

# Assessing Sex Differences in Vulnerability Among Employed Parents: The Importance of Marital Status\*

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*Despite earlier claims that women are generally more vulnerable than men to stressors, recent research on mental health indicates that sex differences in vulnerability are highly specific and depend on the type of stressor and disorder considered. My paper extends previous work on this topic by suggesting that gender variation in stress-reactivity is also contingent upon people's marital status. To illustrate the importance of marital status for differential vulnerability, my study assesses sex differences in the impact of work and family role strains on depression and alcohol use-abuse among married and unmarried employed parents who participated in the second wave of the National Survey of Households and Families (N = 2937). My analyses indicate that mothers generally are not more vulnerable than fathers, but that sex differences in parents' response to stress depend on the type of stressor and disorder involved. My analyses also reveal significant marital status contingencies in the effects of stress on mothers' compared to fathers' symptoms of distress. Finally, although married and unmarried mothers do not differ in their response to work or family stress, my analyses show that parental strain is more harmful to unmarried than married fathers. Overall, my research identifies an important, though previously overlooked, factor influencing sex differences in vulnerability and further specifies the types of stressors which are etiologically important for married and unmarried mothers and fathers. I interpret findings from the contextual approach to differential vulnerability, arguing that the circumstances in which stressors occur influence their meaning, emotional significance, and psychological impact.*

Although some earlier work suggests that women generally are more vulnerable than men to stressors, recent research on mental health indicates that sex differences in stress-

reactivity are highly specific and depend on the type of stressor and disorder involved. My paper attempts to extend work on this topic by assessing the extent to which sex differences in vulnerability to role-related (i.e., work and family) stress are also contingent upon people's marital status.

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## BACKGROUND

A considerable body of previous research has documented and sought to explain sex differences in psychological disturbance. Epidemiological studies of life-time and recent prevalence rates for mental disorders consistently demonstrate that women have higher rates than men of nonspecific psychological distress such as depressive and anxiety disorder (e.g., Dohrenwend et al. 1980;

Meyers et al. 1984; Robins et al. 1984). Although epidemiological studies repeatedly show that men have higher rates than women of antisocial personality and substance abuse-dependence disorders, most empirical work on sex differences in mental illness is based on the types of disorders that are more common among women (for a critical review of research on sex differences in mental health, see Aneshensel, Rutter, and Lachenbruch 1991; Dohrenwend and Dohrenwend 1976; Lennon 1987).<sup>1</sup>

To account for observed sex differences in depression, anxiety, and distress, scholars have focused on the "exposure hypothesis" which argues that women are more exposed than men to stressors. Scholars obtain support for this hypothesis when gender differences in distress are reduced to nonsignificance after stress exposure is held constant. Explanations of sex differences in stress-exposure emphasize differences in the inherent stressfulness of men's and women's social roles as well as the difficulties of combining work and family role obligations for women. Until recently, scholars attributed employed mothers' greater exposure to stress to structural factors which stem from gender stratification in the family and workplace (Aneshensel and Pearlin 1987; Gove and Tudor 1973; Lennon 1987; Ross and Mirowsky 1988).

The inability of the exposure hypothesis to fully account for the gender gap in nonspecific psychological distress as well as affective and anxiety disorders has led scholars to focus on the "vulnerability hypothesis," arguing that women are more vulnerable, or susceptible, than men to stressors. Support for this hypothesis typically involves the presence of significant sex-by-stressor interaction terms regressed on symptoms of distress. Explanations of sex differences in stress-reactivity emphasize differences between males' and females' socialization, resulting in (1) women's predisposition to empathize with (and internalize) other people's problems (Belle 1982; Kessler and McLeod 1984) and (2) their lack of efficacious coping and social support resources (Pearlin and Schooler 1978; Radloff 1975).<sup>2</sup> While suggestive, these empirical findings on sex differences in vulnerability are equivocal and do not support earlier claims that, in general, women are more reactive than men to stressors.

