Child Marriage in the United States and Its Association With Mental Health in Women

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WHAT'S KNOWN ON THIS SUBJECT: The prevalence of child marriage (marriage at <18 years of age) in Western countries is considered to be low. Although child marriage has a devastating impact on health, no study has yet evaluated the impact of child marriage on mental health.

WHAT THIS STUDY ADDS: The prevalence of child marriage among women in the United States was 8.9%. Child marriage was associated with higher rates of lifetime and 12-month psychiatric disorders. In addition, women who married as children were more likely to seek health services.

abstract

OBJECTIVE: Despite the devastating impact of child marriage (marriage before the age of 18 years) on health, no study has yet evaluated its impact on mental health in the general adult population. This article presents nationally representative data on the prevalence, sociodemographic correlates, and psychiatric comorbidity of child marriage among women in the United States.

METHODS: Data were drawn from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions. We limited our analyses to the sample of women ($N = 24\,575$) with a known age at first marriage, of whom 18 645 had been or were presently married.

RESULTS: The prevalence of child marriage among women was 8.9%. Demographic factors associated with child marriage were black and American Indian/Alaska Native ethnicities, age at interview of >45 years, low educational level, low income, and living in the South and rural areas of the United States. The overall lifetime and 12-month rates of psychiatric disorders were higher for women who married as children, compared with women who married as adults. In addition, women who married as children were more likely to seek and access health services, compared with women who married in adulthood.

CONCLUSIONS: Child marriage increases the risk of lifetime and current psychiatric disorders in the United States. Support for psychiatric vulnerabilities among women married in childhood is required. *Pediatrics* 2011;128:524–530

Although child marriage (marriage before the age of 18 years) is frequent in West Africa and West Asia,[1] the prevalence of child marriage is considered relatively low in Western Europe, East Asia, and North America,[2] with <6% of women being married before the age of 18 years in the United States.[3] In the United States, all except 2 states require both members of a couple to be 18 years of age or older to marry without parental consent, but most states allow marriage before the age of 18 years with parental or judicial consent. However, the relatively low prevalence of child marriage in Western countries may explain why most research on child marriage has been conducted in low- and middle-income countries.

Child marriage is associated with higher rates of sexually transmitted infections and HIV,[4–6] cervical cancer,[7] unwanted pregnancies,[8] pregnancy termination,[8] death resulting from childbirth,[1] and malnutrition in the offspring.[9] Because schools are one of the primary venues for health education, differences in educational attainment according to age at the time of first marriage may contribute to this health disadvantage.[9] Despite this devastating impact on health, no study has yet evaluated the impact of child marriage on mental health in the general adult population. Therefore, we (1) estimated the prevalence and sociodemographic correlates of child marriage in the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC),[10] (2) investigated the lifetime and 12-month prevalence of psychiatric disorders associated with child marriage, and (3) estimated lifetime and 12-month rates of mental health treatment-seeking among child-married women.

METHODS

Sample

We analyzed cross-sectional data from a population-based, national, representative-sample survey, the NESARC.[10] The NESARC is a face-to-face survey of 43 093 adults (response rate: 81%) aged 18 years or older from the civilian noninstitutionalized population residing in the United States that was conducted by the National Institute on Alcohol Abuse and Alcoholism in 2001–2002. Recruitment and informed consent procedures received full ethical review and approval from the US Census Bureau and the Office of Management and Budget. The NESARC oversampled black individuals, Hispanic individuals, and young adults 18 to 24 years of age. Data were adjusted for oversampling and household- and person-level nonresponse. The weighted data were adjusted further to represent the civilian US population, on the basis of 2000 Census data.

Characteristics of interviewers, training, and field quality control were described elsewhere.[11] Briefly, interviews were conducted by ~1800 professional lay interviewers from the US Census Bureau. On average, the interviewers had 5 years of experience working on Census surveys and other health-related national surveys. The interviewers completed 10 days of training, which was standardized through centralized training sessions under the direction of National Institute on Alcohol Abuse and Alcoholism and Census headquarters staff members. The survey instrument was computerized with software that included built-in skip, logic, and consistency checks. For quality control, regional supervisors recontacted a 10% random sample of all respondents and asked a subset of the interview questions again, to verify the accuracy of the interviewer's performance.

