INTRODUCTION

Respiratory tract infections (RTIs) are one of the most common diseases in children. They mostly have a viral origin and disturb the larynx, throat, trachea, mouth, and nose. The most common symptoms are cough, fever, nasal congestion, runny nose, and sore throat. RTIs can be frustrating for both children and their parents, affecting daily activities as well as respiratory symptoms.

To treat the symptoms of simple health problems, individuals look for approaches that they can easily apply at home. These methods, which are included in complementary and alternative medicine (CAM) applications, are used in all age groups, including children. Complementary and alternative medicinal practices, especially herbals are frequently used for managing symptoms of RTIs in children. Studies in pediatric patients showed that herbal remedies are often used to treat coughs and colds.

Although many plants are used for RTI symptoms, studies on the safe use of these plants in children are incomplete. There are ethical and moral limitations. Moreover, children have different physiology than adults and scientific data explaining the effectiveness of herbal products, their interaction with drugs and their side effects are lacking for all age groups.
The aim of this study was to determine the plant drugs and herbal products used by the families of children mostly suffering from viral upper respiratory tract symptoms. In this study, applications and products other than plants used by families for their children were also investigated. In this large-scale research, types of teas, preparation techniques of the teas, the herbs used in the teas, their preparation, the quantity and frequency of applications of those teas are examined.

**MATERIALS AND METHODS**

The research was conducted as a cross-sectional survey at the Department of Pediatric Infectious Disease in General Pediatrics at the Faculty of Medicine, Gazi University between July 1st 2020 and September 1st 2020. The approval was obtained for this study from the Ethics Committee at Gazi University (12.05.2020-E.54135). All the participants voluntarily participated in the study. The research was conducted with the families of the patients, who applied to the hospital with the symptoms of viral upper RTI. The questionnaire was prepared based on the relevant literature and applied to the patients with face-to-face by the researchers. Cough, rhinorrhea, nasal congestion, sore throat, and fever were determined as symptoms of upper RTI and their presence in children was questioned. In the first part of the questionnaire, the descriptive characteristics of the participants and their children were examined and 250 individuals were included in the study. Since the amount of the salary can change in numbers in our country, respondents were asked to categorize their family income as “very low”, “low”, “middle”, “good” or “excellent”. In the next sections, herbal and non-pharmacological applications used for upper respiratory tract symptoms are presented. In addition to questions with two options such as “yes” and “no,” “multiple response” questions, where more than one option can be selected were also included. The preparation technique, frequency and amount of used herbal teas were also examined. Herbal tea preparation techniques were classified as infusion, decoction, and maceration. The infusion is defined as brewing with boiling water, decoction is adding cold water and boiling with it, and maceration is adding water, keeping it at room temperature by shaking occasionally.

**Statistical analysis**

The data obtained from the study were analyzed with the Statistical Package for the Social Sciences (SPSS) 26.0 statistical program. The frequency of participant responses is shown in the accompanying tables and figures. Cross tables were created to correlate the responses and chi-square tests were conducted. The level of significance for all statistical analyzes was accepted as $p<0.05$.

**RESULTS**

**Characteristics of participants and children**

The characteristics of the participants and children are shown in detail in Table 1. A total of 250 individuals participated in this study, in which 72.0% were mothers, 25.2% were fathers, and

