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Don't Ask, Don't Tell: Parental Nondisclosure of Complementary and Alternative Medicine and Over-the-Counter Medication Use in Children's Asthma Management

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Abstract

Background—Parent-healthcare provider (HCP) communication is an important component of pediatric asthma management. Given the high prevalence of complementary and alternative medicine (CAM) and over-the-counter (OTC) medication use among this population, it is important to examine parental nondisclosure of these asthma management strategies.

Method—One-time interview and one-year retrospective medical record review with 228 parents of 5–12 year old children with asthma enrolled from 6 pediatric primary care practices examining parental nondisclosure of CAM and OTC medication use, reasons for nondisclosure, medical record documentation of CAM usage, and association between parent-HCP relationship and nondisclosure.

Results—Seventy-one percent of parents reported using CAM and/or OTC medication for children's asthma management and 54% of those parents did not disclose usage. Seventy-five percent "did not think" to discuss it. Better parent-HCP relationship led to decreased nondisclosure.

Discussion—HCPs can play an important role in creating an environment where parents feel comfortable sharing information about their children's asthma management strategies in order to arrive at a shared asthma management plan for the child leading to improved asthma health outcomes.

Parent-healthcare provider communication is an important component of pediatric asthma management. It is, however, an area that has not been fully explored in relationship to the use of complementary and alternative medicine (CAM) and over-the-counter (OTC) medications.

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Sharing this information with the child's health care provider (HCP) is important not only to ensure safety when these therapies are used but also to provide the HCP with a better understanding of the parents' health beliefs and practices. With this understanding, the parent and HCP can arrive at a shared management plan for the child aimed at achieving optimal asthma outcomes.

Prior research on CAM use in asthma showed fairly high prevalence rates of CAM use among children (Braganza, Ozuah, & Sharif, 2003; Crawford, Cincotta, Lim, & Powell, 2006; Mazur, DeYbarrondo, Miller, & Colasurdo, 2001; Reznik, Ozuah, Franco, Cohen, & Motlow, 2002; Shenfield, Lim, & Allen, 2002) yet the results of studies on CAM therapies do not generally support their efficacy in treating asthma (Angsten, 2000; Bielory, 2004; Bielory, Russin, & Zuckerman, 2004; Blazek-O'Neill, 2005; Gardner & Wornham, 2000; Graham & Blaiss, 2000; Gyorik & Brutsche, 2004; Heimall & Bielory, 2004; Markham & Wilkinson, 2004). CAM prevalence rates (lifetime and current) among children with asthma range from 52% to 89% (Braganza et al.; Mazur et al.; Reznik et al.; Shenfield et al.).

In the general pediatric population, studies show that the majority of parents do not disclose CAM use to their child's HCP (Cala, Crismon, & Baumgartner, 2003; Crawford et al., 2006; Heuschkel et al., 2002; Lanski, Greenwald, Perkins, & Simon, 2003; Madsen et al., 2003; Ottolini et al., 2001; Pitetti, Singh, Hornyak, Garcia, & Herr, 2001; Sawni-Sikand, Schubiner, & Thomas, 2002; Spigelblatt & Laine-Ammara, 1994; Wilson & Klein, 2002). The most frequently reported barriers to CAM disclosure, among the general population as well as families with children, were a feeling that the HCP did not need to know about CAM use, fear of a negative response from the HCP, and the HCP did not ask (Prussing, Sobo, Walker, Dennis, & Kurtin, 2004; Robinson & McGrail, 2004; Shaw, Thompson, & Sharp, 2006). Few studies examined whether the HCP inquired about CAM use among children; when reported, however, the rates of inquiry have been quite low (Heuschkel et al.; Lanski et al.; Pitetti et al.).

