Complementary and Alternative Medicine Used by Pediatric Patients With Cancer in Western Turkey

Rabia E. Genc, PhD, RN, Selmin Senol, PhD, Ayse S. Turgay, PhD, and Mehmet Kantar, MD

Complementary and alternative medicine (CAM) encompasses a wide range of approaches, including herbal medicine, manual healing techniques, traditional therapies, and mind-body interventions (Gozum, Tezel, & Koç, 2003). The National Center for Complementary and Alternative Medicine (NCCAM, 2007) in the United States defines CAM as a group of diverse medical and healthcare systems, practices, and products that are not presently considered to be part of conventional medicine. NCCAM has developed five categories to classify CAM: alternative medical systems, mind-body interventions, biologic-based therapies, manipulative and body-based methods, and energy therapies.

CAM is widely used throughout the world to treat a variety of illnesses and to maintain health. Ernst and Cassileth (1998) examined data from 13 countries and reported that the incidence of CAM use in adults with cancer was 7%–64%. In an Australian study conducted by Smith and Eckert (2006), the use of CAM in children was 164 (18%) of 911 children with various illnesses.

Children diagnosed with cancer have to cope with many disease-related and treatment-related symptoms. Studies conducted in countries worldwide have reported that 31%–84% of pediatric patients with cancer use CAM (Arush et al., 2006; Bold & Leis, 2001; Fernandez, Stutzer, MacWilliam, & Fryer, 1998; Fletcher & Clarke, 2004; Friedman et al., 1997; Gagnon & Recklist, 2003; Grootenhuis, Last, de Graaf-Nijkerk, & van der Wel, 1998; Kelly et al., 2000; Langler, Spix, Gottschling, Graf, & Kaatsch, 2005; Martel et al., 2005; McCurdy, Spangler, Woford, Chauvenet, & McLean, 2003; Molassiotis & Cubbin, 2004; Neuhouser et al., 2001; Yeh, Tsai, Li, Lee, & Yang, 2000). Reasons that CAM is used in pediatric patients with cancer include improving children’s general health (Kelly et al.; Molassiotis & Cubbin; Yeh et al.), treating cancer and coping with the side effects of treatment (Molassiotis & Cubbin; Yeh et al.), religious or other beliefs (Friedman et al.), improving the immune system, and preventing the recurrence of cancer (Molassiotis & Cubbin).

Studies that have examined the extent of CAM use in adult patients with cancer in Turkey have reported an increase of CAM use in the past few years. According to data from 2001–2005, the incidence of CAM use in adults with cancer was reported to be 39%–61% (Algier, Hanoglu, Ozden, & Kara, 2005; Ceylan, Hamzaoglu, Komurcu, Beyan, & Yalcin, 2002; Gozum et al., 2003; Isikhan et al., 2003; Samur, Bozçuk, Kara, & Savas, 2001). Although many studies have been conducted in Turkey for adults with cancer, very few have looked at pediatric patients with cancer. To date, only two (Gozum, Arikan, & Büyükavci, 2007; Kara-Deniz, Pinarli, Oluz, Gürsel, & Canter, 2007) have been...
conducted in Turkey. In those two studies, the incidence of CAM use in pediatric patients with cancer was reported at 49% and 52%.

Many factors affect the use of CAM and type used (Post-White, 2006). Herbs are widely used in Turkey as CAM treatment (32%–72%) (Inane, Sahin, Cicek, & Tasc, 2006; Oguz & Pinar, 2000), but the incidence of herb use varies somewhat from country to country: 16% (Friedman et al., 1997), 32% (Kelly et al., 2000), and 35% (Neuhouser et al., 2001) reported for the United States; 13% for the United Kingdom (Molassiotis & Cubbin, 2004); 38% for Israel (Arush et al., 2006); 28% for Taiwan (Yeh et al., 2000); and 20% for Canada (Martel et al., 2005). In the studies conducted on pediatric patients with cancer in Turkey, Gozum et al. (2007) reported that 39 (91%) of the 43 patients (49%) who reported using CAM used herbs, and Karadeniz et al. (2007) reported that 35 (71%) of the 49 patients (52%) who reported using CAM used herbs.

Although herbs are widely used as CAM treatment in pediatric patients with cancer, limited research has been conducted on their safety and effectiveness (McLean & Kemper, 2006b). Some CAM therapies that have been used extensively in other studies can be potentially harmful when used in combination with the chemotherapy the pediatric patients are receiving (Gozum et al., 2007). McLean and Kemper’s (2006c) review of the literature showed that herbs and vitamins are used in pediatric patients; however, when used in combination with conventional medical therapy, they can cause side effects. Ernst (2003) reviewed the literature about the use of CAM in children and adolescents and determined that most side effects of CAM therapies are related to herbs, and that the side effects can include bradycardia, toxic hepatitis, and death. Cohen (2006) reviewed the literature about the ethical and legal aspects of CAM use and determined that, in some studies, the evidence about CAM therapy was contradictory and that, although CAM can be safe and effective, it also can have harmful effects in some people. The evidence about the use of CAM therapy is confusing. Some treatments are considered to be safe and effective but they can be harmful.

