.96
Holistic health sub-dimension	5.0	29.00	8.47±2.80
Total AHCAM scale	16.00	45.00	29.51±3.79

Table 4.

Factors that Predicted Parents' Use of Traditional and Complementary Medicine in Children with Upper Respiratory Tract Infections

Variables							%95CI	
	Beta	Standard Error	Wald	Df	Sig.	Exp (B)	Lower	Upper
Child's age	0.230	0.101	5.198	1	0.023	1.258	1.033	1.533
Child's gender	0.074	0.515	0.021	1	0.885	1.077	0.393	2.953
Number of children	-0.210	0.389	0.292	1	0.589	0.810	0.378	1.736
Mother's age	-0.039	0.108	0.130	1	0.719	0.962	0.779	1.188
Mother's education level	0.293	0.390	0.564	1	0.453	1.340	0.624	2.877
Father's age	-0.093	0.106	0.773	1	0.379	0.911	0.741	1.121

Father's education level	-0.088	0.434	0.041	1	0.840	0.916	0.391	2.145
Income level of the family	1.070	0.505	4.488	1	0.034	2.916	1.083	7.849
Chronic illness status of the child	0.443	0.820	0.292	1	0.589	1.557	0.312	7.766
Family type	0.771	1.112	0.481	1	0.488	2.163	0.245	19.125
Complementary alternative medicine sub-dimension	-0.463	0.107	18.878	1	<.001	0.629	0.510	0.775
Holistic health sub-dimension	-0.238	0.067	12.795	1	<.001	0.788	0.692	0.898

Nagelkerke R Square: 0.337; Hosmer and Lemeshow test: Chi-square: 7.185, df: 8, Sig: 0.517; Omnibus test: Chi-square: 49.39, p<0.001.

4. DISCUSSION

Parents' use of TCM in children with upper respiratory tract infections is globally increasing.[1,3,19]Some studies have shown that parents' use of TCM in children with upper respiratory tract infections is high (11.6%-86.0%)[20-22], they use TCM methods before drug treatment, and that they benefit from them.[16,20] The findings of these studies are similar to our research results. The reasons why parents usually turn to TCM methods may have been that hospitals are usually crowded and far away, there is no referral system in family health centers despite easy access to them, parents think that hospitals cannot adequately meet their expectations and demands, some TCM methods can be easily applied in the home environment, and that these methods are considered natural and harmless.[23-25]

The examination of parents' sources of information about TCM methods in the literature indicated that they mostly obtained information from family members and relatives.[16,21, 20,26,27] These studies are not consistent with our research. In this study, doctors/nurses/healthcare workers were the first people to get information about TCM, which was followed by family members/relatives. There was no study in the literature showing that parents received information from doctors/nurses/healthcare workers about TCM methods to use in children with upper respiratory tract infections. It is thought that the reason for this situation may have been that the majority of the parents in our study were university graduates, that is, their education level was high. As a result of this study, we recommend that healthcare personnel, especially pediatric nurses who provide care for pediatric patients, should be informed about TCM methods and their side effects and that parents should also be informed accordingly.[26,28]

When parents' practices of traditional and complementary medicine methods to reduce fever were examined, it was found that most of them showered the child or gave a tepid sponge bath.[15,16,20,27] These studies are similar to our study. It is known that showering the child with warm water and applying a warm compress to decrease fever are correct practices while showering with cold water, applying cold compresses, ice, or a

mixture of aspirin and lemon to the body, and wiping the body with vinegar water are wrong practices.[16,20,29]It was determined that the majority of parents in this study resorted to the correct practice in decreasing fever, that is, they showered the child /gave a tepid sponge bath and that very few of them wiped the body with vinegar water. When the practices of parents to relieve a sore throat were examined, it was found that they gave the child milk with honey, honey with ginger, molasses, and herbal tea (mint-lemon, linden, etc.) and had them rinse their mouth with apple cider vinegar.[15,20] These results are consistent with our research results. Although usage rates vary across studies, the methods used to relieve a sore throat are similar. The practices used by parents to relieve nasal congestion mainly included washing the child's nose with salt water, which was followed by applying Vicks, thyme oil, or peppermint oil to the nose wings, using vapor, and dropping olive oil into the nose.[15,26,20] These results are similar to those of our research. Parents primarily preferred nasal irrigation with saline, especially in cases of nasal congestion, in this study, which was found significant. In the literature, it has been recommended that parents perform nasal irrigation with salt water as an alternative treatment method in cases of nasal congestion in children, especially in chronic and allergic sinusitis.[30,31] When the practices used to relieve earache were examined, it was determined that parents put a hot towel on the child's ear and applied drops of onion juice, breast milk, salt water, olive oil-ozone oil, and glycerin/clean water into the child's ear.[15,20] These studies are similar to our research. Since the effectiveness of these applications has not been fully proven, their use is controversial. The examination of practices to reduce/cut a cough indicated that the first method preferred by parents was to give honey and molasses to the child, and practices such as giving the child herbal tea/herbal mixtures, applying Vicks to the body and massage, or keeping warm (placing a towel on the back, etc.) were also performed.[15,16,27] These results are consistent with our research. Since studies on this subject are limited, more studies are needed.

