

# Complementary and Alternative Medicine Use by Pediatric Specialty Outpatients

**AUTHORS:** Denise Adams, PhD,<sup>a,b</sup> Simon Dagenais, DC, PhD,<sup>c</sup> Tammy Clifford, PhD,<sup>d,e,f</sup> Lola Baydala, MD, MSc, FRCPC,<sup>b</sup> W. James King, MD, FRCPC, MSc,<sup>g,h</sup> Marilou Hervas-Malo, MSc,<sup>i</sup> David Moher, PhD,<sup>d,j,k</sup> and Sunita Vohra, MD, FRCPC, MSc<sup>a,b</sup>

<sup>a</sup>CARE Program, and <sup>b</sup>Department of Pediatrics, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada;

<sup>c</sup>Department of Social and Preventive Medicine, University at Buffalo, Buffalo, New York;

<sup>d</sup>Departments of Pediatrics and <sup>e</sup>Epidemiology & Community Medicine, University of Ottawa, Ottawa, Canada;

<sup>f</sup>Canadian Agency for Drugs and Technologies in Health, Ottawa, Canada;

<sup>g</sup>Division of Pediatric Medicine, Department of Pediatrics, University of Ottawa, Ottawa, Canada;

<sup>h</sup>Children's Hospital of Eastern Ontario, Ottawa, Canada;

<sup>i</sup>Epidemiology Coordinating and Research (EPICORE) Centre, Edmonton, Canada;

<sup>j</sup>Ottawa Hospital Research Institute, Ottawa, Canada;

and <sup>k</sup>University of Ottawa Evidence-based Practice Centre, Ottawa, Canada

## KEY WORDS

complementary medicine, pediatric, data collection

## ABBREVIATIONS

CAM—complementary and alternative medicine

CI—confidence interval

RA—research assistant

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Address correspondence to Sunita Vohra, MD, FRCPC, MSc, Department of Pediatrics, Faculty of Medicine & Dentistry and School of Public Health, University of Alberta, 8B19-11111 Jasper Ave; Edmonton General Hospital, Edmonton, AB, Canada; T5K 0L4. E-mail: [svohra@ualberta.ca](mailto:svohra@ualberta.ca)

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**WHAT'S KNOWN ON THIS SUBJECT:** Complementary and alternative medicine (CAM) use is common among children, especially those with chronic, recurrent, or incurable conditions. Concurrent use of CAM with conventional medications is of concern and needs to be assessed, especially in vulnerable patient populations.



**WHAT THIS STUDY ADDS:** CAM use is high among pediatric cardiology, gastroenterology, neurology, oncology, and respiratory patients, most of whom use CAM concurrently with conventional care. This study provides additional evidence to suggest the use of CAM be included in routine patient history taking.

## abstract

FREE

**OBJECTIVE:** Complementary and alternative medicine (CAM) use is high among children and youth with chronic illnesses. The objective of this study was to assess the prevalence and patterns of CAM use in 10 subspecialty clinics in Canada and to compare CAM use between 2 geographically diverse locations.

**METHODS:** This survey was carried out at 1 Children's Hospital in western Canada (Edmonton) and 1 Children's Hospital in central Canada (Ottawa). Questionnaires were completed by parents in either French or English.

**RESULTS:** Although demographic characteristics of the 2 populations were similar, CAM use at the western hospital was 71% ( $n = 704$ ) compared with 42% ( $n = 222$ ) at the central hospital ( $P < .0001$ ). Most respondents agreed or strongly agreed that they feel comfortable discussing CAM in their clinic. The most common CAM products currently used were multivitamins/minerals, herbal products, and homeopathic remedies. The most common CAM practices currently used were massage, chiropractic, relaxation, and aromatherapy. Eighty adverse effects were reported, and 55 (68.8%) of these were self-assessed as minor.

