The importance of cultural and linguistic issues in the emergency care of children

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Background: Rapid growth in the diversity of the US population makes it increasingly likely that emergency clinicians will encounter greater numbers of patients from different cultures, but little is known about the importance of culture and language in the emergency care of children.

Objective: To conduct a critical review and synthesis of published studies on culture and language in the emergency care of children.

Methods: PubMed was used to perform a literature search (using 17 search terms) of all articles on culture, language, and the emergency care of children published in English or Spanish from 1966 to 1999.

Results: More than 2000 citations initially were identified; consensus review yielded 400 papers that were photocopied. A final database of 117 articles revealed the following: certain normative cultural values, such as the Navajo *hozhooji* (the importance of thinking and speaking positively), can have profound effects on informed consent and discussions of medical risk. For limited English proficient children and their families, studies document that medical interpreters frequently are not used, there is a lack of trained interpreters, there are more access barriers, and those who need but do not get interpreters have poor understanding of their diagnosis and treatment. Numerous folk illnesses, such as *empacho* among Latinos, can affect care, because symptoms often overlap with important bio-medical conditions, the first clinical contact may be with folk healers, and certain folk remedies are harmful or even fatal. Certain parent beliefs and practices can result in serious morbidity and fatalities (from lead poisoning, liver failure, and other causes), costly or unnecessary medical evaluations (eg, Fenugreek teas), and clinical findings easily confused with child abuse (eg, coining). Biased provider attitudes and practices can have profound clinical consequences, including ethnic disparities in prescriptions, analgesia, test ordering, sexual history taking, asthma care quality, and diagnostic evaluations.

Conclusions: Failure to appreciate the importance of culture and language in pediatric emergencies can result in multiple adverse consequences, including difficulties with informed consent, miscommunication, inadequate understanding of diagnoses and treatment by families, dissatisfaction with care, preventable morbidity and mortality, unnecessary child abuse evaluations, lower quality of care, clinician bias, and ethnic disparities in prescriptions, analgesia, test ordering, and diagnostic evaluations.

INTRODUCTION

Rapid growth in the diversity of the US population makes it increasingly likely that physicians will encounter greater numbers of patients from different cultures. Over 78 million Americans, or about 29% of the nation's population, are of nonwhite race or ethnicity (1). One out of every three US children ($\leq$ 18 years old) is nonwhite (2). Of the approximately 74 million children living in the US in 1999, 47.9 million (65%) were non-Latino white, 11.6 million (16%) were Latino, 10.8 million (15%) were non-Latino African-American, 3 million (4%) were Asian or Pacific Islander, and 714,000 (1%) were Native American (2). There already are more nonwhites than whites in the nation's most populous state, with 52% of California's population comprised of minorities (2). Nonwhites outnumber whites in eight of the 10 largest cities in the United States (2). By 2025, almost 40% of Americans and about half of all US children will be nonwhite (2). From 1991 to 1997, almost 7 million new immigrants came to the US, a pace that will allow 1991 to 2000 to shatter the 20th century record for most immigrants in a decade (set in 1901 to 1910) (2).

The dramatic surge in the diversity of our nation has led to a greater recognition of the importance of providing culturally competent and linguistically appropriate health care. A growing literature reveals that culture and language significantly impact clinical care, including health care processes, morbidity, mortality, quality of care, and patient satisfaction, issues of intense interest in this age of managed care. A recent review, for example, demonstrated that failure to consider a patient's cultural and linguistic issues can result in a variety of adverse consequences, including miscommuni-

cation, poor continuity of care, less preventive screening, difficulties with informed consent, inadequate analgesia, decreased access to care, use of harmful remedies, delayed immunizations, and fewer prescriptions (3).

Although there has been a recent increase in the number of studies on cultural issues in health care, not enough attention has been devoted to culture and the emergency care of children. Indeed, in an extensive literature search, we did not encounter any published reviews, conceptual frameworks, synthetic overviews, or models addressing culture and the emergency care of children. We therefore conducted a literature review to 1) identify published studies on culture and language in the emergency care of children, 2) define the key issues for providers of emergency care of children, and 3) highlight findings concerning managed care and health care policy.

METHODS

We used PubMed to perform a literature search of all articles on culture, language, and the emergency care of children published in English or Spanish from 1966 through April 1999. The PubMed database includes MEDLINE, PreMEDLINE, HealthSTAR, and publisher-supplied citations (4). We used the following search terms, both as medical subject headings and as key words: culture, language, interpreters, Aborigines, African-Americans, Asian-Americans, blacks, Eskimos, Gypsies, Hispanic-Americans, immigrants, Latinos, Pacific Islanders, Native Americans, North American Indians, folk illnesses, home remedies, parental beliefs, and provider behaviors. We then performed Boolean searches of each of these terms using the search terms "child," "pediatric," and "emergency care." For example, after identifying all citations using the key word "Hispanic-Americans," the database was limited to those citations with the key word "child." Additional citations were obtained by scanning the reference lists of the final set of articles that were photocopied and analyzed.

To ensure a more rigorous, data-driven approach, we included only those studies that reported analysis of primary or secondary data sources (including case reports). We thus excluded review articles, perspectives, opinion pieces, editorials, essays, and papers that failed to document adequately the collection, analysis, and reporting of scientific data. Case reports were included because we found that a substantial number of cultural issues in pediatric emergency care were reported only in this format. Because our primary study aim was to examine cultural and linguistic issues in the emergency care of children, we also excluded studies that 1) concerned issues not directly related to the emergency care of children (such as primary care topics), 2) were ethnographies or anthropologic investigations that contained no data of clinical relevance, 3) dealt solely with complementary and alternative medicine practices, and 4) exclusively focused on adults (> 18 years of age) or primarily adult diseases. We did, however, include a small number of studies on adult populations that 1) concerned conditions or issues that frequently affect children and 2) addressed relevant issues for which no studies on children exist. Certain studies that were conducted in nonemergency department settings but addressed issues relevant to emergency medicine also were included.

We compiled citations and their abstracts for all titles located in the PubMed search. The first three authors then met over the course of several months to review the abstracts of all citations. Studies that failed to meet all inclusion and exclusion criteria based on abstract content were excluded from further analysis only by consensus of the three authors to ensure validity and consistency. The remaining citations and those without abstracts were photocopied.

All photocopied articles were reviewed by three of the authors (G.F., J.R., A.S.). Additional articles were excluded if they failed to meet all inclusion and exclusion criteria. The final set of articles were then classified using the five-component cultural competency model of Flores (3) and Flores et al. (5), which has been described in detail elsewhere. In brief, these five components are 1) normative cultural values, the beliefs, ideas, and behaviors that a particular cultural group generally values and expects in interpersonal interactions (but bearing in mind that individuals subscribe to group norms to varying degrees (3)); 2) language issues; 3) folk illnesses, culturally constructed diagnostic categories commonly recognized by an ethnic group; 4) parent and patient beliefs, including beliefs about disease causality, and use of home remedies, folk remedies (except those used for specific folk illnesses), and over-the-counter medications; and 5) provider practices, the beliefs and practices of health care providers that are directly or indirectly associated with disparities or bias in health care.

RESULTS

Literature Search. The PubMed search initially identified over 2000 citations. Consensus review of the initial citations yielded 400 papers that were photocopied. The final database consisted of 117 articles.

Normative Cultural Values. An ethnographic study of Navajo traditional healers, biomedical health care providers, and laypersons revealed normative cultural values that substantially differ from Western bioethical beliefs and can have profound effects on informed consent, advance directives, and the discussion of medical risks (6). Study participants commented that it is important to think and speak in a positive way (a concept called *hozhooji*), consistent with the Navajo view that thought and language have the power to shape reality and control events. The expectation is that communication between healers and patients will embody this concept of positive thoughts and words. In this view, negative thoughts and words can result in harm. Thus, one Navajo man was told by his surgeon that in every operation there is a risk of not waking up, which the gentleman viewed to be almost like a death sentence, so he refused to consent to the surgery (6). Indeed, 86% of participants stated that advance care planning (establishing a living will or durable power of attorney in the event of incapacitation) was a dangerous violation of traditional Navajo values and thinking, and many would not even discuss the issue because they felt it was too dangerous (6).

In the emergency care of Navajo children and their families, a clinician's lack of awareness of *hozhooji* has the potential to cause failure to obtain consent for procedures, nonadherence, and dissatisfaction with care. What methods can the clinician use to address informed consent, discussion of risks, and advanced directives sensitively? The approach used by traditional Navajo healers is to communicate information about possible bad outcomes by making reference to a hypothetical third party (7). A second approach is to focus on the positive aspects of the treatment (7).

The potential effects of cultural misunderstanding on treatment and prevention were indicated in a study comparing recall of descriptions of illness and treatment between matched groups of American and Australian Aboriginal women of childbearing age (8). Two passages containing either Aboriginal or Western concepts of illness and treatment were read to participants, who were then asked to recall the stories. When hearing the passage from their own culture, participants were significantly more likely to recall more total words and the gist, and significantly less likely to make errors in

words or ideas. In contrast, when hearing the passage from the other culture, participants were significantly less likely to recall words and gist and more likely to make errors. In the case of the American story about illness and the prescribed treatment, the Aboriginal women recalled only half as many idea units as the American women, and one quarter of what the Aboriginal women recalled was inaccurate. The investigators concluded that the success of cross-cultural interactions regarding treatment and prevention issues might be hindered by miscommunication. They suggest that incorporating the patient's model of illness into the treatment plan and using a cultural negotiator with transcultural expertise (such as a trained interpreter) might overcome these problems.

