The Journal of Mental Health Policy and Economics
J Ment Health Policy Econ **7**, 133-145 (2004)

Adolescent Propensity for Depressed Mood and Help Seeking: Race and Gender Differences

Bisakha Sen[1]*

[1]*Ph.D., Assistant Professor, Department of Healthcare Organization and Policy, University of Alabama at Birmingham, Birmingham, AL, USA*

Abstract

Background: Studies investigating the correlates of adolescent depression and suicidal tendencies have found that the probability of such tendencies vary by race and gender. However, while there exists evidence that most adolescents suffering from the above problems fail to seek (and obtain) help, the role of race and gender in determining the propensity to seek help for depression remains largely unexplored.

Aims of Study: The study uses data from the 1996 round of 'Health Behavior in School-Aged Children' (HBSC), USA, which surveys a representative sample of more than 9000 adolescents enrolled in grades 6-10. Respondents are asked if they suffered from persistent depressed moods (lasting two weeks or more) over the past year, and whether they sought help while suffering from depressed mood, and if so, from whom. Questions are also asked about whether the respondent had self-injury ideation or actually attempted self-injury. Demographic and other information on respondents is also provided. The primary aim is to test whether there are significant differences between genders, and between non-Hispanic whites, non-Hispanic blacks, Hispanics and Asians in the likelihood of seeking help, and from whom, when depressed. Gender and race-ethnicity differences in the likelihood of being depressed are also explored to find if they correspond to results in the extant literature.

Methods: Multinomial logit models are used to estimate the likelihood of being depressed or at self-injury risk, and help-seeking behavior in event of depressed mood. Models are estimated for the full-sample and sub-samples who report depressed mood or are at self-injury risk. In addition to race and gender, all models control for additional demographic characteristics such as age, family structure, and family socio-economic status.

Results: Adolescent females are significantly more likely than adolescent males to suffer from depressed mood. However, adolescent males are less likely to ask for help than females (odds ratio: 0.72). All minority groups are more likely to suffer from depressed mood compared to non-Hispanic whites, but blacks are at lower self-injury risk. Blacks and Asians are especially prone not to ask for help, with the problem being particularly acute in case of black males and Asian males.

Discussion: The lower propensity of adolescent males to seek help for depression compared to females are in keeping with previous research. However, predicted values show that the majority of males *and* females with depressed mood or at self-injury risk do not seek help from anyone. Certain racial groups are also at greater risk for not asking for help for depression. This may have implications regarding racial differences in suicide rates, as well as racial differences in future life outcomes. The study suffers from the drawback that because the survey is confined to those enrolled in school, adolescents who are institutionalized for mental health problems or who have dropped out of school due to problems related to depression are not represented in it.

Implications for Health Policies: There have been efforts in the USA to educate the population about the problems of adolescent depression. However, the above results suggest that it may be useful to have additional educational efforts targeted at specific population groups, to educate them about the risks associated with depression, help overcome any stigma associated with depression and encourage help-seeking when suffering from depressed mood.

Implications for Further Research: A number of directions of future research are suggested. It would be useful to obtain information on the outcomes of help seeking – whether it actually led to obtaining help. It would also be useful to know the probability of an adolescent being diagnosed with depressed mood (perhaps by a primary care physician) even without actively seeking help. Regarding the racial differences, it would be useful to examine the extent to which such differences arise from immigration status, and also to have more extensive information about attitudes, familial expectations, religiosity, community ties, confidence in the medical system and other factors, so as to analyze further why some races are more prone to depression and averse to seeking help for depression than others. Finally, it would be useful to periodically revisit this topic with more contemporary data to see whether recent efforts at awareness raising has increased the odds of help-seeking among adolescents with depressed mood.

Received January 14 2004; accepted 24 May 2004

Introduction

Recent years have seen a newfound awareness among medical practitioners, clinical and social scientists regarding the problems of adolescent depression among medical practitioners, clinical and social scientists. It derives from the exponential growth in adolescent suicide rates and suicide attempts witnessed over the past decades,[1,2] as well as from the increasing evidence on the strong association of depression with psychosocial impairment, substance use disorders,[3] low educational/economic achievement, and the apparent persistence of symptoms and suicide-risk into adulthood.[4]

* **Correspondence to:** Bisakha Sen, Ph.D., Assistant Professor, Department of Healthcare Organization and Policy, University of Alabama at Birmingham, Ryals Bldg 330, 1665 University Blvd, Birmingham, AL 35294, USA
Tel.: +1-205-975 8960
Fax: +1-205-934 3347
E-mail: bsen@uab.edu
Source of Funding: None declared

A persistent theme in the literature on depression is the problems of detection and diagnosis, with evidence indicating that even primary care physicians frequently fail to recognize half or more of depressed patients.[5,6] The problem of failure to diagnose may be even more acute in case of children and young adolescents, with some studies suggesting that up to 60-80 percent of children and young adolescents with mental health problems fail receive mental health treatment.[7,8] Consequently, help-seeking by the afflicted persons themselves might often be a necessary antecedent to obtaining treatment. This is particularly applicable to adolescents, for whom common symptoms of depression include insomnia, appetite loss, loss of energy, lack of interest in activities, irritability,[9] and somatic symptoms like bodyaches and headaches,[10] which may either go unnoticed by parents and caregivers, or be dismissed as an ''adolescent phase''.[11] Consequently, it is of interest to investigate what characteristics affect the likelihood of an afflicted person's seeking help for mental health problems. There exist studies that consider this issue in context of the general population.[12,13] However, relatively few studies explore determinants of help-seeking behavior for mental health problems among adolescents. Those that do tend to utilize relatively small and non-random samples, and the focus typically is on associative factors which are likely to be endogenous to help-seeking (like loneliness, self-esteem problems, and lack of awareness regarding resources at school).[14,15] From a broad policy perspective, it is useful to explore this issue using more representative data, and also to focus on determinants that are exogenous to mental health problems and help-seeking behavior. Potential determinants include (among others) gender and race-ethnicity.

Anecdotal evidence and extant research strongly suggest that gender influences the likelihood of help-seeking, with males being more reluctant than females to seek help. This has been found to be the case among adolescents in Australia[16,17] and France.[18,19] A study using (largely suburban) high-school students in the state of New York found that adolescent females had higher odds of seeking help from the internet for various ''problems'' than their male counterparts.[20] However, to the best of my knowledge, this pattern of gender difference in adolescent help-seeking has not yet been confirmed using a nationally representative dataset for the U.S.

Some evidence that race/ethnicity is among the factors that influence the likelihood of help-seeking for mental problems among adolescents is offered by the 1999 Surgeon General's report,[21] which cites lower receipt of mental health treatment by afflicted African-American youth and children than their white counterparts after controlling for other socio-economic characteristics. The report also cites some evidence of lower receipt of treatment by Asian-Americans and Hispanics overall compared to whites, but it calls attention to the paucity of studies on Asian-American and Hispanic youth in specific.

The primary purpose of this study is to use a large, representative secondary dataset on adolescents in the U.S. and investigate how race-ethnicity and gender correlate with their likelihood of help-seeking when suffering from depressed mood. That analysis is preceded by an analysis of how race-ethnicity and gender correlate with the likelihood of suffering from depressed mood. There exists substantial research on the effects of gender and race-ethnicity on probability of depressed mood, clinical depression, and suicide attempts,[22-24] and it is not expected that this part of the analysis will provide any novel information. Rather, the purpose is to ascertain that results from this dataset are in keeping with extant results in the health science disciplines. This provides assurance about the reliability of the data, and hence the reliability of the results which are the principal contribution of this project – the role of gender and race-ethnicity in help-seeking behavior.

