Examining Perceived Alcoholism Stigma Effect on Racial-Ethnic Disparities in Treatment and Quality of Life Among Alcoholics*

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ABSTRACT. Objective: The aim of this study was to examine racial-ethnic differences in perceived stigmatization of former alcoholics and their effect on associations of race-ethnicity with treatment history and psychological function among lifetime alcoholics. **Method:** Logistic regression analyses were conducted using data from Waves 1 and 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a nationally representative sample of U.S. adults 18 years or older. **Results:** Stigma scores were lowest for Whites and Native Americans, higher for Blacks, and highest for Asians and Hispanics, both in the total population and among lifetime alcoholics. Neither race-ethnicity nor stigma was associated with treatment utilization. Psychological function was negatively associated with stigma, but the impact of stigma on racial-ethnic differences in psychological function fell short of statistical significance. **Conclusions:** Stigma may reduce quality of life among those with alcohol dependence, but there is no clear evidence that it affects racial-ethnic differences in quality of life. (*J. Stud. Alcohol Drugs, 71,* 231-236, 2010)

THE SURGEON GENERAL'S REPORT on mental health identified stigma as being "the most formidable" barrier to mental health (U.S. Department of Health and Human Services, 1999, p. 3). Perceived stigma and self-stigma, the internalization of negative societal attitudes about mental illness, may prevent affected persons from seeking treatment. Individuals with mental illness who felt embarrassed or perceived stigma about their condition were less likely to seek help for psychological problems (Barney et al., 2006; Cooper et al., 2003) or to adhere to or complete treatment (Sirey et al., 2001a, 2001b). Hispanics who answered the National Alcohol Survey in Spanish were more likely than those who answered in English to avoid alcohol treatment lest others find out about their alcohol problem (Zemore et al., 2008), illustrating the potential for stigma to affect subsets of the population differently.

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Stigma may also affect psychological quality of life among individuals with highly stigmatized disorders (Holmes and River, 1998; Link and Phelan, 2001a). Stigmatizing attitudes about mental health vary across population subgroups, including those defined by race-ethnicity. Some (Anglin et al., 2006; Corrigan and Watson, 2007), but not all (Corrigan et al., 2001), studies have indicated that minorities hold more stigmatizing attitudes than non-Hispanic Whites.

Stigmatizing opinions may be more likely to occur in relation to disorders seen as being "brought on" by individuals (e.g., substance-use disorders). Crisp et al. (2000) reported that the majority of British adults believed that individuals with alcohol addiction had themselves to blame, even after a public antistigma campaign on mental illness indicating otherwise (Crisp et al., 2005). Despite evidence of substantial stigmatization of alcoholics, we are not aware of any investigations of racial-ethnic differences in the stigmatization of recovering alcoholics.

If racial-ethnic minorities hold more stigmatizing perceptions of alcoholics, including those in recovery or treatment, this may explain racial-ethnic differences in initiation and completion of treatment (Bluthenthal et al., 2007; Jacobson et al., 2007; Schmidt et al., 2007; Wells et al., 2001). Differences in alcoholism stigma may also affect psychological functioning among alcoholics, resulting in racial-ethnic differences in readiness for change and course of recovery. The purposes of this study were to examine (a) racial-ethnic

differences in perceived stigma toward former alcoholics, (b) whether the same variations exist among lifetime alcoholics, and (c) whether these differences confound or modify associations of race-ethnicity with treatment history and psychological functioning among lifetime alcoholics.

Method

NESARC sample

The methodology of Waves 1 and 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) has been described in detail elsewhere (Grant et al., 2003b, 2004b). The Wave 1 sample was representative of noninstitutionalized U.S. adults (n = 43,093). Wave 2 involved face-to-face re-interviews with 34,653 respondents from Wave 1. Respondents with more than two missing stigma scale items (n = 1,080) were excluded. Respondents missing one or two stigma scale items (n = 2,034) were retained, and the modal values of the missing items were imputed. The weighted proportions and unweighted sample sizes for this report consisted of 70.9% Whites (n = 20,161), 11.1% Blacks (n = 6,587), 2.2% Native Americans (n = 578), 4.3% Asians (n = 968), and 11.6% Hispanics (n = 6,359). The subsample with lifetime alcohol dependence consisted of 4,857 respondents.

