ABSTRACT

Underutilization of Medication to Treat ADHD in African American Children: Reasoned Action and Planned Behavior

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Attention-deficit hyperactivity disorder is one of the most common mental illness diagnoses given to children today. While African American children are diagnosed with the disorder at approximately the same rate as Anglo children, they are disproportionately underrepresented in medication therapy programs. This study uses Fishbein and Ajzen's (1975) theory of reasoned action and Ajzen's (1991) theory of planned behavior to explore the factors underlying African American's decision to use medication to treat their child's ADHD. While the theory of reasoned action explains most of the variance in intention to seek medication for a child with ADHD, the theory of planned behavior adds to the explanatory power of the model and causes the effect of race to disappear.

Underutilization of Medication to Treat ADHD in African American Children: Reasoned Action and Planned Behavior

by

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CHAPTER ONE

Review of Literature and Statement of the Problem

Introduction: The Theories of Reasoned Action and Planned Behavior

Diagnosing children with mental illness is becoming more common in our society, with behavioral disorders topping the diagnoses given to children. Of these behavioral disorders, attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD) are the most common – in 1985, between 650,000 and 750,000 people were diagnosed with ADHD. By 1990, that figure had risen to between 850,000 and 900,000, and in 2000, estimates indicate that 4 to 5 million people in America are diagnosed with ADHD, most of them children (Mayes, 2002). ADHD not only interferes with children's academic performance, but also their ability to function in social settings (Greene, Biederman, Faraone, Ouelette, Penn, & Griffin, 1996). In fact, Litner (2003), in her study of teens with ADHD, shows that there is low social tolerance for people with the illness, leading to loneliness and peer rejection, spiraling into complete social isolation. With treatment, the social difficulty symptoms of ADHD can be controlled, but without, social repercussions may continue, leading to more behavior problems and emotional disorders. The importance of quick and thorough treatment is evident. Recent studies have suggested that African American children, although they are diagnosed with ADHD at approximately the same rate as Anglo children, are vastly underrepresented in ADHD treatment programs (Rowland, Lesesne, & Abramowitz, 2002). Olfson, Gameroff, Marcus, & Jensen, (2003) showed that Anglo children are more than twice as

likely as African American children to receive medication for ADHD (4.4% vs. 1.7%). This difference remains, even when controls for the socioeconomic status of the respondent are added. The differences between African Americans and Anglos on mental health service participation are not only economic, but may also reflect cultural differences between the two groups. What are the underlying factors responsible for the underutilization of treatment for ADHD by African American children?

To examine the factors underlying the decision to medicate a child's ADHD, and more specifically how these factors influence the race difference in treatment, I use Fishbein and Ajzen's (1975) theory of reasoned action and Ajzen's (1991) theory of planned behavior. Fishbein and Ajzen's theory resulted from concern that a person's attitudes do not perfectly predict their behavior. Wicker (1969) showed that attitudes toward a behavior, once thought to explain why people perform some behaviors but not others, only accounted for about 10% of the variance in an individual's decision. Other authors (Deutscher, 1966, 1973; DeFleur and Westie, 1958) implied that social situational and structural factors interact with a person's attitude toward a behavior to shape the person's actions.

The theory of reasoned action states that a person's behavior is determined by their intention to perform that behavior. Intentions are predicted, in turn, by the person's attitude towards the behavior and their subjective norm about the behavior. Attitudes towards the behavior include beliefs about the outcome of the behavior, and the value of these consequences to the respondent. We learn to favor behaviors that we believe have largely desirable consequences, and we form unfavorable attitudes towards behaviors we associate with mostly undesirable consequences. Subjective norms about a behavior

involve the evaluation of what a respondent's significant others will think of the behavior. To the extent that people hold favorable attitudes towards performing a behavior, and believe that their significant others will look favorably on their decision to perform the behavior, they will show greater intention to perform the behavior.

The theory of reasoned action was criticized for being unable to predict actual behavior in some situations. Intentions did not perfectly predict behavior. Ajzen (1991) suggested that people intended to perform these behaviors, but something in that specific situation prevented them from completing their intentions. In situations where the individual held little control over the situation, there was a disjuncture between intention and behavior. In these situations, Ajzen claimed, a third variable, perceived behavioral control, intervened. Ajzen called his new framework the theory of planned behavior. Essentially, Ajzen's theory is the same as his earlier work with Fishbein, with the addition of perceived behavioral control. Control beliefs stem from the resources and information that the respondent has about the behavior. The more information he or she has, and the fewer obstacles he or she faces in successful completion of the task, the higher the individual's control beliefs will be, and, in turn, the higher his or her perceived control over the situation will be. The theory of reasoned action would still be valid in those situations in which the individual had control over the performance of the behavior, but when there was incomplete control, the person's opinion about the ease or difficulty of performing the behavior of interest would intervene, itself predicting the action to be taken.

The differential explanatory power of the theories of reasoned action and planned behavior lie in the concept of perceived behavioral control. Intention only has the power

to predict future behavior if the respondent has complete control over the situation, and there are no barriers, social or economic, to completing the behavior. If, however, there are structural obstacles to the respondent's successful completion of the behavior of interest, the extent to which these blockages inhibit the performance of the behavior will predict the respondent's actions. By using variables in both the theory of reasoned action and the theory of planned behavior, this study examines both individual and social factors that may affect parents' decisions to medicate their child's ADHD, with particular attention to African American parents. This enables a more robust discussion of possible interventions with African American parents to equalize treatment among children with ADHD. If the addition of perceived behavioral control to the analysis results in significant gains in explanatory power and effects the differences between Whites and African Americans, an argument can be made that structural factors inhibit African American parents' treatment-seeking behavior for their children, but, if the theory of reasoned action variables (attitude and subjective norms) show more significance on their own, cultural differences should be examined.

