

Children's Beliefs About Causes of Childhood Depression and ADHD: A Study of Stigmatization

Daniel Coleman, Ph.D.

Janet S. Walker, Ph.D.

Junghee Lee, Ph.D.

Barbara J. Friesen, Ph.D.

Peter N. Squire, Ph.D.

Objective: Children's causal attributions about childhood mental health problems were examined in a national sample for prevalence; relative stigmatization; variation by age, race and ethnicity, and gender; and self-report of a diagnosis of depression or attention-deficit hyperactivity disorder (ADHD). **Methods:** A national sample of 1,091 children were randomly assigned to read vignettes about a peer with depression, ADHD, or asthma and respond to an online survey. Causal attributions and social distance were assessed, and correlations were examined. Logistic regression models for each causal item tested main effects and interaction terms for conditions, demographic characteristics, and self-reported diagnosis. **Results:** The beliefs that parenting, substance abuse, and low effort caused the condition were all strongly intercorrelated and were moderately correlated with social distance. The depression condition was the strongest predictor of endorsement of the most stigmatizing causal beliefs. Stigmatizing causal beliefs were evident for ADHD, but with more modest effects. Children who reported a diagnosis were more likely to endorse parenting and substance abuse as causes (attenuated for ADHD). Modest to moderate effects were found for variation in causal beliefs across ethnic groups. **Conclusions:** This study demonstrated a consistent presence of stigmatization in children's beliefs about the causes of childhood mental health problems. Low effort, parenting, and substance abuse together tapped a moralistic and blaming view of mental health problems. The results reinforce the need to address stigmatization of mental disorders and the relative stigmatization of different causal beliefs. The findings of variation by ethnicity and diagnosis can inform and target antistigmatization efforts. (*Psychiatric Services* 60:950-957, 2009)

Attribution theory suggests that beliefs about the causes of mental disorders have an influence on stigmatizing attitudes and behaviors toward persons with men-

tal illness. Findings from attribution theory-informed studies have implications for antistigmatization efforts, in which education about causation is typically a central strategy for reduc-

ing negative attitudes toward people with mental disorders (1-6).

Research on causation is informed by a central tenet of attribution theory suggesting that a person with a mental disorder will be perceived relatively more favorably when the cause of the disorder is seen as outside of the individual's control (such as a biological, genetic, or environmental cause) and, conversely, that such a person will be perceived more negatively if he or she is seen as somehow causing the condition through a lack of willpower or effort or some other moral failing (7-10). Although predictions derived from attribution theory are supported for the most part, findings regarding attribution to genetic or biological causes are mixed. In some studies, attribution to biological or genetic causes was associated with less negative perceptions (8,11), but in others, genetic or biological causal attributions were associated with more negative perceptions (10,12-14), perhaps because behavior arising from these factors is likely to be perceived as serious, persistent, or difficult to control (9,10,12-15).

Research on beliefs about the causes of mental disorders documents variation across cultures (10,16,17) and between cultural groups within Western societies (16,18-21). Antistigmatization efforts that include a focus on causal attributions may thus require sensitivity to subpopulation differences in beliefs about causation.

Dr. Coleman is affiliated with the Graduate School of Social Work, Portland State University, P.O. Box 751-SSW, Portland, OR 97207 (e-mail: dcoleman@pdx.edu). Dr. Walker, Dr. Lee, and Dr. Friesen are with the Regional Research Institute, Portland State University. Dr. Squire is with the Department of Psychology, George Mason University, Fairfax, Virginia.

Although there is a small body of literature about exploring causal attributions among people who have mental illnesses (22–24), there appears to be only one study that compared these attributions with those of the general public (23). In that study, people with mental illness were much more likely than the general public to make negative causal attributions, for example, seeing their condition caused by their “own bad character” (25).

Comparatively little research has examined causal beliefs among children and adolescents. Existing studies are typically small, and few have explored differences by sex or by race and ethnicity, even though these variables have proven significant in studies that focused generally on children’s perceptions of peers with emotional or behavioral difficulties (5,26–28). This limited body of research indicates that children generally endorse the same types of causes of mental illness or emotional and behavioral disorders as adults, including genetic or biological causes and stress or trauma (5,29–31). Available evidence also suggests that, like adults, children tend to have more negative views of peers whom they see as responsible for their problematic behavior (29,32–35) and more positive views of peers whose difficulties are caused by life stress (36).