Before beginning this study, the authors observed that the majority of children on the pediatric oncology ward used CAM without a specific medical basis and that parents had heard about the treatments from relatives, neighbors, or the media. In addition, they did not discuss this information with the healthcare team. Sibinga, Ottoloni, Duggan, and Wilson (2004) reported that 53% of caregivers wanted to discuss the CAM treatments they were using with their physician. It also has been reported that, of the parents who use CAM treatments, only 16% in the United States (Friedman et al., 1997) and 23% in Taiwan (Yeh et al., 2000) have discussed it with their physicians.

No safety standards exist for the herbs used as CAM in Turkey. For this reason, nurses and other healthcare providers should know which CAM treatments are being used, how often they are being used in pediatric patients with cancer, and what the factors are that affect this situation. Therefore, the purpose of this study was to determine the prevalence of CAM use among pediatric patients with cancer as reported by their parents, the types of CAM used, and the sociodemographic and medical characteristics associated with the use of CAM.

Methods

Design, Setting, and Sample

The study was a cross-sectional sample and descriptive design with data collected by a questionnaire administered to parents of pediatric patients treated for cancer at Ege University Medical Faculty, Department of Pediatric Oncology, in Izmir, one of the largest hospitals in the western region of Turkey. Data were collected with a nonrandom convenience sampling technique. The study was approved by the ethics committee of Ege University. The committee determined that written informed consent could be waived; therefore, verbal informed consent for participation was obtained from parents.
The subjects of this study were parents of 112 children aged 1–18 years who were attending the university’s hospital outpatient or inpatient clinics. Children had been diagnosed with cancer within the previous five-year period. Pediatric patients with cancer who had been receiving treatment for at least one month in the inpatient clinic or who were returning for follow-up evaluation at the outpatient clinic were eligible for the study.

**Instruments**

The parents completed a self-administered, 22-item questionnaire prepared by the researchers according to information in the literature. The questionnaire was divided into two sections, the first of which was related to the children and parents’ sociodemographic characteristics (gender, age, education level, marital status, monthly family income, diagnosis, and cancer status at the time of survey) and clinical status. The second section of the questionnaire asked parents whether they administered any form of CAM to their child after the cancer diagnosis. If the parents’ answer was “yes,” they were asked to explain the type of CAM (e.g., herbs, massage, prayer), reasons for using CAM, and how they learned about CAM.

The questionnaire was pilot tested on a sample of 15 parents to check for clarity of the items, and necessary revisions were made. Either the child’s mother or father was asked to answer the questionnaire. For mothers or fathers who were illiterate, the questions were read to them by the researcher, who recorded their answers on the questionnaire.

**Data Analyses**

The statistical analyses were performed with SPSS® 11.0 for Microsoft® Windows®. Descriptive statistics were obtained and the differences between variables were conducted with chi-square test. For all analyses, a p value less than 0.05 was considered significant.

**Results**

The demographic characteristics are presented in Table 1. The median age of the patients was 9.21 years (range = 1–18); 52% were girls. The average age of the mothers was 34.65 ± 5.94 years and 77% of them completed primary school. Among the 112 patients, 86 (77%) used at least one CAM.

The oncology diagnoses included leukemia (44%), lymphoma (27%), and others (29%) (see Table 2). The most commonly used CAM therapies included herbs (primarily nettle and *Salvia officinalis*) at 92% (see Table 3). Parents’ expectations of the CAM included boosting the immune system (60%), cleaning blood (20%), and curing the disease (12%). A high percentage of CAM was recommended either by neighbors (49%) or relatives (43%). Only 29 (26%) parents had ever discussed the use of CAM with their oncologists, and none of the parents discussed the use of CAM with their nurses (see Table 4). No statistically significant relationship was found between CAM use and sociodemographic and clinical data.

**Discussion**

According to the results of this study, widespread use of CAM is occurring in pediatric patients with cancer in western Turkey. This prevalence is higher than in some studies from other countries (Neuhouser et al., 2001; Yeh et al., 2000) but lower than that in the United States as reported by Kelly et al. (2000). However, it was higher than in other studies conducted in Turkey (Gozum et al., 2007; Karadeniz et al., 2007), suggesting that regional differences may exist.

