Use of Complementary Therapy by Adolescents With Asthma

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**Background:** About 40% of adult Americans use complementary or alternative medicine (CAM) for health problems.

**Objective:** To determine the prevalence of reported use of CAM in a population of urban adolescents with asthma.

**Design/Methods:** We used a multistaged, stratified sample approach at an inner-city high school. An asthma screening survey was administered to 3800 registered students, aged 13 to 18 years. We identified a subset of 200 respondents who answered yes to each of the following questions: (1) Does your physician think that you have asthma? (2) Do your parents think that you have asthma? (3) Do you think that you have asthma? A self-completion questionnaire was administered to a sample drawn from this cohort. Differences in proportion were tested by *χ²* analyses.

**Results:** Of the 160 participants, 63% were female, 68% were Hispanic, 26% were African American, 33% had weekly symptoms, and 14% had daily symptoms. Overall, 80% of participants reported using CAM for asthma. The most commonly reported CAM included rubs (74%), herbal teas (39%), prayer (37%), massage (36%), and Jarabe 7 syrup (24%). Subjects with daily or weekly symptoms were more likely to use CAM for each episode of asthma (72% vs 51%; *P* = .005). The 61% of subjects who had a family member who used CAM were more likely to use CAM again (84% vs 39%; *P* < .001). Of the respondents, 59% reported that CAM was effective. Subjects who perceived CAM to be effective were more likely to use it again (96% vs 22%; *P* < .001).

**Conclusions:** Most adolescents with asthma in this study used CAM. The prevalence of CAM use in this study population was twice the national average for adults.

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**SUBJECTS AND METHODS**

**OPERATIONAL DEFINITION**

Complementary or alternative medicine (CAM) has captured public attention in recent years. National surveys show a trend toward increasing use of CAM.1,2 Adult use of CAM increased from 33.8% in 19901 to 42.1% in 1997.2 Of particular note, adults with chronic diseases such as asthma are among the most frequent users of CAM.3,4 Asthma is the most prevalent chronic disease affecting children and adolescents in this country.5,6 Some reports suggest that the use of CAM may be high among adolescents with asthma.7 However, the extent of CAM use has not been widely studied in this population.8,9 Such use, if documented, may be relevant and significant for physicians who treat teenagers with asthma. Thus, the aim of this study was to determine the prevalence of reported use of CAM in a population of urban adolescents with asthma.

**SUBJECTS AND SETTING**

We conducted a multistaged stratified survey in October 2000 at a high school in the Bronx, NY, where 57% of the students were Latino, 35% were African American, and 3% were white. Incomes were at or below 130% of the federal poverty level in 83% of families of students at this school. This study was approved by the institutional review board at Montefiore Medical Center, Bronx.

First, we developed, piloted, and modified a questionnaire to screen for asthma. Then, we conducted a survey of 3800 registered students (aged 13-18 years). On the basis of the results of the screening survey, we identified a subset of 200 children with the most positive screening results for asthma. These subjects answered yes to all of the following questions: (1) Does your physician think that you have asthma? (2) Do your parents think that you have asthma? (3) Do you think that you have asthma? A self-completion questionnaire was administered to a sample drawn from this cohort. Differences in proportion were tested by *χ²* analyses.

**SAMPLING AND DATA COLLECTION**

To assess the use of CAM, we developed, piloted, and modified a self-completion questionnaire. This questionnaire was administered to the cohort with the most positive screening results.
for asthma. We discussed feasibility and arranged logistics with the high school administration through several meetings. Students were located by their class schedules and assembled in a school auditorium to complete the questionnaire. The investigators distributed and collected all questionnaires. Of the 200 students targeted, 160 were present in school on the day of the study. All 160 students completed a questionnaire.

Subjects were surveyed regarding severity of asthma symptoms, use and perceived efficacy of CAM, and demographic information. To assess severity of asthma symptoms, subjects were asked about frequency of asthma symptoms, medical visits, missed school days because of asthma, and prescribed medications for asthma.

The questionnaire included items about specific CAM therapies that were developed on the basis of a literature review and clinical experience. From the findings of this review, we determined the most commonly used CAM therapies for asthma to include teas (eg, chamomile, ginger, wild root, and eucalyptus), rubs (eg, camphor [Vicks VapoRub; The Procter & Gamble Company, Cincinnati, Ohio]), foods (eg, garlic, onion, watercress, castor oil, cod-liver oil), massage, prayer, and syrups (eg, Jarabe 7).

Jarabe 7 is an herbal preparation commonly available at botanicas and grocery stores in many Puerto Rican communities. It consists of sweet almond oil, castor oil, tula, wild cherry, licorice, cocillana, and honey. Subjects were surveyed about use of these therapies in the past year. In addition, subjects were asked to list other CAM therapies not on the list (through open-ended questions), whether they used CAM instead of conventional treatments for asthma, if they were satisfied with CAM therapy, if they would use CAM again, if anyone else in their family ever used CAM, and who recommended CAM.