Previous literature has focused on each of these areas individually, but all variables of both of the theories have never been integrated and examined simultaneously to determine the cause of underutilization of mental heath services by African Americans. This study not only integrates all of these causes to predict the main cause of the behavior, but uses them to look at a specific mental illness, ADHD, which afflicts more children each year.

The theory of reasoned action uses a person's attitudes and subjective norms about the behavior to predict intentions. The literature concerning race differences in

attitudes toward mental illness includes research on beliefs about the causes and appropriate treatment for mental illness, while research on respondents' subjective norms focuses on stigmatization by the community:

Attitudes

Beliefs About the Causes of Mental Illness

While the psychiatric community as a whole favors a biological model for most mental illnesses, the general public doesn't always agree. Beliefs about the causes of mental illness directly feed into whether or not someone will seek help for that mental illness, and if a person's belief does not mesh with that of the psychiatric community, it is very unlikely that they will turn to medical treatment. Several studies have examined lay beliefs about the causes of mental illness to explain the differential use of mental health services by minorities.

Schnittker, Freese, and Powell (2000) and Estroff, Lachiotte, Illingsworth, and Johnston (1991) examined differences in causal attributions about mental illness between African Americans and Anglos, and found that, in general, African Americans are less likely than Anglos to favor a biological explanation for mental illness. Specifically, Anglos are more likely than African Americans to say that genetics plays a role in the etiology of mental illness. Schnittker et al. (2000) suggest that this is due to the genetic arguments that were used in the past to explain the social inferiority of African Americans.

Looking more closely at mental illness in children, Bussing, Mills, and Garvan (2003) find that among Anglo and African American parents whose children have been diagnosed with a behavioral disorder, twice as many African American as Anglo parents incorrectly indicated that their child's condition was caused by too much sugar in the diet, fewer African American parents indicated that they thought their child's illness had genetic causes, and only 19% of African Americans applied a medical label to their child's mental illness (like the term "ADHD"), compared to 40% of Anglos.

Belief about the Appropriate Treatment for Mental Illness

Some studies suggest the existence of cultural differences between African Americans and Anglos that may cause Anglos to be more likely to seek professional help for mental illness, while African Americans will be more prone to either not seek help, or seek help elsewhere. The literature in this area is divided; some (Dadfar & Friedlander, 1982) show that African Americans hold less positive attitudes towards professional treatment than do Anglos, some (Furnham & Andrew, 1996; Hall & Tucker, 1985; Leaf, Bruce, Tischler, & Holzer, 1987; Sheikh & Furnham, 2000; Wolkon, Moriwaki, & Williams, 1973) show no differences in attitudes towards treatment, and still others (Diala, Muntaner, Walrath, Nickerson, LaViest, & Leaf, 2000; Leaf, Bruce, & Tischler, 1986) show that African Americans hold attitudes MORE favorable towards treatment than do Anglos. Diala et al. (2000) explained these last two findings thusly, even though African Americans were found to hold attitudes more favorable to treatment, they were still less likely to actually visit a mental health professional.

Subjective Norms

Stigmatization by the Community

Wills (1983) showed that stigmatization of the mentally ill was a major factor in the decision not to seek professional help. As an explanation for why there is a lack of use of mental health services among African Americans, some have suggested that there is a greater stigma attached to a mental illness diagnosis in the African American community than in the Anglo community. Silva De Crane and Spielberger (1981), for example, found that African Americans were more likely than Anglos to see mental patients as inferior to normal people, and hold fewer kind and paternalistic attitudes towards the mentally ill.

Alvidrez (1999) revealed that African American adults are less likely to seek psychological help because of the greater reliance on family to solve problems in minority communities, the greater stigma attached to mental illness in these communities, and the increased belief in folk causes of mental illness (for example, spiritual or mystical causes of mental illness). Snowden (1998), however, found that although African Americans are more likely to rely on their social networks for assistance with other life problems, they are less likely to seek help from their family and friends when the topic is mental illness: “Assistance with money, housing, child care, and other supportive goods and services may flow freely, but appear to do so without encouraging direct disclosure and emotional support for problems in mental health (1998, p. 436).”

Research on perceived behavioral control, which is included in the theory of planned behavior, focuses on cultural mistrust and lack of resources or information:

Perceived Behavioral Control

Cultural Mistrust

Finally, research in the area of mental health service utilization by minorities has focused on the ethnicities of the mental health professionals and their patients, suggesting that a cultural mismatch between the two can lead to some reluctance on the part of the patient to seek help in the first place. Nickerson, Helms and Terrell (1994), for example, found that African American college students were less likely than their Anglo counterparts to seek help from counselors at their university, because the counselors were Anglo. These students held some cultural mistrust for Anglos, thinking that a counselor outside of their own race was less likely to understand the problem and more likely to make a false diagnosis, simply because of a lack of cultural understanding. This was also shown by Poston, Craine, and Atkinson (1991), who found that African Americans who were more mistrusting of Anglos tended to see Anglo counselors as a less credible source of information.

Bussing, Schoenberg, and Perwien (1998) and Bussing, Schoenberg, Rogers, Zima, & Angus, (1998) suggest that when it comes to ADHD, the cultural mistrust problem arises early in the referral process. They show that the behavior of children that could be defined by the medical community as problematic may fall under the normal expectations of child behavior in the African American community, and that if the behavior is somewhat erratic, the child will quickly outgrow it. ADHD, suggest the authors, is low on the worry list for this culture, as they have so many other social concerns.

Lack of Resources and Information

Another area of research into underutilization of mental health services by African Americans concentrates on the lack of resources and information about treatment in minority communities. Bussing, Schoenberg, and Perwien (1998) and Bussing et al. (1998) show that there is a lack of information circulating in the African American community about the illness. People in minority communities are ill informed about the causes or appropriate treatment of the disorder, in addition to not being told about resources that may be available to their child. They say that the problem is that the idea of ADHD as a mental illness has not been incorporated into the "collective conscience" of African Americans. The implications of this, say Bussing et al. (1998) could hinder the child's receiving treatment; if little information is circulating in the African American community about the disease, people in this community will be less likely to take the disease seriously, and will not seek the medical help that the child needs. They suggest that rather than thinking of ADHD as a problem that requires medical attention, African American parents are more likely to think of it as a normal childhood phase that the child will outgrow.