Language Issues. Three studies highlight the barriers to health care faced by patients with limited English proficiency (LEP). A small qualitative study of nurses and foreign-born patients revealed problems related to medical histories and physical examinations (9). Language issues were considered potentially problematic by most nurses and patients. Patients reported that language barriers caused difficulties communicating concerns, whereas nurses feared that language problems hindered obtaining accurate clinical information and might result in misunderstanding instructions. Among Latino adolescents and adults in a primary care practice, LEP patients were significantly more likely than their English-speaking counterparts to be dissatisfied with care and significantly less likely to have medication side effects explained (10). Most participants said that understanding medication side effects corresponds with adherence, but about half of the LEP patients did not receive explanations of medication side effects, compared with 16% of patients fluent in English. For 138 disadvantaged asthmatic Latino children (all of whom had made emergency department [ED] visits in the prior year), language problems in talking to physicians were cited by the children's mothers as one of the major barriers to improved management of asthma (11).

Several studies have documented the use and effectiveness of medical interpreters. In a study of 301 primary care physicians in northern California, researchers found that LEP patient visits were common but trained interpreters were infrequently used (12). Ninety-two percent of the physicians reported seeing at least one LEP patient per week, and 21% of all encounters were with LEP patients. Either a trained interpreter was used or the physician was fluent in the patients' language in only one third of cases. Untrained interpreters were used in more than half of all encounters, and no interpreter was used in 11% of encounters. Intriguing disparities were found in a study of the perceptions of Spanish-speaking Latino patients and their English-speaking psychiatrists regarding initial therapy interviews with or without interpreters (13). Two groups of Latino patients were examined: LEP patients who used an interpreter, and English-proficient (EP) patients who neither requested nor used interpreters. Only 70% of EP patients said that they understood their doctor, whereas 81% of LEP patients who used interpreters understood their doctor; however, 81% of the psychiatrists said that the LEP patients who used interpreters felt less understood by their doctors. Furthermore, although none of the psychiatrists believed that they helped LEP patients with interpreters as much as they helped the EP patients, significantly more of the LEP (76%) than the EP (40%) patients reported that the psychiatrist helped them with their problems.

Data on the use of interpreters for 530 Latino adult ED patients suggest some of the language problems that probably confront families of children brought to the ED, including infrequent use of interpreters, lack of trained interpreters, and perceived impaired understanding of the treatment plan (14). No interpreter was used for 46% of patients for whom an interpreter was thought necessary by either the patient or clinician. When both the clinician's Spanish and patient's English were poor, an interpreter was not called one third of the time. For patients who had an interpreter, 39% of the interpreters were untrained, including family members and friends (12%, one third who were < 18 years old), hospital clerks (11%), and other ED employees (16%). Patients who needed but did not have an interpreter were significantly less likely to have a good to excellent understanding of their discharge diagnosis and treatment plan but significantly more likely to have preferred that the examiner had explained things better, compared with patients who did not need an interpreter and those who needed and got an interpreter.

Folk Illnesses. *Overlap with Biomedical Conditions.* By knowing the symptoms of common folk illnesses and how they overlap with biomedical conditions, the pediatric emergency clinician can obtain medical histories and diagnoses more rapidly, accurately, and efficiently. Table 1 summarizes folk illnesses commonly seen in the emergency care of children and biomedical conditions that overlap with these folk illnesses.

Empacho is a folk illness known to affect Latinos in which something (usually food or saliva) gets stuck inside the stomach due to dietary indiscretions such as eating food that is poorly prepared or of the wrong type and eating too much or at the wrong time (15). The most common symptoms include vomiting, stomach pain, headache, abdominal distention, loss of appetite, diarrhea, fever, and crying (15–17). As evidenced by presentation of two cases with common *empacho* symptoms to 10 pediatricians, *empacho* can overlap with important and sometimes serious biomedical conditions, including gastroenteritis, viral infections, milk allergy, appendicitis, intussusception, and anatomic obstruction (15).

Several other folk illnesses from diverse cultures (Table 1) have gastrointestinal symptoms that overlap with gastroenteritis and dehydration. In Swaziland, three kinds of folk diarrhea illnesses are recognized: 1) *umsheko,* believed to be caused by heat, an evil wind, relocation, or eating or drinking bad, contaminated, or insufficient food or drink; 2) *kuhabula,* caused by inhalation of medicinal smoke or vapors of another clan; and 3) *umphezulu,* contracted *in utero* when the pregnant mother failed to keep her head covered at all times or passed through an area stuck by lightning or where enemies spread harmful medicines (18). *Mandama* is a folk diarrhea illness believed by the Sinhalese in Sri Lanka to be caused by an infant's consumption of both breast milk and rice cereal, resulting in an indigestible mix which agitates beneficial worms living in the gut (19). In rural Bangladesh, there are four distinct types of diarrheal folk illnesses of varying seriousness: 1) *dud haga,* due to polluted breast milk; 2) *ajirno,* caused by indigestion due to overeating or food poisoning; 3) *amasha,* of unclear etiology; and 4) *daeria*, due to consumption of inappropriate or rotten food or to a curse (20). In northern Pakistan, the eight distinct types of diarrheal folk illnesses (Table 1) have a panoply of believed causes, including congenital conditions, poisons, shadows, indigestion, diet, teething, and the evil eye (21). *Doença de Criança* is a Brazilian diarrheal folk illness that is considered by some mothers to be virulent, transmissible, and the leading cause of childhood death (22,23). Its believed causes are multiple environmental and supernatural etiologies, including unhealthy pregnancy behaviors, diet, sanitation, trauma, microbes, insects, parasites, spirits, and the pull of the moon (22,23).

Caida de mollera (fallen fontanelle in Spanish) is a Latino folk illness characterized by diarrhea, excessive crying, fever, loss of appetite, irritability, and a fallen fontanelle (24–27). The illness is believed to affect infants under 1 year old (27) and to be caused by

TABLE 1

Folk illnesses with symptoms that overlap with biomedical conditions affecting the emergency care of children

Regional origin	Folk illness	Ethnicity/nationality that may have folk illness belief	Symptoms of folk illness	Biomedical conditions that overlap with folk illness
Latin America	*Empacho* (and *pega*)	Latino	Vomiting, stomach pain, headache, abdominal distention, loss of appetite, diarrhea, fever, and crying	Gastroenteritis, viral infections, milk allergy, appendicitis, intussusception, anatomical obstruction
	Caida Mollera	Latino	Diarrhea, excessive crying, fever, loss of appetite, irritability, fallen fontanelle	Gastroenteritis, dehydration, sepsis, meningitis
	Susto	Latino	Drowsiness, insomnia, irritability, exaggerated startle reflex, diarrhea, anorexia, fever, and nightmares	Persistent symptoms after pesticide toxicity
	Mal Ojo	Latino	Inconsolable crying, fever, diarrhea, vomiting, pain, gassy stomach	Gastroenteritis, dehydration, bacteremia, sepsis
	Quebrante/Olhado	Brazilian		
	Quebranto	Costa Rican	Irritability, crying, leg-length discrepancy	Developmental dysplasia of the hip
	Doença de Criança	Brazilian	Diarrhea, fallen fontanelle, convulsions, cyanosis, crying, vomiting (and 176 other less common symptoms)	Gastroenteritis, dehydration, malaria, bacterial meningitis, dengue, measles, pneumonia
	Ventre Caido	Brazilian	Vomiting, diarrhea, loss of appetite, fatigue, cough	Gastroenteritis, dehydration
Africa	*Nyènkènè bilènkè*	Mali	Red urine	Schistosomiasis
	Umsheko	Swaziland	Wet, loose, nongreen stools accompanied by grumbling stomach, loss of appetite, and vomiting	Gastroenteritis, dehydration
	Kuhabula	Swaziland	Sunken fontanelle, loss of strength, vomiting, crying, ribs appear to come together	Gastroenteritis, dehydration
	Umphezulu	Swaziland	Green or yellow diarrhea, unusual cry, loss of appetite, distended stomach and/or navel, grumbling stomach, sunken fontanelle, blood vessels visible on stomach or forehead	Gastroenteritis, dehydration
Indian sub-continent	*Mandama*	Sinhalese (Sri Lanka)	Diarrhea, abdominal distention, lethargy, lean legs	Gastroenteritis, dehydration
	Dud haga	Rural Bangladesh	Watery stools, crying, abdominal pain	Gastroenteritis, dehydration
	Ajirno	Rural Bangladesh	Diarrhea, abdominal distention, gripping of the stomach	Gastroenteritis, dehydration
	Amasha	Rural Bangladesh	Mucoid and sometimes bloody diarrhea	Gastroenteritis, dehydration, dysentery
	Daeria	Rural Bangladesh	Frequent stools with rice-water appearance, sunken eyes, thirst, vomiting, reduced urine output, weakness	Cholera, gastroenteritis, dehydration
	Phrooey	Northern Pakistan	Green diarrhea, blisters on body, infections of the ear and eye	Gastroenteritis, dehydration
	Sarishna	Northern Pakistan	Green watery stools, burning yellow urine, weakness, eyes turned upward	Gastroenteritis, dehydration
	Loose motions	Northern Pakistan	White watery stools, fallen fontanelle	Gastroenteritis, dehydration
	Sardawan	Northern Pakistan	Frequent green watery stools, sunken eyes, weakness	Gastroenteritis, dehydration
	Maleeh	Northern Pakistan	Yellow or green watery stools	Gastroenteritis, dehydration
	Saya/parchawan	Northern Pakistan	Persistent green, white, or yellow diarrhea	Gastroenteritis, dehydration
	Nazar (evil eye)	Northern Pakistan	Green watery stools, fever, sunken eyes, dry lips, weak extremities	Gastroenteritis, dehydration
	Kand-pota (fallen fontanelle)	Northern Pakistan	Watery green stools, vomiting	Gastroenteritis, dehydration
	Sardi/Padsa	Marathis (India)	Cough, runny nose, congested chest, fever	Mild upper respiratory infection
	Potat ala	Marathis (India)	Labored respirations, stomach "going up and down," fever, phlegm, cough, congested chest	Moderate to severe respiratory infections including pneumonia
	Paltha dabba	Marathis (India)	Tight/hard stomach, worse at night, cough, eyes closed, nostrils flare, fisted hands	Severe pneumonia
	Phugrya vat	Marathis (India)	Tight/hard stomach, anorexia, constipation	Moderate to severe respiratory infections, including pneumonia
Asia/ Pacific Islands	*Kitsune-tsuki* (fox possession)	Japanese	Delusions, disordered thinking, auditory hallucinations, paranoia	Psychosis, schizophrenia
	Piang	The Philippines	Cough, fever	Acute respiratory infection including pneumonia
	Naeng	Korea	Vaginal discharge, back pain, cold hands and feet, abdominal pain, vaginal itching	Vaginal candidiasis, sexually transmitted diseases