This study utilizes information on depressed mood rather than clinically diagnosed disorders, since that is the information provided in the dataset. Depressed mood is among the defining criteria for depressive disorders and syndromes in adolescence, with the vast majority of adolescents with depressive disorder reporting that they suffer from depressed mood[25]. Depressed mood is a major factor in suicide attempts, and associated with impaired functioning in social, familial, and academic arenas[26], and a consistent correlate of risky behaviors in adolescence[27]. This provides strong rationale for investigating what factors correlate with help-seeking for depressed mood, since such help-seeking may be crucial in averting other acutely negative outcomes.

Briefly, the main findings of this study are as follows: in keeping with findings in extant research, female gender is a strong predictor of depressed mood as well as self-injury thoughts and attempts. Effects of race-ethnicity on depressed mood and self-injury thoughts/attempts are also in keeping with broad findings in extant research. More interestingly, there is evidence of many significant differences in help-seeking behavior between males and females and between different race-ethnicity categories. This indicates that 'one-size-fits-all' policies to persuade the youth populace to seek help for depression and other mental health problems may be of limited efficacy, and further research must be done to understand the reasons behind the gender and race-ethnicity differences so that policies may be tailored to account for and address those reasons.

Methods

Health Behavior in School Aged Children (HBSC) Data

The data utilized is drawn from the 1996 ''Health Behavior in School-Aged Children'' (HBSC) study conducted in the USA. The HBCS data-sets are part of a cross-national, school-based study of health-related attitudes and behaviors of young people sponsored by the World Health Organization, which have been conducted every four years since the 1985-1986 school year. The primary objectives of the HBSC studies are to monitor health-risk behaviors and attitudes in youth so as to provide background and identify

targets for health promotion initiatives, and to provide researchers with relevant information that helps analyze and explain the development of health attitudes and behaviors during the adolescence period. The studies are based on nationally independent surveys of school-aged children in a number of participating countries. The United States is among the countries chosen to implement the survey out of cycle, and the data utilized here is obtained from the United States HBSC 1996 survey, which is readily available for public use. This survey was jointly sponsored by United States Department of Health & Human Services, Substance Abuse & Mental Health Services Administration, and World Health Organization.

The HBSC 1996 in the U.S. employs a three-stage cluster design in which the school district is the primary sampling unit (PSU) or first stage (sometimes smaller districts were combined as a single PSU), school is the second stage, and classroom is the third stage. The targeted mean in the respondent age groups are 11.5, 13.5 and 15.5, selected to correspond approximately to grades 6, 8 and 10 in the United States. However, there is some variation in the degree of correspondence depending on the frequency with which students repeated a grade. A total of 9,938 respondents are included in the final survey.

The survey possesses certain unique characteristics that make it advantageous for this research: the questions pertaining to ''depressed mood'' are in close accordance with the ideal criteria for 'major depressive' described in the 4th Diagnostic and Statistical Manual of Mental Disorders. Respondents are asked whether they had ''felt sad, blue, down or depressed'' almost every day for a continuous period of two weeks or more in the preceding year. Thereafter, they are asked about experiencing a series of symptoms – including irritability, loss of concentration, loss of interest, weight changes, change in sleep patterns, recurrent thoughts of death, and self-injury ideation while depressed. Respondents are also asked whether they made any deliberate attempts to injure themselves during the past year. Finally, respondents are asked whether they sought help when feeling depressed from parents, siblings, other relatives, school officials, health professionals, counselors, church officials, other adults, or friends. These categories are not mutually exclusive, and respondents can potentially report seeking help from multiple sources. Respondents are also asked whether they chose *not* to seek help from anyone when depressed. In addition, information is obtained regarding health behaviors like substance use, eating and exercise habits, attitude towards and problems in school. Information is also obtained about family make-up, parental education, and other demographic characteristics.

Statistical Analysis and Results

Two dichotomous mental health outcomes are considered. The first is whether the respondent reports feeling sad or depressed continuously for two weeks or more (hereafter referred to as ''depressed mood''). The second is whether the respondent either reports experiencing repeated thoughts of death or self-injury when depressed, or reports an actual attempt at self-injury (hereafter referred to as ''self-injury risk''). Help-seeking behavior is initially constructed as a dichotomous measure of whether the respondent reports asking for help from anyone versus not asking for help when depressed. Subsequently, help-seeking behavior is divided into three categories: whether the respondent reports asking help from any adult figure (parents, school official, other adult relative, healthcare professional, counselor, church official), whether the respondent reports asking help from a peer (friend or sibling) but *not* from any adult, and whether the respondent reports not asking for help when depressed. Categories one and two are treated separately since asking help from peers is probably less useful than asking help from an adult in terms of identifying mental health problems and obtaining appropriate treatment. Nonetheless, it may be a superior option to not asking for help at all.

The primary motivation is to investigate the effects of gender, race and ethnicity on the likelihood of depressed mood or self-injury risk, as well as on the likelihood of asking for help. Obtaining meaningful results in this context necessitates controlling for socio-economic status insofar as permitted by the information in the survey. It seems well-established that certain minorities, like black and Hispanic adolescents, are more likely to live in poverty and to come from single-parent families than their white counterparts. For example, reports from the Census Bureau[28] shows that, in 2002, about 9.4 percent of those under 18 years olds defined as ''white alone, non-Hispanic'' were in poverty, compared to 32.3 percent of those under 18 years olds defined as ''black alone'', and 28.6 percent of those under 18 years old defined as ''Hispanic, any race.'' Among those defined as ''Asians alone'', 11.7 percent of those under 18 years old were in poverty. Statistical Abstracts of the U.S., shows that in year 2000, 27.1 percent of all white births were to unmarried mothers, compared to 68.7 percent of all black births and 42.7 percent of all Hispanic births.[29] Based on another set of reports by the same Statistical Abstracts, it can be calculated that ''single-parent families with children under 18 years'' as a percentage of ''all families with children under 18 years'' constitute of 22.4 percent for whites, 56.2 percent for blacks, and 28.9 percent for Hispanics.[30] Extant research presents evidence that increased family income is associated with reductions in suicide attempts, substance use, depression, and sedentary behavior among adolescents.[31,32]

Family income levels also appear to be associated with access to and use of various health services, including mental health care, among adolescents.[33] Existing research also finds evidence of psychologically detrimental effects of non-intact parental families on children. For example, there is evidence fatherless boys and girls to be 3-4 times more likely to develop psychiatric problems than counterparts.[34] There is evidence of positive correlations between teen suicide rates and adult divorce rates at the state level.[35] A meta-analysis of 92 studies by Amato and Keith[36] find that, among other things, children who experience parental divorce score lower on measures of conduct, psychological adjustments, social relations, and self image than their counterparts living in intact parental families. Since economic hardship and family structure can impact adolescent depression, failure to control

for such factors may confound the real effects of race-ethnicity on the likelihood of depressed mood and help-seeking.

A problem is posed by the fact that the HBSC provides no direct measure of family poverty status or family income. However, it does provide information of the education level of parents, which should serve as a reasonably good predictor of the family's economic status. Accordingly, four binary indicators are created based on the education level of the parent with the greater education (for two-parent households) or the available parent (for single parent household). These designate whether the parent is a high school drop-out, whether the parent just has a high-school degree, whether the parent has at least some college education, and whether there is no information available at all on parental education. HBCS provides information on who the respondent currently lives with, thus making it possible to determine whether the respondent lives in an intact parental family (defined as living with both natural parents) or not. Other controls include the respondent's age, number of siblings (including step and foster siblings) in the household, the number of days a week the respondent typically spends more than an hour unsupervised by any adult, and the number of times in the past year the respondent has been a victim of bullying either in school or outside school. There is the possibility that the last two variables may be endogenous. For example, depressed and withdrawn respondents unwilling to communicate about their problems may seek ways to spend time alone and unsupervised by adults. Also, persons who appear depressed and isolated and are unwilling to seek help may present tempting targets for bullies. Therefore, as a robustness check, equations are later re-estimated after omitting those two variables. Race-ethnicity categories include non-Hispanic blacks (hereafter referred to as blacks), Hispanic, Asian, and non-Hispanic whites (hereafter referred to as whites). One group excluded from this analysis is Native Americans, due to the smallness of their number in the survey.

