

ORIGINAL RESEARCH

Traditional and Complementary Medicine Practices Used by Mothers in the Treatment of Acute Upper Respiratory Tract Infections in Children

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Abstract

Objective: The aim of this study was to determine the traditional and complementary medicine methods used by mothers of children with acute upper respiratory tract infection.

Material-Method: We conducted a survey study with questions regarding the traditional and complementary medicine methods used by mothers of 300 children aged 2-12 years who presented to the pediatric outpatient clinic with symptoms of acute upper respiratory tract infections.

Results: Eighty-six point seven percent of mothers reported using traditional and complementary medicine (T&CM) practices at varying frequencies. When asked about the frequency of using non-pharmacological treatment options, 36.4% stated that they always preferred these methods, while 40.6% said they sometimes did. It was observed that 42.3% of mothers started alternative treatments before visiting a doctor, while 40.6% used T&CM after seeing a doctor if they could not get better with the medication prescribed by the doctor. The most common reason for choosing T&CM methods, cited by 50.3% of respondents, was the belief that these treatments are natural and harmless. The most frequently performed practices included giving honey to reduce coughing (36%) and using lukewarm baths to lower fever (74.3%), as well as rinsing nasal congestion with saline or saltwater (48.3%). The information sources regarding these practices were family members (60.6%) and the internet or social media (50.3%). No statistically significance was found between mothers' ages, educational levels, or employment status and the use of T&CM for upper respiratory tract infections.

Conclusion: We found that mothers frequently used various T&CM methods, and that incorrect treatments were common. Families should be informed about what constitutes correct and incorrect treatment practices, and they should be warned about the potential side effects of incorrect treatments.

Key words: Traditional and Complementary Medicine, Mother, Acute Respiratory Tract Infections

INTRODUCTION

According to the World Health Organization (WHO), Traditional medicine is the sum total of the knowledge, skill, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses. The terms “complementary medicine” refer to a broad set of health care practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant health-care system. They are used interchangeably with traditional medicine in some countries.¹ Although Traditional and Complementary Medicine (T&CM) practices are predominantly recognized within Eastern medicine, their utilization extends

across nearly all societies. Recent studies indicate a growing popularity of T&CM practices in Western societies, including the United States, as well as in our own country.^{2,3}

T&CM methods are used to support medical treatments, sometimes applied when there is no response to drug treatment, and sometimes alone. Acute upper respiratory tract infections are the most common infections in children. Approximately 40% of the patients admitted to paediatric outpatient clinics are children with respiratory tract infections.⁴ Upper respiratory tract infections such as laryngitis, pharyngitis, nasopharyngitis and rhinitis are among the most common diseases. The most common symptoms of upper respiratory tract infections include cough, sore throat, nasal congestion, fever and headache. In children, upper respiratory tract

infections may progress to lower respiratory tract infections, leading to a worsening clinical condition.⁵ Although T&CM treatments are used in various diseases, it has been shown in many studies that they are frequently used in upper respiratory tract infections.⁶

This study investigates the frequency and reasons for the preference of T&CM methods used by mothers of children presenting with upper respiratory tract infections at our outpatient clinic, and also the knowledge and attitudes of the mothers about these methods.

MATERIALS AND METHODS

Between July 2024 and October 2024, mothers of children aged 2-12 years who presented to the Pediatrics Outpatient Clinic of Düzce University Hospital with complaints such as cough, fever, sore throat, nasal congestion, earache and were diagnosed with upper respiratory tract infection constituted the study group. The questionnaire form consisted of seventeen questions covering personal information and questions about T&CM practices. The questionnaire forms were completed through face-to-face interviews with the mothers who consented to participate in the study. The researchers collected information about the circumstances, frequency, timing and reasons of T&CM use; sources of information about them, thoughts about their effectiveness, and whether they would recommend them to others. Ethical approval

was obtained from the ethics committee of Düzce University (Date/Number: 10.06.2024/119).