For instance, while some studies show that

network events (i.e., undesirable events that occur to members of one's social network) have a more depressive effect on women (Kessler and McLeod 1984), others find that self events (i.e., undesirable events that occur to oneself)—particularly financial losses—have a greater impact on men (Kessler and McLeod 1984; Thoits 1987; Turner and Avison 1989). Moreover, research examining on-going (rather than eventful) stressors finds that marital strain is more depressing for women but that occupational strain is more depressing for men (Pearlin 1975; Pearlin and Lieberman 1979).<sup>3</sup> Furthermore, studies including a range of mental health outcomes indicate that sex differences in stress-reactivity are disorder specific, further discrediting the notion that vulnerability is associated with females (Aneshensel et al. 1991; Lennon 1987). In a recent study which included affective or anxiety disorder, substance disorder, and any psychiatric disorder, Aneshensel et al. (1991) demonstrated that the effects of stress on men and women vary across different types of disorders. Stressful life events (including self and network events) were more strongly associated with psychological distress for women and substance abuse-dependence for men. These and other research findings have led to the conclusion that sex differences in vulnerability are affected by the *type* of stressor and mental health outcome considered and that gender variation in stress-reactivity is itself variable (Aneshensel 1992; Thoits 1987).

Interestingly, while these findings clearly refute the hypothesis that women are more vulnerable than men to stressors *in general*, they do suggest, at least on first glance, that sex differences in stress-reactivity closely correspond to the *roles* males and females typically assume in the family. For example, undesirable events and problems that occur to oneself—especially financial events and occupational strains—may have a greater impact on men's mental health than on women's because men's family roles typically involve responsibility for the financial well-being of family members (Pearlin 1975; Pearlin and Lieberman 1979). On the other hand, undesirable events and problems that involve other people may have a greater impact on women's mental health than on men's because women's family roles typically involve responsibility for interpersonal relationships as well as the emotional

and physical well-being of family members (Kessler and McLeod 1984; Turner and Avison 1989). Although it appears that men are more reactive to problems that have implications for the breadwinner role and women are more reactive to problems that have implications for nurturant roles and interpersonal relationships, the findings discussed above cannot and should not be generalized to all men and women because, on close inspection, they tend to be based on *married* people's depression. A very different pattern of sex differences in vulnerability may be evident when male and female types of disorders are considered as well as for *unmarried* men and women. In other words, sex differences in response to stress, particularly to *role-related* stress, may be contingent upon not only the type of stressor and mental health outcome involved but also on people's marital status and role configuration.

To date, surprisingly little research has examined marital status and role configuration contingencies with respect to sex differences in stress-reactivity. The limited evidence that exists suggests that role configuration is important, but this work has focused on employment rather than marital status and has been based largely on married people's symptoms of depression. For example, Turner and Avison (1989) found that sex differences in vulnerability to undesirable events that occur to oneself, one's spouse, and members of one's social network depend on employment, and that the tendency for men to be more depressed than women by self events is reversed when employed wives are compared to employed husbands. Relatedly, in a study which compared employed wives with homemakers, Kandel, Davies, and Raveis (1985) showed that marital problems have a greater impact on unemployed than employed women.<sup>4</sup> And Barnett (1994) found no sex differences in response to marital strains among dual-income couples. Although these authors did not examine marital status contingencies in the effects of stress on men's and women's depression, they did acknowledge that their results might differ for unmarried persons and for other psychological disorders. Indeed, in a study of life strains and depression among unmarried people, Newmann (1986) found no evidence of male vulnerability to strains that have implications for the breadwinner role or female vulnerability to strains that have impli-

cations for nurturant roles and interpersonal relationships.

Prior research demonstrates that marital status moderates the impact of stressors on symptoms (Kessler and Essex 1985; Pearlin and Johnson 1977). Marital status may also affect sex differences in stress-reactivity because it differentially influences the meaning and emotional significance of stressors in work and family role domains for men and women.