Admittedly, the race-ethnicity categorizations are simplistic to an extent. For example, Asian-Americans may exhibit differences in behavior based on region of origin (for example, Indian Sub-continent versus Far East). Similarly, non-Hispanic whites who have been in USA for generations may exhibit differences in behavior with recent immigrants from East European nations. The above categorizations will mask such within-race/ethnicity variations. However, this data-set lacks the information and the sample size to create further sub-groups based on ethnicity, and that is left to future research.

Table 1 presents means for dependent and independent variables of interest for the full sample, and subsequently for the sub-samples of those who report depressed mood, and those who report self-injury risk. Notably, about 34 percent of the full sample report depressed mood, and about 12 percent report thoughts of self-injury/death and/or self-injury attempts. These figures correspond reasonably well with figures reported based on the well-known Youth Risk Behavior Survey,[37] where 28.3% of respondents (34.5% female respondents, 21.6% male respondents) report they had felt so sad or hopeless almost every day for 2 or more weeks in a row in the 12 months preceding the survey, and that 19% of respondents (23.6% female respondents, 14.2% male respondents) had contemplated suicide in the 12 months preceding the survey. Table 1 also indicates that the vast majority of respondents experiencing depressed mood or reporting self-injury/death thoughts and/or self-injury attempts report that they did not ask for help at all. However, those who do report asking for help seemed to do so from adults – about 25.1 percent of those with depressed mood and 24.7 percent of those at self-injury risk, as compared to only 5.7 percent and 7.1 percent respectively in those two groups who *only* seek help from peers.

Further details pertaining to additional symptoms suffered by those reporting depressed mood as well as who the teens seek help from (if anyone) are provided in the Appendix. While these details are not explicitly used in the statistical analysis, they may be of interest to readers

Initial multivariate analyses use binomial logistic regression to examine the effects of the independent variables on the probability of depressed mood and of self-injury risk for the full sample, and thereafter uses logistic regression to examine the effects of the independent variables on the probability of seeking help (from anyone) on the sub-samples with depressed mood or at self-injury risk respectively (**Table 2**). Males are found to be have substantially lower odds than females of depressed mood (OR: 0.43, 95% CI: 0.39-0.47) and self-injury risk (OR: 0.45, 95% CI: 0.39-0.52). This is strongly consistent with extant research, as virtually all studies on these topics find that females are more likely to suffer from depressed mood and to attempt suicide or inflict other self-injuries than are males.

Race and ethnicity are also found to affect the risk of depressed mood or self-injury risk. In comparison to the control group of whites, Asians and Hispanics are more likely to suffer from depressed mood (respective ORs and 95% CI for the two groups being 1.40, 1.20-1.63; and 1.39, 1.24-1.57) as well as self-injury risk (respective ORs and 95% CI 1.44, 1.17-1.77; and 1.43, 1.22-1.67). In contrast, blacks display higher odds of depressed mood (OR 1.30, 95% CI: 1.13-1.49) than whites, but lower odds of self-injury risk (OR: 0.63, 95% CI: 0.50-0.79). Existing studies support the results pertaining to Hispanics, though evidence regarding blacks is somewhat mixed.[38,39] Lower odds of self-injury risk among blacks corresponds with descriptive statistics based on Youth Risk Behavior Survey,[37] where it is found that Hispanic and white female students (26.5% and 24.2%, respectively) were significantly more likely than black female students (17.2%) to have considered attempting suicide; white male students (14.9%) were significantly more likely than black male students (9.2%) to have considered attempting suicide. It has been suggested that this may be due to ''protective factors'' in the African-American community that reduce suicide risk, such as strong family ties, and church, fraternal and social organizations,[40,41] and there is evidence of greater moral objections to suicide and stronger survival and coping beliefs among black students compared to white students.[42]

While previous literature on depression and suicide/self-

Table 1. Means of Selected Variables for Full Sample and Sub-Samples.

Variable		Full Sample (N = 9308)		Depressed (N = 3105)		Self-Injury Risk (N = 1013)	
		Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
Depressed Mood	Feelings of sadness / ''blues'' 2 or more weeks in a row.	0.340	(0.474)				
Self-Injury Risk	Thoughts of self-injury/death while depressed, and/or actual attempts at self-injury.	0.127	(0.333)				
Seek Help Adult	Asked help from (one or more) adults when depressed.			0.251	(0.441)	0.242	(0.456)
Seek Help Peer[a]	Asked help from peers (only) when depressed			0.057	(0.256)	0.071	(0.288)
Age	Age in years	13.797	(2.124)	14.079	(2.109)	14.076	(2.028)
Male	1 if male	0.477	(0.500)	0.359	(0.480)	0.337	(0.473)
Black	1 if non-Hispanic Black	0.147	(0.354)	0.164	(0.371)	0.098	(0.297)
Asian	1 if Asian	0.102	(0.303)	0.111	(0.314)	0.129	(0.335)
Hisp	1 if Hispanic origin	0.242	(0.428)	0.273	(0.445)	0.295	(0.456)
Twopar	Lives with both natural parents	0.646	(0.478)	0.584	(0.493)	0.596	(0.491)
Par_Lhs	1 if highest parental education is high school dropout	0.075	(0.264)	0.100	(0.300)	0.106	(0.308)
Par_Hs	1 if highest parental education is high school grad	0.356	(0.479)	0.386	(0.487)	0.370	(0.483)
Par_Coll	1 if highest parental education is at least some college	0.439	(0.496)	0.392	(0.488)	0.406	(0.491)
Par_Miss	1 if parental information is missing	0.115	(0.320)	0.106	(0.308)	0.104	(0.305)
Sibs	# of siblings (own, step, half, foster) in household	2.248	(2.067)	2.116	(2.138)	2.116	(2.139)
Days Alone	# of days a week spends more than an hour alone or unsupervised by any adult	2.311	(1.937)	2.530	(1.920)	2.707	(1.899)
Times Bullied	# of times been victim of bullying in or out of school in past year.	18.564	(24.252)	27.340	(29.715)	35.822	(31.265)

Notes: Some respondents seeking help for depression did so from both adults and peers. They are included in the ''seek help adult'' group. The ''seek help peer'' group includes those who only sought help from peers, and not any adults.

Table 2. Logistic Regressions for Depressed Mood/Self Injury Risk, and Help-seeking Conditional On Depressed Mood/Self Injury Risk.