a fall to the baby, tossing the baby in the air too hard, holding the baby incorrectly, trauma to the baby, or pulling the nipple too quickly or forcefully from an infant's mouth (24–27). Surveys of physicians confirm that the symptoms of *caida de mollera* overlap with several important biomedical conditions, including gastroenteritis, dehydration, sepsis, and meningitis (25,26). In a review of 57 cases of *caida de mollera,* two physicians concluded that all patients should have made a medical visit, and 87% of cases were life-threatening (26). Although not nearly as well studied as *caida de mollera,* fallen fontanelle also is a folk illness in Pakistan (called *kandi pota*) (21) and Brazil (*moleira funda*) (22,23) with remarkably similar symptoms that probably overlap with the same biomedical conditions.

Susto or fright sickness is a Latino folk illness that occurs after a startling event such as a car accident, which is believed to dislodge the soul (24,25,28). Symptoms include daytime drowsiness, insomnia, irritability, exaggerated startle reflex, diarrhea, anorexia, fever, and nightmares (24,25,28). Data on adults indicate that patients with *susto* have significantly more serious illness and greater comorbidity and mortality (29). Physicians reviewing cases of *susto* among the children of Mexican migrant farm workers concluded that 60% of the children should have made medical visits and that in 21% of cases, the sickness could be life threatening if the symptoms were untreated (30). Among 30 adult Mexican farm workers who had serious pesticide poisoning, 23% believed that they developed *susto* as a consequence (31).

Certain Indian and Filipino folk illnesses overlap with acute respiratory infections (ARIs) that range from mild upper respiratory infections to severe pneumonia. In the Marathwada region of India (32), four major folk illnesses are associated with respiratory infections (Table 1): 1) *sardi* or *padsa,* equivalent to the common cold and believed to be caused by wind blowing in the ears, sun, or rain; 2) *potat ala,* a moderate to severe ARI due to breastfeeding from a mother who had consumed inappropriate foods; 3) *paltha dabba,* an extremely serious lower respiratory infection that almost always results in death and is due to untreated *potat ala,* or gas in the stomach; and 4) *phugrya vat,* a moderate to severe ARI due to eating inappropriate food. *Piang* is a Filipino folk illness manifesting as a sprain or dislocation of tissues or bones in the chest or back, thought to be caused by the child falling down or being mishandled (33).

The remaining folk illnesses with symptoms that overlap biomedical conditions hail from a diverse set of ethnic groups. Two studies have described *kitsune-tsuki* (fox possession) in Japan, in which the fox spirit possesses a person who is upset, manifested by symptoms consistent with acute psychosis and schizophrenia (34,35). For example, an adolescent involved in a traffic accident started imitating a fox at the police station, bit his mother, was hospitalized for 3 months for psychosis, and after being discharged was diagnosed with fox possession by a religious practitioner (34). In Mali, where schistosomiasis is endemic, the three types of the folk illness *nyènkènè bilènkè* (red urine) are attributed to a number of causes, including overexertion, diet, stepping in animal or human urine, sexual intercourse, and maternal-fetal transmission (36). *Naeng* is a Korean folk illness affecting females that presents as vaginal discharge, back pain, cold hands and feet, and abdominal pain; believed causes include overcooling of the body, a predisposed constitution, insufficient rest after a delivery, and poor genital hygiene (37). Two Costa Rican folk illnesses have symptoms that overlap with biomedical conditions (38): *pega,* a gastrointestinal illness essentially identical to *empacho;* and *quebranto,* caused when babies under 7 months old are handled roughly, causing hip and leg damage manifested by irritability, cry-

ing, and leg-length discrepancy, symptoms consistent with developmental dysplasia of the hip. *Mal ojo* (evil eye) is a Latino folk illness in which a person with "strong eyes" covetously looks at a child, causing the blood to heat up, leading to inconsolable crying, fever, diarrhea, vomiting, pain, and a gassy stomach (24,29). Evil eye is also recognized as a folk illness in Pakistan (*nazar*) (39), Sri Lanka (*eshwaha*) (19), and Brazil (*quebrante* or *olhado*) (22,23,40), although the symptoms are not as well documented. The Brazilian folk illness *ventre caido* (displaced intestines) (40) also has symptoms that overlap with biomedical conditions (Table 1).

Adverse Consequences of Folk Illness Treatments. Certain remedies for folk illnesses can cause serious morbidity and, on rare occasions, mortality (Table 2). The use of several toxic remedies is associated with the Latino folk illness *empacho.* In particular, frequent use has been documented of lead oxide and lead carbonate powders called *azarcón, greta,* and *albayalde,* with total lead contents varying from 70 to 97% (41–43). Multiple cases of severe lead toxicity have been reported, with outcomes that include death and lead levels as high as 124 µg/dL (41,44–47). Toxicologic analysis indicates that *azarcón* has a greater toxic effect on the heart and brain compared with pure lead tetroxide, possibly due to chemical interactions with other components, such as calcium (42). Children who have had two or more episodes of *empacho* have almost triple the odds of lead poisoning from these folk remedies (48). Community use of lead-based *empacho* remedies can be as high as 35% in Mexico (49) and 11% in the United States (50). Other potentially toxic folk remedies occasionally used for *empacho* include wormwood tea (*estafiate*), which can cause convulsions and delirium (25,28); laundry bluing (*anil*) (25); and elemental mercury (*azogue*) (25). Harmless but culturally acceptable alternative remedies for *empacho* that can be offered to families by the pediatric ED clinician include abdominal massage with warm oil (15,25,28,50) and mint tea (Table 2) (25,50).

Pediatric emergency clinicians should be aware of other potentially harmful folk illness treatments. In Bangladesh (20), Pakistan (39), and Sri Lanka (19), folk illnesses associated with infantile diarrhea (*dud haga, nazar,* and *eshwaha,* respectively) include beliefs that the mother's breast milk is poisoned and breast feeding must be discontinued, placing the infant at greater risk of dehydration and mortality (Table 1). The treatment of the Indian respiratory folk illness *phugrya vat* can include burning an acidic seed (*biba*) in a circle on the child's abdomen, which may result in infections and ulcerations (32). For diarrhea accompanying the Swazi folk illness *umphezulu,* traditional vaccination (*kugata*) may be performed in which shallow cuts are made with a razor blade (usually not sterilized), then rubbed with ashes (18). An uncommon treatment of *caida de mollera,* consisting of shaking an infant held upside-down with the head partially immersed in boiling water, resulted in subdural hematoma and eventual death (51). Culturally acceptable, harmless alternative remedies are available for all of these harmful folk remedies (Table 2).

Folk Illness Prevalence and Folk Healers. Table 3 summarizes the limited available data on the prevalence of folk illnesses relevant to the emergency care of children. One can conclude that 1) there is tremendous variability in folk illness prevalence, as exemplified by substantial differences in Latino folk illness prevalences even in adjacent communities in three states in the southwestern United States (25); 2) factors associated with folk illness beliefs have not been elucidated by the few studies examining this topic; and 3) in some communities, the vast majority of parents have folk illness beliefs.

