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Seeking help for attention deficit hyperactivity disorder in developing countries: A study of parental explanatory models in Goa, India

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Abstract

This qualitative study analyzes the explanatory models employed by parents whose children have been diagnosed with attention deficit hyperactivity disorder (ADHD) and the ways in which these explanatory models change as they seek help for their child's problem. In-depth interviews were conducted with 24 parents recruited from a list of children who had been diagnosed with ADHD at a community-based child development center (CDC) in Goa, India. The most frequent reasons for consulting the CDC were educational difficulties. Despite having received an ADHD diagnosis and reporting significant adverse impact of the child's behavior, most parents were reluctant to accept the biomedical explanatory model or even consider their child's difficulties as an illness. Instead, parents most commonly attributed causality to psychological models, learning and memory difficulties, and to models which emphasized either the volitional or non-volitional nature of the problem, or to attribute blame of self or spouse. Interventions most commonly used were educational and religious; consultation with the CDC was the last resort for many parents. We conclude that cultural attitudes towards mental illness significantly affect parental perception and behavior in response to interventions by biomedical practitioners for child mental health problems in developing countries.

Keywords: Attention deficit hyperactivity disorder (ADHD); India; Parents; Explanatory model; Mental health; Culture; Help-seeking

Introduction

Attention deficit hyperactivity disorder (ADHD) is a common and pervasive child psychiatric disorder that can have significant adverse effects on academic and social development, both during childhood, and later during adolescence and adulthood (National Institutes of Health, 1998). Most studies of ADHD have been conducted in developed countries; less is known about ADHD in developing countries (Rohde, 2002). Recent studies in India (Mukhopadhyay, Misra, Mitra, & Niyogi, 2003; Malhi & Singhi, 2000) cite a prevalence of ADHD in children referred from a hospital to a child guidance outpatient clinic located in a tertiary

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care hospital, and in children referred by schools to a child guidance clinic of 8.1% and 15.5%, respectively. These clinics were referral sites for children with behavioral or academic problems and thus represent a treated population.

Cultural factors are known to affect identification of psychiatric illness and management of problematic behaviors in children. The degree to which a behavior is perceived as deviant varies across cultures. Several authors (Chandra, 1993; Mann et al., 1992; Scahill & Schwab-Stone, 2000; Weisz, Suwanlert, Chaiyasit, Weiss, & Jackson, 1991) discuss the wide variation within and across countries in defining childhood behavior as problematic by teachers, mental health workers, and parents. These variations have a potentially significant impact on parental receptivity to interventions and other help-seeking behavior (Bussing, Gary, Mills, & Garvan, 2003; Bussing, Koro-Ljungberg, Gary, Mason, & Garvan, 2005; Sayal, Taylor, & Beecham, 2003; Weisz & Weiss, 1991). The validity of psychiatric diagnostic categories also varies across cultures (Kleinman, 1977). The ways in which cultural variations influence the validity of the ADHD diagnostic construct in different parts of the world is still unclear (Anderson, 1996; Gomez, Burns, Walsh, & Hafetz, 2005; Littlewood, 1990; Mann et al., 1992; Rohde, 2002).

Qualitative research tends to ask 'what' 'how' and 'why' questions rather than 'how often' or 'how many' (Buston, Parry-Jones, Livingston, Bogan, & Wood, 1998), thus providing crucial information about the organization and delivery of mental health services otherwise unavailable through quantitative research methodologies. Using qualitative research techniques to elicit explanatory models, which are frameworks used to better understand each person's unique perspective about an illness (Kleinman, 1980), can facilitate an understanding of context and meanings of illness (Rodrigues, Patel, Jaswal, & De Souza, 2003). Parental understanding of a child's behavior has been shown in other studies to influence parental help-seeking decisions (Arcia & Fernandez, 2003; Bussing et al., 2003) and parental–child interactions and parenting methods (Dix, Ruble, Grusec, & Nixon, 1986; Johnston & Mash, 1989; Johnston & Ohan, 2005; Johnston & Patenaude, 1994; Maniadaki, Sonuga-Barke, & Kakouros, 2005). Therefore, it is imperative for us to explore parental understanding.