| Characteristics                        | Number (n) | Percentage (%) |
|----------------------------------------|------------|----------------|
| Child’s gender                         |            |                |
| Girl                                   | 130        | 52.0           |
| Boy                                    | 120        | 48.0           |
| Child’s age                            |            |                |
| 0-2                                    | 58         | 23.2           |
| 3-6                                    | 70         | 28.0           |
| 7-11                                   | 59         | 23.6           |
| 12-17                                  | 63         | 25.2           |
| *Child’s symptoms                      |            |                |
| Cough                                  | 162        | 25.8           |
| Rhinorrhea                             | 129        | 20.5           |
| Nasal congestion                       | 119        | 18.9           |
| Fever                                  | 92         | 14.6           |
| Sore throat                            | 84         | 13.4           |
| Other                                  | 43         | 6.8            |
| Children having chronic diseases       |            |                |
| Yes                                    | 36         | 14.4           |
| No                                     | 214        | 85.6           |
| Children having a regular medication intake |          |                |
| Yes                                    | 42         | 16.8           |
| No                                     | 208        | 83.2           |
| Participant’s relationship to child    |            |                |
| Mother                                 | 180        | 72.0           |
| Father                                 | 63         | 25.2           |
| Other                                  | 7          | 2.8            |
| Participant’s age                      |            |                |
| 18-29                                  | 56         | 22.4           |
| 30-44                                  | 163        | 65.2           |
| 45-59                                  | 28         | 11.2           |
| ≥60                                    | 3          | 1.2            |
| Participant’s education                |            |                |
| Illiterate                             | 6          | 2.4            |
| Literate                               | 4          | 1.6            |
| Primary school graduate                | 33         | 13.2           |
| Secondary school graduate              | 48         | 19.2           |
| High school graduate                   | 74         | 29.6           |
| University graduate                    | 73         | 29.2           |
| Master’s and PhD                       | 12         | 4.8            |
| Family income                          |            |                |
| Very low                               | 2          | 0.8            |
| Low                                    | 15         | 6.0            |
| Middle                                 | 161        | 64.4           |
| Good                                   | 68         | 27.2           |
| Excellent                              | 4          | 1.6            |
| Residence                              |            |                |
| City center                            | 163        | 65.2           |
| District                               | 83         | 33.2           |
| Other                                  | 4          | 1.6            |

*Multiple response
2.8% were other individuals. Most individuals (65.2%) between the ages of 30 and 44 and more than half of the participants (65.2%) reside in the city center, moreover, about 65% of respondents described their family income as “middle”. As for the education of the participants 29.6% of the participants are high school graduates, 29.2% are university graduates and 4.8% are postgraduate.

The participated children were mostly between the ages of 3 and 6 (28.0%), 52% of the children were girls and 48% were boys, who generally did not have chronic illnesses or did not take regular medications. The most common upper respiratory tract symptoms in children were cough (25.8%) followed by rhinorrhea (20.5%).

**Use of non-pharmaceutical products**

Non-drug applications and products used are given in Table 2 and symbolized in Figure 1. The number of participants who applied or did not apply anything other than medication for their child’s upper RTI symptoms was close to. 47.2% of the participants reported that they used non-drug therapeutic approaches for their children with upper RTI symptoms. These applications were herbal tea, honey milk, vitamin supplements, mandarin/orange and/or their juice, and Vicks® rub, and steam application. The most common non-drug practice was to drink herbal tea (30.5%). The rate of use of herbal and/or herbal products, which was asked as a different question, was 34%. Participants reported that they mostly used honey (19.0%) for their children’s symptoms, apart from herbal tea as a product. Differently, among the frequently used products were grape molasses (11.4%), vitamins (6.9%), carob molasses (5.9%), and fish oil (5.2%).

**Use of herbal tea and products**

The details about the application of herbal teas and products by the participants are given in Tables 3 and 4. Participants (34%) used herbal tea/product for their children’s symptoms, used them most often at the onset of diseases (61.2%). Herbal use declined after the disease progressed. Most participants did not use the prescribed medicine and herbal products together (89.6%). Participants applied herbs mostly by brewing or boiling. The most used herbal hot drink was reported as linden infusion/decoction (44.2%) for upper RTI symptoms, followed by mint-lemon (28.6%) infusion/decoction. Individuals, who used linden for their children reported that they usually prepared it by infusion and they made their children drink 1 to 2 cups, usually 1 to 3 times a week. However, they prepared mint-lemon by decoction and made them drink 1-2 cups. The other reported herbs were sage, cinnamon-ginger, winter tea, chamomile, quince, fennel, marshmallow, green tea, and pomegranate flower.

The data associated with herbal use and characteristic features of the children/participants are presented in Table 5. There was a statistically significant relationship between the age of the children and herals use. Children between the ages of 7 and 11 highly consumed herbal teas ($p<0.05$). However, herbal usage was low in children with chronic diseases and taking regular medication. Analysis showed that parents between 30 and 44 years old and mostly mothers used herbs/herbals for their children. Among those parents, there were university graduates had a middle-income and lived in the city center. However, the relationship between herbs usage and parents’ gender, age, education, and income level was not statistically significant ($p>0.05$). Participants who used herbs for themselves were more probably to use herbs for their children. Individuals who did not use herbs for themselves generally did not use herbs for their children (40.8%) either. The rate of the participants, who both themselves and their children used herbal medicine, was 31.2%.