The evaluation of the findings of this study showed that parents used traditional and complementary medicine practices to reduce fever, relieve a sore throat, nasal congestion, and earache, and reduce/cut a cough, which were not life-threatening practices.

In our study, the mean AHCAM score of the parents was found as 29.51±3.79. In a study conducted in the literature, parents' mean AHCAM score was found to be 26.19±7.52.[26]The results of our study are similar to those in the literature, and it was determined that parents' attitudes toward TCM methods were positive and moderate.

Many factors affect parents' use of traditional and complementary medicine in children.[26,32] In this study, it was determined that the child's age was effective in parents' use of TCM methods. It was found that as the child's age increased, parents' use of TCM increased, as well. It has also been stated in the literature that parents tend to use TCM as the child's age increases.[16]The result of our research is consistent with the literature. On the other hand, there are studies showing that the child's age and using TCM methods are not related.[21]Such a result in this study may have been that parents' use of TCM to cope with this situation may have increased due to the frequent occurrence of respiratory tract infections in crowded and closed environments when children started school. In this study, it was determined that the economic status of the family was effective in parents' use of TCM. It was found that as the economic status of the family increased, parents' use of TCM increased, as well. In a study,

families with high economic status reported that they frequently used TCM for their children.[32] There are studies in the literature showing that income level and TCM use are not related.[26,33,34] This study showed that parents' good economic status allowed them to access TCM methods more easily. Similar to the studies in the literature, no relationship was found in our study between parents' use of TCM and the child's gender, the number of children, parents' age and education level, the child's chronic disease status, and family type.[26,32] The differences or similarities between factors affecting parents' use of traditional and complementary medicine in children with upper respiratory tract infections in our study and other studies may have been due to cultural differences or different measurement tools used to measure traditional and complementary medicine practices.

Limitations of our study:

This study has several limitations. The use of a convenience sample method is a limitation. Therefore, its generalizability may be limited. Another limitation is that parents filled out the questionnaire based on self-report, which may have led to biases. However, it is thought that the participation of parents from three regions of Turkey in the study and the large sample size may have reduced this limitation.

5. CONCLUSIONS

It was determined that parents' attitudes towards TCM methods that they applied to their 7-14-year-old children with upper respiratory tract infections were positive and moderate. The majority of parents used TCM methods for children with upper respiratory tract infections. According to the results, parents applied traditional and complementary medicine methods to their children to intervene in some health disturbances. For example, they preferred showering the child or tepid sponging to reduce fever, giving the child milk with honey, a mixture of ginger and honey, or molasses to relieve a sore throat, washing the child's nose with salt water to relieve nasal congestion, putting a hot towel on the child's ear to relieve earache, and giving the child honey and molasses to reduce/cut a cough. As a result of the logistic regression analysis in the study, it was determined that the age of the child and the economic status of the family were variables that significantly predicted parents' use of traditional and complementary medicine methods. It is recommended to conduct correlational type studies with larger samples to reveal the relationship between sociodemographic characteristics and TCM use. Parents' interest in TCM methods requires all healthcare personnel, especially pediatric nurses, to have comprehensive knowledge about these methods. Parents and society should be educated about the correct use of them.

Declaration of interests:

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

Author Contributions:

Idea/Concept: DDK, ŞD, MB; Design: DDK, ŞD, MB; Control/Supervision: DDK, ŞD, MB; Data Collection and/or Processing: DDK, ŞD; Analysis and/or Interpretation: DDK, MB; Literature Review: DDK, ŞD, MB ektaş; Writing the Article: DDK, ŞD, MB; Critical Review: DDK, ŞD, MB.

Ethics Committee:

The approval of the ethics committee of a university (date: 30.10.2023, decision number: 2023/116-1) and the permission of the author of the scale to be used in the study were obtained. Parents who agreed to participate in the research were asked to read and mark the informed consent section on the online data collection form. Those who checked the approval box were allowed to access

the rest of the data collection form. The study was conducted in accordance with the principles of the Declaration of Helsinki.

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