#### *The Meaning, Emotional Significance, and Psychological Impact of Role-Related Stressors*

Over the past two decades, stress and mental health scholars have recognized that the personal meaning of a role or stressor is pivotal for understanding its psychological impact. To assess meaning—and help account for differential vulnerability—researchers have focused on the social context surrounding stressors (e.g., Brown and Harris 1978); individuals' appraisals of situations (e.g., Lazarus and Folkman 1984; Riessman 1990); the identity relevance of problems (e.g., Thoits 1991, 1995); and people's values and beliefs (e.g., Pearlin 1989; Simon 1995). An approach to meaning of particular use for understanding gender variation in vulnerability is known as the "contextual approach" because it uses information about the individual's social circumstances to specify the meaning of an event or strain in terms of its stressfulness and emotional significance. For example, Brown and Harris (1978) assessed the meaning and severity of acute and chronic stressors by taking into account the person's biography, his or her future plans, and other circumstances surrounding the stressor. More recently, Wheaton (1990) assessed the meaning and impact of events by examining individuals' level of pre-existing stress in a role as part of their role-history. Overall, although scholars differ on which aspect of context is most consequential for mental health, contextual-based research finds that differences in response to stress are partially a function of differences in the meaning and emotional significance of stressors (see Simon 1997 for a critical review of theoretical approaches for assessing meaning in stress research).

An aspect of context which may shape the meaning, emotional significance, and psycho-

logical impact of role-related stressors for males and females is marital status. Family researchers have long recognized that men's and women's work and family roles are defined and organized on the basis of marital status. Studies document that in most American marriages today (including those in which the wife is employed outside the home), men continue to feel primarily responsible for providing financial support to spouse and children, whereas women continue to feel primarily responsible for maintaining interpersonal relationships and their spouse and children's emotional and physical well-being (Bernard 1981; Hochschild 1989; Simon 1995; Thompson and Walker 1989). Given the persistence of the traditional division of responsibility within marriage, it makes sense that stressors associated with the breadwinner role are appraised as more threatening by men than by women, whereas stressors associated with nurturant roles and interpersonal relationships are appraised as more threatening by women than by men. However, studies also document that in female-headed, single-parent families—the predominant type of single-parent family in the U.S. today (Garfinkel and McLanahan 1986)—there is little division of labor based on gender since women assume most, and men assume little, if any, responsibility for their children's emotional, physical, and financial well-being (Furstenberg 1988; Spain and Bianchi 1996; Weiss 1979). Among the unmarried, then, it is possible that stressors associated with the breadwinner role as well as those associated with nurturant roles are appraised as equally (or even more) threatening by women than by men; it is also possible that there are marital status differences in the impact of role-related stress among women and among men.

To the extent that the meaning and significance of stressors in work and family role domains differ for men and women with different marital statuses, it is reasonable to expect that: (1) financial and occupational problems are more damaging to married fathers' mental health compared to married mothers'; (2) problems with spouse and children and their emotional and physical well-being are more harmful for married mothers' mental health than for married fathers'; (3) financial problems, occupational problems, as well as parental problems are just as (if not more) distressing for unmarried mothers rela-

tive to unmarried fathers; and (4) men's and women's vulnerability is manifested in disorders typical for their gender. With this line of reasoning, we also could expect: (5) marital status differences in vulnerability to work and family role strains among mothers and among fathers. For example, strains that have implications for the breadwinner role may be more distressing for unmarried compared to married mothers, and conversely, less distressing for unmarried compared to married fathers. To date, research has neither examined sex differences in response to work and family role strains among married and unmarried parents based on male and female types of mental health problems nor considered marital status differences in the impact of work and family strains among women and among men. An examination of these issues is crucial, however, not only for theoretical development in this area but for substantive reasons since males and especially females currently spend a large proportion of their adult lives outside of marriage (Spain and Bianchi 1996).

My paper, therefore, extends work on this topic by assessing sex differences in the impact of work and family role strain on the mental health of married and unmarried employed parents. I first test the hypothesis that women are generally more vulnerable than men to stressors, as some scholars have claimed. Then, I evaluate the alternative hypothesis—that sex differences in vulnerability are contingent upon the type of stressor and mental health outcome considered as well as people's marital status. In addition to illustrating the importance of marital status for understanding sex differences in stress-reactivity, my findings contribute to research on the types of stressors which are etiologically important for married and unmarried parents and the sources of psychological disturbance for men and women with different role configurations. Better specification of the conditions affecting men's and women's distress and vulnerability should, in the future, suggest more effective strategies for intervention.