Epidemiologic data on OTC use in treating asthma are limited, outdated and have focused primarily on the use of OTC inhalers (Dickinson, Altman, Deitchman, & Champion, 2000; Gibson et al., 1993; Kushner, Hankinson, Wong, & Blanc, 1997; Redman & Druce, 1998; Scarpinato & Purdom, 1993). A single study conducted among adults with asthma reported that use of coffee and tea, but not OTC medications resulted in increased odds of being hospitalized (Blanc, Kushner, Katz, Smith, & Yelin, 1997). Even less has been published regarding disclosure of OTC medication use in asthma management. A search of the literature using Medline, CINAHL, and PubMed found only one study that examined physician-patient communication about OTC medication use among an adult population (Sleath, Rubin, Campbell, Gwyther, & Clark, 2001). The investigators found that 36% of the subjects who reported using OTC medication in the past month failed to disclose it to their HCP. Reasons reported for nondisclosure were that the physician did not ask (23%), OTC medication use was not important for the physician to know (14%), or they forgot (13%); no reason was stated for 24%. When we narrowed the search to studies examining disclosure of OTC medications used in asthma management, no studies were found.

To address these gaps in the literature, we examined CAM and OTC medication nondisclosure to the HCP in the context of managing childhood asthma. The aims of these analyses were (a) to examine the frequency of CAM and OTC nondisclosure to the HCP, (b) to describe nondisclosure by CAM domain and sociodemographic characteristics, (c) to investigate parents' reasons for not disclosing CAM and OTC medication use, and (d) to explore the relationship between parents' rating of the quality of their relationship with their child's HCP and nondisclosure.

METHODS

Design

The data for these secondary analyses were derived from a study investigating the impact of parental beliefs about the nature of asthma and its treatment on the adequacy of the child's treatment regimen. The study was cross-sectional and used a one-time, semi-structured home interview of parents of children with asthma and the children themselves, and a retrospective one-year review of the children's medical records. An additional section on CAM use was added to the parent interview as part of the first author's doctoral dissertation research project (Yoos et al., 2006). Data reported here were derived from the parental interview (the child interview did not assess CAM or OTC medication use).

Participants

The study sample consisted of 228 parents and their 5 – 12 year old children with asthma recruited from six pediatric primary care practice sites in Rochester, New York. The sites included 2 pediatric clinics serving primarily urban, minority families as well as 4 community pediatric practices serving predominantly middle-class families. The University of Rochester Institutional Review Board approved the study protocol for the main study and the secondary data analyses. Parents and children were invited to participate in the study if they met the following criteria: (a) the child was 5 to 12 years of age, (b) the family was English-speaking, (c) the child carried a diagnosis of asthma, and (d) the child had at least two asthma-related health care visits in the year prior to the interview. School-aged children with a diagnosis of asthma were identified in each primary care setting using the practice's computerized dataset to extract demographic information, ICD9 codes, and number of visits related to asthma. Eligible families were informed of the study by a letter from the primary care providers in each setting and families could refuse further contact by notifying their health care provider. Due to HIPPA regulations, the research staff was not allowed to contact families until they had given their assent to the provider. Potentially willing participants were then contacted by the research staff and offered enrollment. After agreement to participate was obtained, a single home visit was scheduled by the study nurse. Consent for the interview and medical record review was obtained from the parent and verbal assent was obtained from the child during the home visit. Experienced pediatric nurses trained in asthma care and also trained to the research protocol by asthma specialists on the team conducted the parent and child interviews and medical record abstractions. Interviews occurred over a 16-month period to capture seasonal variations in asthma.

Measures and Measurement Strategies

Demographic Variables—Race was determined using the National Institute of Health classification system

(http://grants.nih.gov/grants/funding/phs398/instructions2/p2_nih_policy_report_race_ethnicity.htm) and collapsed to Black, White, and Hispanic. Type of health insurance was used as a marker for poverty and was established using Medicaid and State Children's Health Insurance Program (SCHIP) eligibility because these programs use federal poverty guidelines for enrollment. Parental education was reported as the years of completed education and subsequently categorized as <high school, high school graduate, or > high school. Child's age was categorized as younger school-aged (5–8 years) and older school-aged (9–12 years).

Asthma Duration—Parents were asked how old the child was when s/he was diagnosed with asthma. The duration (in months) was calculated by subtracting this age from the child's age at the time of the interview.