In the study reported here, we used data from the first national study of children’s attitudes toward peers with mental health problems to examine beliefs about causation. Earlier analyses of data from the same source examined stigmatization generally and found marked stigmatization of depression and attention-deficit hyperactivity disorder (ADHD) compared with asthma, with depression generally more stigmatized than ADHD (28). The level of stigmatization was relatively consistent across most demographic variables. This study built on these earlier analyses in examining young people’s beliefs about the causes of depression and ADHD, the most commonly diagnosed emotional and behavioral disorders among children (37,38). Seven well-studied and theoretically meaningful causes were identified from the literature and

used in this study: parenting, substance abuse, lack of effort, genetics, brain differences, God’s will, and stress.

Although this study was informed by attribution theory and related research, the limitations of the existing literature made the formulation of specific hypotheses difficult. As a result, an exploratory approach was used to address the primary research question: what are the factors associated with endorsement of the various causal beliefs? The independent variables tested were condition (ADHD and depression), age, sex, race and ethnicity, and whether the respondent reported having received a diagnosis of the target condition.

To help clarify the meaning of the primary analyses, we explored two preliminary research questions. First, as evidence of the relative stigmatization of the causal attributions, what is the correlation of each of the seven causation items to social distance, the most widely used stigmatization construct (39–42)? Second, what is the interrelationship of the causation items?

Methods

The survey was administered online in 2006 by the polling firm Harris Interactive, which maintains a panel of more than six million members who have agreed to participate in its surveys. Harris Interactive is a member organization of the Council of American Survey Research Organizations and thus adheres to its code of ethics (43), which prescribes specific protections for survey respondents. Procedures include written informed parental consent and child consent or assent. The institutional review board at Portland State University certified that the study met the criteria for a secondary analysis and provided a waiver of review.

Children of adult panel members were recruited into the panel with parental permission and ranged in age from eight to 12. Youth panel members aged 13 and over were either recruited in a similar manner or else directly, via e-mail. Randomly selected youth panel members were invited by e-mail to participate in the survey. For children under 13, an in-

formational e-mail was first sent to the parent panel member, who then allowed the child to participate. Responses were gathered until U.S. Census-based demographic targets were approximated. The data were then weighted for age and sex to bring them in line with their proportions in the general population. Weighted samples from the Harris Interactive panels have provided data that are comparable with data from random samples of general populations (44,45). Table 1 shows the correspondence of the weighted and unweighted sample of 1,318 children and adolescents to the U.S. child population. Because of the cognitive complexity of the items, the eight- and nine-year-olds were not asked about causation; the analysis therefore used the data from 1,091 respondents aged ten and older.

Survey respondents were randomly assigned to one of three survey versions, each with a focus on depression, ADHD, or asthma. The first two conditions were chosen because of the likelihood that children and adolescents between ages eight and 18 would have had contact with peers who had these emotional and behavioral conditions. Asthma, a physical illness, was used as a comparison condition.

The study survey was developed collaboratively by children’s mental health researchers, staff from Harris Interactive, and young people with emotional and behavioral disorders. The first section of the survey includes a brief vignette about Michael, a young person who has the target condition. Respondents are asked to imagine that Michael is a student in their class and that, because of this condition, Michael sees a doctor, has been in the hospital several times, and spends part of the school day in special classes or activities. Respondents then answer a series of questions about Michael, including questions about what might be causing Michael’s condition and about peer preferences for social distance from Michael.

Measures

Causal beliefs were assessed with seven items parallel to those used in studies of adults (8,40,46). Respon-

Table 1

Correspondence of weighted and unweighted samples of youths to the U.S. child population

Characteristic	U.S. census		Harris Interactive sample (N=1,318) ^a			
			Weighted		Unweighted	
	N ^b	%	N	%	N	%
Age						
8–11	16.69	37.3	463	35.1	507	38.5
12–14	12.21	27.3	365	27.7	323	24.5
15–18	15.83	35.4	490	37.2	488	37.0
Gender						
Male	37.06	51.3	674	51.1	615	46.7
Female	35.23	48.7	644	48.9	703	53.3
Race or ethnicity						
White	44.02	61.2	—	—	779	59.1
African American	10.59	14.8	—	—	199	15.1
Asian or Pacific Islander	2.54	3.6	—	—	49	3.7
Hispanic or Latino	12.34	17.0	—	—	234	17.8

^a Data were weighted to U.S. Census 2000–based targets for age and sex but not for ethnicity.^b Data are in millions.

dents were also asked whether a psychologist or physician had ever given them a diagnosis of the target condition.