Measures

Age at Marriage

Child marriage was coded on the basis of the participant's age at the time of first marriage. Participants who reported marriage at 17 years or younger were defined as having experienced a child marriage.

There were 24 575 women in the NESARC sample. Of those, 18 966 women had been married at least once in their lifetimes, whereas the remaining 5609 women had never married. Of the 18 966 women who had been married at least once in their lifetimes, 321 women did not know their age at the time of first marriage and were removed from the analysis, 2181 women were married at 17 years or younger (child-married women), and the remaining women in the NESARC were included in the adult marriage group (N = 16 464).

Diagnostic Assessment

The Alcohol Use Disorder and Associated Disabilities Interview Schedule IV (AUDADIS-IV) from the National Institute on Alcohol Abuse and Alcoholism was used by interviewers to assess lifetime and past 12-month axis I psychiatric disorders. In the present study, we report lifetime and past 12-month prevalence for mood and anxiety disorders, including panic disorder, agoraphobia, specific phobia, social phobia, generalized anxiety disorder, depression, dysthymia, and bipolar disorder (type I or II), as defined according to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, criteria. Mood disorder diagnoses also were combined to create a single variable indicating the presence of any mood disorder. In a similar manner, the 4 separate anxiety diagnoses were combined to create a classification of any anxiety disorder.

The AUDADIS-IV includes an extensive list of symptom questions that assess separately the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, criteria for nicotine dependence and alcohol and drug abuse

and dependence. The drug use disorder assessment includes sedatives, tranquilizers, opiates (other than heroin or methadone), stimulants, hallucinogens, cannabis, cocaine (including crack cocaine), inhalants/solvents, heroin, and other drugs. All diagnoses of abuse and dependence were derived by using the same algorithm and were aggregated to produce a measure of any substance use disorder. Possible psychotic disorders were assessed by asking respondents whether they had ever been told by a physician or other health care professional that they had schizophrenia or a psychotic disorder.

Other Measures

We considered sociodemographic characteristics including age, race, educational level, household income, region of residence, and urbanicity. Age at the time of the interview was categorized as 18 to 29, 30 to 44, 45 to 64, or 65 years or older. Race/ethnicity was categorized as white, black, Asian/Native Hawaiian/Pacific Islander, Hispanic/Latino, or American Indian/Alaska Native. Educational level was classified as less than high school, high school graduate, or some college or higher. Total household income was classified as $0 to $19 999, $20 000 to $34 999, $35 000 to $59 999, or $60 000 or greater. Region of residence was classified as Northeast, Midwest, South, or West. Urbanicity was classified as rural or urban. Additional questions queried marital status regarding the first marriage, parity, age at the birth of the first child, and stressful life events.

The AUDADIS-IV assessed stressful life events (eg, death of a family member or close friend) that occurred in the 12 months before the interview with 12 items from the Social Readjustment Rating Scale. Past-year stressful life events were categorized as 0 events, 1 or 2 events, or ≥3 events.

Mental Health Service Utilization

For estimation of rates of mental health service utilization and for consistency with previous research,[12] respondents were classified as having received treatment for mood or anxiety disorders if they had visited a physician, psychologist, or any other health care professional; had been hospitalized in a ward of a psychiatric/general hospital or a community mental health program; had visited an emergency department; or had received prescribed medications. Respondents were classified as having received treatment for substance use disorders if they had visited a physician, psychologist, or any other health care professional; had been hospitalized in a ward of a psychiatric/general hospital or a community mental health program or had gone to an outpatient clinic or alcohol/drug detoxification/methadone maintenance program; had visited an emergency department or crisis center; or had received treatment from a member of the clergy, through an employee assistance program, or through a family/social services agency or had attended 12-step meetings. Treatment utilization questions were conducted in separate modules that were administered to all respondents who had been screened into the diagnostic module for that disorder.

Statistical Analyses

Weighted prevalence estimates and SEs were computed by using SUDAAN 10.01 (Research Triangle Institute, Research Triangle Park, NC). This software implements a Taylor linearization to adjust SEs of estimates for complex survey sampling design effects, including clustering of data. Multivariate logistic regression analyses were conducted with simultaneous entry of sociodemographic covariates. Adjusted odds ratios (ORs) and 95%

confidence intervals (CIs) are presented to reflect association strength and significance.