Qualitative studies in developed countries have shown diverse results. Some highlight the diversion of parental explanatory models from established biomedical explanatory models to non-biomedical ones; in one study parents emphasized non-biomedically established causal attributions (Sonuga-Barke & Balding, 1993) and in another, fathers resisted treatment with medicines, identifying with their son's symptomatic behaviors (Singh, 2003). In contrast, other studies show that parents seek out biomedical diagnosis and treatment. In one study, parents who had sought out help from physicians for their child's behavior and had anticipated a medical cause for their child's behavior, experienced a feeling of alienation and stress when medical practitioners did not give a medical label or cause for their child's behavior (Klasen, 2000; Klasen & Goodman, 2000); in another, after psychosocial treatments (46%), the most commonly requested treatment by parents was medication (30%) (Bussing et al., 2003).

To date, there are no studies that have explored the explanatory models of parents with children who have been diagnosed with ADHD in India. Using qualitative research methods, this paper analyzes the explanatory models of parents whose children are diagnosed with ADHD. Additionally, it analyzes the trajectories of these explanatory models as parents seek help for their children's illness. We aimed to describe parental explanatory models of problematic childhood behaviors diagnosed as ADHD, how these perceptions change through interactions with medical providers, and the relevance of the ADHD diagnostic construct in this culture.

Methods

The setting of the study was a community-based non-profit non-governmental organization (NGO) which provided child mental health services through a multi-disciplinary child development center (CDC) in the state of Goa, India. Goa is a small state on the west coast of India with a population of 1.2 million, of which 59% is rural and 41% urban. This community-based NGO is a leading provider of child and adolescent mental health services in Goa. All research activities were described in written protocols and approved by the community-based NGO review board before research commenced.

Participants were identified from a patient list provided by CDC, which was generated by searching for all clients who had received a diagnosis of ADHD and had been diagnosed with ADHD and/or had received treatment from the CDC within the previous four years. The primary criterion for

inclusion in the study was that an individual be a parent of a child who had been given an ADHD diagnosis. Diagnoses were made by an experienced local behavioral pediatrician and were based on clinical assessment, inputs from the Werry–Weiss–Peters activity scale from parents (Werry, 1968) and the abbreviated teacher questionnaire (Zentall & Barack, 1979), using DSM IV criteria (American Psychiatric Association, 1994).

Parents were sent letters inviting them to participate in the study. Parents gave informed consent prior to engaging in the interview. Confidentiality was assured, and maintained. In-depth semi-structured interviews were conducted by a Caucasian investigator (CW) at participants' homes and the CDC between February and March 2004. All interviews and discussions were tape-recorded and transcribed. A translator was required in two of the 22 interviews to translate from Konkani (the local language) to English. In two cases, both parents were interviewed together, but we did not include the mother's data in the analysis, as they contributed significantly less than the fathers. For the rest, mothers and fathers were interviewed separately. After the interviews were completed, the child's charts were reviewed when available.

The semi-structured interview guide covered the following topics:

(1) socio-demographic information on the family, including parental age, ethnicity, economic status, profession, and family composition;
(2) explanatory models for the child's problem based on the short explanatory model interview (Lloyd et al., 1998) and Kleinman's (1980) suggested questions, which explored the nature of the problem, the onset, the causes, the effects on child and family;
(3) help-seeking behavior and coping mechanisms for managing the child's problem;
(4) how parents' explanatory models changed as they interacted with doctors, teachers, religious leaders and lay advisors, and how they viewed the effectiveness of those interactions.

At the end of the interviews, parents were asked to give their own impressions of ADHD. Further, parents were encouraged to explore how they felt their understanding of the problem's label and causality had changed as a result of interacting with various consultants, and whether or not they thought the child had an illness.

Before undertaking analysis, transcripts were carefully checked against audiotapes for accuracy. Subsequently, the authors read, organized, and coded the data according to the following categories. Data were first organized into the broad categories of demographics, onset, cause/exacerbating factors, treatment/efficacy, effect, help seeking and how it affected understanding, name and manifestations, ADHD references, future expectations, barriers to help seeking, factors associated with considering it a problem. Under these categories, further sub-categories were coded for recurring themes by the authors. After data were organized into categories, emergent themes were analyzed by the authors. In addition, a timeline was created for each parent on which were marked each event of help-seeking, reasons for that event and subsequent changes in explanatory models.