**CONCLUSIONS:** Results of this study indicate that CAM use is high among pediatric specialty clinic outpatients and is much greater in the western than in the central hospital. Most respondents felt that their CAM use was helpful with few or no harms associated. Many patients, using CAM alongside their conventional medicines, are still not discussing their CAM use with their physicians and are increasing the likelihood for potential interactions and preventable harms. *Pediatrics* 2013;131:225–232

The use of complementary and alternative medicine (CAM) is common and increasing among children.<sup>1</sup> Often our most vulnerable pediatric populations, particularly those with chronic, recurrent, or incurable conditions, turn to CAM. Rates vary depending on how CAM is defined and how sampling is done, with some rates reaching >75%.<sup>1-4</sup> Furthermore, it is not uncommon for children to be given >1 type of CAM at a time. A 2003 study found that of the 64% of children attending a rheumatology clinic in Toronto who were currently using CAM, 50% were using >1 type.<sup>5</sup> Concurrent use of CAM with conventional medications is also common. For example, 20% of pediatric patients in a Canadian emergency department used conventional medicines and CAM concurrently.<sup>6</sup>

Difficulties in studying pediatric CAM use have been identified and include variation in definitions of both CAM (ie, does CAM include vitamins or prayer) and pediatric as well as lack of reporting of period of assessment, costs, insurance coverage, occurrence of adverse events, source of CAM information, and discussion of CAM use with a conventional health care provider.<sup>7</sup>

Despite the popularity of CAM, rates of disclosure of CAM use to physicians are often poor, with rates as low as 23%. Reasons for lack of disclosure include concerns about a negative response by the physician, belief that the physician did not need to know about the CAM use, and that the physician did not ask.<sup>8</sup> Concurrent use of CAM and prescription medications is widespread and poses a possible risk to patients who may be unaware of the potential for interactions.<sup>6,9</sup> Given the rates of concurrent use, in conjunction with lack of disclosure, there is a pressing need to assess pediatric CAM use in Canada.

The purpose of this article is to assess patterns of CAM use in 10 Canadian

pediatric outpatient clinics in 2 geographically diverse locations. By conducting the survey in 2 locations over the same period of time, we hoped to make meaningful comparisons about CAM usage between 2 geographically diverse populations with chronic illness. Because utilization rates can vary according to how the information is sampled (ie, current use vs lifetime exposure), this issue was explored, as well as the perceived helpfulness and possible adverse events associated with CAM use.

## METHODS

The target populations in this study were children with chronic illnesses seeking care at 2 participating tertiary care centers, 1 Children's Hospital in western Canada (the Stollery Children's Hospital in Edmonton, Alberta) and the other in central Canada (the Children's Hospital of Eastern Ontario in Ottawa, Ontario). Five specialty clinics were chosen for the study (cardiology, gastroenterology, neurology, oncology, and respiratory), and patients in these clinics were surveyed at each location (10 clinics in total). These 5 specialties were chosen because they see many patients with chronic conditions

Surveys were carried out in the waiting room of each participating clinic before the clinic appointment. Children and/or their families were eligible to participate in this study if they were <18 years of age, could read French or English, and had not previously filled out this survey. The research assistant (RA) stayed in the room with the participants to answer questions as they completed the questionnaire and then collected the completed surveys. Surveys were anonymous, and to prevent duplicate surveys, the RA asked participants if they had previously completed a survey for this study.

There exists no standard survey instrument for assessing pediatric CAM

use, and so to facilitate comparisons between study populations and study locations, a survey was developed for use by all participants regardless of specialty or setting. The final survey was composed of 19 questions that addressed patient and family demographics, general health, use of specific CAM products and therapies (both current and lifetime use), reasons for use, concurrent use with conventional medicine, satisfaction with care, adverse effects, and disclosure about use. The survey was developed according to established methodology.<sup>10-12</sup> CAM products and practices commonly used by children were identified through a literature review<sup>13,14</sup> and previous published surveys of CAM use.<sup>5,15-17</sup> Questions were developed by the investigative team to address gaps in our knowledge of CAM use in children. Draft questions were reviewed by experts in CAM and pediatrics and revised accordingly. The survey was subjected to pilot testing to establish concept validity in a convenience sample of Children's Hospital of Eastern Ontario staff and patients and revised accordingly. When the English language survey was finalized, the questionnaire was translated into French by a professional translator and then back translated into English to ensure the veracity of the translation. The French version of the survey was also pilot tested. (For a copy of the survey, contact the corresponding author.)