Race-ethnicity

Respondents were allowed to choose among five racial-ethnic categories. When more than one race was selected, the race was assigned based on the following priority: Black, Native American (American Indian or Alaska Native), Asian (including Native Hawaiian and other Pacific Islander), and White. Respondents who self-identified as Hispanic also were classified as Hispanic regardless of race.

Alcoholism stigma

Alcoholism stigma was measured using a modification of the Perceived Devaluation-Discrimination Scale (Link, 1982; Link et al., 1991, 2001b) that evaluated the degree to which respondents would discriminate against or devalue people with past histories of an alcohol-use disorder. Higher scores (range: 1-6) indicated stronger perceived devaluation and discrimination. Statements that mentioned actions measured discrimination (seven items). Statements about beliefs measured devaluation (five items). The values were summed across items to determine the domain total scores. Test-retest reliability of the alcoholism stigma scale was excellent (intraclass correlation coefficient = .93, α = .82; Ruan et al., 2008).

Alcohol dependence

Diagnoses of lifetime alcohol dependence (i.e., lifetime alcoholism) required respondents to meet at least three of seven Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994), dependence criteria in any 12-month period preceding the Wave 2 interview. The diagnoses were based on data collected in the interviews from Waves 1 and 2 using the Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV version (AUDADIS-IV; Grant et al., 2001, 2004a). The derivation and psychometric properties of AUDADIS-IV alcohol-dependence diagnoses have been described in detail elsewhere (Grant et al., 2003a).

Lifetime alcohol treatment and psychological function

Treatment was classified dichotomously, based on whether respondents reported ever seeking help for their drinking problems. Psychological function was measured using the norm-based mental component score (NBMCS) from the Short Form-12 Health Survey (Bohannon et al., 2004; Resnick and Nahm, 2001; Salyers et al., 2000; Singh et al., 2006; Ware et al., 2002). The NBMCS was standardized (M = 50, range: 0-100); higher scores indicated better functioning.

Covariates

DSM-IV lifetime mood, anxiety, and personality disorders were diagnosed using the AUDADIS-IV (Grant et al., 2001, 2004a). All psychiatric disorders assessed in the NESARC were primary, excluding cases that were substance induced or related to a medical condition (American Psychiatric Association, 2000). Major depressive disorder diagnoses also ruled out bereavement.

Additional covariates included sex, age, family income, education, marital status, urbanicity, family history of alcohol problems, currently having an alcoholic spouse, volume of ethanol intake during period of heaviest drinking (Dawson et al., 2004), and number of lifetime alcohol-use-disorder symptoms.

Statistical analyses

All statistical analyses were conducted using SUDAAN statistical software, Version 9.0 (Research Triangle Institute, 2004). Multivariate linear and logistic regression analyses were used to examine racial-ethnic differentials in total stigma, discrimination, and devaluation scores, as well as NBMCS and treatment, and to evaluate whether stigma mediated or modified these associations among lifetime alcoholics (Hosmer and Lemeshow, 2000; Kleinbaum et al., 2007).

Results

Racial-ethnic variation in stigma

The total stigma score was lowest for Whites and Native Americans (37.09 and 37.07, respectively), higher for Blacks (39.17), and highest for Asians and Hispanics (40.26 and 40.25, respectively). This pattern held for subscales and most individual items. After controlling for sociodemographic variables, history of family or spousal alcohol problems, and substance-use and psychiatric disorders, these bivariate associations remained (Table 1). Although most racial-ethnic differences were reduced following adjustment, those between Blacks and Asians increased for each subscale and the total stigma score. The greatest reductions in racial-ethnic differences were seen in associations for Hispanics and Blacks, with Whites and Native Americans as the referent groups. Interaction terms for race-ethnicity and lifetime alcohol dependence were nonsignificant, indicating that racial-ethnic differences in perceived stigma extend to those with lifetime alcohol dependence.