This study used an adapted version of the Social Distance Scale (SDS), which asks respondents to rate their willingness to interact with people with mental illness in different situations. The published reliability of the SDS ranges from .75 to .92 (39). For this study, the SDS was adapted to reflect situations more typical of child-

hood; for example, the item asking about willingness to “work with” a person was changed to “work on a school project with.” The adapted five-item scale had very good reliability ($\alpha=.89$).

Based on theoretical considerations and examination of the distributions of the items, Likert scale items were dichotomized by collapsing responses that indicated agreement (for example, maybe and yes responses were recoded as 1, and no was re-

coded as 0). The nondichotomized variables were used for the computation of correlations.

Analysis

Correlations were computed between social distance and the seven causation items. Scaling of causation items was explored, but no parsimonious scale summary of the seven causation items was found, so the individual items were used in further analyses. Hierarchical logistic regression models were constructed for each causation item, with main effects entered in step 1 and interaction terms in step 2. Age, sex, race or ethnicity, target condition, and diagnosis were entered simultaneously in step 1. To arrive at a parsimonious final model, step 2 used backward removal to test 15 theoretically selected terms: the interaction of condition (depression or ADHD) with each demographic variable and with diagnosis and the interaction of race or ethnicity and gender.

Results

Table 2 shows the percentages of respondents in each condition who endorsed the causation items and reported having received a diagnosis of that condition. Tests of significance are not reported for these bivariate relationships because the relationships were tested later in the multi-

Table 2Respondents reporting a diagnosis and endorsing the causation items^a

Attribution area and item	All (N=1,091)		Depression (N=339)		ADHD (N=380)		Asthma (N=372)	
	N	%	N	%	N	%	N	%
Diagnosis: Has a doctor or psychologist ever said that you have [target condition]?	187	17	39	12	58	15	90	24
Causation: Do you think any of these things could be part of the cause of Michael's condition?								
Parenting: Michael's parents are not raising him right.	372	34	197	58	120	32	54	15
Substance abuse: Michael abuses drugs or drinks alcohol.	357	33	214	63	77	20	65	18
Low effort: Michael is not trying hard enough to get better.	254	23	116	34	88	23	49	13
Genetics: Michael's parent or other members of Michael's family have the same condition.	915	84	272	80	313	82	330	89
Brain differences: Michael's brain works differently than a normal brain does.	979	90	303	89	347	92	328	88
God's will: It's God's will.	611	56	138	41	236	62	237	64
Stress: Michael has experienced more stressful events in his life than most do.	801	73	316	93	246	65	240	65

^a Items were presented after respondents received a vignette about Michael, who had depression, ADHD, or asthma.

Table 3

Interrelationships of the causation items and correlations with social distance

Variable	Parenting	Substance abuse	Low effort	Genetics	Brain differences	God's will	Stress
Causation item							
Parenting	—						
Substance abuse	.586***	—					
Low effort	.530***	.447***	—				
Genetics	-.019	.063*	-.059	—			
Brain differences	-.158***	-.106***	-.075*	.202***	—		
God's will	-.015	-.047	.081**	.121***	.076*	—	
Stress	.255***	.329***	.192***	.048	.134***	.022	—
Social distance	.208***	.203***	.149***	.015	-.025	.044	.089**

* $p < .05$ (two-tailed)** $p < .01$ (two-tailed)*** $p < .001$ (two-tailed)

variate logistic analysis. Within each of the three conditions, participants were asked if they had ever received a diagnosis of that condition. More children reported diagnoses of ADHD than depression. Three causation items (parenting, substance abuse, and low effort) were endorsed by markedly higher proportions of children given the depression vignette (compared with ADHD or asthma conditions). These items were also rated higher by those in the ADHD condition than those in the asthma condition. Genetics and brain differences were consistently endorsed by 80% to 90% of respondents across conditions. Stress was endorsed at high rates across conditions, with a very high proportion in the depression condition. Just over half of the participants (56%) thought it likely that Michael's condition was due to God's will, with a lower proportion (41%) in the depression condition endorsing that cause.