Data were entered into a database (SPSS 11) and 10% were "double entered" to test data entry quality; an error rate <0.01% was deemed acceptable.

Descriptive statistics were tabulated as means (standard deviation) or medians (interquartile range) for continuous scaled variables and numbers and percentages for categorical variables. Participant demographics,

general health and use of specific CAM products and therapies, satisfaction with care, and beliefs about CAM were compared by site (western vs central Canada) using Wilcoxon tests, independent *t* tests, and  $\chi^2$  tests as appropriate. The proportion of CAM use was also compared between sites overall and stratified between clinics.

To determine if the variability in CAM use could be explained by other factors, predictor variables that had previously been shown to be associated with CAM use were tested.<sup>1,18–23</sup> This included child's age and gender, child's health status, time since diagnosis, family's use of CAM, family's CAM insurance, ethnicity, parent's education and income, and whether discussion of CAM use with conventional medical practitioner occurred. Each factor's relationship with use of CAM was independently tested via bivariate logistic regression model for each site separately. Eligible factors that achieved a significance level of  $<.2$  were considered for inclusion in a multivariable logistic regression model. The approach that selected the best subset of factors that predicted CAM use included stepwise selection procedure and theoretical judgment. Regression diagnostics were performed such as *c* statistics,  $R^2$ , and Hosmer and Lemeshow lack of fit statistics. Measures for detecting outliers and influential observations were likewise considered.

## RESULTS

Nine hundred seventy-nine families were approached to complete a survey: 746 in western Canada (Edmonton) and 233 in central Canada (Ottawa). Forty individuals refused participation (29 in Edmonton and 11 in Ottawa), but there was no significant difference in refusal rate between site or clinic. The most common reasons for refusal were lack of time or interest. Of the 939 surveys completed (717 in Edmonton and 222 in

Ottawa; response rate 95.9%), 12 Edmonton surveys were completed for children outside our age range, and 1 was completed for 4 children. All 13 of these surveys were excluded for a final total of 926 surveys analyzed.

## Population Characteristics

The pediatric survey population had a mean age of 8.8 years (SD 5.1) and comprised slightly more girls than boys (Table 1). The population consisted primarily of children with ancestries self-reported as Caucasian or Canadian/French Canadian (83.8%). Other ancestries that were represented, in order of decreasing frequency, were described as First Nations/Inuit/Metis (10.9%), East Asian (5.0%), South Asian (3.4%), black (2.6%), Middle Eastern/Arabic (1.9%), and Latin American/Hispanic (1.1%). Overall health status was reported as excellent, very good, or good for most children, and the time since diagnosis of their condition was primarily  $>12$  months (Table 1).

More than 95% of the respondents were the patient's parent, mostly mothers (81.7%). The majority of parents at each site reported their own health status as excellent or very good (78.4%). More than 70% of parents at each site had postsecondary training, with a significantly greater proportion of parents in Ottawa having achieved a university degree than Edmonton (33.6% vs 21.0%,  $P = .0002$ ). The 2 populations showed similar distributions across the ranges of household income, with 45.2% reporting annual household income of  $\geq \$80\,000$ . Almost half (43.0%) of all respondents reported having health insurance coverage for CAM therapies (Table 1).

## Utilization

Statistically significant differences between sites were noted for all clinics except oncology. Patient use of CAM was significantly higher in Edmonton than in Ottawa, reporting rates of 71.4% and

42.3% respectively ( $P < .0001$ ; Table 2). There was no significant difference in patient CAM use by clinic for Ottawa alone; however, examination of the Edmonton values alone demonstrated statistically significant differences between clinics ( $P < .0001$ ). Patients who used only multivitamins/minerals accounted for 10% of respondents (11.3% Edmonton; 3.2% Ottawa,  $P = .014$ ; Table 3).