Structured Assessment of Symptom Severity—The study nurse utilized a structured interview based on the National Asthma Education and Prevention Program (NAEPP) Expert Panel II guidelines (1997, 2002) to assign each child to one of four symptom severity groups: mild intermittent, mild persistent, moderate persistent, and severe persistent. Assignment was based on the parent's response to questions regarding daytime symptoms, nocturnal symptoms, activity limitations, exacerbations, and use of short-acting β_2 agonists for the three month period prior to the interview.

Anti-inflammatory Medication Use—Parents were asked to list all prescription medications that their child was currently taking for asthma management. The reported medications were classified as either maintenance anti-inflammatory or "quick relief" bronchodilator asthma medications.

CAM Use—CAM use was derived from a structured set of questions based on specific CAM therapies identified by the National Center for Complementary and Alternative Medicine (NCCAM). NCCAM (2007) classifies CAM therapies into five broad domains: (a) mind-body interventions (e.g., prayer, yoga, deep breathing exercises), (b) biologically based therapies (e.g., herbal supplements, special dietary products), (c) energy therapies (e.g., Reiki healing, use of magnets), (d) manipulative and body based methods (e.g., chiropractic manipulation, massage), and (e) whole alternative medical systems (e.g. acupuncture, Ayurveda). Parents were asked if they ever used the therapy and if "Yes" what they used. Because we did not assess the number of times they used a particular therapy, this variable represents the number of initial uses for the various CAM therapies assessed.

OTC Medication Use—The interview did not contain questions specific to OTC medication use. Use of these products emerged during the structured assessment of CAM. We decided to examine OTC medications because there was a high prevalence of usage, they were being taken with therapeutic intent, and the child's HCP was not monitoring usage. OTC syrups and pills were grouped together because they were taken orally. This variable represents the total number of initial uses of the OTC medications reported.

Nondisclosure of OTC and CAM Usage—We asked parents a global question about whether they discussed the use of CAM and OTC therapies with their child's HCP. The response choices were 1 (*Yes*), 2 (*No*) and 3 (*Some, but not all*).

Reasons for Nondisclosure—For each therapy not disclosed, we recorded (verbatim) the parent's reason for nondisclosure. The research team reviewed these responses and reached consensus on four categories: a) did not think/need to discuss it, b) personal barrier, c) perceived HCP barrier, and d) not necessary because prescribed medications were also used. Sample statements of personal barriers were: "Too embarrassed" and "It is personal and private." Sample perceived HCP barriers to disclosure statements included, "I see a different doctor each time I go," "Doctor is too busy to listen," and "Doctor didn't ask."

Parent-Health Care Provider Relationship—Quality of the parent-HCP relationship was assessed using a 10-item subscale from the Asthma Illness Representation Scale[®] (AIRS) (Yoos, Kitzman, & McMullen, 2003; Yoos et al., 2007). The AIRS instrument was developed to identify parental barriers to anti-inflammatory medication use and also risk factors for underutilization of these medications. Details on instrument development and the psychometric analyses conducted on the final instrument have been previously published but will be summarized here (Yoos, Kitzman, & McMullen, 2003). Cronbach's alpha for the total instrument was .87 and .79 for the parent-healthcare provider relationship subscale. In addition to feedback from parents and pulmonary experts and factor analysis which supported construct

validity, we also examined whether groups who were known to differ in morbidity outcomes based on demographic and background characteristics (race, education, and socioeconomic status) would differ on the questionnaire. There were significant differences in the total score and selected subscale scores based on these characteristics. In addition, the questionnaire differentiated children who were on an appropriate medication regimen or those with mild asthma from those who were on a suboptimal regimen. The Parent/Health Care Provider Relationship subscale items reflect provider availability, sensitivity, and communication skills. Sample statements were: “My child’s health care provider is clear about what medicines my child needs to control his/her asthma” and “I am sometimes reluctant to discuss my worries about asthma medicines with my child’s health care provider.” Items were scored on a 5-point Likert scale with 1 (*strongly agree*) to 5 (*strongly disagree*). When indicated, items were reverse scored prior to aggregation, with higher scores denoting a more positive relationship. Cronbach’s alpha for this subscale in this sample was .82.