Statistical analysis

The data in the questionnaire forms were uploaded to SPSS 21.0 statistical programme and statistical analyses were performed. Categorical variables were shown as frequency and percentage. Continuous variables with normal distribution were presented as mean \pm standard deviation. The Mann-Whitney U test was used to compare two groups of continuous variables with independent samples. The Chi-square test was used for the analysis of categorical data, and the relationship between the significant variables and T&CM use was determined by Spearman correlation analysis. A p-value of $p < 0.05$ was considered significant.

RESULTS

Three hundred children with upper respiratory tract infections and their mothers were included in our study. Among the children, 153 (51%) were girls and 147 (49%) were boys. The mean age of the children was 8.8 ± 4.2 years. It was found that 1% of the mothers included in the study were illiterate, 23% had a university degree, 73% were housewives, and 49.6% were between the ages of 30-40 (Table 1). No statistically significant difference was found between the mothers' age ($p=0.25$), educational status ($p=0.89$) and employment status ($p=0.88$) and the use of T&CM for upper respiratory tract infections ($p > 0.05$).

Table 1. Demographic data of the mothers who participated in the study

Age	n	%
< 20	14	4,6
20-30	51	17
30-40	149	49,6
> 40	86	28,6
Mothers profession		
Housewife	219	73
Civil servant	34	11,3
Worker	43	14,3
Tradespeople	4	1,3
Educational level		
Illiterate	3	1
Primary school	70	23,3
Secondary school	74	24,6
High school	84	28
University	69	23

When we asked the mothers participating in the study what they would do first in cases such as fever, cough, sore throat, earache, nasal congestion and runny nose in their children, 47% answered that they would go to a doctor, 23% said they would try non-pharmaceutical methods at home, and 30% indicated they would use medications available at

home. When asked whether they use non-pharmacological methods at home when their children have upper respiratory tract infection symptoms, 13.3% stated that they never use them, 36.4% always, 40.7% sometimes, and 9.6% rarely use T&CM methods.

42.3% of mothers reported using these practices

before visiting a doctor, 40.6% stated that they used them after seeing a doctor, and 17% stated that they started using them before going to a doctor and continued them after the doctor's visit.

50.3% of mothers said that they used T&CM methods because they considered them to be natural and harmless. When asked about the sources from which they learned about T&CM methods for their

children, 60.6% stated that they learned them from their close environment (family, friends), 50.3% indicated that they had obtained the information from media tools (internet, TV, social media). Additionally, 39.6% of mothers who used T&CM methods for their children were observed to recommend them to others (Table 2).

Table 2. Distribution of mothers' use of T&CM

Reasons for using T&CM	n	%
Thinking that it is natural, harmless	151	50,3
Difficulty of finding doctor's appointment	44	14,6
Fear of side effects of medication	37	12,3
Easier and cheaper	15	5
No benefit from medical treatment	14	4,6
Habit	10	3,3
Source from which T&CM is learned		
Close environment (Family, friends)	182	60,6
Media (internet, social media, TV)	151	50,3
Herbalist	3	1
Suggesting the T&CM method		
Yes	119	39,6
No	181	60,3

The study identified various Traditional and Complementary Medicine (T&CM) methods used by mothers whose children exhibited symptoms of

respiratory tract infections, such as fever, cough, sore throat, ear pain, and nasal congestion. The methods used are summarised in Table 3.