The most popular CAM products currently used at either site were vitamins/minerals (85.0%), herbal products (15.6%), and homeopathics (11.5%). The most popular CAM practices currently used at either site were massage (39.1%), faith healing (27.1%), chiropractic (20.3%), aromatherapy (16.1%), and relaxation (16.1%). Use of herbal products and 3 practices (energy healing, homeopathy, and naturopathy) had significantly different utilization rates between sites. Patterns of lifetime use were similar to those for current use. Most CAM products (84.2%) and practices (76.2%) were rated as helpful or may have been helpful. The top conditions for each clinic population as well as the top CAM practices or products are shown in Table 4.

Secondary analyses determined that for Edmonton patients, use of CAM was significantly associated with child age, child's health, and parent use of CAM. In particular, for every 5-year increase in age, the odds of use of CAM increased by 1.4 ( $P = .0007$ , 95% confidence interval [CI] 1.2–1.8). Similarly, adjusting for other factors, children who had poor or fair health and those whose parents used CAM were 2.1 times ( $P = .039$ , 95% CI 1.01–4.1) and 9.4 times ( $P < .0001$ , 95% CI 6.1–14.4), respectively, more likely to use CAM. For the Ottawa patients, use of CAM by patients was significantly associated with child's health and parent use of CAM. In particular, children who had poor or fair health and those whose parents used CAM were 3.1 times ( $P = .048$ , 95%

**TABLE 1** Patient and Parent/Caregiver Information<sup>a,b</sup>

	<i>n</i>	Edmonton	<i>n</i>	Ottawa	Total
<b>Patient</b>					
Child/youth age, mean (SD)	704	8.7 (5.1)	222	9.2 (5.1)	8.8 (5.1)
Gender male, <i>n</i> (%)	703	311 (44.2)	222	104 (46.8)	415 (44.9)
Overall health status	697		222		919
Excellent		130 (18.7)		40 (18.0)	170 (18.5)
Very good		264 (37.9)		89 (40.1)	353 (38.4)
Good		217 (31.1)		73 (32.9)	290 (31.6)
Fair		73 (10.5)		16 (7.2)	89 (9.7)
Poor		13 (1.9)		4 (1.8)	17 (1.8)
Time since diagnosis	687		217		904
0–3 mo		118 (17.2)		36 (16.6)	154 (17.0)
3–6 mo		63 (9.2)		22 (10.1)	85 (9.4)
6–12 mo		100 (14.6)		32 (14.7)	132 (14.6)
>12 mo		406 (59.1)		127 (58.5)	533 (59.0)
If child/youth has ever used CAM	704		222		926
Yes (%)		503 (71.4)****		94 (42.3)	597 (64.5)
Reasons for not using CAM for child*	201		128		329
Don't know enough about CAM		115 (57.2)*		59 (46.1)	174 (52.9)
Don't think CAM is necessary		36 (17.9)		28 (21.9)	64 (19.5)
Don't believe in CAM		5 (2.5)		7 (5.5)	12 (3.6)
CAM not available for me		4 (2.0)		3 (2.3)	7 (2.1)
Can't afford CAM		7 (3.5)		6 (4.7)	13 (4.0)
Concerned about safety of CAM		10 (5.0)		12 (9.4)	22 (6.7)
Doctor has warned against using it		5 (2.5)		1 (0.8)	6 (1.8)
Worried about side effects from mixing with other treatments		27 (13.4)		14 (10.9)	41 (12.5)
Other <sup>c</sup>		37 (18.4)		34 (26.6)	71 (21.6)
<b>Respondent</b>					
If respondent had ever used CAM	695		218		913
Yes		503 (72.4)****		130 (59.6)	633 (69.3)
CAM coverage by a private health insurance plan	691		220		911
Yes		282 (40.8)		110 (50.0)	392 (43.0)
No		236 (34.2)		66 (30.0)	302 (33.2)
Not sure		173 (25.0)		44 (20.0)	217 (23.8)
Overall health status	697		218		915
Excellent		223 (32.0)		85 (39.0)	308 (33.7)
Very good		315 (45.2)		94 (43.1)	409 (44.7)
Good		143 (20.5)		31 (14.2)	174 (19.0)
Fair		13 (1.9)		5 (2.3)	18 (2.0)
Poor		3 (0.4)		3 (1.4)	6 (0.7)
Adverse events reported	66		14		
Minor		43 (65.2)		12 (85.7)	
Moderate		17 (25.8)		2 (14.7)	
Severe		6 (9.1)		0	

*n*, number with valid responses.