Hypotheses

In the context of reasoned action and planned behavior, I examined the factors underlying decisions to medicate a child's ADHD. While attitudes, subjective norms, and perceived behavioral control will all affect the respondent's intention to medicate their child's ADHD, perceived behavioral control will be the most important factor in African American parents' intention to medicate their child. To the extent that my

hypothesis is supported, the theory of planned behavior will be shown to better predict intentions to seek treatment than the theory of reasoned action, particularly for African American parents. African Americans will face structural barriers that, although they may hold attitudes and subjective norms favorable towards seeking medication for their child's ADHD, will prevent them from actually following through with the act.

CHAPTER TWO

Data and Methods

The 2002 General Social Survey, conducted by the National Opinion Research Center, is used in this research to examine these differences in treatment for Attention Deficit Hyperactivity Disorder among African American and Anglo children. The GSS is conducted every two years, and is a full probability survey of non-institutionalized adults in the United States. In 2002, the survey contained a topic module looking at child mental illness. Included in this topic module was a section on ADHD. Respondents were randomly given a situation in which they heard a vignette about a child with ADHD, a depressed child, a child with asthma, and a "normal" child. They were then asked to give their opinions on the cause of the child's problem, what should be done for the child, where they would seek advice if it was their child, and finally, general questions about ADHD. While the General Social Survey is one of the best resources to measure attitudes in a nationally representative sample, not all questions are asked of all respondents, leading to a low sample size when those attitudes pertinent to the topic of study are selected. Because of this limited sample size, demographic controls with high levels of non-response could not be included in the analysis, including income and educational attainment. These measures have been used in previous studies as controls for the differing characteristics of respondents, but have not been shown to mediate the effect of race (Bussing et al., 1998, Olfson et al., 2003). Further, chi-square analysis of the sample being used in this study reveals no significant differences between races on

income or educational attainment. Due to the nature of the sample, these demographic factors can be excluded.

These data give one of the first opportunities for researchers to look at national data for beliefs about the causes of mental illness in children. The 1996 GSS looked at beliefs about mental illness in adults, allowing examination of racial differences in adults, but not about children. We can now discover what barriers may be preventing African American parents from seeking medication for their children's mental illnesses.

Dependent Variables

To measure the intention of respondents to medicate their children's ADHD, I use two dependent variables in cumulative logistic regression analysis: "If teachers said your child should be on medication, how likely would you be to do that?" and "If doctors said that your child should be on medication, how likely would you be to do that?" Snider, Frankenberger, and Aspensen (2000) showed that teachers make the initial referral for treatment about 40% of the time, more than any other group. Teachers observe the child continuously throughout the day, and may notice more ADHD-like behaviors in the child than the parents, who may have biased opinions of their child's behavior. By refusing to seek treatment based on the teacher's opinion, parents may be missing an important opportunity to catch the child's mental illness early and treat it early, before functioning is over-impaired. The child's primary care physician then operates off of the teacher's referral, or may, in some cases, identify the problem behaviors themselves. By measuring both the respondent's intent to medicate the child based on the recommendation of the teacher and the recommendation of the doctor, it is possible to identify factors that mediate their ultimate decision to medicate or not medicate the child

at both stages of the referral process. This will enable a more robust discussion of interventions that should be used to equalize the differences in treatment between African American and Anglo children.

Independent Variables

To examine the explanatory power of the theories of reasoned action and planned behavior, I include measures for the respondent's attitude toward medicating ADHD, his or her subjective norm about the treatment, and his or her perceived behavioral control over the behavior. The inclusion of attitude and subjective norm measures in the analysis will show the explanatory power of Fishbein and Ajzen's theory of reasoned action, and the addition of perceived behavioral control will further the theoretical framework to test the theory of planned behavior. To the extent that the addition of perceived behavioral control variables increases the amount of variance in intention to seek medication based on the advice of the child's teacher or doctor, Ajzen's theory of planned behavior will be shown to be a more accurate predictor of intention to medicate children with ADHD.

To measure the base model, the theory of reasoned action, two sets of variables are included: those that are designed to measure the respondent's attitude toward medicating their child, and the respondent's subjective norm about seeking this medication.

For the purposes of this study, attitudes can be more correctly interpreted as the respondent's beliefs and cognitions surrounding the use of medication to treat ADHD. This starts with their beliefs about the causes of ADHD -- in this case, environmental or biological. If the respondent favors a more biological orientation to explain the etiology of ADHD, they will be more likely to seek professional treatment for their child, while if

the respondent favors an environmental explanation, they will be less likely to seek help for their child. This follows with previous research on beliefs about the causes of mental illness and subsequent treatment-seeking behavior (Schnittker et al., 2000; Bussing et al., 2003).