Actual numbers in parentheses reflect the number of participants who reported a particular code; when no number is mentioned it means that only one participant used that code.

Results

Eighteen out of 32 families contacted were interested in participating; the other families preferred not to participate in the study. Twenty-four parents were interviewed including six couples (altogether 10 fathers and 14 mothers). Two mothers were not included in the analysis as they were interviewed only briefly, and in the presence of the fathers. The number of children in the families averaged 2.3, the average age of the fathers was 47.9 years, and the average age of the mothers was 41.7 years. Two of the families spoke Konkani rather than English. Eleven families were Christian or Catholic, five were Hindu, one was Buddhist and Hindu, and one was Parsee. The family income range was 800–40,000 rupees per month with an average income of 10,946 rupees per month. One mother was left out of this average as she cited a monthly income of 50,000 but stated she was not sure if that was correct or not, and three parents did not report family incomes at all. An average household income of more than 90,000 rupees per year is cited as Middle High by the National Council of Applied Economic Research in the Market Information Survey of Households. In 2001 this represented 28% of Indians.

The mean age of the child was 10 years (SD 3.5), and the age at diagnosis ranged from 4 to 13 years.

The time between first diagnosis and interview date ranged from 0 to 5 years. Fifteen of the children were male, and three were female. Nine of the children were in ongoing care.

The families that agreed to participate were quite similar in religious background (28% versus 21%), number of children in the family (mean 2.15 versus 2, $p = .29$), and type of profession (majority of fathers working professional, semi-professional, or business related jobs) compared with the families who refused our invitation. The boundaries between rural and urban are relatively blurred in Goa, thus we opted against using this as a factor in examining differences between groups.

Onset and cause of illness

Parents saw the onset of their child's problem as occurring when the child's age ranged between 18 months and 11 years. Some parents first noticed their child's problematic behaviors at home with various forms of misbehavior: for example, jumping up and down in church, not listening, saying rude things to guests (5). The rest first noticed significant problems when their child interfaced with the school system (18) and did poorly in studies (17), or when they got complaints about behavior in class (2), or when the children were not getting along with other children (3).

For many, other life events also marked the onset of the child's problematic behavior, and were often given a causal significance, like birth of another sibling (6), a geographical move, or a father leaving the home due to separation/divorce. Some parents commented on other childhood ailments such as seizures (3), leg shakes, head trauma, or a fever but they were unable to state how they understood the relationship between these physical illnesses and the problematic behaviors.

Of the 19 subjects with whom the concept of illness was discussed (i.e., whether the parent felt their child's problem was an illness), only six were certain that their child had an illness. Religion did not appear to have much effect on acceptance of the diagnosis, or considering the problem an illness, and income was only significant in that those who were economically better off seemed to be less likely to call it an illness. However, increased time between diagnosis and interview was associated with a higher likelihood of accepting the diagnosis (mean 2.45 years) than being unsure (mean 2.1 years) or being sure the child did not have the diagnosis (mean 1.0 years) although these differences were not significant. The diagnostic label 'attention deficit hyperactivity disorder', or 'ADHD' was not readily accepted by these parents. Even though all parents had been in contact at least once with either a biomedically trained physician or the CDC (where all parents were informed of the diagnosis), of the 22 participants, only six offered up a diagnosis of ADHD without prompting, and only 10 were certain that their child had ADHD after prompting. Ten were either unaware of the nature of ADHD or unsure about whether their child suffered from this condition; two were sure that their child did not have it. Both members of a couple were always in agreement on the subject of whether the child had ADHD.

Table 1 summarizes all proposed causal attributions. Multiple causal attributions were common. Psychological models, learning and memory difficulties, and models which emphasized either volitional or non-volitional nature of the condition, or blame of self or spouse predominated. Of note, the parents of the girls (3) never directly attributed intentionality to the child; however one mother did say that her child does not have an illness but "wants to be petted" and "told in a nice way". In addition, mothers tended to cite a number of causal attributions more frequently than fathers, but the category of highest difference between mothers and fathers was self blame, with nine mothers blaming themselves versus only two fathers.