Stigma predicting treatment and psychological f unctioning

Of respondents with lifetime alcohol dependence, 24.3% sought treatment. In models controlling for sociodemographic variables, lifetime psychopathology, alcohol-use-disorder symptoms, and volume of ethanol intake, race-ethnicity was not associated with lifetime treatment utilization (Table 2), nor was the association between race-ethnicity and treatment modified by stigma. The overall mean NBMCS score among respondents with alcohol dependence was 50.5. After adjustment for sociodemographic variables and other potential confounders, Hispanics had significantly higher scores (p = .025) and Blacks had marginally significantly lower scores (p = .050) than Whites. When further adjusted for the significant negative effect of stigma, the association for Hispanics increased slightly and the association for Blacks lost statistical significance. However, racial-ethnic parameters before and after adjustment for stigma lay within sampling error of each other, ruling out any clear mediating effect of stigma.

Table 1. Linear regression parameters for unadjusted and adjusted[a] racial-ethnic differences in total discrimination score, total devaluation score, and total stigma score among the total U.S. adult population 18 years and older

	Difference in score relative to:											
	White			Black			Native American			Asian		
Variable	β	(*SE*)	*p*	β	(*SE*)	*p*	β	(*SE*)	*p*	β	(*SE*)	*p*
Unadjusted total stigma score												
White		ref.										
Black	2.08	(0.17)	.000		ref.							
Native American	-0.02	(0.47)	.969	-2.10	(0.49)	.000		ref.				
Asian	3.17	(0.29)	.000	1.10	(0.32)	.001	3.19	(0.55)	.000		ref.	
Hispanic	3.16	(0.25)	.000	1.08	(0.29)	.000	3.17	(0.52)	.000	-0.02	(0.38)	.962
Adjusted total stigma score												
White		ref.										
Black	1.41	(0.16)	.000		ref.							
Native American	-0.20	(0.45)	.662	-1.61	(0.47)	.001		ref.				
Asian	2.78	(0.29)	.000	1.37	(0.32)	.000	2.98	(0.53)	.000		ref.	
Hispanic	2.30	(0.24)	.000	0.88	(0.27)	.002	2.50	(0.49)	.000	-0.49	(0.37)	.187
Adjusted total discrimination score												
White		ref.										
Black	0.75	(0.10)	.000		ref.							
Native American	-0.27	(0.28)	.341	-1.02	(0.29)	.001		ref.				
Asian	1.26	(0.19)	.000	0.51	(0.21)	.016	1.53	(0.32)	.000		ref.	
Hispanic	0.93	(0.14)	.000	0.18	(0.16)	.266	1.19	(0.30)	.002	-0.34	(0.22)	.133
Adjusted total devaluation score												
White		ref.										
Black	0.66	(0.08)	.000		ref.							
Native American	0.07	(0.21)	.752	-0.59	(0.22)	.008		ref.				
Asian	1.52	(0.15)	.000	0.86	(0.16)	.000	1.45	(0.26)	.000		ref.	
Hispanic	1.37	(0.12)	.000	0.71	(0.14)	.000	1.30	(0.23)	.000	-0.15	(0.19)	.417

Notes: Ref. = reference. [a]Adjusted for sex; education; family income; family history of alcoholism; whether ever had an alcoholic spouse/partner; lifetime alcohol-use disorder; lifetime drug-use disorder; lifetime nicotine dependence; and lifetime mood, anxiety, and personality disorders (controls for age, marital status, and urbanicity were dropped because of nonsignificance, $p > .10$, in all models).

TABLE 2. Racial-ethnic and stigma parameters from adjusted[a] models predicting selected outcomes among individuals with lifetime alcohol dependence (based on criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition)

	Models predicting lifetime treatment utilization/12-step participation[a]			Models predicting past-year mental/psychological functioning (NBMCS)[a]		
Variable	β	(*SE*)	*p*	β	(*SE*)	*p*
Models disregarding stigma score						
White		ref.			ref.	
Black	-0.027	(0.145)	.852	-1.063	(0.533)	.050
Native American	0.018	(0.282)	.950	-0.719	(1.323)	.589
Asian	-0.224	(0.538)	.679	-0.275	(1.288)	.832
Hispanic	0.075	(0.151)	.620	1.139	(0.498)	.025
Models controlling for stigma score						
White		ref.			ref.	
Black	-0.007	(0.145)	.963	-0.781	(0.527)	.144
Native American	<0.001	(0.283)	.999	-0.842	(1.273)	.511
Asian	-0.215	(0.541)	.692	-0.081	(1.286)	.950
Hispanic	0.097	(0.152)	.527	1.419	(0.504)	.006
Stigma score	-0.011	(0.006)	.063	-0.142	(0.021)	.000

Notes: Ref. = reference. NBMCS = norm-based mental component score. [a]All models controlled for age; sex; marital status; family income; education; lifetime drug-use disorder; lifetime nicotine dependence; lifetime mood, anxiety, and personality disorders; lifetime alcohol consumption; and number of lifetime alcohol-use-disorder symptoms. NBMCS models also controlled for current alcohol-use disorders, but not lifetime mood and anxiety disorders as these were presumed to represent an inherent element of psychological functioning.