TABLE 2

Biomedical conditions in the emergency care of children that can result from harmful folk illness remedies or parental beliefs and practices

Regional origin	Condition	Associated folk illness, parental belief, or symptom	Ethnicity/nationality that may have folk illness/ parental belief	Harmful treatment associated with condition	Culturally acceptable alternative folk treatments	Reference
Latin America	Lead poisoning	*Empacho*	Latinos	Powders containing lead oxides (*azarcón, greta, albayalde*)	Abdominal massage with warm oil, mint tea	41, 43–47
	Subdural hematoma	*Caida de mollera*	Latinos	Infant shaken while held upside-down with head partially immersed in boiling water	Put soap foam on fontanelle, gently push up on palate	51
	Gonococcal conjunctivitis	Conjunctivitis	Latinos (?)*	Adult urine as treatment for conjunctivitis in children	Special diet: vegetable soup and fresh fruits, carrot juice, eliminate flour tortillas, bread and soda	62
	Disseminated *Salmonella arizona* infections	Sinus and skin conditions, diarrhea, infections, itchy feet, AIDS, diabetes, connective tissue diseases, heart disease, cancer	Latinos	Capsules or powder containing dried ground rattlesnake, raw dried rattlesnake meat: *polvo de vibora, carne de vibora, vibora de cascabel*	Variety of harmless, disease-specific herbal preparations	63
	Hepatic veno-occlusive disease	Cough	Latinos	*Gordolobo yerba,* tea made from herb *Senecio longilobus,* which contains hepatotoxic pyrrolizidine alkaloids	Herbal teas using small amounts of oregano, cinnamon, or chamomile (not sweetened with honey)	77
Africa	Wound infection/ cellulitis around infant's umbilicus	*Umphezulu* (type of diarrhea)	Swaziland (Africa)	Traditional vaccination (*kugata*): razor blade cuts made around infant's umbilicus rubbed with ashes	Herbal teas	18
	Urinary retention, dysuria, urinary tract infections, incontinence, fever, menstrual difficulties, cysts, abscesses, fistulae, obstetric complications; vaginal pain, bleeding, and discharge	Reasons cited by cultures for practice: tradition, group identity/ norms, chastity, marital reasons, hygiene	Widespread in 33 African nations, most commonly: Somalia, Djibouti, Ethiopia, Eritrea, Sudan, Sierra Leone; certain Islamic peoples in Asia, Middle East	Female circumcision, genital mutilation, *Sunna* infibulation, Pharaonic circumcision, traditional/ ritual female genital surgery	Education regarding health risks; discuss culturally-acceptable alternatives with community/religious groups; advocacy against procedure by community, religious, women's and law organizations; use of least damaging procedure (such as small nick/incision of prepuce) in families insisting on practice	64–68
Indian Sub-continent†	Dehydration	*Dud haga* *Nazar* *Eshwaha,* diarrhea in general	Bangladesh Pakistan Sri Lanka	1) Breastfeeding discontinued because breast milk considered poisoned by shadow, evil eye, black magic, new pregnancy, illness, diet, cold; pseudoscientific laboratory breast milk analysis shows pus, germs, mobile bacteria, or blood (Pakistan) 2) Reduce child's oral intake of liquid because liquid believed to worsen diarrhea or vomiting feared	Mother avoids eating green vegetables, fish, meat; give formula until breast-milk no longer considered poisonous; apply "chanted oil" (available from folk healers, Buddhist priests); education	19, 20, 39
	Burns in circular pattern on abdomen	*Phugrya vat* (respiratory illness)	India	Burning acidic seed (*biba*) in circle on abdomen	Rub ghee (clarified butter) on abdomen	32
	Lead poisoning (including death)	Maintenance of infant health	India	Lead-containing tonics, such as *ghasard,* with lead concentration up to 1.6%; lead-containing eye cosmetics (*kohl, surma alkohl*)	Education, ascertain whether multivitamin drops are acceptable replacement	71, 125
	Lipoid pneumonia, bronchiectasis	Cleaning airway of newborn; treatment of respiratory infections	India	Apply butter or oil to nostrils or oropharynx	Replace with saline drops	72, 73

(continued)

TABLE 2 (*Continued*)
Biomedical conditions in the emergency care of children that can result from harmful folk illness remedies or parental beliefs and practices

Regional origin	Condition	Associated folk illness, parental belief, or symptom	Ethnicity/nationality that may have folk illness/ parental belief	Harmful treatment associated with condition	Culturally acceptable alternative folk treatments	Reference
Middle East[†]	Lead poisoning (including encephalopathy, death)	Teething, cosmetics	Saudi Arabia, Kuwait, Oman	Teething powders: *Saoott, Cebagin* Cosmetics: *Koh* Other: *Bint al dahah*	Teething powders/solutions without lead	61, 75, 124
	Lipoid pneumonia, bronchiectasis	Cleaning airway of newborn; treatment of respiratory infections	Saudi Arabia	Apply butter or oil to nostrils or oropharynx	Replace with saline drops	73, 74
	Hypernatremia (fatal)	Healthy newborn skin	Turkey	Salting infant's skin or placing salt in swaddling material before swaddling	Education regarding health risks	78
Asia/Pacific Islands[†]	Lead Poisoning	Fever, rash	Hmong (Cambodia)	*Pay-loo-ah,* a red/orange powder with lead concentration of 1–80% (and occasionally arsenic)	Education regarding risks; replacement with culturally-acceptable harmless herbal preparations	69
	Life-threatening bradycardia; respiratory and central nervous system depression	Chinese herbal medicine used for analgesia by parents	Chinese	Unintentional poisoning caused by ingestion of *Jin Bu Huan* tablets, Chinese herbal medicine used for analgesia by adults, containing L-THP (potent dopamine receptor antagonist/sedative)	Parental education regarding potential toxicity for children	70
	Opiate toxicity in infants	Diarrhea	Hmong	Enema made from opium seeds, unidentified capsule	Education regarding risks; culturally-acceptable harmless herbal preparations	76

*Ethnicity of affected children not explicitly stated in study.

†Certain ethnic groups from these regions may also practice female circumcision, which is described as one of the conditions in the African region.

TABLE 3
Data from published studies on the prevalence of folk illnesses relevant to the emergency care of children

Regional origin of folk illness	Folk illness	Study site	Prevalence of folk illness beliefs among parents	Factors associated with folk illness beliefs	Reference
Latin America	*Caida de mollera*	Hospital-based family medicine clinic (US)	91%	NA*	54
		Texas *colonia* (US)	4–91%[†]	NA	53
		35 migrant and public health clinics in three states (US)	3–70%	NA	25
		Pediatric ED (US)	69%	None	52
		Florida migrant health center (US)	30%	NA	27
	Empacho	35 migrant and public health clinics in three states (US)	18–96%	NA	25
		Hospital-based family medicine clinic (US)	94%	NA	54
		Pediatric ED (US)	78%	None	52
		Random community sample (Mexico)	71%	NA	48
		Hospital-based clinics (Mexico)	35–68%	NA	48
		Hospital-based clinics & emergency departments (Mexico)	24–35%	NA	49
		Hospital-based pediatric clinic (US)	64%	None	15
		Metropolitan communities (Mexico)	46%	Lower socio-economic status	16
		Florida migrant health center (US)	32%	NA	27
		Random household sample in rural community (Guatemala)	14%[‡]	NA	17
	Mal ojo	Pediatric ED (US)	54%	None	52
		Florida migrant health center (US)	40%	NA	27
		Hospital-based family medicine clinic (US)	23%	NA	54
	Susto	Hospital-based family medicine clinic (US)	85%	NA	54
		35 migrant and public health clinics in three states (US)	10–69%	NA	25
		Pediatric ED (US)	53%	None	52
		Florida migrant health center (US)	25%	NA	27
Asia/Pacific Islands	*Piang*	Communities in Bohol, Philippines	93–100%	NA	33
	Naeng	Hospital outpatient clinic in Seoul (Korea)	83%	NA	37

*NA, not applicable; no factors examined in study.

†Lower estimate from surveys, higher estimate from focus groups.

‡Represents incidence, not prevalence.

Table 4 summarizes data on folk healers relevant to the emergency care of children. Concurrent use of folk healers and physicians is not uncommon and can cause uncertainty for parents about whether to give their children folk remedies or prescription medications. Folk healers often are the first and preferred choices for pediatric care when children are believed to have folk illnesses. Parents are frequently dissatisfied with physicians' treatment of folk illnesses and sometimes believe that biomedical treatment of these conditions is ineffective.

Parent and Patient Beliefs.   Table 2 documents the substantial morbidity and mortality that can result from certain harmful parent or patient beliefs and practices. These beliefs and practices originate from diverse cultures, can affect a variety of organ systems, and have resulted in multiple fatalities. Pediatric emergency clinicians can offer families alternative folk treatments that are harmless, culturally acceptable, and have the potential to prevent illness and death (Table 2).

Several folk treatments administered at home for common childhood symptoms can result in clinical findings that can be confused with child abuse (Table 5). The identified studies (Table 5) document that failure to recognize the clinical presentation of these treatments can result in child abuse evaluations and involvement of child protective services that are unnecessary, costly, and traumatic to families. Indeed, one Vietnamese father who had treated his son with coin rubbing (*cao gio*) committed suicide in jail after mistakenly being accused of child abuse based on the marks on the boy (93).