Table 3 shows the correlations between the causation items and between the causation items and social distance. There was a convergence of strong correlations among parenting, substance abuse, and low effort. In addition, stress had small to medium correlations with those three items. More modest convergence was found for genetics and brain differences, with a small to medium correlation. Small correlations were observed between God's will and genetics and God's will and low effort.

Three items—genetics, brain dif-

ferences, and God's will—had no association with social distance. Using Cohen's (47) guidelines for interpreting correlation coefficients, we found that three causation items had small to medium correlations with social distance: parenting, substance abuse, and low effort. A small correlation was observed between social distance and stress.

Table 4 shows the logistic regression results for each causation item as a dependent variable (step 1 is the main-effects analysis; step 2 is the interaction model). All of the models were significant at $p < .001$, except the main-effects models for brain differences (not significant) and genetics ($p < .01$). The Nagelkerke approximation of R^2 underestimates the multiple associations of the independent variables to the dependent variable (48). Therefore, the R^2 approximation should be viewed as a very conservative estimate of the effect size for the model. Nagelkerke R^2 values ranged from small to moderate.

The strongest main effect for six of the models was the depression condition. Asthma was the comparison condition. The size of these effects ranged from very large—nearly ten times more likely to endorse parenting as a cause of depression—to small to medium—half as likely to endorse genetics (effect size interpretations according to Rosenthal's [49] guidelines for odds ratios). In addition to the very large effect of parenting, large effects were found for respondents who were given the

depression vignette, who were more likely to endorse substance abuse, low effort, and stress as causes. Effects for the ADHD vignette were smaller and present in fewer models. Participants in the ADHD condition were more likely to endorse parenting and low effort and less likely to endorse genetics.

Those who reported a diagnosis of depression or ADHD were more likely to attribute the condition to parenting and substance abuse (small to medium effects). In the parenting interaction model, those who reported a diagnosis of depression or asthma were 2.5 times more likely to endorse parenting, but this effect did not hold true for children diagnosed as having ADHD. A similar pattern of main and interactive effects was found in the low-effort interaction model.

For race or ethnicity, the comparison group consisted of white youths and youths of other racial or ethnic backgrounds. Asian or Pacific Islanders were nearly three times more likely than youths in the comparison group to endorse parenting and stress as causes (small to medium effects). Hispanic youths were 1.5 times more likely to endorse parenting and low effort. African-American respondents were approximately half as likely as the comparison group to endorse low effort. In the interaction term model, youths who were Asian or Pacific Islanders were 2.5 times more likely to endorse genetics across conditions, with a very strong effect (ten times

Table 4

Odds ratios from logistic regression models for predicting children's causal beliefs about target conditions^a

Independent variable	Dependent variable													
	Parenting		Substance use		Low effort		Genetics		Brain differences		God's will		Stress	
	Step 1	Step 2	Step 1	Step 2 ^b	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Condition														
Depression	9.7***	8.0***	8.1***	—	3.9***	5.3***	.5**	.5**	1.2	1.6	.4***	.4***	7.3***	7.4***
Attention-deficit hyperactivity disorder (ADHD)	3.0**	2.8***	1.3	—	2.2***	3.0***	.5**	.3***	1.3	1.0	.9	.9	.9	.9
Diagnosis	1.8**	2.5***	1.5*	—	1.4	2.8**	.9	.9	.8	.8	1.1	1.1	.9	.9
Ethnicity or race														
African American	.7	.8	.9	—	.6*	.6*	1.0	.7	.7	.5*	2.3***	1.5	1.4	1.4
Asian or Pacific Islander	2.9**	2.9**	1.7	—	1.1	1.1	.9	.4*	.5	.5	1.1	1.1	2.7*	2.9*
Hispanic	1.5*	.7	1.0	—	1.5*	1.5*	1.6	.9	1.0	1.9	1.8**	3.0***	1.4	2.1**
Female	1.0	.9	1.3	—	.8	.8	.9	.9	.9	.9	1.2	1.3	1.2**	1.4*
Age	1.0	1.0	1.1***	—	1.0	1.0	.9*	.9*	.9*	.9*	1.0	1.0	.9**	.9**
Interaction														
Depression × diagnosis		—	—	—		.3*	—	—	—	—	—	—	—	—
Depression × Hispanic		4.0**	—	—		—	—	—	.2**	—	—	—	—	—
ADHD × diagnosis		.4*	—	—		.3*	—	—	—	—	—	—	—	—
ADHD × African American		—	—	—		—	—	2.7*	4.4*	—	—	—	—	—
ADHD × Asian or Pacific Islander		—	—	—		—	—	10.1*	—	—	—	—	—	—
ADHD × Hispanic		3.1*	—	—		—	—	4.8**	—	—	—	—	—	—
Female × Hispanic		—	—	—		—	—	—	—	—	.4*	—	—	.5*
Nagelkerke R ²	.22	.23	.26	—	.09	.10	.03	.06	.02	.05	.09	.11	.17	.17