To assess disclosure of CAM use to pediatricians, subjects were asked whether they told their physician that they used CAM therapies and if they would like to discuss CAM treatment of asthma with their physician. We obtained demographic information regarding each participant’s age, sex, ethnicity, and immigration (defined as birth or prior residence in a country other than the United States).

STATISTICAL ANALYSIS

Differences in proportions were tested by chi-square or Fisher exact test as appropriate for dichotomous variables. Data were maintained in SPSS version 10.0 statistical software (SPSS Inc, Chicago, Ill).

RESULTS

Of the 200 subjects identified, 160 (80%) completed the survey. Of these respondents, 63% were female; 68%, Hispanic; 26%, African American; and 24%, immigrants. The mean age was 15.7 years. Assessment of asthma severity showed that 33% had weekly symptoms of asthma and 14% had daily symptoms of asthma.

Overall, 80% of subjects reported using CAM for asthma, and 66% indicated that they would use CAM again for the treatment of asthma. The most commonly used CAM were rubs and herbal teas, as seen in the following tabulation:

<table>
<thead>
<tr>
<th>CAM Therapy</th>
<th>% of Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubs</td>
<td>74</td>
</tr>
<tr>
<td>Herbal teas</td>
<td>39</td>
</tr>
<tr>
<td>Prayer</td>
<td>37</td>
</tr>
<tr>
<td>Massage</td>
<td>36</td>
</tr>
<tr>
<td>Jarabe 7 syrup</td>
<td>24</td>
</tr>
<tr>
<td>Foods</td>
<td>24</td>
</tr>
</tbody>
</table>

Characteristics of CAM use in the 128 respondents who reported CAM use are listed in the following tabulation:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% of Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informed physician about CAM use</td>
<td>54</td>
</tr>
<tr>
<td>CAM recommended by a relative</td>
<td>67</td>
</tr>
<tr>
<td>Used CAM with conventional therapy</td>
<td>73</td>
</tr>
<tr>
<td>Used CAM instead of prescribed medications</td>
<td>27</td>
</tr>
<tr>
<td>CAM treatment was effective for asthma</td>
<td>73</td>
</tr>
</tbody>
</table>

We found no significant association between CAM use and ethnicity or immigrant status.

In our examination of the correlates of CAM use, subjects with daily or weekly symptoms of asthma were more likely to use CAM for each episode of asthma (72% vs 51%; P=.005). In addition, 61% of respondents had a family member who used CAM, and these respondents were more likely to indicate that they would repeat the use of CAM (84% vs 39%; P<.001).

In assessing the perceived efficacy of CAM, 59% of subjects perceived CAM to be as effective as conventional treatments for their asthma. These subjects were more likely to report that they would repeat the use of CAM (96% vs 22%; P<.001).

The results of this study demonstrate the extent of CAM use in inner-city Bronx adolescents with asthma. We found that 80% of adolescents with asthma used CAM for treatment of their asthma. The prevalence of CAM use in our study population was twice the national average reported for adults 10 years earlier. However, in a 1998 survey, Breun et al reported that 70% of 163 homeless adolescents receiving health care at a youth clinic in Seattle, Wash, used CAM. Our findings support this earlier report.

We noted that 24% of subjects in our study used Jarabe 7 for their asthma. This herbal preparation is commonly available at botanicas and grocery stores in many Puerto Rican communities. It is a mixture of sweet almond oil, castor oil, tula, wild cherry, licorice, cocillana, and honey.

Alternative therapies are generally used as adjuncts to, rather than as replacements for, conventional therapy. Other studies have reported clinical improvements with pediatric CAM use in synergy with traditional medicine, eg, in children treated with massage therapy for asthma. In 1994, the percentage of patients treated in general pediatric practices who used alternative therapies was approximately 11%. This percentage increased to 21% in 1997. The percentage is substantially higher for children and families faced with chronic, recurrent, or fatal conditions such as cancer, asthma, cystic fibrosis, and juvenile rheumatoid arthritis. In children and adolescents with these conditions, rates of CAM use range from 46% to 70%, depending on age, background, and access to services.

Some limitations to our study should be noted. First, we relied on self-reports by adolescents and could not independently verify the information that was reported. Some of the responses may have been inaccurate, a limitation of all self-report surveys. Second, some subjects met the of the responses may have been inaccurate, a limitation...
of all self-report surveys. Second, some subjects met the inclusion criteria for our study but were absent from school on the day the survey was administered. The absentees might have been different from the subjects who participated in the survey. However, we were able to recruit 80% of the population of interest to our study. It is unknown whether a study of middle- or upper-class adolescents with asthma would provide different results from those in our study. Our study population was composed of primarily inner-city, poor, and minority children.

**CONCLUSIONS**

Most adolescents in this study used CAM for their asthma. Of particular significance was the prevalence of CAM use in this study population, which was twice the national average reported for adults. These findings have implications for physicians treating adolescents with asthma in the inner city.

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**REFERENCES**