Table 3. T&CM practices of mothers in upper respiratory tract complaints

Practices to reduce fever	n	%
Lukewarm bath	233	74,3
Putting a cloth soaked in cold water	86	28,6
I do not apply non-medication	40	13,3
Wiping with vinegar water	26	8,6
Wiping with cologne	0	0
Sweating under the duvet	0	0
Practices to alleviate coughing		
I do not apply non-medication	124	41,3
Honey	108	36
Herbal tea (linden, mint, thyme)	72	24
Molasses	48	16
Horseradish-honey	12	4
Onion-honey	7	2,3
Giving garlic	3	1
Practices to reduce sore throat		
I do not apply non-medication	130	43,3
Honey	98	32,6
Soup	69	23
Milk with honey	50	16,6
Herbal tea (linden, mint, thyme)	42	14
Vinegar	39	13
Lemon	21	7
Practices for relieving ear pain		
I do not apply non-medication	271	90,3
Onion juice instillation	13	4,3
Dripping vegetable oils (udi turkey oil, lavender oil, almond oil)	8	2,6
Breast milk instillation	7	2,3
Butter dripping	3	1
Practices to relieve nasal congestion		
Nasal washing (with saline, saline solution)	145	48,3
I do not apply non-medication	137	45,6
Fogging	26	8,6
Dripping vegetable oils (udi turkey oil, lavender oil, almond oil)	7	2,3

The rate of lukewarm bath, which was accepted as

the correct method to reduce fever, was found to be

74.3%, while incorrect applications were observed in 37.2% of cases. The most commonly used method to alleviate cough was giving honey (36%) and offering herbal teas such as mint or linden (24%). The most common methods used by mothers to reduce sore throat were giving honey (32.6%) and offering soup (23%). While 90.3% of mothers stated that they did not use any non-pharmaceutical applications for ear pain, the rate of those who used wrong application was 10.3%. When asked about the methods used to alleviate nasal congestion, 48.3% of mothers reported using saline solution or saltwater for nasal irrigation, while 45.6% stated that they did not use any non-pharmacological intervention.

When we asked the mothers whether they would try non-medical methods they first encountered on social media or television for their children, 75.6% said they would never try them, 17% said they would try them if the person recommending was a doctor, 6.3% stated they would try them if they were a herbal product, and 1% said they would try them if they were recommended by a favourite influencer. When asked whether they think every product labelled as “herbal” or “natural” is natural and harmless, 88.6% answered “no”, while 11.4% said “yes”. When we asked the mothers whether they would use supplements labelled as containing herbal ingredients to prevent their children from getting sick, 57.3% of the mothers said “no”, 22.7% said “yes”, 20% said “I don’t use them, but I am considering whether I should”.

DISCUSSION

Studies show that the use of T&CM therapies is becoming increasingly popular all over the world, including European countries and the United States of America. In publications from European countries, the use of T&CM treatment is reported to be 56% (range: 10-90%) in adults and 45% (range: 5-90%) in children.⁷

In a meta-analysis of 17631 children in the UK, the average rate of T&CM use within 1 year was 34% (range: 20-41) and the lifetime use rate was 42% (range: 29-61). 48.3% (range: 14-61) of patients/parents stated that they thought T&CM was useful.⁸ In the United States of America, the average rate of T&CM use in children was reported to be 11.6%.⁹ Although the frequency varies in our country, it is observed to be practised in all regions. In a review conducted in Turkey, the average rate of T&CM use was found to be 60% (standard deviation±17%, range: 26%-87%).¹⁰ In a study

conducted with children with respiratory tract infection and their parents, Topaloğlu et al. found that 93.7% of parents and Aydın et al. found that 69.4% of parents applied T&CM.^{11,12}

As a result of our questionnaire study, we determined the rate of T&CM use by mothers who applied to the Pediatrics Outpatient Clinic of our hospital with the complaint of upper respiratory tract infection as 86.7%. Although this rate seems to be considerably higher than the data in Europe and the USA, it is similar to studies conducted in Turkey. We believe that the high proportion of this response is due to the fact that our study only included patients with upper respiratory tract infections.