^a Step 1 is the main-effects analysis; step 2 is the interaction model. The baseline or reference group for sets of indicator variables with three or more categories were as follows: asthma (for condition), white (N=626) and other race or ethnicity (N=42) (for ethnicity or race).

^b There were no significant interaction terms for this step.

*p<.05

**p<.01

***p<.001

more likely) to endorse genetics as a cause of ADHD.

As causes of depression, Hispanic children were four times more likely than the comparison group to endorse parenting and five times less likely to endorse brain differences. Hispanic children were also three times more likely than the comparison group to endorse parenting and nearly five times more likely to endorse genetics as causes of ADHD. A main effect for Hispanic youths to be twice as likely to endorse stress as a cause did not hold true for Hispanic girls (Hispanic × female interaction term indicated that endorsement was half as likely).

Girls were more likely to endorse stress, the one significant effect of gender. Age of participants was associated with increased likelihood to attribute Michael's condition to substance abuse (10% increase per year older). The probability decreased 10% for each

year older for endorsing genetics, brain differences, and stress as a cause.

Respondents were 2.5 times less likely to attribute depression to God's will, and African-American and Hispanic children were roughly twice as likely as the comparison group to endorse God's will (medium effect sizes). In the interaction model, Hispanic children overall were three times more likely to endorse God's will, but this effect was almost entirely attenuated for Hispanic girls (2.5 times less likely).

Discussion

The beliefs about the causes of depression and ADHD were associated with varying levels of stigmatization. We used the face-valid meaning of items, correlations with social distance, and intercorrelation of the causal beliefs to interpret the degree of stigmatization inherent in each causal belief. The item on low effort

had high face validity as a stigmatizing causal belief. One-third to one-quarter of the respondents agreed that not trying hard enough to get better was a cause of Michael's depression or ADHD. Thus, for a child with depression or ADHD, at least one in four peers believes the child is to blame for the condition.

There was further evidence of stigmatization in the small to medium correlations of parenting and substance abuse with social distance, and both had strong correlations with low effort. The stigmatizing meaning of low effort, parenting, and substance abuse converged with similar research for adults (8). The strong intercorrelation of these three items reflects an underlying construct of an individualistic, moralistic, and blaming view of the causation of mental health difficulties. This result is consistent with previous attribution theory-based re-

search that found blaming and moralistic attributions associated with higher stigmatization (7–10).

Endorsements of the three items—low effort, parenting, and substance abuse—were four to 9.7 times more likely in depression than in the asthma condition. More modest effects were found for ADHD. In a separate analysis of this data set, the same three-step pattern of stigmatization, depression more stigmatized than ADHD and ADHD more stigmatized than asthma, was found by Walker and colleagues (28) in negative and positive attributes, social distance, and family attitudes.

Studies of adults have found mixed evidence of stigmatization for beliefs centering on biological or genetic causes (8,10,13–15). In our study, brain differences and genetics were not associated with social distance. However, brain differences had small negative associations with the moralistic and blaming causal attributions of parenting, substance abuse, and low effort. The causal attribution of brain differences modestly countered the moralistic causal beliefs, but genetics was neutral.

Stress was modestly stigmatizing (correlated with social distance, parenting, substance abuse, and low effort), in contrast to some previous studies using attribution theory (7,10,36). God's will did not show a correlation with social distance and had small correlations with low effort, genetics, and brain differences. There was some evidence that God's will tapped a fatalistic causal belief that combines biologically based difference with personal weakness.

The clearest effects—the moralistic causal attributions that were correlated with social distance and much more likely for depression and ADHD—were consistent with previous attribution theory research. However, the weaker effects—such as stress being modestly stigmatizing—point to the complexity of meaning in causal attributions. Although some children perceive stress as an external cause, raising genuine empathy for their peer, other children may blame a peer for not coping well with stressful life circumstances.