Three other parent or patient beliefs and practices illustrate how cultural misunderstanding can lead to costly and unnecessary evaluations. Parents from certain Middle Eastern countries may give their infants fenugreek teas (such as Helba tea) to reduce flatulence and prevent fevers (94). Because fenugreek seeds impart a maple syrup aroma to the urine, the uninformed clinician may perform expensive and superfluous emergency evaluations to rule out maple syrup urine disease, as has been reported (94,95). Heart distress (*narahatiye qalb*) in Iran is a culturally recognized complex of physical sensations associated with feelings of anxiety caused by emotional problems (96). Symptoms, which are not uncommon in teenaged females, are described as a pressed, squeezed, or fluttering heart, which could easily prompt a full but unnecessary cardiac evaluation (96). A recent study revealed that infant head molding, the application of pressure or bindings to cranial bones to alter their shapes, is practiced by various Caribbean, Latino, European, African-American, Asian, and Native American groups to promote the infant's beauty, health, or intelligence (97). Clinicians need to inquire about infant head molding, because failure to do so could lead to unnecessary evaluations for dysmorphism or craniosynostosis, and none of the 30 parents in this study told the child's physician about this practice (97).

Certain parental beliefs and practices can delay or complicate the emergency care of children. For example, among Mexican-American mothers in San Diego, only 35% primarily used thermometers to determine whether their child had a fever; the other two thirds primarily or exclusively used touch or visual observation (98). Mothers who did not regularly use thermometers for fever assessment were significantly less likely to take their febrile child to see a physician, but significantly more likely to have had their child hospitalized (98).

Provider Practices.   Several studies document biased attitudes of health care providers that can affect the quality of emergency care for children. For adolescent girls presenting to the ED with ab-dominal pain, ethnicity is a significant determinant, along with age and socioeconomic status, of whether physicians obtain sexual histories (99). Multivariate analysis revealed that physicians significantly more often obtained sexual histories on African-American and Hispanic girls (88%) compared with whites (50%), and for girls younger than 15 years, 100% of minority but only 44% of white girls were asked about sexual activity (99). A survey of a representative sample of predominantly white employees (eg, physicians, nurses, clerks, housekeeping) at a Texas medical school and affiliated hospitals revealed stereotypes about the characteristics and behaviors of adolescents in four ethnic groups (100). Seventy-seven percent of employees said that white, black, Mexican-American, and "Oriental" adolescents differed in some or all of the 36 characteristics and behaviors. Substantially more employees said that whites use contraceptives (79% vs 1% to 15% for minorities), smoke cigarettes (51% vs 0% to 28%), and drink beer (50% vs 2% to 25%), and that blacks have sexual intercourse (67% vs 14% in whites) and get into trouble with the law (74% vs 6% in whites). In a study of white psychotherapists in which two case histories were presented that were identical except for the race of the adolescent boy (white vs black), the therapists gave significantly lower ratings for the black adolescent for the clinical significance of eight of 21 pathologic behaviors (101). White therapists thus were less distressed about a black adolescent beating his girlfriend, stealing cars, mistrusting the interviewer, and hating his mother, supporting the investigator's hypothesis that mental disorders in black adolescents are underdiagnosed because their pathologic behaviors are rated less severely (101).

Studies on physicians in England also document biased attitudes that potentially can affect the quality of pediatric care. In one survey, general practitioners (GPs) held less positive attitudes towards Asian (Indian subcontinent) patients, including perceptions that Asians require longer visits, are less adherent, and make excessive and inappropriate use of health services compared with non-Asian patients (whose visits were rated significantly more satisfying by GPs) (102). In another survey, most GPs said that Asians made more visits, required longer visits, and presented with more trivial complaints than non-Asians (103).

Dramatic ethnic and racial disparities among children have been documented for prescription medications, the use of analgesia, and diagnostic evaluation. Data from the National Medical Expenditure Survey reveal that among children 6 to 17 years old who made outpatient visits, only 52% of African-American and 53% of Latino children received prescriptions, significantly less than the 66% of white children (104). These differences persisted after adjustment for relevant covariates (poverty, health, and the number of physician visits made). Statistically significant differences also were found in the number of prescribed medicines, with Latino (mean prescriptions, 1.5) and African-American (1.7) children receiving fewer prescriptions than whites (2.4) (104). Several studies both in the United States and in the United Kingdom reveal ethnic disparities in asthma medication prescription (105–108). Among children with asthma 4 to 11 years of age who belonged to a managed care system in Michigan and did not see specialists, African-Americans were twice as likely as whites to receive no prescriptions for anti-inflammatory medications (105). Among children with asthma in the Michigan Medicaid system, African-Americans received medical care more frequently but asthma medication prescriptions less frequently than white children (106). Among children with reported asthma attacks in a nationally representative study in England and Scotland, both Afro-Caribbean and Indian subcontinent

TABLE 4
Data from published studies on folk healers relevant to the emergency care of children

Regional origin	Ethnic group/ national origin	Folk illness issue	Study site	Finding	References
Native Americans (US)	Urban Native Americans	Use of traditional Native American medicine	Household interviews, San Francisco Bay area	Use of traditional medicine: Varies by tribal group, from 0% (Inuit) to 62% (Pacific Northwest) Not related to physician visits Greater among those with specific health problems, previous hospitalization, and impaired access to physician Greater in those with native language ability, living in city ≤1 year, residing on reservation or in rural area	55
	Native Americans (mostly Midwestern tribes)	Use of Native American healers	Milwaukee Indian Health Service Clinic	Traditional healers used by 38% of patients Traditional healer use more likely among female and older patients One third of patients seeing traditional healers reported conflicts about use of healer's herbal remedies vs use of physican's medications 62% rate healer's advice higher than physician's advice Only 15% of patients seeing healers tell their physicians about healer use	56
	Navajo	Use of traditional healers	Navajo Reservation	18%–23% of families used chanter (traditional healer) Only 53% made physician visit in previous year	57
Latin American	Mexican-Americans (US)	Physician's ability to treat folk illnesses	Dallas Public Housing Project	2/3 of patients say that physicans don't know how to treat folk illnesses because of lack of knowledge, faith, and understanding 1/5 of patients say physicians can treat folk illnesses but refuse to because of lack of knowledge, faith, and understanding	24
	Mexican-Americans (US)	Use of *curanderos*	Urban Texas community	68% of families use both folk medicine and biomedical systems For folk illnesses (*empacho, mal ojo, susto, caida mollera*), greater use of *curanderos* (by 13% to 29%) than physicians (0% to 5%)	58
	Mexican-Americans (US)	Use of physicians to treat *caida de mollera*	31 migrant or public health clinics in 3 Southwest states	Of 80 parents whose children had *caida de mollera,* only one said the treatment should be to take the child to a physician	26
	Mainland Puerto Ricans (US)	Folk vs. biomedical treatment for *empacho*	Hospital-based clinic, urban Connecticut	For treatment of *empacho* 77% took child to santiguadora (folk healer) vs 37% to physician* First choice was santiguadora (33%), physician, 30% Best treatment as per parents: santiguadora, 58%; physician, 5% Among those initially visiting physician, 83% sought another treatment modality afterward Of 24 children brought to physician, only four got better according to parent	15
	Guatemala	Consultations for *empacho*	Random sample of rural household, Guatemala	Folk healers infrequently consulted (3% of all episodes), as often as physicians (3%)	17
	Brazil	Physician consultation before death from *doença de criança* and other causes	In-home interviews in Northeastern Brazilian community	In 65 terminal childhood cases of illnesses resulting in death (many with the folk illness *doença de criança,* folk healers were consulted in 72% of cases, physicians in 66%	23
Indian subcontinent	Pakistan	Treatment of *phrooey*	Household survey, northern Pakistan	Most mothers said physicians cannot effectively treat this type of fatal diarrhea	21
Asia/Pacific Islands	Chinese-Americans	Use of Chinese medicine practitioner or herbalist	Community survey, Chinese-Americans in San Francisco	When first sick, use of Chinese medicine practitioners and herbalists significantly greater among uninsured (25%) compared with insured (8%)	59

(continued)

TABLE 4 (*Continued*)

Data from published studies on folk healers relevant to the emergency care of children

Regional origin	Ethnic group/ national origin	Folk illness issue	Study site	Finding	References
	China	Witch doctors and mental illness	Community and out-patient psychiatric clinic	70% of outpatient psychiatric patients said they consulted witch doctors (*Wu Yi,* who perform ritual healing) before coming to clinic Witch doctors used significantly more often by rural (74%) vs urban (18%) outpatients 71% of mentally ill in community consulted witch doctor at some point in illness	60
	Korea	Treatment of *Naeng*	Hospital-based out-patient clinic, Seoul	Among 487 respondents with *Naeng,* 26% had sought treatment from an herbal practitioner or shaman vs 42% from a physician	37
	Philippines	Treatment of *Piang*	Interviews and focus groups, Bohol province	Can only be diagnosed and treated by *manghihilot,* folk healers specializing in massage Physicians and biomedicine are not effective	33

*Percentages total > 100% because parents could use more than one treatment modality.

children were significantly less likely to receive β$_2$-agonist prescriptions, and Indian subcontinent children were about four times less likely to be prescribed anti-inflammatory medications (107). In addition, Afro-Caribbean asthmatic children had eight times the odds and Indian subcontinent children four times the odds of receiving contraindicated antitussive prescriptions. Among preschool children hospitalized for asthma at a major US children's hospital, Latinos were 17 times less likely than whites or African-Americans to be prescribed a nebulizer for home use at discharge, after adjustment for relevant covariates (108).