	Depressed Mood N = 9308		Self-Injury Risk N = 9308		Ask Help (Depressed Mood) N = 3105		Ask Help (Self-Injury Risk) N = 1013	
	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]	Odds Ratio	[95% CI]
Male	0.43	[0.39 0.47]	0.45	[0.39 0.52]	0.69	[0.58 0.83]	0.61	[0.44 0.85]
Age	1.11	[1.08 1.13]	1.07	[1.04 1.11]	1.03	[0.99 1.08]	1.07	[1.00 1.15]
Black	1.30	[1.13 1.49]	0.63	[0.50 0.79]	0.66	[0.51 0.85]	0.81	[0.48 1.36]
Asian	1.40	[1.20 1.63]	1.44	[1.17 1.77]	0.78	[0.59 1.03]	1.03	[0.67 1.57]
Hisp	1.39	[1.24 1.57]	1.43	[1.22 1.67]	1.01	[0.83 1.23]	0.84	[0.61 1.16]
Twopar	0.73	[0.66 0.80]	0.79	[0.69 0.91]	1.00	[0.84 1.18]	1.12	[0.84 1.51]
Par_Lhs	1.50	[1.25 1.80]	1.34	[1.05 1.70]	0.93	[0.70 1.25]	1.78	[1.11 2.83]
Par_Hs	1.19	[1.07 1.32]	1.07	[0.92 1.24]	0.77	[0.64 0.92]	0.93	[0.68 1.28]
Par_Miss	1.04	[0.89 1.23]	1.02	[0.81 1.29]	0.99	[0.74 1.32]	1.59	[0.95 2.66]
Sibs	0.97	[0.95 0.99]	0.97	[0.94 1.00]	0.99	[0.96 1.03]	0.97	[0.91 1.04]
Days Alone	1.09	[1.06 1.11]	1.12	[1.08 1.16]	1.00	[0.95 1.04]	1.04	[0.96 1.12]
Times Bullied	1.01	[1.01 1.01]	1.01	[1.01 1.01]	0.99	[0.98 1.00]	0.99	[0.99 1.00]
Log-likelihood	−5251.23		−3093.01		−1704.50		−572.08	
Chi-square	805.33		446.67		39.87		34.27	
Psuedo-R^2	0.117		0.163		0.112		0.129	

injury ideation among Asian-American adolescents is very limited, Lorenzo *et al.*[43] and previously cited Roberts *et al.*[40] respectively find that Asian or Asian-American students are more prone to suffer from anxiety and depression, and that they have higher odds of suicide ideation and suicide attempts, than their Caucasian counterparts.

With regards to asking for help, **Table 2** shows that males are also substantially less likely than females to ask for help conditional on depressed mood (OR: 0.69, 95% CI: 0.58-0.83) or self-injury risk (odds ratio 0.61, 95% CI 0.44-0.85). Effects of race and ethnicity on the probability of asking for help are fairly weak overall, being statistically significant in case of blacks (OR: 0.66, 95% CI: 0.51-0.85)and weakly significant in case of Asians (OR: 0.78, 95% CI: 0.59-1.03) in the sub-sample of depressed mood.

With regard to the other controls, age plays a role, with older respondents having a higher likelihood of depressed mood and self-injury risk (OR, 95% CI for a one-year increase in age are respectively 1.11, 1.08-1.13 and 1.07, 1.04-1.11). However, age also increases the probability of help-seeking conditional upon being at self-injury risk (1.07, 1.00-1.15). Intact parental family reduces the probability of depressed mood (OR: .73, 95% CI: .66-.8) and self-injury risk (OR: .79, 95% CI: .69-.91), though there appears to be no statistically significant effect on the probability of help-seeking. Lower levels of parental education consistently increase the probability of depressed mood (the control group is at least some college education), though self-injury risk only appears to be significantly increased when parental education is less than high-school. Presence of siblings appears to lower the odds of both depressed mood and self-injury risk, while number of days (per week) when the respondent is alone or unsupervised for an hour or more increases those odds. Neither have statistically significant effects with regard to help-seeking.

Results from the binomial logistic regression thus far confirm that gender and race-ethnicity do impact the likelihoods of depressed mood and self-injury risk, though apparently not so much the likelihood of help-seeking conditional on suffering from either of those. There remains the possibility that gender and race-ethnicity may have differential effects on the probability of help-seeking from adults versus help-seeking from peers. Furthermore, when a demographic characteristic – like gender – decreases the odds of depressed mood but also decreases the odds of help-seeking conditional on suffering from depressed mood, then it is of interest to examine the *net effect* that the demographic characteristic has on the odds of suffering from depressed mood but *not* seeking help versus not suffering from depressed mood. Finally, the analyses so far constrains the effects of race-ethnicity to remain equal across genders, which may be an overly restrictive assumption.

To address these above issues, subsequent analyses utilize reduced-form multinomial logistic regressions, estimated separately for depressed mood and self-injury risk, pooled as well as separately by gender. The base category of comparison in each case is ‘‘does not report depressed mood/self-injury risk’’. The three other categories are ‘‘reports depressed mood/self-injury risk and asking help when depressed from an adult’’ (category A), ‘‘reports depressed mood/self-injury risk and asking help when depressed from a peer’’ (category B), and ‘‘reports depressed mood/self-injury

risk but not asking for help when depressed'' (category C). These analyses are done using the full sample. Thereafter, multinomial logistic regressions are done for only the sub-samples suffering from depressed mood or self-injury risk. The base category of comparison is now ''reports asking help from adult'', with the other two categories being ''reports asking help from peer'' (category X) and ''reports not asking for help'' (category Y). Again, the analyses are done pooled and separately by gender. All models include the additional covariates that were included in the previous binomial logistic regressions. Results are presented respectively in **Table 3a** and **Table 3b**. For brevity, I only present results pertaining to gender and race-ethnicity, the rest being available upon request.

Full sample results (**Table 3a**) indicate differential impacts of race-ethnicity effects on help-seeking behavior across genders. The base comparison group in all cases is (non-Hispanic) whites. Recall again that the base category is ''does not report depressed mood/self-injury risk''. The pooled models show that:

- Compared to the base group, blacks have significantly higher odds of suffering from depressed mood but not seeking help (OR: 1.33, 95% CI: 1.14-1.56); Asians have significantly higher odds of suffering from depressed mood and seeking help from peers (OR: 1.76, 95% CI: 1.12-2.75) as well as not seeking help (OR: 1.44, 95% CI: 1.21-1.71); Hispanics have significantly higher odds of belonging to all of the three depressed mood categories.
- In case of self-injury risk, blacks do not appear to have different odds of belonging to any of the three categories compared to whites. In contrast, Asians again display significantly higher odds of belonging to categories B and C, while Hispanics display higher odds of belonging to categories A and C.

  The analyses by gender reveals further patterns in race-ethnicity differences.
- For instance, in case of Asians, the odds of suffering from depressed mood and help-seeking from peers is significantly higher (than whites) for Asian women (OR: 1.77, 95% CI: 1.07-2.94), not for Asian men (OR: 1.57, 95% CI: 0.58-4.24). However, whereas the odds of depressed mood and not seeking for help are somewhat higher and weakly significant statistically for Asian women (OR: 1.25, 95% CI: 0.99-1.58), they are considerably higher and strongly significant statistically for Asian men (OR: 1.76, 95% CI: 1.36-2.27).
- Among Hispanics, both genders have significantly higher odds (than whites) of suffering from depressed mood or being at self-injury risk and seeking help from adults. Only Hispanic women display higher odds of depressed mood or self-injury risk and not seeking help at all.
- Among blacks, the results obtained separately by gender continue to follow the pattern observed when the genders were pooled – that is, both genders separately display significantly higher odds of suffering from depressed mood but not seeking help than their white counterparts, but not higher odds of belonging to any of the self-injury risk categories.

Estimations using only the sub-samples suffering from depressed mood or at self-injury risk (**Table 3b**) use as ''seeking help from adults'' as the base category. Pooled gender results again verify that conditional upon depressed mood or self-injury risk, males have significantly higher odds than females of not seeking help at all as opposed to seeking help from adults (respective ORs and 95% CI are 1.56, 1.29-1.88, and 1.40, 1.12-1.75). However, there do not appear to be any differences across genders in the odds of seeking help from peers versus seeking help from adults. Regarding effects of race-ethnicity:

- Black respondents systematically display higher odds of not seeking help in case of depressed mood (1.53, 1.18-2.00, in pooled sample) or self-injury risk (1.4, 1.1-1.75, in pooled sample). The analysis by gender finds that this pattern persists for both males and females separately.
- Asian respondents overall display statistically higher odds of seeking help from peers, though the analysis by gender indicates that this result is driven by the behavior of Asian women rather than men. Both Asian men and women display statistically higher odds of not seeking help in case of depressed mood. In case of self-injury risk, the odds of not seeking help are statistically higher for Asian women, but not for Asian men.
- Hispanics do not appear to have statistically different odds of belonging to either category X (seek help from peers) or category Y (not seek help) in comparison to whites in either subsample.