<sup>a</sup> Statistically significant differences are for between-site comparisons.

<sup>b</sup> Multiple responses allowed.

<sup>c</sup> No current need, never heard of it, never thought of it, never offered.

\*  $P < .050$ .

\*\*\*\*  $P < .0001$

CI 1.01–9.5) and 6.9 times ( $P < .0001$ , 95% CI 3.4–13.9), respectively, more likely to use CAM, while adjusting for other factors.

## Safety

Eighty adverse effects (cardiology: 13/176 respondents, gastrointestinal: 29/

214, neurology: 22/205, oncology: 7/129, respiratory: 9/202) were reported, and of these, 55 (68.8%) were self-assessed as minor (Table 1). Nineteen adverse effects were self-assessed as moderate: vitamins (4), herbals (1), homeopathics (3), acupuncture (1), aromatherapy (1), chiropractic (2),

magnets (1), probiotics (2), traditional Chinese medicine (2), and yoga (2). Six adverse effects were self-assessed as severe, including for vitamins (2), homeopathics (1), magnets (2), and naturopathy (1); specifics of the adverse effects were not provided.

Almost half (49.8%) of patients reported using CAM at the same time as conventional medical care. An additional 9.7% reported having tried CAM before conventional medicine and 5.2% used CAM instead of conventional medicine.

More than half our sample (56.3%) reported concurrent use of CAM with prescription drugs. The majority of these respondents reported consulting with their physician (65.2%), and 41.9% consulted with their pharmacist. Of the concurrent users, 12.3% consulted with both an MD and pharmacist, 20.6% consulted with their MD but not a pharmacist, 2.8% consulted with a pharmacist but not an MD, and 19.4% consulted neither an MD nor a pharmacist.

## Information Needs/Sources

The most common reason reported by parents/caregivers for not using CAM for their children was lack of knowledge about CAM (57.2% in Edmonton; 46.1% in Ottawa,  $P = .005$ ) (Table 1). In both Edmonton and Ottawa, the reasons for not using CAM in themselves were similar to the reasons for not using CAM in their children.

Nearly 80% of respondents felt comfortable discussing CAM use in their clinic, and the majority of respondents (59.9%) would like more information regarding CAM from their clinic.

The most common information source about CAM, cited by >60% of respondents at both sites, was “family.” Approximately one-third of respondents identified either their conventional or CAM health care providers, health food stores, pharmacies, and books/magazines as their most common information source about CAM. There

**TABLE 2** Pediatric CAM Use by Clinic Population

Clinic	Site, <i>n</i> (%)			<i>P</i> value between sites
	Edmonton**** <i>n</i> = 704	Ottawa <i>n</i> = 222	Total (combined clinics) <i>n</i> = 926	
Cardiology	93/145 (64.1%)	11/31 (35.5%)	104/176 (59.1%)	.0032
Gastroenterology	124/150 (82.7%)	23/64 (35.9%)	147/214 (68.7%)	.0007
Neurology	117/151 (77.5%)	26/54 (48.1%)	143/205 (69.8%)	<.0001
Oncology	67/107 (62.6%)	11/22 (50%)	78/129 (60.5%)	NS
Respiratory	102/151 (67.5%)	23/51 (45.1%)	125/202 (61.9%)	.0043
Total	503/704 (71.4%)	94/222 (42.3%)	597/926 (64.5%)	<.0001

NS, not significant.