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**Figure 1. Use of non-pharmaceutical products**
Participants reported that they learned the use of herbals mostly from relatives, family elders, neighbors, and friends (60.5%). The number of participants who received advice from health professionals was quite low (15.5%). For this reason, the rate of use of herbal products sold in pharmacies (Umca® and Sambucol®) was also very little (1.5%). Almost half of the individuals obtained the herbs from herbalists or spice shops. Apart from that, they were mostly obtained from village/hometown and market/supermarkets. The number of individuals who bought the herbs from the pharmacy was quite low (5%). Individuals using herbals preferred them because they thought they were useful and less harmful than chemicals. About half of the participants who did not use herbals reported that they considered them ineffective (49%). Some of them described herbs as expensive (1.9%) and harmful (13.5%), additionally, 4.8% of the participants reported that their family doctor said they should not use herbal medicine because they were already taking medicine.

### Table 2: Use of herbal and non-pharmaceutical products

| Before applying to the hospital for your child, did you apply anything other than medication for upper respiratory tract infection symptoms? | Number (n) | Percentage (%) |
|---|---|---|
| Yes | 118 | 47.2 |
| No | 132 | 52.8 |

*Before taking your child to the hospital, what applications did you use for upper respiratory tract infection symptoms other than medication?*

| Herbal tea | 76 | 30.5 |
| Mandarin/orange and/or their juices | 67 | 26.9 |
| Honey milk | 38 | 15.3 |
| Vitamin supplements | 28 | 11.2 |
| Rides vicks | 16 | 6.4 |
| Steam application | 12 | 4.8 |
| Other | 12 | 4.8 |

| Do you use herbal tea/product for upper respiratory tract infection symptoms in your child? | Number (n) | Percentage (%) |
|---|---|---|
| Yes | 85 | 34.0 |
| No | 165 | 66.0 |

| Linden (Tilia sp.) | 68 | 44.2 |
| Mint- lemon (Mentha sp.-Citrus limonum) | 44 | 28.6 |
| Sage (Salvia sp.) | 12 | 7.8 |
| Cinnamon- ginger (Cinnamomum sp.-Zingiber officinalis) | 9 | 5.8 |
| Winter tea | 7 | 4.5 |
| Chamomile (Matricaria recutita) | 3 | 1.9 |
| Quince (Cydonia oblonga) | 3 | 1.9 |
| Fennel (Foeniculum sp.) | 2 | 1.3 |
| Marshmallow (Althaea sp.) | 1 | 0.6 |

*What products do you use for your child other than herbal tea?*

| I do not use | 138 | 32.8 |
| Honey | 80 | 19.0 |
| Grape molasses | 48 | 11.4 |
| Vitamin | 29 | 6.9 |
| Carob molasses | 5 | 1.2 |
| Fish oil | 22 | 5.2 |
| Olive oil | 20 | 4.8 |
| Turmeric- honey mixture | 17 | 4.0 |
| Propolis | 13 | 3.1 |
| Black cumin oil | 5 | 1.2 |
| Mulberry molasses | 4 | 1.0 |
| Black radish- honey mixture | 4 | 1.0 |
| Umca® (Pelargonium sidoides) | 4 | 1.0 |
| Ginger- honey mixture | 2 | 0.5 |
| Sambucol® (Sambucus nigra) | 2 | 0.5 |
| Germ oil | 1 | 0.2 |
| Other | 7 | 1.6 |

*Multiple response*
DISCUSSION

The use of herbs and herbal products in pediatric populations has been studied mostly under the heading of CAM. Studies have focused more on determining for what kind of symptoms the CAM are used in the general pediatric population. In Italy, CAM is mostly used to treat ear, nose, and throat pathologies. The most used methods are phytotherapy and homeopathy. In southwest England, 50% of the children had used complementary medicine who had upper RTIs. As well as in the United States of America, CAM practices are also frequently used for respiratory diseases in children. More than 50% of users have been using vitamin supplements and over 40% have been using herbal treatments. Aloe vera, chamomile tea, echinacea, garlic, and ginger were among the most consumed herbs.