RESULTS

More than three-fourths of women (76.87% [18 645 of 24 254]) reported a history of marriage (Table 1). More than 10% of those women (11.69% [2181 of 18 645]) were married before the age of 18 years. One-half of those women (51.53% [1124 of 2181]) were married at 16 years or younger; of those women, 1 in 9 (12.09% [136 of 1124]) were married at the age of 14 years. These prevalence rates are equivalent to a national population projection of 9 406 523 women being married at 16 years or younger, and 1 668 752 women were married at 15 years or younger.

Child marriage was associated with an age at the time of the interview of older than 45 years, black or American Indian/Alaska Native ethnicity, low educational level, low household income, and living in the South and in rural areas of the United States (Table 1). The prevalence of child marriage was higher for women aged 65 years or older (13.35%) than for women 18 to 29 years of age (3.45%), with intermediate prevalence rates for women 30 to 44 years of age (6.91%) and 45 to 64 years of age (11.67%).

Compared with women who married as adults, women who married as children were more likely to have >1 child (97.51% vs 87.35%; $P < .001$) and were more likely to be pregnant for the first time before the age of 18 years (48.84% vs 3.26%; $P < .001$). Child marriage was associated with higher rates of divorce (48.41%) and widowing (14.83%), relative to adult marriage (27.82% and 11.93%, respectively; $P < .001$). Women who married as children were more likely to report ≥1 stressful life event within the past 12 months, compared with adult-married women

TABLE 1 Demographic Characteristics According to Age at Marriage for Women in the NESARC

	Proportion, Estimate ± SE, %		
	Never Married (N = 5609)	Child Marriage (N = 2181)	Adult Marriage (N = 16 464)
Age			
18–29 y	61.68 ± 0.92	8.28 ± 0.75	10.92 ± 0.39
30–44 y	24.50 ± 0.70	23.77 ± 1.23	32.74 ± 0.51
45–64 y	10.52 ± 0.47	40.78 ± 1.23	35.37 ± 0.49
≥65 y	3.31 ± 0.28	27.17 ± 1.31	20.97 ± 0.43
Race/ethnicity			
White	57.65 ± 2.02	68.90 ± 1.99	74.75 ± 1.47
Black	22.06 ± 1.28	9.53 ± 0.83	9.22 ± 0.56
American Indian/Alaska Native	1.80 ± 0.27	3.18 ± 0.50	2.11 ± 0.21
Asian/Native Hawaiian/Pacific Islander	4.69 ± 0.68	2.69 ± 0.58	4.42 ± 0.54
Hispanic	13.80 ± 1.57	15.70 ± 1.80	9.50 ± 1.09
Education			
Less than high school	3.23 ± 0.41	18.71 ± 1.10	5.14 ± 0.36
High school graduate	36.87 ± 0.93	58.58 ± 1.36	37.47 ± 0.61
Some college or higher	59.90 ± 0.96	22.71 ± 1.12	57.39 ± 0.70
Income			
$0–$19 999	34.41 ± 1.10	38.55 ± 1.24	21.31 ± 0.50
$20 000–$34 999	20.86 ± 0.60	23.04 ± 1.11	19.42 ± 0.44
$35 000–$59 999	23.40 ± 0.72	21.83 ± 1.16	26.21 ± 0.44
At least $60 000	21.33 ± 1.00	16.57 ± 1.13	34.06 ± 0.85
Region			
Northeast	22.35 ± 4.36	10.67 ± 2.26	20.22 ± 3.38
Midwest	21.60 ± 3.60	20.47 ± 2.81	23.76 ± 3.24
South	34.19 ± 3.83	47.60 ± 3.38	34.10 ± 3.19
West	21.86 ± 4.28	21.26 ± 3.12	21.91 ± 3.39
Urbanicity			
Rural	38.59 ± 2.90	26.15 ± 2.07	27.57 ± 2.10
Urban	61.41 ± 2.90	73.85 ± 2.07	72.43 ± 2.10

Sample sizes are unweighted values, and proportions are weighted values. All analyses were weighted to reflect national population estimates; χ^2 statistics were used to compare respondent characteristics among the 3 subgroups defined on the basis of marriage status. All P values were <.001. Column totals may not add to 100 because of rounding.