Thus far, the estimation results find that there exist some notable differences across gender and race-ethnicity in the likelihood of depressed mood /self-injury risk as well as the likelihood of help-seeking for depressed mood, even after including socio-demographic and other controls based on information available in the dataset. Finally, **Table 4a** and **Table 4b** present predicted probabilities of belonging to the different categories of mental health outcomes and help-seeking behavior for each gender and race-ethnicity group, while holding all of the other controls in the model at their mean value. Thus, these predicted values provide some indication of the quantitative differences across race and gender in the risk of depressed mood and self-injury risk and in propensities for help-seeking, with other factors being equal. Note that in **Table 4a**, the categories are non-exhaustive – hence the percentages do not add up to 100. The omitted category is predicted value of non-depressed mood (or non-self injury risk). In **Table 4b**, the categories are exhaustive since they are only for sub-samples with depressed mood or self-injury risk.

It is seen from **Table 4a** that

- Adolescent females have higher predicted probabilities than males of belonging to all categories of depressed mood as well as self-injury risk. However, adolescent females display less racial/ethnic variation in the predicted probability of suffering from depressed mood but not asking for help.
- Among males, in contrast, Asian and black males display noticeably higher predicted probabilities of belonging to

Table 3a. Multinomial Logistic Regressions for Depressed Mood/Self Injury Risk and Help-seeking.

	Depressed Mood, Seek Help Adult (Cat A)			Depressed Mood, Seek Help Peer (Cat B)			Depressed Mood, Not Seek Help (Cat C)			Self-Injury Risk, Seek Help Adult (Cat A)			Self-Injury Risk, Seek Help Peer (Cat B)			Self-Injury Risk, Not Seek Help (Cat C)		
	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]
All																		
Male	0.31	[0.26	0.36]	0.23	[0.16	0.33]	0.47	[0.42	0.52]	0.33	[0.28	0.40]	0.23	[0.16	0.35]	0.44	[0.39	0.50]
Black	0.88	[0.69	1.12]	0.79	[0.46	1.36]	1.33	[1.14	1.56]	0.65	[0.48	0.88]	0.59	[0.30	1.13]	0.98	[0.82	1.18]
Asian	0.88	[0.66	1.18]	1.76	[1.12	2.75]	1.44	[1.21	1.71]	1.22	[0.90	1.64]	2.83	[1.84	4.36]	1.68	[1.39	2.02]
Hisp	1.41	[1.17	1.68]	1.44	[1.02	2.04]	1.34	[1.18	1.52]	1.41	[1.15	1.73]	1.22	[0.82	1.80]	1.30	[1.13	1.49]
Log-likelihood	–7197.77									–5938.43								
Chi-square	885.06									766.84								
Psuedo-R^2	0.157									0.160								
Female																		
Black	0.84	[0.62	1.12]	0.90	[0.50	1.62]	1.33	[1.09	1.63]	0.65	[0.46	0.93]	0.62	[0.30	1.30]	0.99	[0.79	1.24]
Asian	0.73	[0.51	1.05]	1.77	[1.07	2.94]	1.25	[0.99	1.58]	1.10	[0.75	1.60]	2.77	[1.67	4.59]	1.64	[1.28	2.10]
Hisp	1.43	[1.13	1.80]	1.43	[0.94	2.19]	1.50	[1.26	1.78]	1.35	[1.04	1.75]	1.48	[0.93	2.35]	1.41	[1.17	1.70]
Log-likelihood	–4321.38									–3698.82								
Chi-square	394.97									330.62								
Psuedo-R^2	0.143									0.143								
Male																		
Black	0.94	[0.59	1.49]	0.49	[0.11	2.15]	1.36	[1.06	1.74]	0.63	[0.34	1.15]	0.72	[0.16	3.27]	1.02	[0.75	1.39]
Asian	1.23	[0.76	1.99]	1.57	[0.58	4.24]	1.76	[1.36	2.27]	1.61	[0.97	2.67]	2.94	[1.20	7.18]	1.80	[1.33	2.42]
Hisp	1.43	[1.02	2.00]	1.68	[0.82	3.47]	1.11	[0.90	1.38]	1.57	[1.07	2.30]	0.70	[0.26	1.89]	1.05	[0.82	1.35]
Log-likelihood	–2853.93									–2227.32								
Chi-square	217.12									212.09								
Psuedo-R^2	0.137									0.145								

Notes: The estimations are done using the full sample. The base category of comparisons are not depressed mood and not at self-injury risk respectively. Additional controls used in **Table 2** are used here as well.

Table 3b. Multinomial Logistic Regressions for Help-seeking Conditional on Depressed Mood/Self Injury Risk.

	Depressed Mood, Seek Help Peer (Cat X)			Depressed Mood, Not Seek Help (Cat Y)			Self-Injury Risk, Seek Help Peer (Cat X)			Self-Injury Risk, Not Seek Help (Cat Y)		
	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]	Odds Ratio	[95%	CI]
All												
Male	0.78	[0.53	1.78]	1.56	[1.29	1.88]	0.72	[0.46	1.15]	1.40	[1.12	1.75]
Black	0.93	[0.51	1.66]	1.53	[1.18	2.00]	1.03	[0.50	2.11]	1.53	[1.10	2.14]
Asian	2.15	[1.28	3.60]	1.62	[1.19	2.20]	2.62	[1.57	4.67]	1.41	[1.01	1.95]
Hispanic	1.12	[0.76	1.35]	0.96	[0.78	1.17]	1.02	[0.65	1.58]	0.91	[0.72	1.16]
Log-likelihood	–2276.63						–1898.90					
Chi-square	108.65						102.45					
Psuedo-R^2	0.130						0.118					
Female												
Black	1.03	[0.55	1.96]	1.58	[1.16	2.14]	0.95	[0.42	1.99]	1.48	[1.01	2.19]
Asian	2.53	[1.39	4.48]	1.36	[1.01	2.06]	2.74	[1.50	5.01]	1.55	[1.03	2.34]
Hispanic	1.08	[0.69	1.69]	1.04	[0.82	1.33]	1.17	[0.71	1.97]	1.00	[0.75	1.33]
Log-likelihood	–1525.51						–1123.94					
Chi-square	54.50						49.46					
Psuedo-R^2	0.117						0.091					
Male												
Black	0.60	[0.13	2.85]	1.43	[1.07	2.13]	1.87	[0.35	9.97]	1.74	[1.00	3.41]
Asian	1.25	[0.42	3.70]	1.72	[1.16	2.54]	2.10	[0.70	5.79]	1.12	[0.77	1.94]
Hispanic	1.21	[0.56	2.63]	0.77	[0.53	1.11]	0.60	[0.21	1.70]	0.71	[0.47	1.10]
Log-likelihood	–644.30						–448.77					
Chi-square	35.30						39.10					
Psuedo-R^2	0.127						0.107					

Notes: The estimations are done using the sub-samples of those with depressed mood or at self-injury risk respectively. The base category of comparison in each case is seeking help from an adult. Additional controls used in **Table 2** are used here as well.

the category of suffering from depressed mood but not asking for help (23.6 percent and 20.1 percent respectively) compared to Hispanic and non-Hispanic white males (16.9 percent and 15.6 percent respectively).

- Among females, Asians and Hispanics have higher predicted probabilities of being at self-injury risk and not asking for help than their black and white counterparts (23.5 percent and 21 percent versus 17.5 percent and 17 percent). Among males, Asians by far have the highest probabilities of being at self-injury risk and not asking for help (16.2 percent) compared to any other group.