Among adolescent and adult patients treated for long bone fractures in a California ED, a significantly greater proportion of Latinos (55%) than whites (26%) received no analgesia, and whites were significantly more likely than Latinos to receive oral, narcotic, and nonnarcotic analgesia (109). After adjustment for relevant covariates (including injury type, language, and insurance status), Latinos had seven times the odds of receiving no analgesia

compared with whites. In a study of children and adults hospitalized for open reduction and internal fixation of limb fractures, researchers found that whites received significantly higher doses of narcotic analgesics (22 mg/day of morphine equivalents) than blacks (16 mg/day) and Latinos (13 mg/day), differences that persisted in separate analyses for oral or parenteral route and after adjustment for relevant covariates (such as insurance status and number of diagnoses) (110). Although a third study found no ethnic differences in analgesia for fractures in an Arizona ED (111), the findings are questionable due to methodologic problems that included small sample sizes and failure to adjust adequately for relevant covariates (such as insurance status and injury severity, mechanism, and site).

Among children with gastroenteritis evaluated in the pediatric ED of a major children's hospital, Latinos were significantly less likely than white and African-American patients to undergo diagnostic laboratory tests and x-rays (112). After adjustment for age and disease characteristics, white children had twice the odds of

TABLE 5

Cultural healing practices that can be confused with child abuse

Regional origin	Clinical presentation	Cultural practice	Ethnicity/nationality associated with practice	Symptoms/illnesses treated	References
Latin America	Patterned circular erythema, petechiae, occasional burns	Cupping (*ventosas*): create vacuum in cup by burning alcohol over inverted cup, place cup on affected anatomy	Latino	Pain, fever, poor appetite, congestion	79–81
Asia/Pacific Islands	Circular burns (2° or 3°) and scars	Moxibustion: moxa herb or yarn rolled into ball/cone, ignited, applied to body part, and allowed to burn to point of pain	Laotian, Cambodian, Chinese, Japanese	Fever, abdominal pain, ear infections, enuresis, temper tantrums	81–83
	Linear ecchymoses, hyper-pigmentation, transient microscopic hematuria	*Cao Gio* (scratch the wind), or coin rubbing: symptomatic area covered with mentholated oil or balsam, then rubbed linearly with coin or other object until ecchymoses occur	Vietnamese	Fever, cough, vomiting, headaches, chills, seizures, myalgias	81, 84–91
	Linear ecchymoses	*Quat Sha* (spoon scratching): porcelain spoon used to rub skin on back (after water or saline applied) until ecchymoses appear	Chinese	Fever, headache	92

having fewer than two diagnostic tests sent and triple the odds of having x-rays taken compared with Latinos.

The clinician's cultural background can influence the diagnosis and treatment of pediatric emergencies. The diagnosis of mental illness varied substantially by national origin of the health care professional in a study of the evaluation of five psychopathology cases by psychiatrists, psychologists, and social workers from 20 countries and six continents (113). Categorization of certain behaviors as child abuse by pediatric nurses can vary by national origin and race (114). Significantly more United Kingdom (97%) than US (72%) nurses consider beating children with a strap or belt to be abusive. Among US nurses, significantly more whites than African-Americans consider strap or belt beatings (85% vs 36%) and confining children to their room for the day (46% vs 7%) to be abusive, but significantly more African-Americans than whites (43% vs 8%) consider slapping children's bodies to be abusive. In a study of mental health professionals from four countries, Chinese and Indonesian clinicians gave significantly higher scores than Japanese and US clinicians for hyperactive-disruptive behaviors in viewing standardized videotape vignettes (115).

Although the issue has not been well studied, a few investigations have examined clinicians' awareness, comfort, and knowledge regarding culturally diverse patient populations. A study of predominantly white nursing students revealed low scores on a scale of cultural knowledge of African-American patients, but scores were significantly higher in seniors compared with freshmen, which investigators speculated might be due to exposure to cultural diversity curricula (116). Using a cultural self-efficacy scale, another study of nursing students documented low scores (mean, 2.6 on 5-point Likert scale) for overall transcultural nursing skills and similarly low scores for providing care for each of five ethnic or racial groups; students reported the least confidence in providing instructions on the care of children and in evaluation of the effectiveness of discharge teaching (117). A study of family practice residents and their patients at an institution serving a large Latino population found consistent disparities between residents' limited awareness of their patients' folk medicine beliefs and the high prevalence of such beliefs among patients (54). In most cases, 50% or more of the residents said they had never encountered the beliefs, but 20 to 97% of patients interviewed subscribed to them. For example, 94% of patients believed in *empacho,* but 77% of residents said they had never encountered it. Greater number of years in the residency program, Spanish fluency, and Latino ethnicity were not associated with greater awareness of patients' beliefs (54).

DISCUSSION

Considerable data have been presented on the profound impact culture can have on the emergency care of children. We suggest that these data can be immediately applied to improving quality of care, reducing costs, and enhancing patient satisfaction. Code cards are indispensable summaries of emergency care protocols that are extremely useful for rapid evaluation and management. We recommend that Tables 1, 2, and 5 be used as cultural code cards. They have been organized so that the clinicians can immediately locate information relevant to their prevalent patient populations. These three cultural code cards could prove useful in obtaining more accurate histories and improving patient satisfaction through use of culturally acceptable alternative treatments (Table 2), generating rapid differential diagnoses and treatment plans (Table 1), and making informed decisions about child abuse (Table 5).

Studies suggest that clinicians' training and comfort levels re-

garding the care of culturally diverse populations may not always be optimal (116–117). This finding is consistent with a recent study on the teaching of cultural issues in US and Canadian medical schools, which demonstrated that most medical schools provide inadequate instruction about cultural issues, particularly the specific cultural aspects of large minority groups (118). These studies, together with data presented in this article, are a persuasive argument for greater instruction in cultural competency at all points in the clinician's training, including professional schools, residencies, and continuing education. Improvements in cultural competency also can be achieved through the use of trained interpreters as cultural brokers and through collaborations among EDs, parent groups, and community organizations.

Language problems can adversely affect many aspects of health care, including access to care, preventive care, health status, adherence to therapy, use of health services, and patient satisfaction (3). There are about 45 million Americans who speak a language other than English at home, and about 19 million are LEP (119), but medical interpreters frequently are not called when needed, are inadequately trained, or are not available at all (14). Only two states in the United States currently provide third-party reimbursement for interpreter services. Clinicians and institutions interested in advocating equitable access to health care for LEP patients can encourage legislators to follow the lead of Massachusetts, which recently passed the Emergency Room Interpreter Services Act (120). This law requires that every acute care hospital ". . . shall provide competent interpreter services in connection with all emergency room services provided to every non-English speaker who is a patient or who seeks appropriate emergency care or treatment" (120). Recent federal initiatives to protect the rights of LEP patients and their families include an executive order to improve access to services for persons with LEP (121) and an Office of Civil Rights guidance memorandum prohibiting discrimination against LEP persons (122).

The review of the literature identified a number of areas in need of more research. It would be useful to document the principal normative cultural values identified by ethnic or racial groups and how these values might affect pediatric emergency care. Several questions remain largely unanswered regarding language barriers to emergency care for children: 1) what health care disparities are associated with being a limited English proficient patient; and 2) what is the impact of having trained versus untrained versus no medical interpreters on quality, costs, and satisfaction? We need to know more about what are the most common folk illnesses and parent beliefs, their prevalence, whether the symptoms overlap with important biomedical conditions, and which treatments might be harmful or fatal. More research is needed on the provider practices that affect the emergency care of children, their impact on quality of care and ethnic or racial disparities in health, and how to identify and eliminate bias in medical care.

Managed care organizations can take several measures to ensure that culturally competent emergency care is delivered to children. Third-party reimbursement for trained interpreter services (including on-call providers or telephonic interpreters for rare language groups) will provide equitable care for LEP patients and may be more cost-effective in the long run, as evidenced by the disastrous, costly outcomes that can result when interpreters are absent or inadequately trained (5). Other effective measures might include institutional standards and guidelines for cultural competency, monitoring and interventions for ethnic disparities, quality assurance evaluation of interpreter services, and provider incentives for fluency in foreign languages spoken by major LEP populations.