\*\*\*\* *P* < .0001 for CAM use between Edmonton clinics.**TABLE 3** Commonly Used Products and Practices

Product	Lifetime use, <i>n</i> (%)			Current use, <i>n</i> (%)		
	Edmonton <i>n</i> = 483	Ottawa <i>n</i> = 88	Total 571	Edmonton <i>n</i> = 308	Ottawa <i>n</i> = 58	Total 366
Vitamins and minerals	445 (92.1)	76 (86.4)	521 (91.2)	264 (85.7)	47 (81.0)	311 (85)
Herbals	124 (25.7)	43 (48.9)	167 (29.2)****	42 (13.6)	15 (25.9)	57 (15.6)*
Homeopathics	175 (36.2)	36 (40.9)	211 (37.0)	39 (12.7)	3 (5.2)	42 (11.5)
Miscellaneous/Other <sup>a</sup>	170 (35.2)	52 (59.1)	222 (38.9)****	81 (26.3)	28 (48.3)	109 (29.8)***
Therapy	<i>n</i> = 282	<i>n</i> = 69	<i>n</i> = 351	<i>n</i> = 154	<i>n</i> = 38	<i>n</i> = 192
Acupuncture	26 (9.2)	9 (13.0)	35 (10)	9 (5.8)	2 (5.3)	11 (5.7)
Aromatherapy	52 (18.4)	9 (13.0)	61 (17.4)	24 (15.6)	7 (18.4)	31 (16.1)
Chiropractic	111 (39.4)	23 (33.3)	134 (38.2)	32 (20.8)	7 (18.4)	39 (20.3)
Energy healing	20 (7.1)	14 (20.3)	34 (9.7)****	7 (4.5)	8 (21.1)	15 (7.8)****
Faith healing	70 (24.8)	15 (21.7)	85 (24.2)	43 (27.9)	9 (23.7)	52 (27.1)
Homeopathy	28 (9.9)	21 (30.4)	49 (14)****	3 (1.9)	7 (18.4)	10 (5.2)****
Massage	123 (43.6)	26 (37.7)	149 (42.5)	61 (39.6)	14 (36.8)	75 (39.1)
Naturopathy	26 (9.2)	9 (13.0)	35 (10)	6 (3.9)	5 (13.2)	11 (5.7)**
Relaxation	35 (12.4)	11 (15.9)	46 (13.1)	23 (14.9)	8 (21.1)	31 (16.1)
Yoga	25 (8.9)	8 (11.6)	32 (9.1)	9 (5.8)	5 (13.2)	14 (7.3)
Other <sup>b</sup>	7 (2.5)	1 (1.4)	8 (2.3)	4 (2.6)	1 (2.6)	5 (2.6)

<sup>a</sup> Including food- and hormone-based products, probiotics, fish oil/omega 3s, etc.<sup>b</sup> Including aqua chi, imagery, craniosacral, ear candling, lifestyle programs.\* *P* < .05.\*\* *P* < .01.\*\*\* *P* < .005.\*\*\*\* *P* < .0001.**TABLE 4** Common Conditions and Commonly Used Products and Practices by Clinic Population

Specialty	Top 3 Conditions	Top 3 CAM Products or Practices (Lifetime Use)
Cardiology	Various heart disorders	Vitamins/minerals; massage; homeopathics
Gastroenterology	Crohn disease, colitis, celiac	Vitamins/minerals; chiropractic, massage
Neurology	Epilepsy; headaches/migraines; cerebral palsy	Vitamins/minerals; massage, homeopathics
Oncology	Leukemia; other cancer	Vitamins/minerals; faith healing, massage
Respiratory	Asthma; cystic fibrosis; other respiratory disorders	Vitamins/minerals; chiropractic, homeopathics

was significant difference between sites in the use of their pediatric clinic for CAM information (Edmonton 35%, Ottawa 20%; *P* = .006). Respondents

rated their level of trust in these sources as highest for health care providers (with equal ratings for conventional and CAM providers) and family.

## DISCUSSION

We report 1 of the largest pediatric CAM utilization studies in Canada, with a diverse group of clinical specialties represented at 2 sites. CAM use among pediatric specialty patients was common at both sites and was self-assessed as effective for most types of CAM. Most adverse events were reported as infrequent and minor. Family was a common source of information regarding CAM use, but patients and parents express considerable interest and trust in obtaining advice about CAM from their health care team.