To measure the respondent's belief about the causes of ADHD, I construct two scales, one based on biological explanations, and one based on environmental explanations. The first index to be created is one based on environmental factors – the nurture side of the etiology continuum. Factor analysis reveals that agreeing that the way the child was raised, that the situation was caused by the child's own bad character, and that the situation was caused by a lack of discipline in the home covary in a way that would suggest a common pattern – that of using environmental explanation to explain ADHD. Similarly, using the explanation that a chemical imbalance caused the mental illness, that the behavior is caused by a genetic or inherited problem, or that the situation was caused by an allergic reaction suggest a biological orientation.[1] Each individual variable composing the scale is coded 0 to 3, with 0 meaning that the respondent thinks it is "very unlikely" that the child's problem was caused by the explanation in question, and 3 meaning that the respondent thinks it is "very likely" that the behavior was due to that explanation. Responses on the three variable in each index will be added, resulting in a scale from 0 to 9, with 0 being no agreement with the orientation being measured, and 9 being complete agreement. For example, if the respondent believed that it was "somewhat likely" (a score of 2) that a chemical imbalance caused the child's ADHD, "very likely" that it was caused by genetic problems, but "not very likely" (a score of 1)

[1]Eigen value for Factor 1 (environmental explanation) is 2.29, while for Factor 2 (biological explanations), it is 1.83.

that the child's illness was caused by an allergic reaction, they would receive a score of 6, indicating that they favor the biological explanation more than not. From review of the previous literature, I expect to find that African Americans will be less likely than Anglos to favor a biological explanation for ADHD, as they have been shown to do for other mental illnesses.

In addition to the respondent's view as to the etiology of ADHD, beliefs about the appropriate treatment for the behavioral disorder will be important – the more likely a respondent is to believe that the appropriate treatment for ADHD is medication, the more likely they will be to medicate the child. If the belief of respondents is that there is a more appropriate treatment, they will be less likely to pursue this course of action; if, however, the respondent's opinion falls at the other end of spectrum, where the only acceptable treatment is no treatment (i.e., the child will get better on his or her own), they will be less likely to seek medical attention. Included in this are beliefs about the long term outcome of medicating the child – whether it will cure the problem, and whether there will be detrimental effects in the long run.

Beliefs about the appropriate treatment of ADHD will be measured by a series of questions: First, whether or not, in general, the respondent believes that children with ADHD should be given medication. This question, specific to the disease in question, will likely be the best measure of the respondent's beliefs about the appropriate treatment for ADHD. I also look at the respondent's opinion about the detrimental effects of ADHD treatment in two questions about the medication issue in general: the extent to which the respondent thinks that "doctors today are over medicating children with common behavior problems" and that "giving medications to children with behavior

problems will have long-term negative effects on their development." To the extent that the respondent agrees with either of these questions, he or she should be less likely to seek medication for ADHD – the thought is that the treatment will not only fail to cure the child's problem, but will also cause additional negative effects. The combination of these two variables will make the respondent even less likely to agree with seeking medication for ADHD.

Finally, attitudes can be predicted by the respondent's beliefs about ADHD in general – whether or not it is a "real disease," along with the seriousness of the problem. In the 2002 General Social Survey, those respondents who received the topic module on mental illness in children were asked how serious they considered the child's problem to be. The more the respondent perceived the child's problem to be serious, the more inclined they should be to seek any treatment for the child's problem, and, if suggested, treatment with medication should be an option. Respondents were also asked how likely they thought it was that the child in the vignette was experiencing a mental illness. This should measure the same concern as the previous question – the more likely it is that the respondent thinks that the child is suffering from a mental illness, the more likely it should be that they would medicate the child to try to remedy the problem. Similarly, the respondent's belief that ADHD is a real disease is measured. The more likely a respondent is to take ADHD seriously, the more likely they should be to medicate the child.

The respondent's subjective norm about the behavior can be measured by the stigma that they think they or their child will experience as a result of seeking medication for ADHD. The more negative interactions that the respondent thinks that they will

receive, the less likely they will be to seek help for the child's ADHD. Here, we look at the questions asked of the respondent that look at their interpretations of what the public might think about them, for medicating their child, and the stigmatization that the child will receive as part of his or her mental illness label. First, the respondent's perception that mental health treatment will be common knowledge is measured: they are asked how strongly they agree that "regardless of laws protecting confidentiality, most people in the community still know which children have had mental health treatment." The effect on the child is also measured, by asking how strongly the respondent agrees that "getting mental health treatment for a child would make him or her an outsider at school." Finally, the respondent's self-imposed judgment is considered, by asking whether they agree that "getting mental health treatment for a child would make a parent feel like a failure." The more a respondent feels that people will know about the child's mental health treatment, the extent to which they think that medication will make the child an outsider at school, and the more they think that a parent will consider him or herself a failure for seeking mental health treatment for their child, the less likely they will be to seek treatment, as they fear the social judgment that they will incur if they so choose.

To further the analysis to include all of the elements of Ajzen's theory of planned behavior, a set of variables examining the respondent's perceived behavioral control are included. Perceived behavioral control, how much the respondent feels that it is within their power to medicate their child's ADHD, will depend on the resources available to the respondent, the information available to them, and the amount of trust they have in the psychiatric community.

Resources for seeking medication therapy for child ADHD will include financial assets. Guevara, Lozano, Wickzier, Mell, and Gephart (2001) showed that children with ADHD incur significantly higher annual health care costs than do children without ADHD due to higher rates of doctors visits and more pharmacy fills. For parents without insurance, the most disadvantaged members of our society already, these costs can be devastating.

To measure structural resources restrictions that may be hindering parents from seeking psychiatric help for their child, I use information about the respondent's health insurance, specifically, whether their health plan limits the testing they can receive and specialists they can visit. This question is necessarily asked only of those who have insurance, so it also serves to control for those respondents who have insurance. A direct measure of the respondent's income cannot be included in the analysis, because of the high rate of refusal to answer this question. Insurance, however, proves to be a better measure of the respondent's financial position when it comes to health care. Those respondents who have insurance that limits their use of special services will be more likely to be leery of seeking help for non-essential medical care, such as mental illness. Without the safety net of insurance, families may not be able to afford care for their child, especially for a mental health problem, which may be seen as less important than the other family needs drawing on the household's limited resources.

Cultural mistrust must also be taken into account. As was mentioned before, the psychiatric community is composed of predominantly Anglos doctors, leading some African American patients to doubt the medical system. The more a patient mistrusts the

medical community, and Anglos in general, the less likely they will be to successfully seek treatment for ADHD.