## DATA AND METHODS

### *Data*

To assess the potential importance of marital status for sex differences in vulnerability

among employed parents, this paper analyzes data from the second wave of the National Survey of Families and Households (NSFH), collected under the auspices of the Center for Demography and Ecology at the University of Wisconsin. The first wave of interviews (NSFH-1) were conducted in 1987-88 with individuals from 13,017 households in the United States. The survey involved face-to-face interviews with 9,643 individuals, aged 19 and over, selected to be representative of the U.S. population and an additional 3,374 individuals selected to overrepresent minorities (e.g., blacks, Hispanics, single-parents, step-parents, cohabitators, and recently married persons). The main sample was based on a national multistage area probability sample; the oversample was selected by doubling the probability of selection for the overrepresented groups. The response rate for the first wave of interviews was 74 percent. For a detailed description of the design and content of the NSFH-1, see Sweet, Bumpass, and Call (1988).

The second wave of interviews (NSFH-2) were conducted in 1993-94 with 10,005 respondents. Excluding respondents who had died ( $N = 763$ ), the response rate was 81 percent. Logistic regression analyses (not shown) indicate that a number of factors measured at Time 1 (T1) significantly predict attrition from the study by Time 2 (T2), including marital, employment, and parental status as well as gender, age, race, education, household income, and depression. People who were unmarried, unemployed, and did not have dependent children living home at T1 were more likely to leave the study as were males, older people, non-whites, persons with lower levels of education and higher levels of income and depression. Due to oversampling at T1, the sample at T2 still contains relatively high proportions of racial minorities and single-parents; however, the reader should keep in mind that the NSFH-2 probably underrepresents highly depressed individuals and, perhaps, unmarried fathers not living with children.

As noted earlier, research on gender and psychopathology has been criticized for restricting analyses to the types of disorders associated with females (e.g., depression) and excluding analyses of the types of disorders associated with males (e.g., substance abuse-dependence). Consequentially, previous stud-

ies may overestimate women's distress and vulnerability and underestimate men's (Aneshensel 1992; Dohrenwend and Dohrenwend 1976; Lennon 1987). My analyses are based on the NSFH-2 because this sample allows me to examine the effects of role-related stressors on male and female types of mental health problems. These data are also well suited for this research because they include a relatively high proportion of mothers and fathers in the labor force. Note that analyses focus on the second wave of data (rather than the panel data) because the purpose of this paper is to examine *marital status contingencies* in sex differences in stress-reactivity, not the impact of stressors on mental health over time. Although the cross-sectional data do not permit me to rule out reverse causation and social selection arguments, they do allow me to compare the psychological impact of work and family stress on the mental health of mothers and fathers with different marital statuses. I am currently conducting analyses on the panel data which investigate the extent to which change in men's and women's marital status from T1 to T2 results in change in their level of distress between these two time periods.<sup>5</sup>

My analyses are conducted on a subsample which includes married and unmarried parents who are employed 30 hours or more each week and who have at least one child 18 years or younger, resulting in a sample size of 2937. By restricting the analyses to these respondents, I can assess marital status variation in sex differences in stress-reactivity among people who otherwise have the same role-configuration (i.e., parent of minor children and full-time worker). Note that in this and other studies (e.g., Menaghan 1989; Thoits 1986), role configuration refers to the social statuses individuals hold, not the role obligations that are attached to their various social positions. In fact, a central assumption underlying my research is that men and women who have similar role configurations nevertheless have dissimilar role expectations. My analysis sample consists of 70 percent married and 30 percent unmarried parents (reflecting the exit of unmarried parents from the NSFH-2). The unmarried sample includes 56 percent divorced, 5 percent widowed, 23 percent never married, and (though still legally married) 16 percent separated parents, respectively.<sup>6</sup>

Refer to my Appendix for respondent char-

acteristics by marital status and gender. Married and unmarried respondents differ in a number of ways. There is more racial diversity among the unmarried respondents. Compared to married parents, unmarried parents have lower levels of education and household income and are less likely to be living with their dependent children. Within each marital status subgroup, males and females do not appreciably differ. Married mothers and fathers differ somewhat in age and education: husbands are slightly older and have higher levels of education than wives. Unmarried mothers and fathers differ most in household income and the presence of dependent children in the household: unmarried mothers have lower household incomes and are more likely to be living with their children than unmarried fathers.