Concurrent use of CAM and prescription medications is widespread and poses a potential risk to patients who may be unaware of the potential for interactions.<sup>6,9</sup> Combined with a lack of disclosure, such use poses a potential hazard for patients. Of those concurrently using CAM with prescription medications, nearly 20% did not consult with either a physician or a pharmacist. Interaction data for children is sparse; serious harm may be relatively rare but likely still occur. Because we documented that CAM use changes with time since diagnosis, we urge health care professionals to inquire routinely about CAM use at every patient encounter. Although lack of discussion/disclosure about CAM use has been described in the literature for more than a decade, we found that there is still room for improvement. Families trust health care providers but are more likely to disclose CAM use if an open, nonjudgmental approach is used. Concurrent use of natural health products and drugs should be monitored, especially in vulnerable populations such as children with chronic illnesses or those on narrow therapeutic index medications.

Like adult utilization studies,<sup>1</sup> natural health product use is far more common in children than is seeing CAM providers. Although there is some

debate over whether vitamins and minerals are CAM,<sup>24</sup> we included them in our survey for 2 reasons: (1) they are classified as natural health products by Health Canada and (2) we wanted to assess how many patients used them. Although common, the use of vitamins and minerals alone accounted for only 10% of overall CAM use, demonstrating that our high rates of reported use are not solely due to this. As the most common product used, the potential for vitamin-drug interactions is an important issue that needs additional exploration.<sup>6,25</sup>

Regardless of physician opinion of CAM, patient-centered care demands a more sensitive approach when discussing therapies used by a significant proportion of the population. Patients would like to get information about CAM from their conventional health care team, underscoring the importance of clinician knowledge about CAM and emerging research findings. We have provided a list of resources about CAM products and practices (Table 5).

Like any survey, our study has limitations. We do not expect that the presence of the RA during survey completion affected response; however, because the RA was present for all survey completions, any effect should have been equal for all participants. We are aware of the limits on recall of events that occurred in the distant past, and this may be exacerbated by the use of a proxy (ie, parent) response. On the other hand, parents are routinely asked to comment on various aspects of their child's health, and this discourse often occurs during an annual medical checkup. In addition, recent evidence suggests that recall of regularly consumed natural health products, as measured by a single questionnaire, is comparable to more detailed methods such as a diary.<sup>26</sup> Taken along with the fact that we chose a period prevalence that is not a full calendar year, which could result in estimates of CAM use that are confounded by the season during which the survey was completed, this suggests that the benefits

of using parents as a proxy (when necessary) and measuring a 1-year period prevalence of CAM use outweigh the risks. Second, our ability to determine between-site differences is limited by the difference in sample size between locations. Because the surveys were administered in only 2 languages (English and French), our findings are limited in their generalizability; others have found that utilization may be higher in certain ethnic groups for both adult<sup>27–29</sup> and pediatric populations.<sup>30–32</sup> Finally, details of adverse events, beyond occurrence and severity, were not solicited, and it was therefore not possible to do more than speculate about relationships between the adverse events and use of CAM. Respondents were asked which drugs they took with which CAM products; however, they may not have reliably distinguished between different periods of use. We did not assume they took all listed prescription drugs with all listed CAM products concurrently, unless this was specifically stated,

**TABLE 5** Recommended Resources for Clinicians Regarding Pediatric CAM and Natural Health Product (NHP)-Drug Interactions