To measure cultural mistrust, I look into both mistrust of Anglos in general, and mistrust of doctors. Respondents were asked how much they agree or disagree with the statements, "I trust my doctor's judgment about my medical care;" "I trust my doctor to put my medical needs above all other considerations when treating my medical problems;" and "How much would you trust your doctor to put care above all costs?" The more respondents trust their doctors' judgments, the more likely they should be to seek medication. Similarly, respondents were asked how "warm" or "cool" they feel to Anglos. These scores were graded on a scale from 1 to 9, with 1 being "very cool" and 9 "very warm". The warmer the respondent feels towards Anglos, the more likely they should be to seek medical attention for mental illness.

Finally, I add controls for the respondent's past experiences with mental illness, which serves as a measure of the respondent's knowledge about how to deal with finding treatment options and seeking medication. Respondents were asked two questions: "Did you ever know anyone who was in the hospital because of a mental illness," and "Have you ever known anyone who was seeing a psychologist, mental health professional, social worker or other counselor?" Those respondents who have previously known someone who was receiving treatment for mental illness, whether through outpatient therapy (a psychologist or other mental health professional), or inpatient treatment, should be more likely to perceive that they have control over the situation, as they have experience with it.

I include demographic and situational control for the age, sex, and race of the respondent. The trend in our society of seeking psychiatric treatment is a fairly recent development, and older generations may be less willing to accept the notion that a child should be given medication for mental illness. The older the respondent is, the less likely they should be to show the intent to seek treatment for a child's mental health problem. Age is measured continuously, with a minimum age of 18 and a maximum age of 86.

Similarly, the sex of the respondent has been shown to be significantly related to use of mental health services. The gender of the respondent is measured by a dummy variable for female, with males as the reference group.

Race is defined as the first race the respondent mentions when asked what race they consider themselves to be. The variable was recoded to include dummy variables for Anglos, African Americans, and other races (including American Indian, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, other Asian, Samoan, other Pacific Islander, and all others). The dummy variables for African Americans and others are included in the models so that Anglos are the reference group.

CHAPTER THREE

Findings and Discussion

First, descriptive statistics were gathered for the variables included in the subsequent models (see Table 1). The mean scores for favoring biological or environmental causes are 5.22 and 5.33, respectively. For both indices, the midpoint is 4.5, indicating that respondents agree more than disagree with both explanatory models. Over half (70%) of respondents believe that children with ADHD should be medicated, and 82% believe that ADHD is a real disease. When we look at the variables measuring beliefs about the appropriate treatment of ADHD, however, we find that respondents in this sample are more likely than not to believe that doctors today are overmedicating children with common behavior problems, and that medicating these behavior problems will have long term negative effects on children. Subjective norm measures are very close to the midline – respondents are slightly more likely to agree than disagree that the people in the community will know which children are receiving mental health treatment (1.62), and that a child will be an outsider at school if they are receiving treatment (1.62), but are more likely to disagree that medicating a child's behavior problem will make a parent feel like a failure (1.12). 55% of the sample has health insurance that limits their treatment options. For the questions about the respondent's trust of doctors, I find that this sample is very likely to trust their doctors to put their medical needs first and make the correct judgment on the care they should receive, but are not as likely to agree that the doctor will put their health care above all other costs. When asked how warm or cool

they feel towards Anglos, respondents received an average score of 7.02, indicating that the sample feels more warm than cool towards Anglos in general. Finally, the demographic characteristics of the sample were measured, and showed an average age of 43.14 years among a sample that was 60% female, 16% African Americans, 74% Anglo, and 6% some other race.

Table 1
Descriptive Statistics for Variables Used in Analysis

Variables	Mean	Median	Standard Deviation
Attitudes			
Environmental Causes (index)[a]	5.33	6.0	1.87
Biological Causes (index)[b]	5.22	5.0	1.91
Should be medicated	0.70	1.0	0.46
Doctors are overmedicating children	2.30	2.0	0.79
Medication will have negative effects	1.81	2.0	0.92
ADHD is real	.82	1.0	0.39
ADHD is a mental illness	1.45	1.0	0.8
Subjective Norms			
Community knows	1.62	2.0	0.98
Child will be an outsider	1.44	1.0	0.98
Medicating children makes parent feel like a failure	1.12	1.0	0.91
Perceived Behavioral Control			
Insurance limits treatment	0.55	1.0	0.50
Trust doctor's judgment	3.22	3.0	0.82
Trust doctor to put medical needs first	3.16	3.0	0.94
Trust doctor to put health above costs	1.89	2.0	1.33
"Warmness" towards Anglos	7.02	8.0	2.09
Know patient in outpatient therapy	0.80	1.0	0.40
Know patient in mental hospital	0.60	1.0	0.49
Demographic Controls			
Age	43.14	40.0	16.37
Female	0.60		
African American	0.16		
Anglo	0.74		
Other	0.06		

[a]Eigen value = 2.29 [b]Eigen value = 1.83

I begin by measuring the effect of the respondent's attitude towards ADHD in their intent to seek help for their child's ADHD. Cumulative logistic regression was performed on both the intention to seek help based on the teacher's recommendation, and

on the child's doctor's recommendation (see Table 2). Independent variables included the demographic characteristics of the respondent, as well as their belief in either biological or environmental causes of ADHD, belief that children with ADHD should be medicated, belief that children are overmedicated and that medications may have a long-term negative impact on children, and belief that ADHD is a mental illness and a real disease.