ANALYTIC STRATEGIES

Descriptive statistics summarize nondisclosure of OTC medications and CAM use and subgroup differences by type of therapy, race, poverty, education, and symptom severity. Chi-square analyses were conducted to examine differences in nondisclosure by type of CAM/OTC medication and also the sociodemographic differences for reasons for nondisclosure.

Multinomial logistic regression analysis using maximum likelihood estimation (SAS V9.1) examined the influence of the parent-HCP relationship on nondisclosure. This model also included the following covariates that potentially impact nondisclosure: child’s age, number of months child had been diagnosed with asthma, use of anti-inflammatory medications, and symptom severity.

RESULTS

Descriptive Statistics of Sample and CAM/OTC Use

Three parents who reported “Other” race were excluded from all analyses because the group was too small and diverse to make meaningful race-related comparisons. Table 1 shows the descriptive statistics for the sample ($N=225$).

Overall, 159 of 225 parents (71%) reported ever using CAM and/or OTC therapies to manage their child’s asthma. There were statistically significant differences based on race, education, poverty, and child’s symptom severity between those parents who reported using CAM/OTC therapies and those who did not; these data have been more fully described in a previous publication (Sidora-Arcoleo, Yoos, McMullen, & Kitzman, 2007). One hundred thirty-one parents (58%) reported CAM use and 90 (40%) reported OTC medication use. Some parents reported using multiple types of CAM and OTC medications. For example, Parent A reported using cod liver oil, prayer, and Vicks Vaporub® at least once during the child’s lifetime for asthma management. Therefore, we counted this as three types of CAM/OTC therapies initially used. As a result, total usage of 380 CAM therapies and OTC medications was reported: 68% of the uses were CAM and 32% were OTC medications.

CAM Usage

A complete description of the types of CAM used has been described in a previous publication and will only be summarized here (Sidora-Arcoleo et al., 2007). Sixty-nine percent of the CAM therapies reported were mind-body based, 15% were manipulative therapies, 15% were biologically based therapies and 1% was alternative medicine systems.

OTC Product Usage

A total of 123 initial OTC medication uses were reported by 90 parents (40%) to treat their children's asthma. Sixty-eight percent of the OTC medications used were rubs such as Vick's Vaporub® ($N=84$). The remaining 32% were OTC pills and syrups such as Sudafed® and Robitussin® ($N=39$).

Nondisclosure of CAM and OTC Usage by Sociodemographic Characteristics

Of the 159 parents who reported CAM or OTC medication use, 32% stated that they disclosed all CAM and OTC therapies used (full disclosure), 14% stated they disclosed some therapies but not others (partial disclosure), and 54% percent of parents stated they did not disclose any CAM or OTC use to their child's HCP (nondisclosure). Chi-square analyses were not reliable due to small cell sizes in some subgroups, therefore, Table 2 presents the frequency distributions for disclosure by race, poverty, education and symptom severity.

Hispanic parents had the highest prevalence of nondisclosure compared with Black and White parents. Among poor and non-poor parents, the frequency of nondisclosure was over 50% and full disclosure only occurred one third of the time. Nondisclosure was greater than 50% for all three educational levels and full disclosure only occurred between 28% and 34% of the time. Nondisclosure ranged from 40% to 61% for all asthma severity levels and was highest among parents of children with mild symptoms. Full disclosure occurred less than one third of the time for all but the moderate persistent group. Partial disclosure was equivalent across all demographic characteristics examined.

Types of CAM & OTC Therapies Not Disclosed

Parents reported nondisclosure of 195 uses of CAM and OTC therapies. Nondisclosure occurred primarily in the use of mind-body therapies (105 of 195) and OTC medications (51 of 195). Tests of significance were conducted and none of the findings was statistically significant. An examination of the frequency distributions (Table 3), however, highlights several potential clinically significant results. Only three uses of alternative medicine systems were reported, therefore this group was omitted from these analyses.