CONCLUSIONS

An abundance of literature demonstrates the importance of culture in the emergency care of children. The identified studies illustrate how culture can impact quality of care, morbidity, mortality, costs, and patients' satisfaction with care. The data presented indicate that failure to appreciate the role of culture in pediatric emergencies can result in a variety of adverse consequences, including difficulties with informed consent, miscommunication, inadequate understanding of diagnoses and treatment plans by families, dissatisfaction with care, preventable morbidity and mortality, unnecessary child abuse evaluations, and disparities in prescriptions, analgesia, and diagnostic evaluations. (52–92,123,124)

REFERENCES

1. US Census Bureau. Resident population estimates of the United States by sex, race, and Hispanic origin: April 1, 1990 to July 1, 1999, with short-term projections to June 1, 2000. Available at: http://www.census.gov/population/estimates/nation/intfile3–1.txt.
2. US Census Bureau. Statistical abstract of the United States: 2000. Edn 120. Washington, DC: US Department of Commerce, 2001.
3. Flores G. Culture and the patient-physician relationship: achieving cultural competency in health care. J Pediatr 2000;136:14–23.
4. National Center for Biotechnology Information at the National Library of Medicine. PubMed. Available at: http://www.ncbi.nlm.nih.gov/PubMed/.
5. Flores G, Abreu M, Schwartz I, et al. The importance of language and culture in pediatric care: case studies from the Latino community. J Pediatr 2000;137:842–848.
6. Carrese JA, Rhodes LA. Western bioethics on the Navajo reservation: benefit or harm? JAMA 1995;274:826–829.
7. Jecker NS, Carrese JA, Pearlman RA. Caring for patients in cross-cultural settings. Hastings Center Rep 1995;25:6–14.
8. Steffensen MS, Colker L. Intercultural misunderstandings about health care: recall of descriptions of illness and treatment. Soc Sci Med 1982;16:1949–1954.
9. Butrin J. Cultural diversity in the nurse-client encounter. Clin Nurs Res 1992;1:238–251.
10. David RA, Rhee M. The impact of language as a barrier to effective health care in an underserved urban Hispanic community. Mt Sinai J Med 1998;65:393–397.
11. Lewis MA, Rachelefsky G, Lewis CE, et al. The termination of a randomized clinical trial for poor Hispanic children. Arch Pediatr Adolesc Med 1994;148:364–367.
12. Hornberger J, Itakura H, Wilson SR. Bridging language and cultural barriers between physicians and patients. Public Health Rep 1997;112:410–417.
13. Kline F, Acosta FX, Austin W, et al. The misunderstood Spanish-speaking patient. Am J Psychiatry 1980;137:1530–1533.
14. Baker DW, Parker RM, Williams MV, et al. Use and effectiveness of interpreters in an emergency department. JAMA 1996;275:783–788.
15. Pachter LM, Bernstein B, Osorio A. Clinical implications of a folk illness: empacho in mainland Puerto Ricans. Med Anthropol 1992;13:285–299.
16. Cortés-Gallo G, Hernández-González MA, Ayala-García MA, et al. La cura del empacho: una práctica común y peligrosa. Bol Med Hosp Infant Mex 1993;50:44–47.
17. Weller SC, Ruebush TK III, Klein RE. An epidemiological description of a folk illness: a study of empacho in Guatemala. Med Anthropol 1991;13:19–31.
18. Green EC. Traditional healers, mothers and childhood diarrheal diseases in Swaziland: the interface of anthropology and health education. Soc Sci Med 1985;20:277–285.
19. Nichter M. From aralu to ORS: Sinhalese perceptions of digestion, diarrhea, and dehydration. Soc Sci Med 1988;27:39–52.
20. Chowdhury AMR, Kabir ZN. Folk terminology for diarrhea in rural Bangladesh. Rev Infect Dis 1991;13(suppl 4):S252–S254.
21. Malik IA, Bukhtiari N, Good MJD, et al. Mothers' fear of child death due to acute diarrhoea: a study in urban and rural communities in northern Punjab, Pakistan. Soc Sci Med 1992;35:1043–1053.
22. Nations M. The child's disease (Doença de Criança): popular paradigm of persistent diarrhea? Acta Paediatr Suppl 1992;381:55–65.
23. Nations MK, Rebhun LA. Angels with wet wings won't fly: maternal sentiment in Brazil and the image of neglect. Cult Med Psychiatry 1988;12:141–200.
24. Martinez C, Martin HW. Folk diseases among urban Mexican-Americans: etiology, symptoms, and treatment. JAMA 1966;196:161–164.
25. Trotter RT. Folk medicine in the Southwest: myths and medical facts. Postgrad Med 1985;78:167–170.
26. Trotter RT II, Ortiz de Montellano B, Logan MH. Fallen fontanelle in the American Southwest: its origin, epidemiology, and possible organic causes. Med Anthropol 1989;10:211–221.
27. Baer RD, Bustillo M. Caida de mollera among children of Mexican migrant workers: implications for the study of folk illness. Med Anthropol Q 1998;12:241–249.
28. Risser A, Mazur LJ. Use of folk remedies in a Hispanic population. Arch Pediatr Adolesc Med 1995;149:978–981.
29. Ardón RC, Rubel AJ, O'Nell CW, et al. A folk illness (susto) as an indicator of real illness. Lancet 1983;2:1362.
30. Baer RD, Bustillo M. Susto and mal de ojo among Florida farmworkers: emic and etic perspectives. Med Anthropol Q 1993;7:90–100.
31. Baer RD, Penzell D. Research report: susto and pesticide poisoning among Florida farmworkers. Cult Med Psychiatry 1993;17:321–327.
32. Chand AD, Bhattacharyya K. The Marathi "taskonomy" of respiratory illnesses in children. Med Anthropol 1994;15:395–408.
33. McNee A, Khan N, Dawson S, et al. Responding to cough: Boholano illness classification and resort to care in response to childhood ARI. Soc Sci Med 1995;40:1279–1289.
34. Eguchi S. Between folk concepts of illness and psychiatric diagnosis: kitsune-tsuki (fox possession) in a mountain village of western Japan. Cult Med Psychiatry 1991;15:412–451.
35. Etsuko M. The interpretations of fox possession: illness as metaphor. Cult Med Psychiatry 1991;15:453–477.
36. Hielscher S, Sommerfeld J. Concepts of illness and the utilization of health-care services in a rural Malian village. Soc Sci Med 1985;21:469–481.
37. Kim YK, Sich D, Park TK, et al. Naeng: a Korean folk illness, its ethnography and its epidemiology. Yonsei Med J 1980;21:147–155.
38. Simpson SH. Some preliminary considerations on the sobada: a traditional treatment for gastrointestinal illness in Costa Rica. Soc Sci Med 1988;27:69–73.
39. Mull DS. Mother's milk and pseudoscientific breast milk testing in Pakistan. Soc Sci Med 1992;34:1277–1290.
40. Ngokwey N. Naming and grouping illnesses in Feira (Brazil). Cult Med Psychiatry 1995;385–408.
41. Centers for Disease Control and Prevention. Lead poisoning from Mexican folk remedies—California. MMWR 1983;32:555–556.
42. Yañez L, Batres L, Carrizales L, et al. Toxicological assessment of azarcon, a lead salt used as a folk remedy in Mexico, I: oral toxicity in rats. J Ethnopharmacol 1994;41:91–97.
43. Baer RD, Ackerman A. Toxic Mexican folk remedies for the treatment of empacho: the case of azarcon, greta, and albayalde. J Ethnopharmacol 1988;24:31–39.
44. Centers for Disease Control and Prevention. Use of lead tetroxide as a folk remedy for gastrointestinal illness. MMWR 1981;30:546–547.
45. Centers for Disease Control and Prevention. Lead poisoning from lead tetroxide used as a folk remedy—Colorado. MMWR 1981;30:647–648.

46. Bose A, Vashistha K, O'Loughlin BJ. Azarcón por empacho: another cause of lead toxicity. Pediatrics 1983;72:106–108.

47. Centers for Disease Control and Prevention. Lead poisoning associated with the use of traditional ethnic remedies—California, 1991–1992. MMWR 1993;42:521–524.

48. Baer RD, Garcia de Alba J, Leal RM, et al. Mexican use of lead in the treatment of empacho: community, clinic, and longitudinal patterns. Soc Sci Med 1998;47:1263–1266.

49. Baer RD, Garcia de Alba J, Cueto LM, et al. Lead based remedies for empacho: patterns and consequences. Soc Sci Med 1989;29: 1373–1379.

50. Mikhail BI. Hispanic mothers' beliefs and practices regarding selected children's health problems. West J Nurs Res 1994;16:623–638.

51. Guarnashelli J, Lee J, Pitts FW. "Fallen fontanelle" (caida de mollera): a variant of the battered child syndrome. JAMA 1972;222:1545–1546.

52. Sandler AP, Chan LS. Mexican-American folk belief in a pediatric emergency room. Med Care 1978;16:778–784.

53. Ruiz R. Combating a cultural myth: la caída de mollera. Rhode Island Med 1994;77:79–80.

54. Mull JD, Mull DS. Residents' awareness of folk medicine beliefs of their Mexican patients. J Med Educ 1981;56:520–522.

55. Fuchs M, Bashshur R. Use of traditional Indian medicine among urban native Americans. Med Care 1975;13:915–927.

56. Marbella AM, Harris MC, Diehr S, et al. Use of Native American healers among Native American patients in an urban Native American health center. Arch Fam Med 1998;7:182–185.

57. Stewart T, May P, Muneta A. A Navajo consumer survey. Med Care 1980;18:1183–1191.

58. Chesney AP, Thomspon BL, Guevara A, et al. Mexican-American folk medicine: implications for the family physician. J Fam Pract 1980;11:567–574.

59. Jang M, Lee E, Woo K. Income, language, and citizenship status: factors affecting the health care access and utilization of Chinese Americans. Health Soc Work 1998;23:136–145.

60. Li S, Phillips MR. Witch doctors and mental illness in mainland China: a preliminary study. Am J Psychiatry 1990;147:221–224.

61. Abdullah MA. Lead poisoning among children in Saudi Arabia. J Tropical Med Hyg 1984;87:67–70.

62. Alfonso E, Friedland B, Hupp S, et al. Neisseria gonorrhoeae conjunctivitis: an outbreak during an epidemic of acute hemorrhagic conjunctivitis. JAMA 1983;250:794–795.

63. Waterman SH, Juarez G, Carr SJ, et al. Salmonella arizona infections in Latinos associated with rattlesnake folk medicine. Am J Public Health 1990;80:286–289.