Table 2
Coefficients for the Effects of Attitude on Intention to Medicate Based on Teacher's or Doctor's Advice (Odds Ratios in Parentheses)

Variables	Intent to medicate on teacher's advice		Intent to medicate on doctor's advice	
Intercept 3	-5.640		-1.322	
Intercept 2	-3.583		2.468	
Intercept 1	-1.495		4.193	
Demographic Characteristics				
Age	.003	(1.003)	.027	(1.027)
Female	-.175	(0.839)	-.444	(0.642)
African American	-1.082	(0.339)	-1.270	(0.281)*
Other	-.217	(0.805)	-.430	(0.651)
Attitude Measures				
Biological causes (index)	.276	(1.318)*	.250	(1.284)*
Environmental causes (index)	.067	(1.070)	.017	(1.017)
ADHD should be medicated	.852	(2.344)	1.393	(4.026)**
Doctors are overmedicating children	-.007	(0.993)	-.629	(0.533)*
Medications will have long term negative effects	-.181	(0.835)	-1.323	(0.266)****
ADHD is a real disease	.309	(1.362)	.012	(1.012)
ADHD is a mental illness	.562	(1.755)	.587	(1.798)*
R-square	.268		.511	

* p<.05 **p<.01 ***p<.001 ****p<.0001

These models tell us that attitudes can be a very important factor in the respondent's intention to seek medication for their child. When the dependent variable is the teacher's recommendation, controlling for the respondent's attitude and demographic characteristics accounts for 26.8% of the total variance in intent to medicate, and when the dependent variable is intent based on a doctor's recommendation, 51.1% of the variance is explained by attitude. Looking more closely at the effects of attitudes, I find that when the respondent shows a strong belief in biological causes of mental illness, he or she will be significantly more likely to show intent to medicate their child's ADHD,

regardless of whether the advice they are receiving is from the child's teacher or doctor. The same is true of belief that ADHD is a mental illness – respondents who believe that ADHD is a mental illness are significantly more likely to medicate their children. These two attitudes seem to go hand in hand – if the respondent believes that there is a biological cause for mental illness, and believes that ADHD is a mental illness, medication would seem to be the most viable treatment option.

When the advice to medicate a child's ADHD comes from a doctor, two additional significant effects are shown. Belief that ADHD should be medicated is significantly and positively related to intention to seek medication for treatment, such that respondents who believe that ADHD should be medicated are over four times more likely to show intent to medicate based on the doctor's advice than those who do not believe that ADHD should be medicated. An alternative belief, that medications given to children to treat their behavior problems will have a long term negative impact on the child's development, is also significant in the relationship we would expect – those respondents who believe that medications have a long term negative impact on children will be significantly less likely to intend to medicate their child. Similarly, those respondents who think that doctors today are overmedicating children with common behavior problems, a common perception among the general population (more than half of this sample agreed with this statement) were less likely to intend to medicate their child. The implications of this could be severe – if a parent is exposed to this ideology before their child is diagnosed, they may be less likely to accept the diagnosis for fear that the medical community is over-diagnosing and over-medicating a common behavioral problem.

To fully measure the impact of the Theory of Reasoned Action on intention to seek medication for ADHD, I examined the effects of both the respondent's attitude towards the behavior and their subjective norm about the behavior. To the extent that respondents feel that others hold attitudes favorable to the commission of the behavior, in this case, medicating a child with ADHD, they should be more likely to intend to perform the behavior, regardless of the source of the recommendation.

Results for the logistic regression of attitudes and subjective norms on intention to medicate the child's mental illness are shown in Table 3. The results for the measures of attitude remain approximately the same for both measures of intention to medicate. Based on a teacher's advice, those who believe that mental illnesses are caused by biological factors, those who believe that ADHD should be medicated, and those that believe that ADHD is a mental illness show higher likelihood of intention to seek medication. When the child's doctor makes the recommendation that the child receive medication, those who believe that ADHD is a mental illness, and those who agree that ADHD should be medicated are significantly more likely to do so for their child, while those who believe that medications to treat behavior problems cause long term negative effects for children are only 20% as likely as those who do not to seek medication.

Table 3
Coefficients for Elements of the Theory of Reasoned Action on Intention to Medicate Based on Teacher's or Doctor's Advice (Odds Ratios in Parentheses)

Variables	Intent to medicate on teacher's advice		Intent to medicate on doctor's advice	
Intercept 3	-5.72		-1.36	
Intercept 2	-3.57		2.70	
Intercept 1	-1.43		4.48	
Demographic Characteristics				
Age	.001	(1.00)	.023	(1.02)
Female	-.185	(0.83)	-.532	(0.59)
African American	-1.136	(0.32)*	-1.03	(0.36)
Other	-.177	(0.84)	-.478	(0.62)
Attitude Measures				
Biological causes (index)	.246	(1.28)*	.209	(1.23)
Environmental causes (index)	.071	(1.07)	-.041	(0.96)
ADHD should be medicated	.952	(2.59)*	1.652	(5.21)**
Doctors are overmedicating children	-.042	(0.96)	-.715	(0.49)*
Medications will have long term negative effects	-.336	(0.71)	-1.623	(0.20)****
ADHD is a real disease	.286	(1.33)	.147	(1.16)
ADHD is a mental illness	.525	(1.69)*	.559	(1.75)*
Subjective Norm Measures				
Belief that the community knows which children are receiving treatment	.516	(1.66)**	.373	(1.45)
Belief that treatment will make child an outsider at school	-.235	(0.79)	-.029	(0.97)
Belief that getting mental health treatment for a child would make a parent feel like a failure	.117	(1.12)	-.534	(.59)*
R-square	.30		.54	

* p<.05 **p<.01 ***p<.001 ****p<.0001

Turning to the respondent's subjective norm about giving medication to children to treat their ADHD, we find some surprising effects. For intent based on a teacher's referral, belief that the community knows which children are receiving mental health

treatment is significantly and positively related to intention to seek treatment. This implies that the more the respondent thinks others know about their child's treatment, the more likely they will be to seek the most extreme form of treatment – medication. This effect could be indicative of the changing opinion of mental illness in American society. With mental illness becoming more common and less private, it is possible that parents would rather people know that their child is receiving treatment than think that their child is merely "acting out." With the safeguard, rather than the stigma, of a mental illness label, it may be to a parent's benefit for the community to know that their child is receiving treatment.