### Measures

*Psychological Disturbance.* Since previous research indicates that men and women react to stress with sex-typical disorders, measures of depression and alcohol use-abuse are the two outcome variables examined in analyses. The NSFH-2 includes 12 items from the Center for Epidemiological Studies Depression (CES-D) Scale and two different measures of alcohol use-abuse. The CES-D has high reliability and validity and is widely accepted among epidemiologists as a measure of psychological distress in general populations (Radloff 1977). Respondents were asked how many days in the past week: (1) "You were bothered by things that usually don't bother you?"; (2) "You felt lonely?"; (3) "You felt that you could not shake off the blues, even with help from your family or friends?"; (4) "Your sleep was restless?"; (5) "You felt depressed?"; (6) "You felt that everything you did was an effort?"; (7) "You felt fearful?"; (8) "You had trouble keeping your mind on what you were doing?"; (9) "You talked less than usual?"; (10) "You did not feel like eating, your appetite was poor?"; (11) "You felt sad?"; and (12) "You could not get going?" Item responses (0 to 7 days) were summed; scores on this measure of depression ranged from 0-81 ( $\alpha = .92$ ).

*Alcohol use-abuse.* Alcohol use-abuse is typically measured by considering both the frequency of drinking and the amount of alco-

hol consumed (Berkman and Breslow 1983). Therefore, I computed a measure of alcohol consumption by multiplying the number of days in the past month in which the respondent had had a drink by the number of drinks the respondent reported having on those days. Scores on this measure ranged from 0 to 360. However, because longitudinal health and mortality data indicate that moderate drinking is associated with positive health outcomes (Berkman and Breslow 1983; Umberson et al. 1996), I examine a second measure of alcohol use-abuse based on a question which asked respondents the number of days in the previous month they had had five or more drinks. This measure avoids some problems with using total alcohol consumption as a measure of distress by distinguishing heavy drinkers from moderate and non-drinkers: scores on this measure range from 0 to 30 days. Since results for both measures are almost identical, I report only those for heavy drinking.

*Role Strains.* As mentioned earlier, previous research indicates that sex differences in stress-reactivity depend on not only the type of disorder considered but also the type of stressor involved. In my study, I investigate four measures of role strains which include two types of strain that have implications for the breadwinner role and two types of strain that have implications for nurturant roles and interpersonal relationships. I include on-going strains in analyses, rather than life events, because studies show that chronic stressors are more consequential for mental health than are eventful stressors (Pearlin 1989; Turner and Avison 1989). I coded the strain measures so that high values indicate high levels of strain.

*Financial Strain.* I measured financial strain as a dichotomous variable in which respondents reported whether they owe money for bills for more than two months (yes = 1).

*Work Strain.* I measured work strain as a continuous variable in which respondents reported how satisfied they are with their current job. Scores on this measure ranged from one (very satisfied) to seven (not at all satisfied).

*Parental Strain.* I computed an index of parent strain by summing responses to the following two questions: "Would you describe any of your children as difficult to raise?"; and "Have any of your children ever seen a doctor or therapist about any emotional or behavioral problems?" Scores on this index ranged from

zero (0) = children have no problems, one (1) = children are either difficult or have emotional or behavioral problems, and two (2) = children are difficult and have emotional or behavioral problems ( $\alpha = .53$ ).

**Marital Strain.** I constructed a measure of marital strain by summing seven items in which respondents reported: "How often in the last year did you have an open disagreement with your spouse about household tasks; money; spending time together; in-laws; children; and having a baby?" (never = 1 to almost daily = 6); as well as "How happy are you with your marriage?" (very happy = 1 to very unhappy = 6). Scores on this measure ranged from 6–43 ( $\alpha = .76$ ).