Table 4b shows that, conditional on suffering from depressed mood or self-injury risk:

- Both females and males are more likely to not seek help from anyone than to seek help. However, the predicted probability of not seeking help is greater for males over-all than it is for females: 74.4 versus 64.7 percent in case of depressed mood and 72.1 versus 64 percent for self-injury risk. For both genders, Asians and blacks display noticeably higher probabilities of not seeking for help conditional on suffering from depressed mood compared to Hispanics and non-Hispanic whites. Blacks of both genders also show the highest predicted probabilities of not seeking help conditional on being at self-injury risk.

Finally, I repeat the binomial logit and multinomial logit regressions after omitting the two variables which may potentially be endogenous: frequency of being a victim of bullying, and spending time unsupervised by an adult. Results remain very similar, in terms of both the magnitude and statistical significance of the gender and race-ethnicity difference. These results are available upon request.

Discussion and Conclusion

The primary purpose of this study has been to investigate, using a large nationally representative sample, whether gender and race affect adolescents' likelihood of help-seeking when suffering from depressed mood/self-injury risk. The results overall suggest that gender and race do play

Table 4a. Mean Predicted Probabilities for Depressed Mood/Self Injury Risk & Help-seeking, by Gender & Race.

	Depressed Mood, Seek Help from Adult	Depressed Mood, Seek Help from Peer	Depressed Mood, Not Seek Help	Self-Injury Risk, Seek Help from Adult	Self-Injury Risk, Seek Help from Peer	Self-Injury Risk, Not Seek Help
Females						
Over-all	11.4	2.8	26.0	8.2	2.2	18.6
White	11.7	2.6	23.2	8.3	1.9	17.0
Black	9.2	2.1	29.1	5.7	1.2	17.5
Hispanic	13.7	3.3	28.9	10.1	2.7	21.0
Asian	8.7	4.3	27.3	7.5	4.5	23.5
Males						
Over-all	5.0	0.9	17.9	3.7	0.7	11.2
White	4.7	0.8	15.6	3.3	0.6	10.5
Black	4.2	0.4	20.1	2.2	0.4	10.8
Hispanic	6.6	1.2	16.9	5.1	0.7	11.2
Asian	5.0	1.0	23.6	4.6	1.7	16.2

Note: The predicted values are based on belonging to a particular race and gender category, when all other control variables are held at their mean value.

Table 4b. Mean Predicted Probabilities for Help-Seeking Among Sub-Samples with Depressed Mood/Self Injury Risk, by Gender & Race.

	Depressed Mood, Seek Help from Adult	Depressed Mood, Seek Help from Peer	Depressed Mood, Not Seek Help	Self-Injury Risk, Seek Help from Adult	Self-Injury Risk, Seek Help from Peer	Self-Injury Risk, Not Seek Help
Females						
Over-all	28.4	6.9	64.7	28.3	7.6	64.0
White	31.1	6.7	62.2	30.6	6.8	62.6
Black	22.8	5.1	72.0	23.5	4.9	71.6
Hispanic	30.0	7.0	63.0	30.2	7.9	61.9
Asian	20.2	10.0	69.0	21.0	12.7	66.3
Males						
Over-all	21.7	3.9	74.4	23.5	4.4	72.1
White	22.0	3.6	74.3	23.3	4.1	72.6
Black	16.8	1.7	81.4	14.9	4.7	80.4
Hispanic	26.3	5.3	68.4	29.8	3.2	67.0
Asian	17.3	3.5	79.1	20.8	7.3	71.9

Note: The predicted values are based on belonging to a particular race and gender category, when all other control variables are held at their mean value.

roles in that likelihood. Also, in concurrence with existing research, this study finds effects of gender and race-ethnicity on the likelihood of being depressed /at self-injury risk to begin with.

The findings pertaining to the effects of gender and race-ethnicity on help-seeking are in accordance with results from related studies. For example, it is found that conditional upon suffering from depressed mood or being at self-injury risk, females have higher odds of asking for help than males. As mentioned in the Introduction section, similar results have been found by researchers for adolescents in Australia and France. A number of studies (reviewed by Bristow & Patten[44]) have found that gender plays a role in determining treatment-seeking for mental health problems among adults in Canada.

The gender gap in the odds of help-seeking are not uniform within the different racial-ethnic groups. As shown in **Table 4b**, the predicted gender difference in the likelihood of not seeking help (conditional on suffering from depressed mood) is lowest among Hispanics – about 5 percentage points, in contrast to 12 percentage points for non-Hispanic whites, 10 percentage points for Asians, and about 9 percentage points for blacks. Interestingly, these gender gaps are paralleled to some extent by the gender differences in suicide behavior, which has traditionally been significantly less marked among Hispanic teenagers than among white and black teenagers[45]. The pattern seems to persist into current times. In year 2000, the gender gaps in suicide rates per 100,000 population in the 10-19 years age group for non-Hispanic whites and blacks were respectively 6.7 percentage points (8.56 for males

versus 1.82 for females) and 5.2 percentage points (6.12 for males versus 0.94 for females). It was 4 percentage points for Hispanics (5.5 for males versus 1.49 for females).[46]

With regards to the effects of race on the odds of help-seeking, there is little discernible difference between Hispanics and non-Hispanic whites, while both black and Asian adolescents display significantly higher odds (than whites) of not seeking help versus seeking help from an adult. This prevails for both genders. Results pertaining to blacks are in keeping with findings by Wu *et al.*,[47] who used a sample of 206 respondents aged 9-17 years diagnosed with depressive disorder, and found greater evidence of under-treatment among the African-American respondents. While I am aware of no other study that has specifically considered help-seeking behavior for mental health problems by Asian-American adolescents in particular, there is some evidence that Asian-Americans as a whole are more reluctant to admit to such problems than whites. Zhang *et al.*[48] compared Asian Americans and whites from a randomly selected sample based on the first wave of the Epidemiologic Catchment Area study on help seeking for psychological problems, and found that Asian Americans were less likely than whites to mention their mental health problems to a friend or relative (12% versus 25%), psychiatrist or mental health specialist (4% versus 26%), or physician (3% versus 13%).

The reasons why there exist interracial variations among adolescents in help-seeking for depressed mood should be an interesting topic for future research. I speculate that potential reasons might include racial differences in attitudes and the degree of ''stigma'' attached to mental health problems. Adolescents belonging to a racial culture where depressed mood is seen as a sign of personal weakness and failure may be less willing to seek help for this problem. Another issue may be the lack of adults (parents apart) whom to approach with this problem. Various studies have indicated that adult mental health patients express greater comfort in seeking help from a mental health professional of their own racial background. It may be the case that adolescents, particularly from cultures where fear of stigma prohibits asking for help from parents or relatives, will perhaps be more willing to ask for help from a healthcare professional of their own racial background. Yet, there is only a limited number of such professionals who are themselves African-American or Asian-American. According to one scientific report Holzer *et al.*[49] report that, among clinically trained mental health professionals, only 2 percent of psychiatrists, 2 percent of psychologists, and 4 percent of social workers were African American. Moreover, mental health professionals appear to be largely based in urban areas, while a high proportion of African-American population continue to reside in the rural South.[49] According to another report, approximately 70 Asian American professional mental health care providers were available for every 100,000 Asian Americans in the United States – which is about half the ratio for whites[50].

Racial differences in family structure, socio-economic status, and community characteristics may also play a role. This study has attempted to control for family stability and socio-economic status insofar as the data permits, but there remains the continued possibility of omitted variable bias in this respect. Furthermore, in case of Hispanics and Asian-Americans in particular, racial experiences may be further confounded with immigrant-specific problems. These may include displacement trauma, isolation and lack of assimilation into mainstream society, and language barriers, all of which may contribute to depressed mood and also serve as barriers to help-seeking. Unfortunately, this dataset does not provide sufficient information to permit distinguishing whether the effects of Hispanic /Asian-American racial identity on help-seeking behavior vary across first, second, or higher order generations of immigrants. This remains an important topic that future research should explore.