(48.40% of women who married in childhood reported 1 or 2 stressful life events and 24.29% reported ≥3 stressful events, compared with 47.60% and 20.81%, respectively, for women who married as adults; $P <$ .001).

The majority of women who married as children (53.09%) had a lifetime history of mental disorders, compared with 49.05% of women who married as adults (Table 2). In both groups, the most prevalent disorders were major depressive disorder and nicotine dependence, which carried increased risks of 1.43 and 1.92, respectively, among women who married as children, compared with women who married as adults, after adjustment for sociodemographic characteristics. The strongest association, after adjust-

ment for sociodemographic characteristics, was found for antisocial personality disorder (OR: 2.98 [95% CI: 2.03–4.37]).

In an examination of current rather than lifetime diagnoses, women who married as children presented significantly more psychiatric disorders, compared with women who married as adults (35.50% vs 27.65%). The most prevalent disorders were nicotine dependence and specific phobias, which carried increased risks of 2.02 and 1.35, respectively, among women who married as children, compared with women who married as adults, with adjustment for sociodemographic characteristics (Table 3). The strongest association, after adjustment for sociodemographic characteristics,

was found for dysthymia (OR: 2.20 [95% CI: 1.67–2.91]).

Mental health treatment rates for ever-married women varied from 13.35% for substance use disorders to 66.94% for mood disorders. Women who married as children were significantly more likely to receive lifetime treatment for any psychiatric disorder, compared with women who married as adults, in both adjusted and unadjusted analyses (Table 4). When past-year treatment rates were examined, a similar pattern was observed in unadjusted analyses only.

To examine the confounding role of parity (number of children), we examined the subsample of ever-married women with ≥1 child (multipara) (N = 16 452). Moreover, to assess more precisely the impact of child marriage on the development of psychiatric disorders, we reanalyzed our data considering only psychiatric disorders with an age at onset later than the age at first marriage. The associations of child marriage with mental disorders remained significant and of similar magnitude in both analyses (results available on request).

DISCUSSION

To date, there are no published reports on the psychopathological conditions associated with child marriage, to our knowledge. We found that child marriage was associated with a broad range of psychiatric disorders. These associations seemed to be independent of sociodemographic factors, because the magnitude and significance of the associations remained almost unchanged with controlling for those factors or were significant only with controlling for them. Moreover, removing nulliparous women from the analyses did not modify the magnitude and significance of our findings, which suggests that our results are not driven by features associated with parity.

TABLE 2 Lifetime Prevalence and ORs of Axis I Psychiatric Disorders, According to Age at Marriage, Among Ever-Married Women in the NESARC