64. Agugua N, Egwuatu V. Female circumcision: management of urinary complications. J Tropical Pediatr 1982;28:248–252.

65. El Dareer A. Complication of female circumcision in the Sudan. Trop Doct 1983;13:131–133.

66. Olamijulo S, Joiner K, Oyedji G. Female child circumcision in Ilesha, Nigeria. Clin Pediatr 1983;22:580–581.

67. Hezekiah J, Wafula F. Major health problems in women in a Kenyan village. Health Care Women Int 1989;10:15–75.

68. Calder BL, Brown YM, Rae DI. Female circumcision/genital mutilation: culturally sensitive care. Health Care Women Int 1993;14:227–238.

69. Centers for Disease Control and Prevention. Folk remedy-associated lead poisoning in Hmong children—Minnesota. MMWR 1983;32:555–556.

70. Centers for Disease Control and Prevention. Jin Bu Huan toxicity in children—Colorado, 1993. MMWR 1993;42:633–636.

71. Centers for Disease Control and Prevention. Lead-poisoning associated death from Asian Indian folk remedies—Florida. MMWR 1984;33:638,643–645.

72. Balakrishnan S. Lipid pneumonia in infants and children in South India. Med J 1973;4:329–331.

73. Døssing M, Khan JH. Nasal or oral oil application on infants: a possible risk factor for adult bronchiectasis. Eur J Epidemiol 1995;11:141–144.

74. Riff EJ, Moore C, Tufenkeji H, et al. Infantile lipoid pneumonia. Ann Saudi Med 1990;10:378–382.

75. Woolf DA. Aetiology of acute lead encephalopathy in Omani infants. J Trop Pediatr 1990;36:328–330.

76. Rubio EL, Ekins BR. Hmong opiate folk remedy toxicity in three infants. Vet Hum Toxicol 1987;29:323–325.

77. Stillman AS, Huxtable R, Consroe P, et al. Hepatic veno-occlusive disease due to pyrrolizidine (senecio) poisoning in Arizona. Gastroenterology 1977;73:349–352.

78. Yercen N, Çaglayan S, Yücel N, et al. Fatal hypernatremia in an infant due to salting of the skin. Am J Dis Child 1993;147:716–717.

79. Sandler AP, Haynes V. Nonaccidental trauma and medical folk belief: a case of cupping. Pediatr 1978;61:921–922.

80. Asnes RS, Wisotsky DH. Cupping lesions simulating child abuse. J Pediatr 1981;99:267–268.

81. Hansen KK. Folk remedies and child abuse: a review with emphasis on caida de mollera and its relationship to shaken baby syndrome. Child Abuse Negl 1998;22:117–127.

82. Feldman KW. Pseudoabusive burns in Asian refugees. Am J Dis Child 1984;138:768–769.

83. Reinhart MA, Ruhs H. Moxibustion: another traumatic folk remedy. Clin Pediatr 1985;24:58–59.

84. Yeatman GW, Shaw C, Barlow MJ, et al. Pseudobattering in Vietnamese children. Pediatrics 1976;58:616.

85. Golden SM, Duster MC. Hazards of misdiagnosis due to Vietnamese folk medicine. Clin Pediatr 1977;16:949–950.

86. Primosch RE, Young SK. Pseudobattering of Vietnamese children. J Am Dental Assoc 1980;100:47–48.

87. Du JNH. Pseudobattered child syndrome in Vietnamese immigrant children. Can Med Assoc J 1980;122:394–395.

88. Yeatman GW, Dang VV. Cao gío (coin rubbing): Vietnamese attitudes toward health care. JAMA 1980;244:2748–2749.

89. Silfen E, Wyre HW. Factitial dermatitis—cao gio. Cutis 1981;28:399–400.

90. Longmire AW, Broom LA. Vietnamese coin rubbing. Ann Emerg Med 1987;16:602.

91. Rosenblat H, Hong P. Coin rolling misdiagnosed as child abuse. Can Med Assoc J 1989;140:417.

92. Leung AK. Ecchymoses from spoon scratching simulating child abuse. Clin Pediatr 1986;25:98.

93. Anh NT. "Pseudo-battered" child syndrome. JAMA 1976;236:2288.

94. Sewell AC, Mosandl A, Böhles H. False diagnosis of maple syrup urine disease owing to ingestion of herbal tea. N Engl J Med 1999;341:769.

95. Bartley GB, Hilty MD, Andreson BD, et al. "Maple-syrup" urine odor due to fenugreek ingestion. N Engl J Med 1981;305:467.

96. Good BJ. The heart of what's the matter: the semantics of illness in Iran. Cult Med Psychiatry 1977;1:25–58.

97. FitzSimmons E, Prost JH, Peniston S. Infant head molding: a cultural practice. Arch Fam Med 1998;7:88–90.

98. Schwartz N, Guendelman S, English P. Thermometer use among Mexican immigrant mothers in California. Soc Sci Med 1997;45:1315–1323.

99. Hunt AD, Litt IF, Loebner M. Obtaining a sexual history from adolescent girls: a preliminary report of the influence of age and ethnicity. J Adolesc Health Care 1988;9:52–54.

100. Finkelstein JW, Medina M, Vegehla M. Hospital-based employees' opinions about adolescents of four racial-ethnic groups. J Adolesc Health Care 1981;2:1–7.

101. Martin TW. White therapists' differing perceptions of black and white adolescents. Adolescence 1993;28:281–289.

102. Ahmad WIU, Baker MR, Kernohan EEM. General practitioners' perceptions of Asian and non-Asian patients. Fam Pract 1991;8:52–56.

103. Wright CM. Language and communication problems in an Asian community. J R Coll Gen Pract 1983;33:101–104.

104. Hahn BA. Children's health: racial and ethnic differences in the use of prescription medications. Pediatrics 1995;95:727–732.

105. Joseph CL, Havstad SL, Ownby DR, et al. Racial differences in emergency department use persist despite allergist visits and prescriptions filled for antiinflammatory medications. J Allergy Clin Immunol 1998; 101:484–490.

106. Bosco LA, Gerstman BB, Tomita DK. Variations in the use of medication for the treatment of childhood asthma in the Michigan Medicaid populations, 1980 to 1986. Chest 1993;104:1727–1732.

107. Duran-Tauleria E, Rona RJ, Chinn S, et al. Influence of ethnic group on asthma treatment in children in 1990–1991: national cross-sectional study. BMJ 1996;313:148–152.

108. Finkelstein JA, Brown RA, Schneider LC, et al. Quality of care for preschool children with asthma: the role of social factors and practice setting. Pediatrics 1995;95:389–394.

109. Todd KH, Samaroo N, Hoffman JR. Ethnicity as a risk factor for inadequate emergency department analgesia. JAMA 1993;269:1537–1539.

110. Ng B, Dimsdale JE, Shragg GP, et al. Ethnic differences in analgesic consumption for postoperative pain. Psychosom Med 1996;58:125–129.

111. Karpman RR, Del Mar N, Bay C. Analgesia for emergency centers' orthopaedic patients: does an ethnic bias exist? Clin Orthop 1997;334: 270–275.

112. Quintana JM, Goldmann D, Homer C. Social disparities in the use of diagnostic tests for children with gastroenteritis. Int J Qual Health Care 1997;9:419–425.

113. Baskin D. Cross-cultural conceptions of mental illness. Psychiatr Q 1984;56:45–53.

114. Levinson RM, Graves WL, Holcombe J. Cross-cultural variations in the definition of child abuse: nurses in the United States and the United Kingdom. Int J Nurs Stud 1984;21:35–44.

115. Mann EM, Ikeda Y, Mueller CW, et al. Cross-cultural differences in rating hyperactive-disruptive behaviors in children. Am J Psychiatry 1992;149:1539–1542.

116. Felder E. Baccalaureate and associate degree student nurses' cultural knowledge of and attitudes towards black American clients. J Nurs Educ 1990;29:276–282.

117. Kulwicki A, Boloink BJ. Assessment of level of comfort in providing multicultural nursing care by baccalaureate nursing students. J Cult Divers 1996;3:40–45.

118. Flores G, Gee D, Kastner B. The teaching of cultural issues in U.S. and Canadian medical schools. Acad Med 2000;451–455.

119. U.S. Census Bureau. QT-02. Profile of selected social characteristics: 2000. Available at http://factfinder.census.gov/serrlet/QTTable?ds_name=ACS_C2SS_EST_G00_&geo_id=01000US&qr_name=ACS_C2SS_EST_G00_QT02. Accessed December 19, 2001.

120. Commonwealth of Massachusetts. Chapter 66 of the Acts of 2000: an act requiring competent interpreter services in the delivery of certain acute health care services. Approved April 14, 2000.

121. President William J. Clinton. Executive order: improving access to services for persons with limited English proficiency. August 11, 2000.

122. Hayashi D. Guidance memorandum. January 29, 1998. Title VI prohibition against national origin discrimination: persons with limited English proficiency. Available at: http://www.hhs.gov/progorg/ocr/lepfinal.htm.

123. Abu Melha A, Ahmed NAM, El Hassan AY. Traditional remedies and lead intoxication. Trop Geogr Med 1987;39:100–103.

124. Sprinkle RV. Leaded eye cosmetics: a cultural cause of elevated lead levels in children. J Fam Pract 1995;40:358–362.