Among pediatric patients with cancer, the most commonly used CAM therapies are herbs and dietary supplements, with reported prevalence rates as high as 60% (McLean & Kemper, 2006b). In studies conducted on adult patients with cancer in Turkey, 72%–100% of the participants used herbs as CAM therapies and 58%–93% used nettle (Algier et al., 2005; Gozum et al.,...
Two studies found that the prevalence of nettle use varied from 29%–91% (Gozum et al., 2007; Karadeniz et al., 2007). In this study, the prevalence of nettle use was 63%, which is similar to the reported use of nettle in adult and pediatric patients with cancer in Turkey. Nettle is a plant that is grown and consumed in almost every part of Turkey. The nettle leaf is 2–4 cm long and contains potassium salts, iron, acetylcholine, formic acid, histamine, and vitamin C. *Salvia officinalis* comes from Europe and is now grown all over the world; it is a perennial herbaceous-to-shrubby herb growing up to 50 cm in height and is known for its antioxidant and carminative (antiflatulent) effects (Gozum et al., 2003; Inanc et al., 2006).

The use of prayer has been debated for inclusion as a CAM therapy (McLean & Kemper, 2006a); prayer has been included as a CAM therapy in some articles but not in others (McCurdy et al., 2003). According to McLean and Kemper (2006c), belief in prayer is associated with culture. Although prayer may not heal a disease or manage symptoms, it brings peace to families that everything possible is being done for their child. Although the authors did not specifically ask the question, 55% of the families spontaneously stated that they used prayer as a CAM therapy. But, because Turkey is a Muslim nation where prayer is common, this number may not represent the true percentage using prayer.

As a result of treatment, pediatric patients with cancer have weakened immune systems and face frequent infections. When families were asked why they used CAM therapies, the most common answer (60%) was to support the child’s immune system. This reason also was given by 18% in Karadeniz et al. (2007) and by 68% in Arush et al. (2006).

The current study showed that parents gathered information about CAM from neighbors, relatives, and the media. Neighbors and relatives are considered to be the parents’ most common source of information. This finding is consistent with previous studies (Arush et al., 2006; Friedman et al., 1997). The percentage of parents stating that they obtained information from their physicians was only 26%, and none of the parents had shared this information with a nurse. Friedman et al. found that 16% of the families reported that they told their physicians about the CAM therapy they used. In previous studies conducted in Turkey, this rate varied from 8%–28% (Gozum et al., 2007; Karadeniz et al., 2007). Communication is an essential part of the treatment process, and failure to keep the lines of communication open and reveal all aspects of treatment to healthcare professionals could result in negative consequences for children (Fletcher & Clarke, 2004). The healthcare team should establish an open dialogue that will lead to a clear distinction between harmful and possibly helpful CAM therapies (Jankovic et al., 2004).

Studies of pediatric patients with cancer have found several factors associated with CAM use, particularly higher income (Friedman et al., 1997) and higher parental education (Arush et al., 2006; Friedman et al.). In the current study, however, a significant relationship existed between use of CAM and age, diagnosis, income, and parental education.

### Limitations
This study has a number of limitations. The sample size was small and from a single metropolitan area. Izmir has a population of about 2 million, and this representative sample of the western Turkey population may not be generalizable to others of parts of Turkey. Another limitation of the study was that it was cross-sectional and retrospective, which may affect the parents’ ability to remember all events and emotions accurately. Large-scale longitudinal, prospective studies would reflect changes in the use of CAM as a function of changes in the patient’s status.

### Implications for Nursing
According to the findings in this study, widespread use of CAM is occurring in pediatric patients with cancer in western Turkey. However, the results of this study have shown that parents of pediatric patients

### Table 3. Distribution of Complementary and Alternative Medicine Used by Patients

<table>
<thead>
<tr>
<th>Therapy</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbal medicine and biologic intake</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nettle</td>
<td>54</td>
<td>63</td>
</tr>
<tr>
<td><em>Salvia officinalis</em></td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Vitamin or supplements</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Others (bee pollen, bee milk, lime, honey of Anzer)</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Turtle or frog blood</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Mind/body method</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prayer</td>
<td>47</td>
<td>55</td>
</tr>
</tbody>
</table>

N = 112

Note. Some patients used more than one therapy.
with cancer tended to use CAM without informing healthcare professionals. Although parents have the responsibility for making medical decisions for their children, healthcare professionals should provide ad-

Table 4. Use of Complementary and Alternative Medicine (CAM) Related to Specialists

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for resorting to CAM (n = 88)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boost immune system</td>
<td>52</td>
<td>60</td>
</tr>
<tr>
<td>Clean blood</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Cure the disease</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Where they learned about CAM (n = 98)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbors</td>
<td>42</td>
<td>49</td>
</tr>
<tr>
<td>Relatives</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Media</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>If a discussion about CAM occurred, was it with a physician or nurse? (n = 22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

References