Discussion

This study examined perceived stigma toward former alcoholics by race-ethnicity. Race-ethnicity was associated with stigma in both bivariate and multivariate analyses. Minorities, except for Native Americans, held more stigmatizing opinions of former alcoholics than did Whites. Corrigan et al. (2007) suggested that racial-ethnic differences in stigma may reflect the effects of socioeconomic status. In this study, education and income were significantly associated with stigma, but associations of stigma with race-ethnicity remained significant after adjustment for these variables, suggesting that socioeconomic status does not completely explain the association. Racial-ethnic differences observed in this study are also consistent with previous findings (Anglin et al., 2006; Rao et al., 2007) of more stigmatizing attitudes toward those with mental illness among Asians and African Americans than among Whites.

Perceived stigma toward former alcoholics may adversely affect those with lifetime alcohol dependence. The perception that they will continue to be stigmatized by others even if they recover may discourage treatment seeking and adversely affect self-esteem and quality of life. Accordingly, racial-ethnic differences in stigmatization of alcoholics may yield racial-ethnic disparities in burden of disease. Although stigmatization of former alcoholics showed a marginally significant association with treatment among lifetime alcoholics ($p = .063$), it did not mediate the association between race-ethnicity and treatment, reflecting the lack of differences in treatment by race-ethnicity, even before adjustment for stigma. Although these findings are consistent with research suggesting there are no differences in treatment for substance-use disorders (Mojtabai, 2005), other studies have indicated that Whites may be more likely than minorities to receive alcoholism treatment (Hesselbrock et al., 2003; Schmidt et al., 2007; Wells et al., 2001). Research should also consider whether stigma affects successful completion of treatment differentially across racial-ethnic groups. Moreover, because minorities may be more likely to experience discrimination, it is important to determine whether discrimination affects perceived stigma. Implications of these findings include the need for targeted intervention programs to address stigma pertaining to alcoholism and mental health in general.

This study identified a significant inverse association between perceived stigmatization of former alcoholics and psychological function among lifetime alcoholics. The modest effect of stigma on racial-ethnic differences in psychological function indicated that it was not an important mediator of these differences. Some investigators have argued that stigma is inconsequential to self-esteem (Aubry et al., 1995), whereas others believe it can affect quality of life considerably (Corrigan et al., 2006; Link et al, 2001b; Wright et al., 2000)—a position supported by these findings. These results indicate the need for treatment programs to address fears of stigmatization.

Study limitations reflect the cross-sectional design. First, we could not definitively identify the mechanisms underlying associations between race-ethnicity and perceived stigma. Second, examination of treatment utilization was hampered by the measurement of stigma only at Wave 2, by which time respondents' opinions may have differed from those

they held when they sought or needed alcohol treatment. There is no reason to believe that these limitations would substantially affect the present findings or that they would invalidate the recommendations for consideration of the potential importance of differences in perceived stigma in the design of culturally appropriate interventions.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

Anglin, D. M., Link, B. G., & Phelan, J. C. (2006). Racial differences in stigmatizing attitudes toward people with mental illness. *Psychiatric Services, 57,* 857-862.

Aubry, T. D., Tefft, B., & Currie, R. F. (1995). Public attitudes and intentions regarding tenants of community mental health residences who are neighbours. *Community Mental Health Journal, 31,* 39-52.

Barney, L. J., Griffiths, K. M., Jorm, A. F., & Christensen, H. (2006). Stigma about depression and its impact on help-seeking intentions. *Australian and New Zealand Journal of Psychiatry, 40,* 51-54.