The participants reported diagnoses of depression at a slightly lower rate than prevalence estimates (50) but reported ADHD diagnoses at rates markedly higher than prevalence estimates (37,51). The discrepancy of self-reported ADHD diagnosis and epidemiological estimates may reflect growing awareness of ADHD or that real-world diagnosis of ADHD is less rigorous than epidemiological diagnosis.

As a main effect, reporting a diagnosis was associated with the moralistic causal beliefs (parenting, substance abuse, and low effort). This likely reflects both children who are struggling to understand the meaning of having a diagnosis as well as internalized stigmatization. In the interaction model, most children with an ADHD diagnosis were less likely to endorse parenting, possibly because of the widespread neurological explanation for ADHD. Counter to the pattern of internalized stigmatization, those with a diagnosis of depression or ADHD were less likely to endorse low effort.

Cultural emphasis on family and religion was evident with Asian and Pacific Islander youths' and Hispanic youths' greater likelihood of endorsing parenting and African-American and Hispanic youths' greater likelihood of endorsing God's will (52). There was modest evidence that Asian and Pacific Islander youths may have been more disposed toward genetic causal beliefs and that Hispanic youths may have been less disposed toward biological explanations. Further quantitative and qualitative research will provide a richer account of cultural variation and mental health stigmatization; however, these findings imply that antistigmatization efforts should be adapted to the racial and ethnic composition of the target group to synthesize the available evidence of how cultural worldviews shape beliefs about mental health problems.

The findings should be considered with several limitations in mind. The diagnosis of a target condition was based only on the child's recall of receiving a diagnosis. The study relied on self-report, and although the sample was drawn from and weighted to

national population targets, it is not a probability sample. With Web-based research, participants from lower socioeconomic strata may be underrepresented because of lower rates of Internet access. Finally, although online surveys have been found to compare favorably to other survey methods (44,45,53), these studies have been conducted almost exclusively with adults.

Conclusions

These analyses are based on data from the first large national study of children's stigmatization of other children with mental health problems. Earlier analysis of prevalence of social distance and negative attributes found marked stigmatization of depression and ADHD (28). The moralistic and blaming causal beliefs found in this study provide further evidence of stigmatization and demonstrate how causal attributions are related to other stigmatization constructs such as social distance.

The findings suggest that causal beliefs are a promising target for stigma reduction programs, in combination with directly targeting other stigma constructs, such as social distancing or disproportionate associations of mental disorders with dangerousness (8,54). The modest to moderate effects of ethnicity indicate that culturally based beliefs about mental illness should be considered in planning antistigmatization programs. Professionals and family members should also be aware that children with ADHD or depression may be more likely to hold stigmatizing causal beliefs about their own conditions. This internalized stigmatization should be addressed in both prevention and treatment efforts.

Acknowledgments and disclosures

This research was supported by grant H133B990025 from the National Institute of Disability and Rehabilitation Research and by the U.S. Department of Education and the Center for Mental Health Services of the Substance Abuse and Mental Health Services Administration. The content does not necessarily represent the views or policies of the funding agencies. The authors give special thanks to Suzanne Martin and Harris Interactive.

The authors report no competing interests.