Among the studies investigating herbal use in specific pediatric populations, studies in children having respiratory tract disorders are relatively few. In Australia, it has been reported that parents of children being affected by acute respiratory infections commonly use chest lotions/herbal liniments, lemon and honey-mixed drinks, only honey, and probiotics as treatments. However, herbals were used in children, less than these applications. Elderflower, echinacea, ginger, mint, turmeric, and herbal combinations were among the herbals used. Parent’s educational status played a role in the use of CAM in children. In Türkiye, 77.2% of mothers who applied to the emergency department with respiratory system complaints in their children reported that they applied CAM to their children. The most common practice was the use of herbal products and the plants were as follows: linden (50.9%), mint-

| Table 3. Herbal tea/product usage details |
|------------------------------------------|
| **When do you use herbal tea/product for upper respiratory tract infection in your child?** |
| Number (n) | Percentage (%) |
|-------------|-----------------|
| Before disease | 20 | 16.5 |
| When the disease started | 74 | 61.2 |
| When the disease progresses | 8 | 6.6 |
| After stopping the medicine | 11 | 9.1 |
| With the medicine | 11 | 9.1 |
| Other | 2 | 1.7 |

| Do you give your child any other medicines while using the herbal tea/product for upper respiratory tract infection? |
|---------------------------------------------------------------|
| Number (n) | Percentage (%) |
|-------------|-----------------|
| Yes | 26 | 10.4 |
| No | 224 | 89.6 |

| From whom/where did you learn that you can use herbal tea/product for your child’s upper respiratory tract infection? |
|----------------------------------------------------------------------------------------------------------------|
| Number (n) | Percentage (%) |
|-------------|-----------------|
| Relatives, family elders | 54 | 38.0 |
| Neighbor, friend | 32 | 22.5 |
| I have made up my own mind | 18 | 12.7 |
| Internet, television | 14 | 9.9 |
| Doctor | 13 | 9.2 |
| Pharmacist | 6 | 4.2 |
| Other healthcare professionals | 3 | 2.1 |
| Other | 2 | 1.4 |

| Where do you buy the herbs, which you prepare the herbal tea? |
|-------------------------------------------------------------|
| Number (n) | Percentage (%) |
|-------------|-----------------|
| Herbalist, spice | 58 | 47.9 |
| Village/hometown | 25 | 20.7 |
| Market, supermarket | 23 | 19.0 |
| I picked the plant myself | 6 | 5.0 |
| Pharmacy | 6 | 5.0 |
| Internet, television | 3 | 2.5 |

| Why do you use herbal tea/product? |
|-----------------------------------|
| Number (n) | Percentage (%) |
|-------------|-----------------|
| I think it is | 133 | 57.6 |
| Useful | 133 | 57.6 |
| More harmless then chemical drugs | 61 | 26.4 |
| Easily accessible | 24 | 10.4 |
| Cheap | 7 | 3.0 |
| Other | 6 | 2.6 |

| Do you use a herbal tea/product for yourself when you feel sick? |
|---------------------------------------------------------------|
| Number (n) | Percentage (%) |
|-------------|-----------------|
| Yes | 141 | 56.4 |
| No | 109 | 43.6 |

*Multiple response*
linden (40.8%), and carob (29.4%).\textsuperscript{25} In another study, conducted to determine the approaches of mothers to their children having cough, it was determined that 72.8% of mothers benefited from herbs such as linden and mint. The same study indicated that practices such as eating tangerine/orange fruits, drinking milk with honey, applying vics on all over the body were applied for healing.\textsuperscript{26} In Saudi children, the herbal medicine use rate for acute lower respiratory tract disease was 59.3%. Sesame oil, fenugreek, olive oil, and dates were also often used.\textsuperscript{17}

Analysis of the results showed that children’s families used various non-drug practices for their children with viral upper respiratory tract symptoms. It has been determined that the applications and products used by families for their children are easily accessible and applicable at home. The results obtained in this study are similar to the results of previous studies.\textsuperscript{13,14}

Previous studies have shown that female parents tend to use more CAM and herbs for their children; even, some studies were conducted with mothers only.\textsuperscript{17,18,19} Similarly, in this study, herbs were mostly used by mother, moreover, similar to previous studies, participants who used herbs were mostly university graduates.\textsuperscript{13,14} Although this suggested that the participants with a higher education level researched herbs more, additionally, the participants reported that they learned the information mostly from their family members. Participants residing in the city center used herbs more. Considering that the participants mostly obtained herbs from herbalists, this may have been due to their easier access to herbalists in the city center.