Bluthenthal, R. N., Jacobson, J. O., & Robinson, P. L. (2007). Are racial disparities in alcohol treatment completion associated with racial differences in treatment modality entry? Comparison of outpatient treatment and residential treatment in Los Angeles County, 1998 to 2000. *Alcoholism: Clinical and Experimental Research, 31,* 1920-1926.

Bohannon, R. W., Maljanian, R., & Landes, M. (2004). Test-retest reliability of short form (SF)-12 component scores of patients with stroke. *International Journal of Rehabilitation Research, 27,* 149-150.

Cooper, A. E., Corrigan, P. W., & Watson, A. C. (2003). Mental illness stigma and care seeking. *Journal of Nervous and Mental Disease, 191,* 339-341.

Corrigan, P. W., & Watson, A. C. (2007). The stigma of psychiatric disorders and the gender, ethnicity, and education of the perceiver. *Community Mental Health Journal, 43,* 439-458.

Corrigan, P. W., Edwards, A. B., Green, A., Diwan, S. L., & Penn, D. L. (2001). Prejudice, social distance, and familiarity with mental illness. *Schizophrenia Bulletin, 27,* 219-225.

Corrigan, P. W., Watson, A. C., & Barr, L. (2006). The self-stigma of mental illness: Implications for self-esteem and self efficacy. *Journal of Social and Clinical Psychology, 25,* 875-884.

Crisp, A., Gelder, M., Goddard, E., & Meltzer, H. (2005). Stigmatization of people with mental illnesses: A follow-up study within the Changing Minds campaign of the Royal College of Psychiatrists. *World Psychiatry, 4,* 106-113.

Crisp, A. H., Gelder, M. G., Rix, S., Meltzer, H. I., & Rowlands, O. J. (2000). Stigmatisation of people with mental illnesses. *British Journal of Psychiatry, 177,* 4-7.

Dawson, D. A., Grant, B. F., Stinson, F. S., & Chou, P. S. (2004). Toward the attainment of low-risk drinking goals: A 10-year progress report. *Alcoholism: Clinical and Experimental Research, 28,* 1371-1378.

Grant, B. F., Dawson, D. A., & Hasin, D. S. (2001). *The Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-IV version.* Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Grant, B. F., Dawson, D. A., & Hasin, D. S. (2004a). *The Wave 2 National Epidemiologic Survey on Alcohol and Related Conditions Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV version.* Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism. Retrieved from http://www.niaaa.nih.gov

Grant, B. F., Dawson, D. A., Stinson, F. S., Chou, S. P., & Pickering, R. P. (2003a). The Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS): Reliability of alcohol consumption, tobacco use, family history of depression and psychiatric diagnostic modules in a general population sample. *Drug and Alcohol Dependence, 71,* 7-16.

Grant, B. F., Moore, T. C., Shepard, J., & Kaplan, K. (2003b). *Source and accuracy statement, Wave 1: National Epidemiologic Survey on Alcohol and Related Conditions (NESARC).* Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism.

Grant, B. F., Stinson, F. S., Dawson, D. A., Chou, S. P., Dufour, M. C., Compton, W., … Kaplan, K. (2004b). Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry, 61,* 807-816.

Hesselbrock, M. N., Hesselbrock, V. M., Segal, B., Schuckit, M. A., & Bucholz, K. (2003). Ethnicity and psychiatric comorbidity among alcohol-dependent persons who receive inpatient treatment: African Americans, Alaska Natives, Caucasians, and Hispanics. *Alcoholism: Clinical and Experimental Research, 27,* 1368-1373.

Holmes, E. P., & River, L. P. (1998). Individual strategies for coping with the stigma of severe mental illness. *Cognitive and Behavioral Practice, 5,* 231-239.

Hosmer, D. W., & Lemeshow, S. (2000). *Applied logistic regression* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Jacobson, J. O., Robinson, P. L., & Bluthenthal, R. N. (2007). Racial disparities in completion rates from publicly funded alcohol treatment: Economic resources explain more than demographics and addiction severity. *Health Services Research, 42,* 773-794.

Kleinbaum, D. G., Kupper, L. L., Nizam, A., & Muller, K. E. (2007). *Applied regression analysis and multivariable methods* (4th ed.). Pacific Grove, CA: Duxbury Press.