References

1. Lam DCK, Salkovskis PM, Warwick HMC: An experimental investigation of the impact of biological versus psychological explanations of the cause of "mental illness." *Journal of Mental Health* 14:453-464, 2005
2. Corrigan PW, Watson AC: At issue: stop the stigma: call mental illness a brain disease. *Schizophrenia Bulletin* 30:477-479, 2004
3. Corrigan PW, Watson AC, Byrne P, et al: Mental illness stigma: problem of public health or social justice? *Social Work* 50:363-368, 2005
4. Hinshaw SP: The stigmatization of mental illness in children and parents: developmental issues, family concerns, and research needs. *Journal of Child Psychology and Psychiatry* 46:714-734, 2005
5. Watson AC, Otey E, Westbrook AL, et al: Changing middle schoolers' attitudes about mental illness through education. *Schizophrenia Bulletin* 30:563-572, 2004
6. Phelan JC: Genetic bases of mental illness—a cure for stigma? *Trends in Neurosciences* 25:430-431, 2002
7. Martin JK, Pescosolido BA, Olafsdottir S, et al: The construction of fear: Americans' preferences for social distance from children and adolescents with mental health problems. *Journal of Health and Social Behavior* 48:50-67, 2007
8. Martin JK, Pescosolido BA, Tuch SA: Of fear and loathing: the role of "disturbing behavior," labels, and causal attributions in shaping public attitudes towards people with mental illness. *Journal of Health and Social Behavior* 41:208-223, 2000
9. Phelan JC: Geneticization of deviant behavior and consequences for stigma: the case of mental illness. *Journal of Health and Social Behavior* 46:307-322, 2005
10. Dietrich S, Beck M, Bujantugs B, et al: The relationship between public causal beliefs and social distance toward mentally ill people. *Australian and New Zealand Journal of Psychiatry* 28:348-354, 2004
11. Corrigan PW, Lurie BD, Goldman HH, et al: How adolescents perceive the stigma of mental illness and alcohol abuse. *Psychiatric Services* 56:544-550, 2005
12. Walker I, Read J: The differential effectiveness of psychosocial and biogenetic causal explanations in reducing negative attitudes toward "mental illness." *Psychiatry: Interpersonal and Biological Processes* 65:313-325, 2002
13. Read J, Harre N: The role of biological and genetic causal beliefs in the stigmatization of "mental patients." *Journal of Mental Health* 10:223-235, 2001
14. Read J, Law A: The relationship of causal beliefs and contact with users of mental health services to attitudes to the "mentally ill." *International Journal of Social Psychiatry* 45:216-229, 1999
15. Mehta SI, Farina A: Is being "sick" really better? Effect of the disease view of mental disorder on stigma. *Journal of Social and Clinical Psychology* 16:405-419, 1997
16. Sheikh S, Furnham A: A cross-cultural study of mental health beliefs and attitudes towards seeking professional help. *Social Psychiatric and Psychiatric Epidemiology* 35:326-334, 2000
17. Crystal DS: Concepts of deviance and disturbance in children and adolescents: a comparison between the United States and Japan. *International Journal of Psychology* 35:207-218, 2000
18. Alvidrez J: Ethnic variations in mental health attitudes and service use among low-income African American, Latina, and European American young women. *Community Mental Health Journal* 35:515-530, 1999
19. Bailey RK, Owens DL: Overcoming challenges in the diagnosis and treatment of attention-deficit/hyperactivity disorder in African Americans. *Journal of the National Medical Association* 97:5S-10S, 2005
20. Bussing R, Zima BT, Gary FE, et al: Barriers to detection, help-seeking, and service use for children with ADHD symptoms. *Journal of Behavioral Health Services and Research* 30:176-189, 2003
21. Yeh M, Hough RL, McCabe K, et al: Parental beliefs about the causes of child problems: exploring racial/ethnic patterns. *Journal of the American Academy of Child and Adolescent Psychiatry* 43:605-612, 2004
22. Nathan JH, Wylie AM, Marsella AJ: Attribution and serious mental illness: understanding multiple perspectives and ethnocultural factors. *American Journal of Orthopsychiatry* 71:350-357, 2001
23. Van Dorn RA, Swanson JW, Elbogen EB, et al: A comparison of stigmatizing attitudes toward persons with schizophrenia in four stakeholder groups: perceived likelihood of violence and desire for social distance. *Psychiatry: Interpersonal and Biological Processes* 68:152-163, 2005
24. Kahng SK, Mowbray CT: What affects self-esteem of persons with psychiatric disabilities: the role of causal attributions of mental illnesses. *Psychiatric Rehabilitation Journal* 28:354-361, 2005
25. Jones EE, Nisbett RE: *The Actor and the Observer: Divergent Perceptions of the Causes of Behavior*. New York, General Learning Press, 1971
26. Watson AC, Miller FE, Lyons JS: Adolescent attitudes toward serious mental illness. *Journal of Nervous and Mental Disease* 193:769-772, 2005
27. Pinfold V, Thornicroft G, Huxley P, et al: Active ingredients in anti-stigma programmes in mental health. *International Review of Psychiatry* 17:123-131, 2005
28. Walker JS, Coleman D, Lee J, et al: Children's stigmatization of childhood depression and ADHD: magnitude and demographic variation in a national sample. *Journal of the American Academy of Child and Adolescent Psychiatry* 47:912-920, 2008
29. Fox C, Buchanan-Barrow E, Barrett M: Children's understanding of mental illness: an exploratory study. *Child: Care, Health and Development* 34:10-18, 2008
30. Bailey S: Young people, mental illness, and stigmatization. *Psychiatric Bulletin* 23:107-110, 1999
31. Maas E, Marecek J, Travers JR: Children's conceptions of disordered behavior. *Child Development* 49:146-154, 1978
32. Sigelman CK, Begley NL: The early development of reactions to peers with controllable and uncontrollable problems. *Journal of Pediatric Psychology* 12:99-115, 1987
33. Hennessy E, Swords L, Heary C: Children's understanding of psychological problems displayed by their peers: a review of the literature. *Child: Care, Health and Development* 34:4-9, 2008
34. Juvonen J: Deviance, perceived responsibility, and negative peer reactions. *Developmental Psychology* 27:672-681, 1991
35. Graham S, Hoehn S: Children's understanding of aggression and withdrawal as social stigmas: an attributional analysis. *Child Development* 66:1143-1161, 1995
36. Peterson L, Mullins LL, Ridley-Johnson R: Childhood depression: peer reactions to depression and life stress. *Journal of Abnormal Child Psychology* 13:597-609, 1985
37. Costello EJ, Mustillo S, Erkanli A, et al: Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry* 60:837-844, 2003
38. Blanchard LT, Gurka MJ, Blackman JA: Emotional, developmental, and behavioral health of American children and their families: a report from the 2003 National Survey of Children's Health. *Pediatrics* 117:e1202-e1212, 2006
39. Wood AL, Wahl O: Evaluating the effectiveness of a consumer-provided mental health recovery education presentation. *Psychiatric Rehabilitation* 30:46-52, 2006
40. Link BG, Phelan JC, Bresnahan M, et al: Public conceptions of mental illness: labels, causes, dangerousness, and social distance. *American Journal of Public Health* 89:1328-1333, 1999
41. Corrigan PW, Edwards AB, Green A, et al: Prejudice, social distance, and familiarity with mental illness. *Schizophrenia Bulletin* 27:219-225, 2001
42. Link BG, Cullen FT, Frank J, et al: The social rejection of former mental patients: understanding why labels matter. *American Journal of Sociology* 92:1461-1500, 1987
43. CASRO Code of Standards and Ethics for Survey Research. Port Jefferson, New York, Council of American Survey Research Organizations. Available at www.casro.org