Pediatric CAM Resources	Links
NHP-drug interaction grid	A tool for rapid identification of potential NHP and drug interactions has been published in the <i>Canadian Pharmacists Journal</i> in 2009 and is available online for download (Paper: <a href="http://www.cpjournal.ca/doi/pdf/10.3821/1913-701X-142.5.224">http://www.cpjournal.ca/doi/pdf/10.3821/1913-701X-142.5.224</a> ; Grid: <a href="http://www.cpjournal.ca/doi/pdf/10.3821/1913-701X-142.5.224a">http://www.cpjournal.ca/doi/pdf/10.3821/1913-701X-142.5.224a</a> )
PedCAM Network	The Pediatric Complementary and Alternative Medicine Research and Education (PedCAM) Network is a Canadian academic, noncommercial organization, housed within CARE, Program for Integrative Health & Healing at the University of Alberta ( <a href="http://www.pedcam.ca">http://www.pedcam.ca</a> ).
Motherisk	Motherisk is a clinical, research and teaching program affiliated with the University of Toronto, providing guidance and sharing information that promotes the healthy development of the fetus and infants ( <a href="http://www.motherisk.org/women/index.jsp">http://www.motherisk.org/women/index.jsp</a> ).
CAMline	CAMline is an evidence-based web site on CAM for health care professionals and the public ( <a href="http://www.camline.ca/about/about.html">http://www.camline.ca/about/about.html</a> ).
Natural Standard	Natural Standard is a subscription based database aiming to provide high-quality, evidence-based information about complementary and alternative therapies. Validated rating scales are used to evaluate the quality of available evidence. Information is incorporated into comprehensive monographs which are designed to facilitate clinical decision making ( <a href="http://www.naturalstandard.com">http://www.naturalstandard.com</a> ).
Natural Medicines Comprehensive Database (subscription based)	This subscription-based database provides information on complementary, alternative, and integrative therapies, including data on all known uses, efficacy, evidence-based safety ratings, mechanisms of action, active ingredients, adverse reactions, effects on nutrient levels, interactions, dosage and administration, and brand names ( <a href="http://naturaldatabase.therapeuticresearch.com">http://naturaldatabase.therapeuticresearch.com</a> ).
Natural Medicines Comprehensive Database (free)	A free abridged version is available online ( <a href="http://naturaldatabase.therapeuticresearch.com">http://naturaldatabase.therapeuticresearch.com</a> ).
NCCAM	The National Center for Complementary and Alternative Medicine is the US federal government's lead agency for scientific research on CAM ( <a href="http://nccam.nih.gov">http://nccam.nih.gov</a> ).
Health Canada, Natural Health Products	This web site contains natural health product information and links tailored to reach a wide-ranging audience ( <a href="http://www.hc-sc.gc.ca/dhp-mps/prodnatur/index-eng.php">http://www.hc-sc.gc.ca/dhp-mps/prodnatur/index-eng.php</a> ).

**TABLE 6** How to Discuss CAM Use With Patients

## Conversation starters:

1. "Many families whose children have serious health conditions try other kinds of therapies that may not be as part of usual medical care. Do you have questions about complementary and alternative care that you'd like to talk about?"
2. "It would help me provide the best care for your child to know if there are other health care providers/services/products that he/she is taking, such as herbs, vitamins, homeopathy, massage, chiropractic, etc."
3. "What else do you do to support your child's health? For example, do you give your child any herbs or supplements?"

## Follow-up questions regarding CAM providers

"Do you see anyone else for your child's health care, like an herbalist or chiropractor? What do you see them for? How did you decide to seek their care? Have you found them helpful? Have you had any issues with them?"

## Follow-up questions regarding CAM products

"Where do you get the products from? How did you find out about this product? There are some guidelines about finding the best/safest product/therapist. Would you like to know more?"

## Points to cover

List or describe all health care treatments/modalities/products used for your child.

Do you give your child any over-the-counter medicines, vitamins, or supplements (eg, herbals, probiotics, homeopathic remedies)?

Do you take your child to any other health care providers (eg, chiropractor, naturopath)?

Have you altered your child's diet for health reasons?

What effect have these products or practices had on your child's health?

Have they helped your child?

Have there been any unwanted and unexpected effects?

making the assessment of possible interactions difficult. When treatment effectiveness is not known, safety is paramount, and much more needs to be done to document the safety of CAM in children.

## CONCLUSIONS

CAM use is common in children. Data presented here are from Edmonton and Ottawa and complement what has been

described in other parts of the country.<sup>33–36</sup> Use can and does change over time and is often undisclosed; we urge clinicians to inquire about CAM use during routine history taking at every patient visit. Sample scripts and questions to ask are included in Table 6. Parents would clearly like more information about CAM from their specialty clinics; such information would be easier to share if more primary data were available about the safety and

effectiveness of commonly used therapies.

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