Impact of the illness

The narratives underscored the importance that schools can play in determining thresholds for help seeking from professionals. Problems in academic performance or the child's school behavior was most commonly cited as a major reason for seeking help from the CDC (16), and from doctors (4). Other important factors for help seeking from the CDC or doctors included behavior at home (9) and social behavior outside the home (4).

Many of the parents reported a direct adverse effect of the child's behavior on themselves. Terms like 'worry' (8) and 'tension' (5) described the parents' emotional states. Parents also spoke of complaining neighbors (2), fatigue (2), and embarrassment of a parent in public (3). One parent was scared of her son's potential for violence stating, 'what if he…goes and rapes a woman…I'm scared of leaving my daughter…and so I usually am in

Table 1
Parental causal attributions of children's ADHD ($n = 22$)

Causal categories	Causal subcategories	Number	Examples
Psychological	Related to learning or memory	13	Learning disorder/disability; slow; "going by rote"; dyslexia; "difficulties processing meanings of sentences (nine mothers, five fathers)
	Emotional	9	"Wanted attention"; "he hates me and blames me for the father leaving"; "he hates the big sister"; "jealousy towards the mother when the other sibling was born"; "a fear" of the father for beating him; "an ego problem" (revenge for having been teased when younger); "lonely"; "fright" from hernia operation; "not enough love from parents"; "upset" (six mothers, two fathers)
	Volitional (child's fault)	9	"He has given up"; "doesn't want to listen anything of me"; "sometimes I think he's normal and just smarter than all of us, that he doesn't want to study, and that he wants attention"; "he won't apply the brain"; "if somebody tells he doesn't listen"; "stubborn"; "just lazy"; "has the ability to pick up fast but doesn't feel like" (nine mothers, three fathers)
	Non-volitional	9	"Not able to foresee which things can happen and cannot differentiate between some dangers"; "no awareness"; "behavior is beyond his control"; "he's slow and I can't compare him to other children"; "doesn't realize he's doing something wrong"; "doesn't know better and doesn't remember not to do things"; "when he says rude things he doesn't know and all"; "cannot concentrate because his mind is filled up with too many things" (seven mothers, two fathers)
	Immaturity	8	"Childish things still there"; "maturity coming a little late"; "when she gets her period she will be more mature"; "not fully grown up properly"; "late milestones"; "brain is of a 2 year level"
	Lack of interest	6	"Doesn't take an interest in studies"
Social and family environment	Self Blame	11	"Bad parent"; "I used to get hot-like" and beat; didn't give him enough attention; too much pampering; excessive strictness; not encouraging enough (nine mothers, two fathers)
	Changes in family/ environment	8	Birth of siblings (and diversion of attention from child to newborns); a move to a new city; death of a grandfather; property renovation; departure of a father due to separation/divorce; exposure to a violent environment
	Blame of spouse	8	Spouse too pampering or lenient; spouse didn't back up mother's authority; father's voice is loud; mother neglected child and did not breastfeed child "acting like a modern woman" and there was decreased bonding; seeing father's psychotic breakdowns; husband beat the child; husband works out of the home; husband has left the family
	Social environment	8	Lonely and not enough kids to play with his own age; naughty kids get him in trouble; played with "ganthis" (migrant children) and other kids that are more violent or a bad influence; teased
	Schools or teachers	8	Too many other children; teachers not well trained; schools not specialized; too little structure; changing language medium; teachers beating children; change to a new school
	Environmental insult	9	Seizure medication; dropped on head; malnutrition in utero and in childhood; antibiotics in pregnancy; an herbal medicine; was given sips of liquor during bathing by a nanny; mother not breast feeding; forceps delivery (six mothers, three fathers)
	Illness	8	Illness; sickness
	Other physical problem	7	Ear wax ("glue ear"); "heavy tongue" (speech problem); eyesight problems; "hand is paining and hand is heavy so cannot write"; "hot head" (fever); small size
	Brain problem	5	Low weight with "poor blood flow to brain" and so cannot write; "brain tumor"; forceps delivery causing changes in "brain chemistry"; "neurotransmitters"; "brain development not proper"
Hereditary	Hereditary	6	"Maybe it is the father coming to him"; "father was slow in school"; one parent believed that a gynecological procedure to improve fertility selected for the father's chromosomes
Supernatural	Supernatural	4	"God wants of this child"; it's in the "stars and the planets"; it's "in God's hands"

constant fear then because there have been instances where children have raped their mother''. Other concerns include strains on relations within the family (6), negative effects on other siblings (5), strains on the child's relationship with school personnel (6), strains on their child's relationships with other children (6), and financial strain (6).