A similarly counterintuitive finding arises in the subjective norm measures for intent after a doctor's referral. Rather than being less likely to seek treatment if they believe that seeking mental health treatment for a child will make a parent feel like a failure, respondents who believe this are 80% more likely to agree that they would seek medication as treatment for their child based on a doctor's advice. In this same model, when subjective norms are controlled for, the effect of being African American loses it significance. When perceptions of others' beliefs about medicating children are taken into account, African Americans are no more or less likely than Whites to intend to seek medication for their child's ADHD. The controls used when accounting for the respondent's attitude and subjective norm explain away the effect of race on the individual, indicating that the Theory of Reasoned Action may be a better explanation that the Theory of Planned Behavior in predicting medication seeking behavior when the advice is given by a doctor.

To further test the effects for intent based on teachers' or doctors' referrals, I add in measures of the respondent's perceived behavioral control over the situation. If attitudes and subjective norms do not predict the respondent's behavior perfectly, and, in this case, because the effect of race still exists for intent based on a teacher's advice, they do not, the respondent's belief about the control that they exert over the situation may be intervening. The effect of perceived behavioral control can influence intention either along with attitudes and subjective norms, or it may bypass these two and mediate intention completely independently of the other two.

Results for the full model of the Theory of Planned Behavior on the independent variables is shown in Table 4. When perceived behavioral control is added to the model, the explanatory power for intention based on teachers' and doctors' referrals is increased by 9% and 6%, respectively.

Table 4
Coefficients for Elements of the Theory of Planned Behavior on Intention to Medicate Based on Teacher's or Doctor's Advice (Odds Ratios in Parentheses)

Variables	Intent to medicate on teacher's advice		Intent to medicate on doctor's advice	
Intercept 3	-9.05		-0.23	
Intercept 2	-6.63		4.13	
Intercept 1	-4.11		6.20	
Demographic Characteristics				
Age	.01	(1.01)	.027	(1.03)
Female	-.345	(0.71)	-1.316	(0.27)*
African American	-1.203	(0.30)	-1.049	(0.35)
Other	.221	(1.25)	.457	(1.58)
Attitude Measures				
Biological causes (index)	.259	(1.30)	.295	(1.34)
Environmental causes (index)	.108	(1.11)	-.287	(0.75)
ADHD should be medicated	1.316	(3.73)*	1.753	(5.77)*
Doctors are overmedicating children	-.353	(0.70)	-.600	(0.55)
Medications will have long term negative effects	.160	(1.17)	-1.843	(0.16)****
ADHD is a real disease	.725	(2.07)	-.205	(0.81)
ADHD is a mental illness	.561	(1.75)*	.760	(2.14)*
Subjective Norm Measures				
Belief that the community knows which children are receiving treatment	1.074	(2.93)****	.298	(1.35)
Belief that treatment will make child an outsider at school	-.383	(0.68)	-.304	(0.74)
Belief that getting mental health treatment for a child would make a parent feel like a failure	-.276	(0.76)	.543	(1.72)
Perceived Behavioral Control				
Trust doctor – medical needs	-.306	(0.74)	.034	(1.04)
"Warmness" towards Anglos	.346	(1.41)**	-.113	(0.89)
Trust doctor – health above costs	.116	(1.12)	-.058	(0.94)
Trust doctor's judgment	.063	(1.07)	.378	(1.46)
Insurance limits treatment	.151	(1.16)	.744	(2.10)
Know patient in mental hospital	-.396	(0.67)	-1.224	(0.29)*
Know patient in therapy	-.684	(0.50)	.407	(1.50)
R-square	.39		.60	

* p<.05 **p<.01 ***p<.001 ****p<.0001

For the model of intention based on teachers' advice, the same attitude variables remain significant, reiterating that attitudes are very important, and, as is shown here, may be the *most* important indicator of a respondent's likelihood of seeking medication for their child. Similarly, subjective norm measures, specifically whether or not the respondent thinks that the community will know that their child is receiving treatment, remain significant. Because these attitudes and subjective norms are so salient, and persist even when the respondent's control over the structural barriers to treatment seeking are accounted for, perceived behavioral control alone cannot account for treatment seeking differentials. This model does show, however, that control over the situation reduces the effect of race on medicating children. In this model, "warmness" towards Anglos becomes significant, and leaves the race variable unable to predict intention. The respondent's attitude towards Anglos, how close they feel in social distance to this group, moderates the respondent's own race, such that the closer the respondent feel towards Whites as a group, the more likely he or she is to seek treatment for a child. This implies that cultural mistrust plays a large role in African American parents' failure to seek medical treatment for their child.

For intentions based on the child's doctor's recommendation, the addition of controls for the respondent's perceived behavioral control also help regulate the effect of the respondent's race on intention. The attitude measures previously shown to be significant for this behavior remain significant, but, when perceived behavioral control is added to the analysis, the effect of believing that getting mental health treatment for a child would make a parent feel like a failure ceases to be significant. Instead, whether or not the respondent knows someone who has been hospitalized for a mental illness

becomes significant, seeming to mediate the effect of perceived parental failure. However, the effect of being acquainted with someone who is or has been hospitalized for mental illness has the opposite effect of what we would expect. Rather than serving as a measure of the respondent's experience with the mental health system, and serving to make them more aware of and more comfortable with the mental health community, those who know someone who has experienced hospitalization are significantly less likely than those who do not know anyone who has been hospitalized for mental illness to agree to medicate a child's ADHD. The other measure of experience with the mental health community, whether the respondent knows someone who has received outpatient treatment, is not significantly related to the intention to medicate, suggesting that the significant negative effect for hospitalization may be more related to the severity of the treatment rather than the exposure to the system itself. People have seen their acquaintances be hospitalized, one of the most pervasive forms of treatment, and may fear that medication will naturally lead to more harsh treatment for the child. They have experienced the more severe side of the mental health treatment community, and do not want to subject a child to that kind of therapy.