The survey results showed that honey is the most used product of all non-pharmacological therapeutic approaches. In addition to its use alone, honey has been used as a mixture by adding it to plants. Previous studies have also shown that honey is often used for respiratory problems in children, especially for cough. Due to its antibacterial, antimicrobial, and topical soothing properties, honey has been suggested as a potential treatment for coughs and colds.\textsuperscript{18} A Cochrane review compared the effectiveness of honey for acute cough in children with the effectiveness of diphenhydramine, dextromethorphan, and salbutamol. Results showed that honey reduced the cough-time better than placebo and salbutamol. For cough symptoms, honey was approximately equally effective with dextromethorphan, while it was more effective than diphenhydramine, control, and placebo. There was no difference between honey and others in terms of adverse effects.\textsuperscript{19} However, honey is not recommended in children younger than 1 year old as it may cause infantile botulism.\textsuperscript{20}

Linden was the most applied herb for children’s symptoms in our study. According to the European Medicines Agency (EMA), linden flowers can be used to relieve cold symptoms.\textsuperscript{21} Commission E approved the use of linden for cough and bronchitis. According to Physician Desk Reference (PDR), linden flowers can be used for colds of the respiratory tract due to their diaphoretic effect and for febrile colds and infectious diseases, where sweating treatment is required.\textsuperscript{22} However, the indications stated in the monographs are based on traditional use and are not supported by clinical studies. EMA recommends the preparation and use of tea from linden flowers as an infusion, while according to the PDR, it can be prepared both as an infusion and a decoction. Although it is reported in the monographs that linden has no serious side effects, EMA does not recommend the use of linden in children under 4 years of age due to insufficient data. In our study, it was found that the participants prepared linden by both infusion and decoction methods, mostly by infusion. Moreover, this study used linden in children under 4 years old, contrary to what is stated in EMA.

Table 4. Herbs and usage information

| Herbs         | Number of users for child | Preparation technique (n) | Frequency of use (n) | Amount of usage (n) |
|---------------|----------------------------|---------------------------|----------------------|---------------------|
|               | 0-2 age                    | 3-6 age                   | 7-11 age             | 12-17 age           | Infusion | Decoction | Maceration | Every day | Throughout the disease | 1-3 per week | 4-6 per week | 1-2 cups per day | 3 cups a day | 4 or more cups a day | Other |
| Linden        | 13                         | 21                        | 21                   | 13                  | 50       | 18        | 0         | 11        | 26                   | 28          | 3           | 64        | 1         | 0            | 3     |
| Sage          | 2                          | 4                         | 0                    | 6                   | 10       | 2         | 0         | 1         | 6                    | 5           | 0           | 12        | 0         | 0            | 0     |
| Mint- lemon   | 6                          | 15                        | 12                   | 11                  | 16       | 28        | 0         | 5         | 15                   | 22          | 2           | 39        | 4         | 0            | 1     |
| Cinnamon-ginger | 1                        | 2                         | 3                    | 3                   | 5        | 3         | 1         | 1         | 4                    | 4           | 0           | 8         | 0         | 1            | 0     |
| Winter tea    | 0                          | 2                         | 1                    | 4                   | 4        | 2         | 1         | 1         | 3                    | 3           | 0           | 6         | 1         | 0            | 0     |
| Chamomile     | 0                          | 0                         | 1                    | 2                   | 1        | 1         | 1         | 0         | 3                    | 0           | 3          | 0         | 0         | 0            | 0     |
| Marshmallow   | 0                          | 1                         | 0                    | 2                   | 1        | 0         | 0         | 0         | 1                    | 0           | 0           | 0         | 0         | 0            | 0     |
| Quince        | 0                          | 1                         | 0                    | 2                   | 2        | 1         | 0         | 0         | 1                    | 2           | 0           | 3         | 0         | 0            | 0     |
| Fennel        | 1                          | 0                         | 1                    | 2                   | 0        | 0         | 1         | 0         | 1                    | 0           | 0           | 1         | 0         | 0            | 0     |

n: Number
Individuals stated that they mostly used herbal teas or products for their children at the onset of illness. Herbal use declined after the disease progressed. This shows that parents turn to herbs as a first and simple remedy, when their child starts showing symptoms. When the disease progresses, they prefer using the drugs that their doctors prescribe. Generally, they do not prefer to use the prescribed drug and the herbs together. The age of the child and the use of herbs by the families themselves were effective in the use of herbs in children. Participants who used herbs generally used them because they thought they were beneficial, while those who did not use them generally thought they were ineffective.