In the end, however, it must be pointed out that while the gender and race differences in help-seeking for depressed mood are of undoubted interest, one conspicuous finding in this study is the low likelihood of help-seeking for *all* race and gender groups. Interracial and inter-gender variations notwithstanding, the reality is that for no group does the predicted probability of asking for help conditional on depressed mood or self-injury risk approach even the 50 percent mark.

There are various potential shortcomings in this study that must be noted. Since the HBSC survey confines itself to those enrolled in school, adolescents who are institutionalized for mental health problems as well as those who have dropped out of school due to problems related to depression are not represented here. Furthermore, as in the case of all self-reported surveys, there are issues about the honesty and forthrightness of answers. Specifically, members of those racial and gender groups more prone to not asking for help in the event of depressed mood or self-injury risk for fear of stigma may also be more prone to underreporting the occurrence depressed mood and self-injury thoughts or attempts in a survey interview. This may lead to some bias in the estimation results. Also, the design of the survey only allows for limited information regarding the socio-economic status as well as the immigration status of the respondent's family, and (as discussed earlier) these may confound to an extent the effects of race. Finally, one of the central issues of this paper has been the determinants of help-seeking – with the underlying assumption that help-seeking is an useful precedent to actually obtaining appropriate professional help with depression and related problems. However, there remains the question about whether help-seeking (from adults or peers) does indeed eventually lead to *obtaining* such help. In this regard, it would have been useful to have had information on (i) whether help-seeking eventually led to obtainment of appropriate professional help or to any other solutions; (ii) whether those not seeking help were nonetheless identified as having problems by parents, teachers, or healthcare professionals, and were able to obtain appropriate professional help.

In conclusion, this study initiates a new direction of research by using a large, national survey and investigating the effects of gender and race on the likelihood of help-seeking among those suffering from depressed mood and at self-injury risk. The study finds that not only are a fairly high proportion of adolescents at risk of belonging to those

categories, but that the majority of them do not seek help for such problems. This emphasizes the need for policies that encourage adolescents to be aware that such problems are widely prevalent, and that aim to reduce stigma and encourage more adolescents to seek help. At the same time, policy-makers need to be aware that ''one-size-fits-all'' policies may have only limited success, since there exist gender and racial variations in the likelihood of help-seeking. More research is required to explore the underlying reasons for these differences, so that policies may be better tailored to meet the needs of specific gender and racial groups, ensuring that more adolescents seek and are able to obtain help with these problems.

Acknowledgements

Helpful comments from Carolyn Dewa and colleagues in Department of Healthcare Organization & Policy, University of Alabama at Birmingham (UAB), are gratefully acknowledged. The author accepts responsibility for all opinions and errors in this paper.

APPENDIX

Table A and **Table B** provide details on specific symptoms suffered by those reporting depressed mood. Specifically, table A report what fractions of this group also report irritability, loss of interest in normal activities, change in weight (gain or loss), loss of ability to concentrate, changes in sleep patterns, thoughts of self injury, and thoughts of death, when suffering from depressed mood. **Table B** show the distribution of the number of symptoms. It is seen that 30.5 percent of respondents suffering from depressed mood report having 6 or all of the above 7 symptoms when depressed, whereas 37.5 percent report having 4 to 5 of the symptoms. **Table C** shows details from whom the respondents suffering from depressed mood sought help (if they did choose to seek help). 69 percent of those with depressed mood reported not seeking help from anyone. For those seeking help, friends and parents seem to be the primary sources, followed by siblings, other relatives, school officials and counselors/psychologists. Recall that these are not mutually exclusive categories, and many respondents seek help from multiple sources.

Table A. Proportion of Depressed Mood Sub-sample with Selected Symptoms.

Symptom	Proportion With Symptom
Irritable when depressed	0.666
Lost interest when depressed	0.745
Weight changes	0.450
Couldn't concentrate when depressed	0.792
Sleep pattern changes	0.665
Thought of hurting self when depressed	0.474
Thought of death when depressed	0.462

Notes: The Depressed Mood sub-sample has 3105 respondents.

Table B. Distribution of Number of Symptoms among Depressed Mood Sub-sample.

Number of Symptoms	# of respondents from subsample	Percentage of Depressed Mood Sub-sample
0 to 1	249	8.11
2 to 3	738	24.05
4 to 5	1151	37.50
6 to 7	931	30.34

Notes: The Depressed Mood sub-sample has 3105 respondents.

Table C. Percentage of Respondents Seeking Help for Depressed Mood from Different Sources.

Source of Help Seeking for Depressed Mood	# of Respondents	Percentage of Depressed Mood Sub-sample	Percentage of Help-Seeking Sub-sample
Parents/Guardian	602	19.38	58.16
Sibling	374	12.04	36.28
Other Relative	312	10.05	30.50
School Official	298	9.59	28.90
Health Professional (not at school)	117	3.76	11.37
Counselor/Psychologist	260	8.37	25.22
Church /Synagogue/Mosque/Temple	192	6.18	18.8
Friend	721	23.22	69.26
Other Adult	169	5.44	16.5
Did not seek help	2148	69.22	

Note: The above categories are not mutually exclusive, so figures in the last column do not add up to 100 percent. Most respondents in the sub-sample who reported seeking help for depressed mood reported doing so from multiple sources.