Nondisclosure of mind-body therapies occurred approximately 50% of the time and nondisclosure was equivalent across race, poverty, education and symptom severity. Approximately 25% of the time, OTC medication use was not disclosed and the Black parents demonstrated the lowest rates of nondisclosure (17%). On average, the frequency of nondisclosure of biologically-based therapies was quite low but was highest among the parents who were minority, had less than a high school education and whose children had severe persistent symptoms. Frequency of nondisclosure of manipulative/body-based therapies was slightly higher than that for biologically-based therapies and was equivalent across all of the sociodemographic characteristics with one exception: nondisclosure by parents of children with moderate persistent symptoms was only 3%.

Reasons for Nondisclosure

When parents were asked why they did not disclose use of a CAM therapy or OTC medication, 75% stated that they did not think/need to discuss it. Parents identified HCP barriers for 13% of the therapies not disclosed; personal barriers (embarrassment or discomfort) were identified for 5% of the therapies; and for 7% of the therapies the parents reported that they did not need to disclose CAM or OTC medication use because they used these therapies with their child's prescribed medications. There were no statistically significant differences in reasons for nondisclosure based on type of CAM/OTC used.

Table 4 illustrates that there were statistically significant differences in reasons for nondisclosure by race ($\chi^2 = 25.71, p = .0003$), education ($\chi^2 = 12.99, p = .04$), and symptom severity ($\chi^2 = 19.48, p = .02$) but not poverty.

Personal barriers were cited as the reason for nondisclosure most frequently by parents who were Hispanic, had less than a high school education, and whose children had severe persistent symptoms. HCP barriers to disclosure were reported most often by parents who were minority, poor or who had at least a high school education. Hispanic parents and parents of children with severe persistent symptoms were much less likely than the other parents to state that “they did not think about” disclosing CAM and OTC medication use. Parents of children with mild symptoms (mild intermittent and mild persistent) more frequently reported that they did not need to disclose CAM/OTC medication use because they were using them with the child’s prescribed medications.

Nondisclosure and Health Care Provider Relationship

The multinomial logistic regression analysis revealed that after controlling for child’s age, duration of asthma, use of anti-inflammatory medications, and symptom severity, the parent-HCP relationship was a significant predictor of nondisclosure ($\beta = -.658, SE = .321, p = .036, 95\% CI -1.286, -0.029$, Table 5).

Nondisclosure was related to poor parent-HCP relationship, shorter duration of asthma, older child age, and the child not using anti-inflammatory medications.

DISCUSSION

This study provides the first in-depth exploration of parental nondisclosure to HCPs of CAM and OTC medication use in pediatric asthma management. The results demonstrated that 54% of parents who used CAM and OTC medications to manage their children’s asthma symptoms were not disclosing their use to their HCP. Full disclosure occurred only one third of the time, regardless of race, education, or poverty.

The reasons parents gave for nondisclosure in this study parallel what has been reported in the literature (Robinson & McGrail, 2004; Sleath et al., 2001). Seventy-five percent of the time parents stated that they did not think or need to discuss CAM/OTC use with their HCP. One explanation may be that parents are unsure about what therapies are considered CAM; they may be unaware that prayer, massage, and breathing exercises are all types of CAM. Culture may also play a role. Some of the therapies that we define as CAM under our traditional allopathic model of medicine are actually standard medical practices in other countries where this model does not predominate. For example, Jarabe 7 syrup is a combination of plant extracts frequently available in *botanicas* and used by Hispanic families to treat asthma (Patcher, Cloutier, & Bernstein, 1995). Because this is a regularly used treatment among this population, Hispanic parents in the United States may not even think to discuss this treatment with their child’s HCP. In fact, the Hispanic parents in our sample had the highest rates of nondisclosure (85%).

Nondisclosure resulted most frequently for mind/body based therapies. It may be reasonable to assume that therapies such as progressive relaxation or prayer would not cause harm, and may even be beneficial, if used in conjunction with the prescribed medication regimen. If, however, they are used instead of the child’s prescribed medications, the possibility of an adverse outcome exists. Almost one third of the therapies not disclosed were biologically based. Adverse effects have been reported for many herbal preparations and it is unknown whether there are negative interactions of these preparations with anti-inflammatory medications. Nondisclosure for the OTC medications may have resulted because they are commonly

available in the home and do not require a prescription leading parents to perceive them as “safe.”