Descriptive terms used by parents to describe problematic child behavior included troubles in school (23), increased motor activity and hyperactivity (20), distractibility (15), learning problems (9), violence (7), irritability (7), impulsivity (6), destructiveness (5), and not socializing or getting on well with peers (3). Other terms included ''can't differentiate between dangers'', ''normally troubled'', ''a fear'', ''very disturbed'', ''quiet'', ''attention defective'', ''hypertension, attention, memory this thing''.

Other problems mentioned were less directly related to ADHD and included concerns about the child wetting themselves, decreased appetite, seizures (3), increased sexual drive and talk of sex, fevers, passivity, problems with fine motor skills, hallucinations, poor weight gain (2), developmental abnormalities such as ''walking backwards'' (2), and physical abnormalities such as ''shaking legs''.

Many commented on their child's positive behaviors. One referred to their child's ''amazing attention span for stories'', and his ''sponge-like way of listening to things that interest him''. Other positive comments included noting that the child is ''helpful in other things'', ''loving and protective'' of the mother and other family members, ''doesn't mind manual labor'', ''loves the computer'', has a ''craze of reading novels'', is ''never naughty at home or destructive'' and ''obeys'', has ''got the ability and is good in general knowledge'', and is ''kind'' and ''feels bad when his mother gets upset''. Ten referred to their child as having normal or high intelligence, and three of these referred to IQ results.

Help-seeking behavior and relationship to causal attributions

Table 2 summarizes all treatments tried or considered by parents and their perceived effectiveness. By far the most commonly tried interventions were educational or religious. We did not have enough data to explore differences between mothers and fathers within couples, although there were indications of individual variability. However it was interesting to note that in the couples interviewed, all mothers suggested 'sit with him' as a treatment, while none of the fathers did.

Apart from CDC services (which may have included consultation with a pediatrician, remedial classes, consultation with psychologists and family therapists, and/or other services), parents sought help from the following: lay people, including family and friends (13); religious personnel (16); physicians and psychiatrists in the community (14); and teachers or schools (including school-hired tutoring, and switching to a new school) (13). In general, lay people, doctors in the community, and various forms of religious support were consulted early in the course of the illness, and the CDC or boarding schools were utilized later. Pluralistic help-seeking patterns were the norm.

Parent causal attributions and the impact of the problem contributed to their help-seeking behavior. It appears that in most cases, parents did not primarily consult doctors for the behavior, supporting the non-medically based causal attributions. Rather, doctors were consulted about the behavior either when parents felt that medical concerns such as ear wax, headache with concern about a brain tumor, seizure medications, decreased vision, physical weakness, or low weight were thought to be contributing to the behavior, or as secondary questions when they were consulting the doctor for other medical issues (like weight loss, seizures (2), and orthopedic concerns). Four parents consulted doctors, of which three were psychiatrists, directly about the behavior. The CDC was consulted when problems of behavior or academic performance at school were brought to parents' attention by school staff (18), and less often because of problematic behavior in other settings (6); two parents cited both school problems and general behavioral problems as reasons for CDC consultation.

Explanatory models were also affected by help seeking. The CDC and the doctors were discussed as having introduced more medically oriented causal attributions like ''chemical deficiency'', ''brain development not proper'', ''weak and poor blood flow to the brain'', hyperactive (2), ADHD (10), ADD (2), learning disorder or disability (2), and illness. None of the lay people, religious personnel, or school personnel introduced the concept of ADHD to the parents. In fact, lay people and religious personnel were much more likely to reassure parents, steering parents away from seeking medical help. Upon interacting with lay people and religious leaders, parents recalled being told