	Proportion, Estimate ± SE, %		OR (95% CI)	Adjusted OR (95% CI)[a]
	Child Marriage (N = 2181)	Adult Marriage (N = 16 464)		
Any psychiatric disorder	53.09 ± 1.60	49.05 ± 0.90	1.18 (1.05–1.31)	1.41 (1.24–1.61)
Any substance use disorder	32.04 ± 1.40	27.83 ± 0.79	1.22 (1.08–1.38)	1.60 (1.39–1.85)
Nicotine dependence	23.53 ± 1.25	14.68 ± 0.47	1.79 (1.56–2.05)	1.92 (1.65–2.23)
Any alcohol use disorder	19.23 ± 1.16	18.56 ± 0.70	1.04 (0.90–1.22)	1.48 (1.25–1.76)
Alcohol abuse	12.27 ± 0.89	12.18 ± 0.51	1.01 (0.85–1.19)	1.42 (1.18–1.71)
Alcohol dependence	7.75 ± 0.79	6.93 ± 0.34	1.13 (0.89–1.42)	1.44 (1.13–1.83)
Any drug use disorder	6.46 ± 0.70	6.26 ± 0.27	1.03 (0.83–1.29)	1.42 (1.11–1.81)
Drug abuse	5.54 ± 0.65	5.27 ± 0.26	1.05 (0.83–1.34)	1.48 (1.13–1.95)
Drug dependence	2.43 ± 0.43	1.57 ± 0.12	1.56 (1.07–2.28)	1.89 (1.27–2.81)
Pathological gambling	0.32 ± 0.11	0.21 ± 0.04	1.49 (0.65–3.40)	1.33 (0.56–3.14)
Any mood disorder	27.87 ± 1.28	23.07 ± 0.55	1.29 (1.14–1.45)	1.41 (1.24–1.61)
Major depressive disorder	25.25 ± 1.27	20.62 ± 0.54	1.30 (1.15–1.48)	1.43 (1.25–1.63)
Dysthymia	8.69 ± 0.72	5.35 ± 0.24	1.68 (1.37–2.07)	1.65 (1.32–2.06)
Bipolar disorder	6.24 ± 0.59	4.97 ± 0.24	1.27 (1.03–1.57)	1.31 (1.03–1.67)
Any anxiety disorder	25.97 ± 1.33	21.32 ± 0.62	1.29 (1.14–1.47)	1.36 (1.18–1.57)
Panic disorder	9.87 ± 0.79	6.66 ± 0.26	1.54 (1.27–1.86)	1.56 (1.27–1.91)
Social anxiety disorder	7.79 ± 0.78	5.50 ± 0.27	1.45 (1.17–1.81)	1.44 (1.15–1.80)
Specific phobia	15.18 ± 1.05	12.28 ± 0.45	1.28 (1.08–1.51)	1.35 (1.13–1.61)
Generalized anxiety disorder	7.23 ± 0.72	5.48 ± 0.28	1.35 (1.06–1.70)	1.36 (1.06–1.75)
Psychotic disorder	1.58 ± 0.35	0.68 ± 0.07	2.36 (1.44–3.86)	1.95 (1.13–3.37)
Any personality disorder	17.68 ± 1.04	12.80 ± 0.41	1.46 (1.26–1.70)	1.58 (1.35–1.85)
Paranoid personality disorder	7.84 ± 0.80	3.96 ± 0.21	2.06 (1.62–2.63)	1.77 (1.38–2.28)
Schizoid personality disorder	4.79 ± 0.62	2.61 ± 0.16	1.88 (1.38–2.55)	1.73 (1.22–2.44)
Antisocial personality disorder	3.56 ± 0.53	1.31 ± 0.12	2.78 (1.99–3.88)	2.98 (2.03–4.37)
Histrionic personality disorder	1.91 ± 0.36	1.35 ± 0.11	1.42 (0.93–2.16)	1.47 (0.97–2.21)
Avoidant personality disorder	4.46 ± 0.58	2.36 ± 0.17	1.93 (1.42–2.64)	1.64 (1.20–2.24)
Dependent personality disorder	0.94 ± 0.23	0.52 ± 0.07	1.80 (1.01–3.22)	1.47 (0.78–2.76)
Obsessive-compulsive personality disorder	8.91 ± 0.84	7.86 ± 0.30	1.15 (0.93–1.42)	1.40 (1.12–1.74)

[a] ORs were adjusted for age, race/ethnicity, education, income, region, and urbanicity.

Among married women with psychiatric disorders, women who married as children were more likely to seek and to access health services, compared with women who married as adults. Regardless of age at marriage, however, the majority of women reported not using any mental health care.

The following 3 sets of limitations should be kept in mind during interpretation of the results of this study. First, the cross-sectional design of our study does not allow for attribution of causality. However, child marriage generally occurred before the disorders. Moreover, these associations were still significant in an analysis of psychiatric disorders with an age at onset later than the age at first marriage; therefore, the ordering of child marriage before mental disorders can be assumed.[9] Second, although the

NESARC provides an extensive assessment of numerous psychiatric disorders, some disorders, such as obsessive-compulsive disorder, posttraumatic stress disorder, and borderline personality disorder, were not assessed in the present study. Third, the social context of child marriage was not assessed. In particular, potential pressures exerted by family members, premarital pregnancy, or religious affiliation might affect the decision to marry before the age of 18 years and might be associated with future mental health outcomes.[13–15] Longitudinal data are needed to determine whether the association between child marriage and psychiatric disorders observed in this study is modified by these factors.