There are differences in the demographic characteristics and health status of T&CM users. Health-related and sociodemographic determinants of T&CM treatments were analysed in Europe and it has been found that the use of T&CM is more prevalent among women, individuals with higher levels of education, those with higher income levels, and people with long-standing health issues.^{13,14} In some studies conducted in Turkey, it was determined that the frequency of T&CM use decreased as the educational level of parents increased.^{11,15,16} However, in the study by Bozkaya et al. it was observed that the use of T&CM was less in older parents and no significant difference was found between education level and T&CM usage.¹⁷ In our study, we did not find any relationship between maternal age, maternal employment and maternal education level and T&CM use.

In our study, 86.7% of mothers reported using T&CM practices with varying frequencies when their children experienced upper respiratory tract infections. When asked about the frequency of T&CM applications, 36.4% stated they always used them and 40.6% sometimes preferred them; Additionally 42.3% used these applications before going to a doctor. In contrast, In the study by Aydın et al. it was found that 100% of mothers used T&CM methods for respiratory tract infections, 38.2% sometimes used them, and 43.6% used these practices before drug treatment, similar to our study.¹²

In the study by Topaloğlu et al., the sources of information for T&CM methods were found to be 71.3% from close social circles (family and friends) and 11% from media outlets (TV, internet, social media). In the study of Bozkaya et al. 56% of the participants said that they learnt about alternative treatment methods from family and 37.6% from

media organs. Similarly, Hepokur et al. found that the information sources of the mothers were 38.9% close environment (relatives, friends, neighbours, etc.), 24.8% media (TV, Internet, etc.), 22.2% health professionals (doctor, pharmacist, nurse, etc.). In our study, when the mothers who used T&CM methods in their children were asked where they had learned about these methods, 60.6% stated learning from their close environment (family, friends) and 50.3% from media tools (internet, TV, social media). This increase in the proportion of media tools in our study may be due to the more widespread use of social media and the internet over the years and which has a greater influence on people. This shows that social media, internet and television are tools that should be used more frequently by health professionals to convey accurate information about T&CM methods to the public.^{11,17,18}

In previous studies, it has been found that the frequency of alternative treatment use in people with chronic diseases is higher than the normal population. Although our study was not conducted in patients with chronic diseases, it is meaningful in terms of showing that the use of T&CM is quite common in acute diseases with a usage rate of 87.6%.¹⁹

When their children had fever, 74.3% of the mothers used warm shower, which is accepted as the correct practice to reduce fever, while the rate of incorrect practices (wiping with vinegar water 8.6%, putting a cloth soaked with cold water 28.6%) was found to be 37.2%. Wiping with vinegar water had previously been reported in studies from earlier years at rates of 27.5% and 25.4%. The reduction in the proportion of incorrect practices in our study, along with the absence of practices such as wiping with cologne or inducing sweating by covering with heavy blankets, and the increase in the frequency of correct practices, is encouraging.^{16,20}

Cough in children is the most common symptom after fever in upper respiratory tract infections. It is known that many applications such as giving honey, molasses, lemon, herbal tea, giving horseradish-honey, onion-honey mixtures, putting hot towel, wool on the chest, applying butter on the chest, applying batikon are used to reduce cough. Among these alternative applications, giving honey is accepted as a correct application. In meta-analyses, honey has been shown to reduce symptoms of upper respiratory tract infections and cough.²¹ In the study of Büyük et al, 72.8% of mothers gave teas prepared from herbs such as linden and mint to relieve cough,

73.3% of mothers increase the consumption of fruits like tangerine, orange and lemon to alleviate cough of the child and 19.4% of the mothers tried to relieve cough by giving the child milk with honey. The rate of mothers applying vicks to the body of a coughing child and using steam inhalation at home was found to be 15%. No mothers in the study were reported to have not used T&CM methods.²² In our study, the most commonly used method to reduce cough was giving honey with a rate of 36% and giving herbal tea such as mint and linden with a rate of 24%, again similar to the studies. However, in our study, the rate of mothers not using any T&CM method for cough was 41.3% which is higher compared to the data available in the literature.