Table 2
Suggested treatments for child's problems

Treatments mentioned	Number who used or considered using	Effectiveness
Educational: remedial classes (19), talk to teachers (7), change school or try boarding school (13), counseling with teacher	20	Remedial: helped (12), didn't help (2); boarding school: helped (6), didn't help (1)
Religion: religious retreats (3), prayer (4), priest or other christian priest or ceremony (11), hindu temple or ceremony (4), astrologer	17	Helped (5), didn't help (6)
Encouragement	13	Helped (4), didn't help or unable to do (3)
Increased structure: disciplinary consistency (4), study schedule (5), in reference to boarding school (4)	12	Helped (6), didn't help or unable to do (2)
Bribe/threaten/scold	11	Helped (3), didn't help (1)
Western medication: prescribers: psychiatrist (2), doctor (3), CDC physician (4)	10	Helped behavior but stopped it for reasons of side effects (2), continued the medicine and it helped (1), bad taste (1), fear of impotence (1), change in behavior ('like a wounded bird') (1), ineffective (1)
Non-western medication: ayurvedic medicines (4), herbal root (2)	4	Helped child gain weight, not helpful, child is a little calmer (2), worried the root may have caused some of the child's problems
Medical consultation—other	8	Earwax removal didn't help, med for appetite didn't help, changing seizure medication helped
Sit with child while studying	9	Helped (4), didn't help (2), not enough time
Therapy for the child	6	Helped (4), didn't help (2)
Therapy or other support for the parent	5	
Beating	7	Doesn't help ('if you beat, it loses effectiveness') (2)
Stop beating	7	Helped (2)
Physical restraint	4	
Distraction/entertainment	4	Helped (4)

things like "it's just boys", "(you're) overanxious", "the child is normal", the child will improve with age so just wait (4), "it's not a medical problem and he just needed attention", and "don't get worried, everything will be OK". In addition, one friend told a parent not to give medicines because it might make the child impotent, and the parent heeded their advice.

The main reported changes in regards to the future as a result of interacting with doctors in the community were the concepts of immaturity, and that the child will improve with age (4), although one mother stated that she was more worried after seeing a doctor where she had found out it was an illness because "the child's father is also on tablets", and she wondered if her child might need to "be on tablets for life". One father felt consistently that other than physical problems (leg shakes) his child was completely normal, stating "I was not a topper in school; we don't want to become scientists and all, so we don't expect the child to be; according to us he is normal", despite being told by doctors and schools that the child needed help.

Also notable was the shift in the degree to which parents felt their child's behavior was volitional as the parents sought help. As a result of interacting with the CDC and doctors, eight parents became less likely than before to feel that their child was to blame and six felt that the intrinsic capacity for learning was faulty. The only non-professional whom parents viewed as decreasing the degree to which the child was to blame was an astrologer who told the parent that "whatever he is doing he doesn't know it is beyond his understanding; the child's future is in the stars and planets".

Parents also reported a shift in the degree of self-blame as they sought help. They tended to recall interactions with lay people as a source of increased self-blame. For example, when she sought advice from her mother, one subject felt more guilty reporting that her mother stated "you can't just run away from it and you have to sort it out on your own" and that the behavior of her child was normal and it was "just boys". Others were told by lay people that the child was problematic because of "too much pampering" or were given advice on how

to improve their parenting such as being told "if you beat him it will lose effectiveness", or "don't sit with him and give him a break". Unlike their experiences with lay people, participants noted that in interactions with doctors or with the CDC, where the biomedical model was more prominent, self-blame decreased. For example, one mother stated she felt a strong sense of relief with the diagnosis of ADHD because she no longer felt she was a bad parent. Another stated that as he learned more about the child's problem from the CDC, he realized "it's not that we are failing to get him interested" and another stated that "before (we) thought it was our failure of getting him to understand the matter" but that as a result of interaction with the CDC this was no longer true. Through these interactions with physicians and the CDC, parents' causal attributions became more biological thus shifting blame from self or child to physiology. Parents used phrases like "chemical deficiency", "poor blood flow to brain" and the "brain development is not proper" to account for their child's behavior as a result of these visits.

Through seeking help, parents not only understood their child's behavior in new ways, they also tended to adopt new strategies to deal with their child's behavior. Physicians tended to recommend medications (7) and the CDC (7); the CDC recommended mostly remedial classes (16), medications (4), to stop beating (4), to use a time table (4), encouragement/praise/overlook bad behaviors (6), to change to a new school (3), and other parenting techniques (4). Teachers recommended the CDC (15); and lay people and religious personnel suggested waiting (3) in addition to parenting suggestions. However, as seen in Table 2, despite interfacing with the CDC or other biomedical practitioners, of the 10 parents who considered medications as a possible solution, only one parent found medication effective enough to continue it, whereas remedial classes, religious approaches, and other behavioral interventions were cited more frequently as effective.