**Control and Moderating Variables.** To control for other sources of variation that may be implicated in sex differences in stress-reactivity, I included in analyses sociodemographic variables such as respondents' age, race, education, household income, and whether they reside with their minor children. Age was measured in years; race was measured as a dichotomous variable (nonwhite = 1); education and family income were measured as continuous variables; and whether the respondent resides with his or her children was measured as a dichotomous variable (respondent lives with children = 1). Finally, gender and marital status, the moderating variables in this research, were measured as dichotomous variables (female = 1; unmarried = 1).

While the NSFH-2 provides an opportunity to assess marital status contingencies with respect to sex differences in stress-reactivity in

a national sample of employed parents, there are two limitations. First, because respondents were asked about their perceived job dissatisfaction (rather than the concrete problems they face in their jobs), results for work strain should be cautiously interpreted. Second, because the NSFH-2 does not include measures of respondents' appraisals of the strains they experience in role domains, the meaning and significance of stressors is an unobserved variable in this study. However, based on prior research (Kandel et al. 1985; Kessler and McLeod 1984; Pearlin 1975; Simon 1995; Turner and Avison 1989), it is reasonable to expect that the meaning and emotional significance of stressors in work and family role domains covary with gender among the married and may covary with gender among the unmarried.

## RESULTS

### *Associations Between Symptoms, Role Strains, and Sex*

To get an initial idea of sex differences in psychological disturbance and stress exposure among employed parents, it is useful to examine correlations of sex with symptoms and role strains. Table 1 shows these associations for the pooled sample (i.e., for married and unmarried parents together) as well as separately for each marital status subgroup. For greater detail, Table 1 further subdivides the unmarried into the formerly married and the

**TABLE 1. Correlations of Sex (Female = 1) with Symptoms and Role Strains in Pooled, Married, and Unmarried Samples**

	CES-D	Heavy Drinking	Financial Strain	Work Strain	Parental Strain	Marital Strain	Number
<i>Samples</i>							
Pooled	.168**	-.157**	.056**	.016	.080**	—	2937
Married	.141**	-.146**	.032	-.016	.024	-.004	2045
Unmarried	.089**	-.221**	.061	.062	.153**	—	892
<i>Unmarried Sample</i>							
Formerly Married	.085*	-.201**	.036	.067	.158**	—	690
Never Married	.102	-.359**	.155*	.041	.137	—	202
<i>For Pooled Sample</i>							
Column Mean	13.440	.801	.142	2.766	.327	14.973	
Standard Deviation	14.488	2.674	.349	1.507	.608	5.119	
Number <sup>a</sup>	2813	2825	2889	2868	2936	1782	

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

<sup>a</sup> Column numbers vary due to missing values on some variables.

never married. Means and standard deviations for each mental health and role strain variable are also shown for the pooled sample at the bottom of Table 1. Two patterns of findings are evident in this table.

First, consistent with epidemiological research which has examined male and female types of disorders (e.g., Robins et al. 1984; Meyers et al. 1984), mothers' and fathers' emotional disturbance is manifested as sex-typical disorders. Within the pooled sample as well as within each marital status subsample, mothers report higher CES-D scores than fathers, but fathers report more heavy drinking than mothers. With the exception of depression among the never married, gender differences in symptoms are statistically significant.

Second, in addition to confirming previous work which shows that men and women exhibit different types of disorders, the first row of Table 1 indicates that women report more financial and parental strain than fathers. However, an examination of the two main marital status subgroups reveals that sex differences in stress exposure are limited to unmarried parents. That is, while unmarried mothers report significantly more parental strain than unmarried fathers, married mothers and fathers do not significantly differ in their exposure to stressors. Moreover, the bottom portion of Table 1 shows that women's greater exposure to financial strains is limited to never married parents. Taken together, these results indicate that in this national sample of employed parents, mother's and father's emotional problems are manifested as different disorders and that gender differences in exposure to work and family stress depend on marital status.