Within the context of these limitations, this is the first national study to report

on the prevalence and psychiatric correlates of child marriage. We found that mental disorders are common among child-married women and that child marriage is associated with high rates of lifetime and current psychiatric disorders, as well as elevated use of mental health services. With controlling for sociodemographic characteristics, child marriage was significantly associated with all lifetime mental disorders except pathological gambling and histrionic and dependent personality disorders. This association was significant for all past-year mental disorders except alcohol abuse, drug use disorders, pathological gambling, bipolar disorder, and psychotic disorder. The strength of the association of child marriage with these disorders was within the same range as that of other disorders, although nonsignifi-

TABLE 3 Twelve-Month Prevalence and ORs of Axis I Psychiatric Disorders, According to Age at Marriage, Among Ever-Married Women in the NESARC

	Proportion, Estimate ± SE, %		OR (95% CI)	Adjusted OR (95% CI)[a]
	Child Marriage (N = 2181)	Adult Marriage (N = 16 464)		
Any psychiatric disorder	35.50 ± 1.42	27.65 ± 0.71	1.44 (1.27–1.63)	1.51 (1.33–1.73)
Any substance use disorder	20.55 ± 1.16	12.71 ± 0.48	1.78 (1.53–2.07)	1.91 (1.61–2.25)
Nicotine dependence	18.62 ± 1.14	10.16 ± 0.40	2.02 (1.73–2.36)	2.02 (1.70–2.41)
Any alcohol use disorder	4.16 ± 0.54	3.40 ± 0.23	1.24 (0.93–1.65)	1.64 (1.21–2.20)
Alcohol abuse	1.96 ± 0.36	1.93 ± 0.16	1.01 (0.68–1.52)	1.39 (0.92–2.11)
Alcohol dependence	2.21 ± 0.42	1.47 ± 0.13	1.52 (1.01–2.28)	1.89 (1.25–2.85)
Any drug use disorder	1.01 ± 0.28	0.72 ± 0.09	1.40 (0.75–2.59)	1.62 (0.82–3.18)
Drug abuse	0.70 ± 0.24	0.50 ± 0.07	1.39 (0.66–2.95)	1.66 (0.71–3.84)
Drug dependence	0.39 ± 0.16	0.26 ± 0.04	1.51 (0.62–3.67)	1.53 (0.60–3.93)
Pathological gambling	0.16 ± 0.09	0.09 ± 0.03	1.73 (0.48–6.27)	1.48 (0.41–5.36)
Any mood disorder	13.73 ± 0.89	9.95 ± 0.35	1.44 (1.24–1.68)	1.40 (1.19–1.66)
Major depressive disorder	11.61 ± 0.81	8.16 ± 0.32	1.48 (1.25–1.74)	1.44 (1.20–1.72)
Dysthymia	5.08 ± 0.57	2.08 ± 0.16	2.52 (1.96–3.25)	2.20 (1.67–2.91)
Bipolar disorder	2.95 ± 0.44	2.35 ± 0.15	1.27 (0.92–1.74)	1.24 (0.89–1.73)
Any anxiety disorder	18.17 ± 1.15	13.75 ± 0.48	1.39 (1.19–1.63)	1.42 (1.21–1.66)
Panic disorder	5.26 ± 0.62	2.57 ± 0.16	2.10 (1.59–2.78)	2.12 (1.55–2.90)
Social anxiety disorder	4.63 ± 0.64	3.13 ± 0.19	1.50 (1.12–2.02)	1.43 (1.06–1.94)
Specific phobia	11.88 ± 0.95	9.28 ± 0.38	1.32 (1.09–1.59)	1.35 (1.11–1.65)
Generalized anxiety disorder	4.59 ± 0.60	2.58 ± 0.17	1.81 (1.34–2.44)	1.74 (1.24–2.44)
Psychotic disorder	0.81 ± 0.29	0.28 ± 0.05	2.88 (1.32–6.26)	2.10 (0.88–5.05)

[a] ORs were adjusted for age, race/ethnicity, education, income, region, and urbanicity.