Link, B. (1982). Mental patient status, work, and income: An examination of the effects of a psychiatric label. *American Sociological Review, 47,* 202-215.

Link, B. G., Mirotznik, J., & Cullen, F. T. (1991). The effectiveness of stigma coping orientations: Can negative consequences of mental illness labeling be avoided? *Journal of Health and Social Behavior, 32,* 302-320.

Link, B. G., & Phelan, J. C. (2001a). Conceptualizing stigma. *Annual Review of Sociology, 27,* 363-385.

Link, B. G., Struening, E. L., Neese-Todd, S., Asmussen, S., & Phelan, J. C. (2001b). Stigma as a barrier to recovery: The consequences of stigma for the self-esteem of people with mental illnesses. *Psychiatric Services, 52,* 1621-1626.

Mojtabai, R. (2005).Use of specialty substance abuse and mental health services in adults with substance use disorders in the community. *Drug and Alcohol Dependence, 78,* 345-354.

Rao, D., Feinglass, J., & Corrigan, P. (2007). Racial and ethnic disparities in mental illness stigma. *Journal of Nervous and Mental Disease, 195,* 1020-1023.

Research Triangle Institute. (2004). *Software for Survey Data Analysis, SUDAAN* (version 9.0). Research Triangle Park, NC: Author.

Resnick, B., & Nahm, E. S. (2001). Reliability and validity testing of the revised 12-item Short-Form Health Survey in older adults. *Journal of Nursing Measurement, 9,* 151-161.

Ruan, W. J., Goldstein, R. B., Chou, S. P., Smith, S. M., Saha, T. D., Pickering, R. P., … Grant, B. F. (2008). The Alcohol Use Disorder and Associated Disabilities Interview Schedule–IV (AUDADIS-IV): Reliability of new psychiatric diagnostic modules and risk factors in a general population sample. *Drug and Alcohol Dependence, 92,* 27-36.

Salyers, M. P., Bosworth, H. B., Swanson, J. W., Lamb-Pagone, J., & Osher, F. C. (2000). Reliability and validity of the SF-12 Health Survey among people with severe mental illness. *Medical Care, 38,* 1141-1150.

Schmidt, L. A., Ye, Y., Greenfield, T. K., & Bond, J. (2007). Ethnic disparities in clinical severity and services for alcohol problems: Results from the National Alcohol Survey. *Alcoholism: Clinical and Experimental Research, 31,* 48-56.

Singh, A., Gnanalingham, K., Casey, A., & Crockard, A. (2006). Quality of life assessment using the Short Form-12 (SF-12) questionnaire in patients with cervical spondylotic myelopathy: Comparison with SF-36. *Spine, 31,* 639-643.

Sirey, J. A., Bruce, M. L., Alexopoulos, G. S., Perlick, D. A., Friedman, S. J., & Meyers, B. S. (2001a). Stigma as a barrier to recovery: Perceived stigma and patient-rated severity of illness as predictors of antidepressant drug adherence. *Psychiatric Services, 52,* 1615-1620.

Sirey, J. A., Bruce, M. L., Alexopoulos, G. S., Perlick, D. A., Raue, P., Friedman, S. J., & Meyers, B. S. (2001b). Perceived stigma as a predictor of treatment discontinuation in young and older outpatients with depression. *American Journal of Psychiatry, 158,* 479-481.

U.S. Department of Health and Human Services. *Mental health: A report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999.

Ware, J. E., Kosinski, M., Turner-Bowker, D. M., & Gandek, B. (2002). *How to score version 2 of the SF-12(R) Health Survey (with a supplement documenting version 1).* Lincoln, RI: QualityMetric.

Wells, K., Klap, R., Koike, A., & Sherbourne, C. (2001). Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. *American Journal of Psychiatry, 158,* 2027-2032.

Wright, E. R., Gronfein, W. P., & Owens, T. J. (2000). Deinstitutionalization, social rejection, and the self-esteem of former mental patients. *Journal of Health & Social Behavior, 41,* 68-90.

Zemore, S. E., Mulia, N., Ye, Y., Borges, G., & Greenfield, T. K. (2009). Gender, acculturation, and other barriers to alcohol treatment utilization among Latinos in three National Alcohol Surveys. *Journal of Substance Abuse Treatment, 36,* 446-456.