Future laboratory investigations focusing on the interaction of commonly used herbs and OTC medications will provide evidence on whether concomitant use of these products with inhaled anti-inflammatory medications is safe and/or effective. Findings from these studies will provide parents and HCPs with valuable information they can use in making treatment decisions.

Another concern regarding the nondisclosure of OTC medication use arises if the OTC medications are used as the first line of treatment during an asthma exacerbation. In these cases, the child may be at risk for a delay in the start or stepping up of anti-inflammatory medications, thus placing the child at increased risk for poor asthma health outcomes. In this study we did not assess the reasons why and under what circumstances parents used OTC medications for treating their child’s asthma. Further investigations are needed to probe in more detail, whether OTC medications are used as a substitute for anti-inflammatory medications, a first-line of treatment during an exacerbation, or concomitantly with anti-inflammatory medications.

Seventy-five percent of the time parents stated that they “didn’t think to discuss it”. If we “don’t ask”, parents “don’t tell.” These findings highlight the need for HCPs to initiate discussions in their face to face contacts with parents of not only CAM and OTC medication use, but other traditional practices they may utilize to manage their child’s asthma symptoms. Patcher et al. (2002) in a study of asthma beliefs and practices among 4 different Latino cultural groups, demonstrated that while knowledgeable about the biomedical model of asthma and its treatment, respondents also identified humoral (“hot”/“cold”) etiologies and treatments for asthma. For example, if a parent believes that exposure to cold air triggers their child’s asthma symptoms, he or she might place the child in a warm bath. The investigators concluded these Latino parents integrated their traditional beliefs and practices into the biomedical model. Discussions with parents regarding their asthma beliefs and practices will allow HCPs to incorporate those non-harmful cultural beliefs and practices into the asthma management plan while addressing those that are potentially harmful and arriving at alternatives which are acceptable to the HCP and the parents. Hopefully, increased adherence to the pharmacological regimen will result through the acknowledgement and integration of these traditional beliefs and practices into the child’s asthma management plan.

A key finding of this study was that parents who reported a poor relationship with their child’s HCP were more likely to not discuss their CAM and OTC medication use. Pediatric nurse practitioners and other health care providers can improve and enhance this relationship and address the issues surrounding nondisclosure by a) creating a non-judgmental, respectful environment in which parents feel comfortable sharing information about their asthma management strategies, b) educating ourselves and our patients about the safety and efficacy of CAM and OTC medications being used to treat asthma, c) understanding the role that culture may play in CAM use, and d) including assessments of CAM and OTC medication use during our contacts with families. Through enhanced communication, education, and partnership with families, we can arrive at a shared asthma-management plan for the child that will lead to improved asthma health outcomes.

STUDY LIMITATIONS

There are several limitations to this study that need to be discussed. There were only 17 Hispanic families in our sample which resulted in low study power for the analyses examining racial differences in disclosure and nondisclosure. Recall bias may have been a factor because we asked parents to report on CAM and OTC medications ever used to treat their child’s asthma.

We thus focused on lifetime use of these therapies because the disclosure and barriers to disclosure questions were for lifetime (“ever used”). We did, however, assess current usage of these therapies and very few parents had discontinued their use. Although we asked parents to report all prescribed medications currently being used to treat their child’s asthma, we did not ask about adherence to the medication regimen. Therefore, we could not assess whether parents were altering the medication regimen concurrent with their use of CAM or OTC medications. Another limitation is that we did not obtain data from the HCP regarding his/her knowledge, attitudes, and beliefs towards CAM and OTC use in asthma management and whether they discussed use of these therapies in their contacts with parents.