In this final model, the effect of being African American on intent to medicate a child's ADHD based on a doctor's recommendation remains insignificant, while the amount of variance explained increases. This suggests that the Theory of Planned Behavior may be a better measure than the Theory of Reasoned Action alone in predicting intentions to seek medication. While the measures of the Theory of Reasoned Action (attitudes and subjective norms) explain away the effect of race on treatment seeking behaviors, the addition of controls for the Theory of Planned Behavior (perceived

behavioral control) adds to the variance explained, and renders the measures of subjective norm useless.

CHAPTER FOUR

Conclusions

The majority of the variance in intention to medicate a child's ADHD is explained by the Theory of Reasoned Action, particularly a respondent's attitudes towards ADHD – their beliefs about the causes, as well as beliefs about the appropriate treatment for the illness. While most of the variance in treatment intention is explained by the attitudes, race differences still exist in intention to medicate based on a teacher's advice until perceived behavioral control is added to the model. For Anglo respondents, much of the variance can be explained by controlling for the attitudes that they hold toward the behavior and their perceptions of what others think about medicating children. African American respondents, however, even when controlling for attitudes and subjective norms, are still less likely than Anglo respondents to seek help. *Why* this is seems to be tied to African American respondents' perceived lack of behavioral control over the situation in which they find themselves, especially their prior experience with people receiving treatment for mental illness and their trust in Anglos in general.

Cultural mistrust has previously been shown to be tied to decisions not to seek treatment for mental illness for respondents themselves (Nickerson et al., 1994; Poston et al., 1991), and some have shown that it can be a problem for parents seeking treatment for their children (Bussing, Schoenberg, & Perwien, 1998; Bussing et al., 1998). This study confirms previous findings that those respondents who trust the Anglo community less are less likely to intend to treat their child's ADHD with medication. For parents,

this mistrust was shown to be especially important when the source of the referral is the child's teacher. Without controlling for the respondent's feeling towards Whites, African Americans are significantly less likely to seek medication for their children, but when how the respondent feels about Anglos (the predominant race for both teachers and doctors) is held constant, we see that African American parents are no more or less likely than White parents to medicate their children when their child's teacher makes a referral. The differences lie almost completely with the respondent's trust of those who are diagnosing the child. For African American parents who feel more "cool" towards Whites, there may be a suspicion that the behaviors that their child exhibits are not indicative of a mental illness, but rather are normal behaviors, that the teacher doesn't understand. Their cultural framework for judging behavior may be different, causing understandable hesitation on the part of the parents. This is especially true when the suggested treatment for the child is medication. By accepting a diagnosis and medicating the child, the parent is conceding that there is something wrong with the way their child is acting, and taking a fairly drastic measure to change that behavior. If the parent is in any way unsure of the diagnosis, particularly if it is coming from someone who they feel doesn't understand their cultural background, they would be more hesitant to use medication.

These findings imply that while an overall change in parents' attitudes towards ADHD are needed, to increase treatment among all children, more is needed to specifically target African American parents. The finding that trust in Whites diminishes the effect of being African American on intention to medicate suggests that a move towards educating both African American parents and their children's teachers is

warranted: more understanding is needed on both sides to increase the likelihood that the teacher's advice will be heeded. It is not, however, purely the responsibility of African American parents to "learn to trust Whites." It is equally important for teachers to understand the cultural backgrounds of all of the children they teach, so that they are aware of the acceptable behavior of a child within their personal cultural setting. Not all perceived childhood misbehavior is seen as problematic in all cultures, and for parents to trust their child's teacher's recommendation for medication, the parents must know that the teacher is viewing their child's behavior within the culture's individual social context.

When the parent bypasses the teacher's recommendation, either seeking advice directly from their child's physician or looking for a second opinion based on a teacher's recommendation, cultural mistrust is no longer as important. Rather, the parent's previous experience with the mental health community and the parent's attitudes towards medicating children are significant. When the recommendation comes from a medical authority, African American parents seem to be willing to override their cultural mistrust perceptions and trust the doctor's advice, but their own attitudes and experience mediate their intentions. In general, previous experience with the mental health community should serve to increase the respondent's knowledge about treatment, with familiarity with the process serving to make the parent more comfortable, and therefore more likely to medicate. The findings, however, suggest that negative experiences play a more important role in intention to seek treatment, decreasing the likelihood that a parent will seek medication for their child's ADHD. This would be especially true for African Americans, a group that, while they have been shown to be less likely to use mental health services on a voluntary basis, are vastly over represented in involuntary

hospitalizations. The African American community may be more acquainted with the negative sides to mental health hospitalization, which leads to a suspicion concerning all treatment. This implication is further suggested by the fact that prior experience with mental health treatment is significantly related to intention when it comes to a doctor's advice, but not a teacher's. Teachers do not have the authority to give involuntary treatment, but doctors do. The underlying fear that parents have about mental health treatment in general is only manifested when the fear is a rational one.

Further implications for treatment when it comes to advice from the medical community should focus on doctors easing the fears of African American parents by educating them more about the precise treatment plan for their child, easing their fears of harsh treatment with long term negative effects. As with intention based on a teacher's recommendation, changing the attitudes of parents can only go so far in reaching the African American community. It is important to consider the parent's background information and experience with mental health treatment.

This study relied on the theories of Reasoned Action and Planned Behavior to predict the respondent's intention to medicate their child's ADHD. Measures of the respondent's actual behavior were not available, but previous meta-analyses (Albrecht & Carpenter, 1976, Netemeyer, Burton, & Johnston, 1991; Sheppard, Hartwick, & Warshaw, 1988) on the theories of interest have shown that intention can be trusted to reliably predict behavior. However, future studies would be enhanced by including a measure of the respondent's actual behavior; that is, measuring African American parents' actual medication of their children's problems.

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