References

1. Cutler DM, Glaesar EL, Norberg KE. 2001 Explaining the rise in youth suicide. In J Gruber (Eds) *Risky Behavior Among American Youth: An Economic Analysis.* Chicago: University of Chicago Press: 219-269.
2. National Center for Health Statistics: Health, United States, 2002. Trend table # 47. http://www.cdc.gov/nchs/products/pubs/pubd/hus/tables/2002/02hus047.pdf.
3. Brooks, TL, Harris SK, Thrall JS, Woods ER. Association of adolescent risk behaviors with mental health symptoms in high school students. *J Adolesc Health* 2002; **31**: 240-246.
4. Weissman MM, Wolk S, Goldstein RB, Moreau, D. Depressed Adolescents grow up. *JAMA* 1999; **281**: 1707-1713.
5. Simon GE, VonKorff M. Recognition, management, and outcomes of depression in primary care. *Arch Fam Med* 1995; **4**: 99-105
6. Gerber PD , Barrett J , Barrett J , Manheimer E , Whiting R, Smith R. Recognition of depression by internists in primary care: a comparison of internist and gold standard psychiatric assessments. *J Gen Intern Med* 1989; **4**: 7-13
7. Burns B, Costello EJ, Angold A, Tweed D, Stangl D, Farmer EM, Erkanli A. Data Watch, Children's Mental Health Services Use across service sectors. *Health Aff* 1995; **14**: 147-159.
8. Leaf PJ, Alergia M, Cohen P, Goodman SH, Horwitz SM, Hoven CW, Narrow WE, Vaden-Kiernan M, Regier DA. Mental health service use in community and schools: results from the four-community MECA study. *J Am Acad Child Adolesc Psychiatry* 1996; **35**:889-897.
9. Diagnostic and Statistical Manual of Mental Disorders, 4th ed., Text Revision: 2000. American Psychiatric Assc.,
10. Birmaher B, Ryan ND, Williamson DE, Brent DA, Kaufman J, Dahl RE, Perel J, Nelson B.: Childhood and adolescent depression: a review of the past 10 years, Part 1. *J Am Acad Child Adolesc Psychiatry* 1996; **35**: 1427-1439.
11. National Institute for Mental Health. Depression in Children and Adolescents: A Fact Sheet for Physicians 2000. http://www.nimh.nih.gov/publicat/depchildresfact.cfm
12. Bistow K, Patten S. Treatment-seeking rates and associated mediating factors among individuals with depression. *Can J Psychiatry* 2002; **47**: 660-665.
13. Sussman LK, Robins LN, Earls F. Treatment-seeking for depression by black and white Americans. *Soc Sci Med* 1987; **24**: 187-196.
14. Culp AM, Clyman MM, Culp RE. Adolescent depressed mood, reports of suicide attempts, and asking for help. *Adolescence* 1995; **30**: 827- 837
15. Dubow EF, Lovko KR, Kausch DF. Demographic differences in adolescents' health concerns and perceptions of helping agents. *J Clin Child Psychol* 1990; **19**: 44-54.
16. Rickwood DJ, Braithwate VA: Social-psychological factors affecting help-seeking for emotional problems. *Soc Sci Med* 1994; **39**: 563-572.
17. Boldero J, Fallon B. 1995. Adolescent help-seeking: What do they get help for and from whom? *J Adolesc* 1995; **18**: 193-209.
18. Gasquet I, Ledoux S, Chavance M, Choquet M. Consultation of mental health professionals by French adolescents with probable psychiatric problems. *Acta Psychiatr Scand* 1999; **99**: 126-134.
19. Gasquet I, Chavance M, Ledoux S, Choquet M. Psychosocial factors associated with help-seeking behavior among depressive adolescents. *Eur Child Adolesc Psychiatry* 1997; **6**: 151-159
20. Gould MS , Munfakh JL, Lubell K, Kleinman M, Parker S. Seeking help from the internet during adolescence. *J Am Acad Child Adolesc Psychiatry* 2002 ; **41**: 1182-1189.
21. Surgeon General's Report: Mental Health: Culture, Race, Ethnicity – Supplement. 1999. U.S. Department of Health and Human Services, Office of the Surgeon General. (http://www.mentalhealth.org/cre/default.asp).
22. Plants EA, Sachs-Erricson N. Racial and ethnic differences in depression: the roles of social support and meeting basic needs. *J Consult Clin Psychol* 2004; **72**: 41-52.
23. Gore S, Aseltine RH. Race and ethnic differences in depressed mood following the transition from high school. *J Health Soc Behav* 2003; **44**: 370-389
24. Cohen Y, Spirito A, Brown LK. 1996. Suicide and Suicide Behavior. In RJ Diclemente, WB Hansen, LE Ponton. (Eds) *''Handbook of Adolescent Health Risk Behavior''* Plenum Press NY 1996. 193-224.
25. Hammen C, Rudolph KD. 1992. Childhood depression. In EJ Mash, RA Barkley (Eds) *Child Psychopathology*. NY. Guileford Press. 153-195.
26. Gotlib IH, Hammen CL. *Psychological Aspects of Depression: Towards a Cognitive-Interpersonal Integration*. London: Wiley Press. 1991.
27. Jessor R. Risk behavior in adolescents: A psychological framework for understanding and action. In DE Rogers, E. Ginzburg (Eds) *Adolescents at Risk: Medical and Psychological perspectives*. Boulder, CO: Westview Press. 1992.
28. U.S. Census Bureau. Poverty 2002. Table 5: Percent of People in Poverty, by Definition of Income and Selected Characteristics: 2002. http://www.census.gov/hhes/poverty/poverty02/r&dtable5.html.
29. Statistical Abstracts of the U.S. 2002. Vital Statistics: Table 74: Births to teens, unmarried mothers and prenatal care: 1990-2000. http://www.census.gov/prod/www/statistical-abstract-03.html
30. Statistical Abstracts of the U.S. 2002. population: Table 54: Family groups with children under 18 years old by race and Hispanic origin. http://www.census.gov/prod/www/statistical-abstract-03.html
31. Lowry L, Kahn J, Collins L, Kolbe LJ. The effect of socio-economic status on chronic disease risk behavior among US adolescents. *JAMA* 1996; **276**: 792-797.
32. Goodman, E. The role of socioeconomic status gradient in explaining differences in US adolescent's health. *Am J Public Health* 1999; **89**: 1522-1528.
33. Newacheck PW, Hung YY, Park MJ, Brindis CB, Irwin CE. Disparities in adolescent health and health care: does socio-economic status matter? *Health Serv Res* 2003; **38**: 1235-1252.
34. Moilanen I, Rantakallio P. The Single Parent Family and the Child's Mental Health. *Soc Sci Med* 1988; 181-186.
35. Mathur VK and Freeman DJ. A Theoretical Model of Adolescent Suicide and Some Evidence from U.S. Data, *Health Econ* 2002; **11**: 695-708
36. Amato PR, Keith B. Parental divorce and the well-being of children: a meta-analysis. *Psychol Bull* 1996; **110**: 26-46.
37. Grunbaum JA, Kann L, Kinchen SA, Williams B, Ross JG, Lowry R, Kolbe L. Youth Risk Behavior Surveillance – United States, 2001. *MMWR. Surveillance Summaries* 2002; **51(SS-4)**: 1-64.
38. Roberts RE, Chen YR , Roberts CR. Ethnocultural differences in prevalence of adolescent suicidal behaviors. *Suicide Life Threat Behav.* 1997; **27**: 208-217.
39. Siegel JM, Aneshensel CS, Taub B, Cantwell DP, Driscoll AK. Adolescent depressed mood in a multiethnic sample. *J Youth Adolesc* 1998; **27**: 413-427.
40. Gibbs JT, Hines AM. Factors related to sex differences in suicidal behavior among black youth. *J Adolesc Res,* 1989; **4**: 152-172.
41. Nettles SM, Pleck JH. 1994. Risk, resilience, and development: The multiple ecologies of black adolescents in the United States. In R. J. Haggerty, L.R. Sherrod, N. Garmezy, M. Rutter. (Eds.). *Stress, risk, and resilience in children and adolescents: Processes, mechanisms, and interventions.* New York: Cambridge University Press.
42. Morrison LL, Downey DL. Racial differences in self-disclosure of suicide ideation and reasons for living: implications for training. *Cultur Divers Ethnic Minor Psychol* 2000; **6**: 374-386.
43. Lorenzo MK, Pakiz B, Reinherz HZ, Frost A: Emotional and Behavioral Problems of Asian American Adolescents: A Comparative Study. *Child Adolesc Social Work J* 1995; **12**: 197-212.
44. Bristow K, Patten S. Treatment-seeking rates and associated mediating factors among individuals with depression. *Can J Psychiatry* 2002; **47**: 660-665.
45. Shaffer D, Garland A, Gould M, Fisher P, Trautman P. Preventing teenage suicide: A critical review. *Suicide Life Threat Behav* 1988; **27**: 675-687.
46. Based on ''Web-based Injury Statistics Query and Reporting System'' (WISQARS), Centers for Disease Control and Prevention, at the website http://www.cdc.gov/ncipc/wisqars/.
47. Wu P, Hoven CW, Cohen P, Liu X, Moore RE. Factors Associated With Use of Mental Health Services for Depression by Children and Adolescents. 2001. *Psychiatr Serv* 2001; **52**: 189-195.
48. Zhang AY, Snowden LR, Sue S. Differences between Asian- and White-Americans' help-seeking and utilization patterns in the Los Angeles area. *J Community Psychol* 1998; **26**: 317-326.
49. Holzer CE, Goldsmith HF, Ciarlo JA. Effects of rural-urban county type on the availability of health and mental health care providers. In R.W. Manderscheid, M.J. Henderson (Eds.), *Mental health, United States*, Rockville, MD: Center for Mental Health Services. 1998.
50. Manderscheid RW, Henderson MJ (Eds.). *Mental health, United States: 1998.* Rockville, MD: Center for Mental Health Services. 1998.