Finally, overall, parents' perceptions of the future and the seriousness of their child's problem changed through seeking help. Parents who interacted with lay people and religious leaders often found reassurance upon being told that their child was normal. By contrast, through interaction with the CDC, parents had mixed experiences, some parents becoming more worried because their problem seemed more serious, but others feeling relieved because it gave them hope that the child would get better.

Discussion

The primary goal of this study was to elicit the explanatory models of parents who have children diagnosed with ADHD. To the best of our knowledge, this is the only study of this kind from India. Despite all parents having utilized a child development center which used a biomedical model, recognizing that their child had a problem, and representing a relatively middle to upper-class sample, our main finding is that only a few accept the label 'ADHD' or the notion that their child had an illness. In addition, there was resistance in this sample of parents to treating the child's behavioral problem with medicines. Specific mitigating factors were noted amongst those parents who did accept biomedical models or treatments: for example, one was a nurse, one was European-born, and one was taking psychotropic medicines himself. Of all the families who considered treatment with a medicine, only the European-born parent found the medication helpful enough to continue it. Our findings are consistent with other qualitative studies of mental illness in India which reveal resistance to the use of an illness model or a psychiatric label for their problem, and supports the hypothesis that a biomedical psychiatric label may not be an acceptable strategy for meeting mental health needs in Indian culture (Patel & Prince, 2001; Rodrigues et al., 2003).

The resistance to the biomedical model in this sample of parents contrasts with some studies done in developed countries, where, when children are diagnosed with ADHD, parents are more likely to accept medicines and other aspects of the biomedical model (Johnston, Seipp, Hommersen, Hoza, & Fine, 2005; Klasen, 2000; Klasen & Goodman, 2000; Singh, 2004). Not all studies have shown strong support for medical treatment in developed countries, as seen in a study that shows a higher resistance to medical treatment in fathers compared to mothers (Singh, 2003); our study did not show a difference between mothers and fathers in their tendency to accept medicines for treatment of their child's problem. Our parents are more similar to ethnic minority parents in the US; for example, a study of Latina immigrant mothers from developing countries reported resistance to giving their children medicines because they understood medicines to be

addictive, to cause dulling of cognitive processes, and to be inappropriate for behavioral problems (Arcia, Fernandez, & Jaquez, 2004). Rather than accept medicines, the parents in our study were most likely to pursue educational and religious treatments. It is notable, though, that while these parents were unlikely to adopt the biomedical model, this did not imply that they did not perceive their child as having a problem and needing help; the narratives clearly show that the children's behavior caused distress and difficulties within the family and schools.

This distress prompted parents to consult a wide range of professional and lay experts or advisors for help before attending the CDC. It is likely that the explanatory models of parents were heavily influenced by these contacts, and that seeking biomedical help from a specialist agency, albeit community-based, is the 'last' step for many and unlikely to radically shift existing explanatory models. The majority of referrals to the CDC were related to problems in school performance, rather than specific symptoms of ADHD, a finding that differs from studies in developed countries where behavioral and emotional problems are cited more often than school complaints as primary concerns (Bussing et al., 2003). Moreover, educational interventions were more likely to be seen as helpful than other interventions, which likely reflects not only the resistance to the biomedical or psychiatric explanatory models, but also the high value placed on educational outcomes by this particular sample of parents.

Apart from a handful of studies, such as one from Brazil (Rohde, 2002), there is little research evidence on the cross-cultural validity of biomedical diagnoses of ADHD. Brazil has a strong European cultural tradition, and similar studies in other developing countries, including India, are lacking. We believe that the cross-cultural validity of ADHD, and the role of social and cultural factors in the etiology of ADHD, are key research questions. Nevertheless, it also clear from our study, and those reported by other investigators, that children with a clinical diagnosis of ADHD are identifiable in developing countries and that they show similar problematic behaviors as in developed countries, notably behavioral, academic, and peer problems (Malhi & Singhi, 2000).