**Study limitations**

This study was planned and the permissions were obtained before the pandemic but conducted during the Coronavirus disease-2019 (COVID-19) pandemic conditions. Therefore, the number of participants was limited to 250 due to the closures of the clinics from time to time. Moreover, the variation of participants was mostly from the city, since not many parents made to the city hospital due to the pandemics. Since the study was conducted during the first 6 months of the pandemic, parents’ habits might be the same as before pandemics through their children.

**CONCLUSION**

This study is valuable for public health and clinicians in terms of presenting the data on herbal use applied to children in detail at a university hospital. Most of the parents unconsciously used CAM for their children with the information they learned from relatives, family elders, neighbors, and friends. They did not have enough information about the preparation technique of the herbs, the frequency, duration, and amount of use. As a conclusion, appropriate doses and dosage forms of herbal supplement products with scientifically proven efficacy and safety should be determined for the pediatric population. Parents should be informed about herbs that can be used in

| Table 5. Cross-table of herbal tea/product use |
|-----------------------------------------------|
| **Use of herbal tea/product** | **Significance** | **p value** |
| **Yes (%)** | **No (%)** | |
| Child’s age | | |
| 0-2 | 5.6% | 17.6% | p<0.05 |
| 3-6 | 10.4% | 17.6% | |
| 7-11 | 10.8% | 12.8% | |
| 12-17 | 7.2% | 18.0% | |
| Child’s chronic disease | | |
| Yes | 4.8% | 9.6% | p>0.05 |
| No | 29.2% | 56.4% | |
| Child’s regular medication intake of | | |
| Yes | 4.8% | 12.0% | p>0.05 |
| No | 29.2% | 54.0% | |
| Participant’s relationship to child | | |
| Mother | 25.6% | 46.4% | p>0.05 |
| Father | 7.2% | 18.0% | |
| Other | 1.2% | 1.6% | |
| Participant’s age | | |
| 18-29 | 6.8% | 15.6% | p>0.05 |
| 30-44 | 24.0% | 41.2% | |
| 45-59 | 3.2% | 8.0% | |
| ≥60 | 0.0% | 1.2% | |
| Participant’s education | | |
| Illiterate | 0.4% | 2.0% | p>0.05 |
| Literate | 1.2% | 0.4% | |
| Primary school graduate | 3.6% | 9.6% | |
| Secondary school graduate | 5.2% | 14.0% | |
| High school graduate | 9.6% | 20.0% | |
| University graduate | 10.8% | 18.4% | |
| Postgraduate | 3.2% | 1.6% | |
| Family income | | |
| Too bad | 0.4% | 0.4% | p>0.05 |
| Bad | 2.8% | 3.2% | |
| Middle | 20.8% | 43.6% | |
| Good | 10.0% | 17.2% | |
| Excellent | 0.0% | 1.6% | |
| Family residence | | |
| City center | 24.0% | 41.2% | p>0.05 |
| District | 10.0% | 23.2% | |
| Other | 0.0% | 1.6% | |
| Herbal tea/product use for the participant’s own | | |
| Yes | 31.2% | 25.2% | p=0.00 |
| No | 2.8% | 40.8% | |
the pediatric population. Due to the pandemic, parents might have turned to natural resources as there is no proven specific treatment for COVID-19 or vice versa. However, they might have hesitated to use herbs/herbal products because there is not enough information about the COVID-19 and effects on children. Furthere questionairs/studies should be applied to examine the change in parent’s behaviors on herbal usage of their children. Parents should use these products under the supervision of their pediatrician with phytotherapy or natural medicine knowledge, moreover might be consultants of pharmacists.

**Ethics**

**Ethics Committee Approval:** The approval was obtained for this study from the Ethics Committee at Gazi University (12.05.2020-E.54135).

**Informed Consent:** All the participants voluntarily participated in the study.

**Peer-review:** Externally peer-reviewed.

**Authorship Contributions**

Concept: M.M.K., A.T., N.M.K., M.D., U.K.C., Design: M.M.K., A.T., N.M.K., M.D., U.K.C., Data Collection or Processing: M.M.K., A.T., N.M.K., M.D., U.K.C., Analysis or Interpretation: M.M.K., U.K.C., Literature Search: M.M.K., U.K.C., Writing: M.M.K., A.T., N.M.K., M.D., U.K.C.

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