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Table 1
Descriptive Statistics for Analysis Sample (N=225)

Characteristic	N	%		
Maternal Race				
Black	84			37
White	123			55
Hispanic	18			8
Poverty (Medicaid Status)				
Yes	102			45
No	123			55
Maternal Education				
< High School	30			13
High School Graduate/GED	68			30
> High School	127			57
Child's Age				
5–8 years	97			43
9–12 years	128			57
Asthma Symptom Severity				
Mild Intermittent	55			24
Mild Persistent	85			38
Moderate Persistent	53			24
Severe Persistent	32			14
% on anti-inflammatory medication	135			60
	Mean	SE		Range
Illness Duration (# months)	67.16	2.40		2 – 149
Health Care Provider Relationship	4.11	0.03		2.1 – 5.0

Table 2
Disclosure by Sociodemographic Characteristics

	Full Disclosure <i>n</i> (%)	Partial Disclosure <i>n</i> (%)	Non- Disclosure <i>n</i> (%)
Race			
Black (<i>n</i> =69)	24 (35)	10 (14)	35 (51)
White (<i>n</i> =77)	25 (32)	12 (16)	40 (52)
Hispanic (<i>n</i> =13)	1 (8)	1 (8)	11 (84)
Poverty			
Poor (<i>n</i> =81)	27 (33)	9 (11)	45 (56)
Non-Poor (<i>n</i> =78)	23 (29)	14 (18)	41 (53)
Education			
<High school (<i>n</i> =26)	8 (31)	4 (15)	14 (54)
High school (<i>n</i> =50)	14 (28)	8 (16)	28 (56)
>High School (<i>n</i> =83)	28 (34)	11 (13)	44 (53)
Symptom severity			
Mild intermittent (<i>n</i> =28)	6 (21)	5 (18)	17 (61)
Mild persistent (<i>n</i> =65)	19 (29)	7 (11)	39 (60)
Moderate persistent (<i>n</i> =40)	19 (48)	5 (13)	16 (40)
Severe persistent (<i>n</i> =26)	6 (23)	6 (23)	14 (54)

Table 3
Nondisclosure of CAM and OTC Medications by Sociodemographic Characteristics

% Nondisclosure				
	Biologically- based	Manipulative/body- based	Mind-body	OTC
Race				
White (n=75)	5	11	51	33
Hispanic (n=28)	11	11	46	32
Poverty				
Poor (n=118)	8	13	57	22
Non-Poor (n=77)	8	10	51	31
Education				
< High School (n=44)	11	9	55	25
High School (n=59)	7	15	51	27
> High School (n=92)	8	11	56	25
Symptom Severity				
Mild Intermitent (n=27)	0	11	56	33
Mild Persistent (n=96)	8	16	55	21
Moderate Persistent (n=34)	9	3	56	32
Severe Persistent (n=38)	13	11	50	26

Table 4
Reasons for Nondisclosure by Sociodemographic Characteristics

	χ^2	<i>p</i>	Did Not Think to Discuss	% Reason for Nondisclosure Personal Barrier	Health Care Provider Barrier	Used w/Meds so OK
Race	25.71	.0003				
Black (<i>n</i> =93)			75	2	15	7
White (<i>n</i> =76)			85	4	7	5
Hispanic (<i>n</i> =28)			46	21	21	11
Poverty	4.96	.17				
Poor (<i>n</i> =119)			70	6	17	7
Non-Poor (<i>n</i> =78)			81	5	7	7
Education	12.99	.04				
< High School (<i>n</i> =44)			76	13	4	7
High School (<i>n</i> =60)			79	5	11	5
> High School (<i>n</i> =93)			71	2	18	8
Symptom Severity	19.48	.02				
Mild Intermittent (<i>n</i> =27)			81	0	9	9
Mild Persistent (<i>n</i> =97)			75	3	14	8
Moderate Persistent (<i>n</i> =35)			83	3	11	3
Severe Persistent (<i>n</i> =38)			63	18	16	3

Table 5
 Logistic Regression for Nondisclosure on Parent-Health Care Provider Relationship, Child's Age, Use of Anti-inflammatory (AI) Medications, Duration of Asthma, and Symptom Severity

	β	<i>SE</i>	<i>p</i>	95% <i>CI</i>
Parent-Health Care Provider relationship	-.671	.321	.036	-1.286, -.029
Child Age	1.001	.371	.006	0.275, 1.728
Asthma Duration	-.015	.005	.003	-0.025, -.0005
Use of AI Medications	.689	.330	.035	0.042, 1.335
Symptom Severity	-.228	.169	.176	-0.560, 0.104