In our study, although children who were diagnosed with ADHD did suffer from a number of problems, few families consider it an illness, much less a mental illness, and few accepted the role of biomedical treatments. Therefore, practitioners need to find solutions that are both effective and acceptable. Treatment should target behaviors that have the most salience for this particular group, such as educational performance for example. Parents tended to prefer non-medical interventions such as enrolling their child in remedial classes, sending them to boarding school, or engaging in various sorts of religious events more positively. Outreach programs should be aware that parents are unlikely to consult physicians directly for their children's behavioral problems, and that schools tended to be the primary referral source to the CDC. Consistent with other studies in India (Halliburton, 2004), parents also demonstrated medical pluralism, seeking care and advice from multiple providers employing very different theoretical models; thus, biomedical practitioners need to choose which treatments to offer to children of parents who have these diverse explanatory models in mind.

Although there was resistance to accepting aspects of the biomedical model, as parents interacted with the CDC, parents reported a decrease in the blame of the child, which could be a focus for treatment providers. Studies in developed countries have shown that when parents see child misbehavior as intentional, they are more likely to respond with negative affect and harsher discipline (Dix et al., 1986; Johnston & Mash, 1989; Johnston & Patenaude, 1994; Johnston & Ohan, 2005; Maniadaki et al., 2005). Therefore diverting blame away from the child could be another focus for child mental health practitioners in India. Of note, the parents of girls are less likely to perceive intentionality in the child's problem behavior compared to parents of boys, and ADHD behavior is more likely to be accepted as normal in boys (Maniadaki et al., 2005). In this study, although we only had three girls in the group, the parents did not attribute causality to volitional reasons in girls, just to the boys.

Moreover, parents tended to report a decrease in the feeling of self-blame as they interacted with the CDC, similar to the effect that receiving a diagnosis of ADHD had on mothers in the UK (Singh, 2004). Of note, in our study, mothers were especially likely to blame themselves, and education about biomedical models could help decrease this self-blame.

As with any qualitative study, our study has limited generalizability, because it is a small sample from a single region in India. These parents were

recruited from a child development center, and perhaps were more sensitive to their child's emotional needs. They tended to come from a more urbanized and middle to upper-class socioeconomic background, as evidenced by cited monthly incomes and their English speaking abilities, relative to the wider Indian population. Language barriers, given that most of these interviews were conducted in English, as well as cultural and ethnic differences between interviewer and parents, may have prevented us from eliciting more traditional or humoral concepts of illness (Weiss et al., 1988). Finally, it appeared that many of these children carried other medical diagnoses as evidenced by parents mentioning seizures and dyslexia for example. As a consequence of these factors, our findings are likely to represent the most favorable response set towards biomedical models; thus the gap between biomedical and explanatory models of parents in the wider population is likely to be even greater than what we report.

Other reasons for limited generalizability are that the setting of a study is likely to influence the source of referrals; a study of ADHD in a pediatric clinic in India found that the majority of children were referred by other pediatricians rather than educators (Mukhopadhyay et al., 2003) which differs from our sample. We also had a limited number of girls in our sample, possibly due to a diminished parental perception of severity in girls (Maniadaki, Sonuga-Barke, & Kakouros, 2006) and because the diagnosis of ADHD is much commoner in boys. Finally, only 18 of the 32 families contacted accepted our invitation to be in the study, and only older child age was associated with refusal (mean age 10 vs. 12.7, $p = .03$).

Of note too, data are presented with numbers representing individual parents, but eight of these parents were in couples, and often had similar ways of viewing their child's problem, thus potentially skewing the relative significance of some of the noted parental impressions. However, the explanatory models were unique enough such that treating each parent's data as distinct was felt to be valid.

Regardless of these limitations, however, our data add to the very small evidence for the international variations of explanatory models for child mental disorders. Our main findings emphasize the need to use locally acceptable illness models to improve awareness of, and access to, child mental health interventions in developing countries. Our in-depth understanding of parental explanatory models can be used to guide future qualitative or quantitative public health studies about problematic childhood behaviors, existing modes of parental help seeking and service use in India, and the most likely effective interventions. Moreover, this data will help child mental health practitioners attend to and treat the most salient issues for the families of children with ADHD.

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