casro.org/codeofstandards.cfm. Accessed Feb 8, 2008

44. Berrens RP, Jenkins-Smith H, Silva C, et al: The advent of Internet surveys for political research: a comparison of telephone and Internet samples. *Political Analysis* 11:1–22, 2003
45. Duffy B, Smith K, Terhanian G, et al: Comparing data from online and face-to-face surveys. *International Journal of Market Research* 47:615–639, 2005
46. Kuppin S, Carpiano RM: Public conceptions of serious mental illness and substance abuse, their causes and treatments: findings from the 1996 General Social Survey. *American Journal of Public Health* 96:1766–1771, 2006

47. Cohen J: *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, NJ, Erlbaum, 1988

48. Hosmer DW, Lemeshow L: *Applied Logistic Regression*. New York, Wiley, 2000
49. Rosenthal JA: Qualitative descriptors of strength of association and effect size. *Journal of Social Service Research* 21:37–59, 1996
50. Shaffer D, Gould MS, Fisher P, et al: Psychiatric diagnosis in child and adolescent suicide. *Archives of General Psychiatry* 53:339–348, 1996
51. Szatmari P: The epidemiology of attention-deficit hyperactivity disorders, in *Attention-Deficit Hyperactivity Disorder*,

Vol 1. Edited by Weiss G. Philadelphia, Saunders, 1992

52. McGoldrick M, Giordano J, Pearce JK: *Ethnicity and Family Therapy*. New York, Guilford, 1996
53. Taylor H, Bremer J, Overmeyer C, et al: The record of Internet-based opinion polls in predicting the results of 72 races in the November 2000 US elections. *International Journal of Market Research* 43:127–135, 2001
54. Pescosolido BA, Fettes DL, Martin JK, et al: Perceived dangerousness of children with mental health problems and support for coerced treatment. *Psychiatric Services* 58:619–625, 2007

Coming in August

- ◆ **Americans' attitudes toward psychiatric medications: recent trends**
- ◆ **Treatment of bipolar disorder among children and adolescents**
- ◆ **Understanding racial-ethnic disparities in service use: two studies**
- ◆ **Variations across states in ADHD diagnoses and medication treatment**