TABLE 4 Treatment Correlates According to Age at Marriage for Ever-Married Women With 12-Month and Lifetime Psychiatric Disorders in the NESARC

	Proportion, Estimate ± SE, %		OR (95% CI)	Adjusted OR (95% CI)[a]
	Child Marriage	Adult Marriage		
Past-year mental health treatment				
For any disorder[b]	23.18 ± 1.99	18.27 ± 0.73	1.35 (1.06–1.72)	1.23 (0.94–1.61)
For mood disorder[c]	35.71 ± 3.44	32.26 ± 1.44	1.17 (0.85–1.61)	1.19 (0.84–1.69)
For anxiety disorder[d]	20.19 ± 2.84	13.53 ± 0.89	1.62 (1.10–2.38)	1.32 (0.84–2.06)
For alcohol or drug disorder[e]	11.77 ± 4.38	8.92 ± 1.35	1.36 (0.55–3.39)	1.32 (0.45–3.87)
Lifetime mental health treatment				
For any disorder[f]	49.93 ± 1.97	43.70 ± 0.69	1.28 (1.09–1.52)	1.24 (1.40–1.48)
For mood disorder[g]	66.49 ± 2.50	67.00 ± 0.99	0.98 (0.77–1.24)	1.06 (0.83–1.34)
For anxiety disorder[h]	45.58 ± 2.61	36.72 ± 0.96	1.44 (1.14–1.82)	1.43 (1.12–1.84)
For alcohol or drug disorder[i]	21.12 ± 2.22	12.36 ± 0.71	1.90 (1.41–2.56)	1.44 (1.02–2.02)

[a] ORs were adjusted for age, race/ethnicity, education, income, region, and urbanicity.
[b] Among those with a past-year diagnosis of alcohol use disorder, drug use disorder, any mood disorder, or any anxiety disorder.
[c] Among those with a past-year diagnosis of major depressive disorder, dysthymia, or bipolar disorder.
[d] Among those with a past-year diagnosis of panic disorder, social anxiety disorder, specific phobia, or generalized anxiety disorder.
[e] Among those with a past-year diagnosis of alcohol or drug abuse or dependence.
[f] Among those with a lifetime diagnosis of alcohol use disorder, drug use disorder, any mood disorder, or any anxiety disorder.
[g] Among those with a lifetime diagnosis of major depressive disorder, dysthymia, or bipolar disorder.
[h] Among those with a lifetime diagnosis of panic disorder, social anxiety disorder, specific phobia, or generalized anxiety disorder.
[i] Among those with a lifetime diagnosis of alcohol or drug abuse or dependence.

cant (ORs ranging from 1.24 to 2.10). Given the relatively low prevalence of these disorders, this lack of significant association may be attributable, at least in part, to low statistical power, rather than to a specific effect of child marriage on certain mental disorders.

The reported prevalence of child marriage is consistent with another re-search study conducted in the United States during the same period (2001–2002).[3] More than 5% of ever-married women were married before the age of 18 years, of whom 1 in 9 were married at the age of 14 years. This finding con-firms that the prevalence of child mar-riage is lower in the United States than in low- or middle-income countries,

where the prevalence of child mar-riage is estimated to be 40% to 50%.[8,9] For the subgroup of women married as children, however, the proportions of pubescent girls married are very similar for the United States and India. This confirms that child marriage con-cerns not only adolescents 16 to 17 years of age but also a significant num-

ber of children aged 15 years or younger in both countries.

Consistent with previous research, rates of divorce are particularly high for child marriages.[16] Furthermore, child marriage is associated with lower educational level attainment.[17] It also is associated with black and American Indian/Alaska Native ethnicities, which suggests a racial/cultural dimension. It is more prevalent in southern parts of the United States, which may reflect local legislation authorizing marriages as early as 14 years of age in Texas and 15 years of age in Mississippi and Georgia, under certain conditions.[18–21] The lower rate of child marriage in the younger age group suggests that a decrease in child marriage rates in the United States has occurred, although the absence of longitudinal data precludes any definitive conclusion.

CONCLUSIONS

Despite its limitations, our study is the first step toward improving our understanding of the impact of child marriage on mental health. We found high rates of a broad range of psychiatric disorders in a large, nationally representative sample of the general population. Given the pervasiveness of child marriage, its effects on mental health, and the large needs for treatment associated with this condition, the results of this study suggest that support for psychiatric vulnerabilities of women married as children is required.

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