It is known that various non-drug applications are used in sore throat, ear pain and nasal congestion, which are other findings of upper respiratory tract infection. In the study published by Aydın et al. in 2015, 60.1% of the non-pharmacological applications used to relieve sore throat were determined as drinking herbal tea, 25.5% honey, 8.6% gargling with apple cider vinegar, 5.9% black cumin.¹² In the study conducted by Ozyazicioglu et al. in Kars in 2010, when ear pain was observed in children, mothers used harmful practices such as giving aspirin or ear drops to their children 41.1%, using evil eye beads 9.9%, blowing cigarette smoke or a few drops of breast milk, dripping olive oil 4.8%, pouring salt or sugar into the ear and then dripping garlic juice on it 4.5%, covering the ear with cotton or soil or putting cooked onion wrapped in cloth in the ear 4.3%.²³ In the study conducted by Efe et al. in Antalya, the practices performed by mothers to their children when their children had ear pain were as follows: taking them to a health institution 41.8%, dripping breast milk 30.3%, dripping the juice of plants and different substances (fig, apple, onion, garlic juice, cologne-lemon juice, oxygenated water, salty water) 7.2%, doing nothing, waiting for it to pass 13.3%, dripping olive oil, glycerin, putting cotton wool with vaseline 2.9%, putting cotton wool with urine, putting house dust 0.4% shouting in the ear, blowing cigarette smoke, putting a hot cloth, lying on the aching side 1.8%.²⁴ In a study conducted by Yaman et al. in Erzurum in 1994, it was found that 21.1% of mothers applied butter mixed with sugar to the nose to relieve nasal congestion, 6.7% dripped breast milk into the nose and 5.9% dripped butter into the nose.²⁵ In our study, the most common methods used by mothers to reduce sore throat were giving honey (32.6%) and giving soup (23%). While 90.3%

of mothers stated that they did not use any non-pharmaceutical application to reduce earache, the rate of those who used wrong application was 9.7%. When asked about the methods used to reduce nasal congestion, 48.3% of mothers stated that they washed their nose with saline or saline solution, and 45.6% stated that they did not use non-pharmaceutical applications. Only 2.3% of the participants said that they dripped herbal oils (udi turkey oil, lavender oil, almond oil). In our study, we observed that the frequency of misapplication decreased compared to the studies conducted in previous years. This may be due to both the increase in the level of knowledge over the years and the geographical regions, cultural and demographic characteristics of the regions where the studies were conducted.

In our study, 50.3% of mothers said that they used the T&CM methods because they found them natural and harmless. When we asked mothers whether they believed that every product labeled as 'herbal' or 'natural' is truly natural and harmless, 88.6% answered 'no,' while 11.4% responded 'yes.' When we asked mothers whether they use supplements with herbal ingredients to prevent their children from getting sick, 57.3% of mothers said "no", 22.7% said "yes", 20% responded "I don't use them, but I am considering whether I should." Herbal medicines are often considered safe treatment options because they are perceived as "natural". However, this belief can lead to the oversight of potential side effects and harmful effects that these treatments may have. However, studies have shown that not all of them are safe for direct human use, especially in paediatric patients.²⁶

Studies have shown that it can have a strong toxic effect, which may lead to complications such as treatment delays, drug interactions when used with medications, poisoning, nausea, vomiting, headache, dermatitis, even more severe results like respiratory failure, chronic liver damage and renal failure.²⁷

CONCLUSION

When all these results are combined, we found that the use of T&CM in our study was more deliberate, with fewer incorrect applications compared to previous studies. We think that this may be due to the socio-economic and cultural differences of the region where we conducted our study as well as the increasing use of the internet and media outlets. However, harmful and wrong non-medical practices were still being used. Therefore, in order to inform families about the use of T&CM and to eliminate the negative effects that may be experienced by choosing the right T&CM methods, it would be useful for the Ministry of Health to make informative shares and public spots through mass media and to increase the level of knowledge of physicians and healthcare professionals about T&CM.

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