### *Sex Differences in Vulnerability*

As discussed earlier, although some scholars have argued that women are generally more vulnerable than men to stressors, recent research indicates that sex differences in stress-reactivity are highly specific and depend on the type of stressor and disorder involved. If, in general, women are more vulnerable than men to stressors, mothers should display higher distress than fathers in reaction to each type of stressor. However, if sex differences in vulnerability are contingent upon the type of stressor and disorder considered,

mothers and fathers should exhibit higher distress in reaction to different types of stressors—and their distress should be particularly evident for disorders that are typical of their gender. The next analyses examine these different possibilities.

To assess sex differences in vulnerability, I computed interaction terms by multiplying each strain variable by sex. A positive vulnerability coefficient (e.g., sex multiplied by financial strain) would indicate that financial strain is more distressing for mothers than for fathers; a negative coefficient would indicate that fathers are more distressed by financial strain than mothers. Results of these analyses for the pooled sample are shown in Table 2. Note that coefficients from the main effects model (i.e., the exposure model) are shown under Model 1 and coefficients from the model which includes vulnerability terms (i.e., the vulnerability model) are shown under Model 2. In Model 2, the interaction terms were added to Model 1 equations which regressed CES-D and heavy drinking on gender, background variables (including the presence of minor children at home), marital status, and three of the four role strain measures. Because my analyses are conducted on the pooled sample, marital strain and interactions between gender and marital strain are not included in Table 2. Three findings appear in this table.<sup>7</sup>

First, consistent with previous research, stressors have a positive effect on symptoms. However, Model 1 equations indicate that while all three strain variables significantly affect depression, only financial strain significantly affects alcohol consumption.<sup>8</sup> Moreover, model 1 shows that unmarried parents have significantly higher levels of depression (but do not consume significantly more alcohol) than married parents. Further, analyses (not shown) reveal that there are no significant gender differences in the relationship between marital status and CES-D or heavy drinking and that having children at home significantly reduces alcohol use-abuse.

Second, exposure to stressors does not account for mothers' higher levels of depression or fathers' greater alcohol consumption. Gender coefficients for CES-D and heavy drinking remain significant with the inclusion of the stress variables.<sup>9</sup>

Third, in contrast to earlier claims that women are generally more vulnerable than

TABLE 2. Unstandardized Regression Coefficients for the Pooled Sample: Symptoms on Gender and Stressors <sup>a, b</sup>

Independent Variables	Model 1	Model 2	Model 3	Model 4
	CES-D	CES-D	Heavy Drinking	Heavy Drinking
Sex (Female=1)	3.112*** (.565)	4.029*** (1.149)	-.864*** (.106)	-.560** (.215)
Marital Status (Unmarried=1)	3.653*** (.682)	3.562*** (.684)	.154 (.128)	.180 (.128)
Financial Strain	2.394** (.762)	.888 (1.167)	.292* (.033)	.649*** (.218)
Work Strain	1.792*** (.175)	2.162*** (.265)	.009 (.033)	.039 (.050)
Parental Strain	2.504*** (.432)	1.620** (.655)	.104 (.081)	.214 (.123)
Sex × Financial Strain	—	2.618 (1.535)	—	-.634* (.287)
Sex × Work Strain	—	.642 (.353)	—	-.057 (.066)
Sex × Parental Strain	—	1.601 (.870)	—	-.201 (.163)
R <sup>2</sup>	.132	.136	.070	.070
N	2490	2490	2490	2490

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

<sup>a</sup> Unstandardized regression coefficients are reported. Standard errors are in parentheses. R<sup>2</sup> is for the total equation.

<sup>b</sup> Each equation controls for respondents' age, race, education, household income, and whether they reside with their children.

men, results of Model 2 equations support recent findings which show that sex differences in stress-reactivity are highly specific and depend on the type of stressor and disorder considered. The only significant interaction term in Table 2, which is for financial strain on heavy drinking, indicates that fathers are more vulnerable than mothers. In short, consistent with recent work that examines different types of stressors and disorders (Aneshensel et al. 1991; Lennon 1987), there is no evidence of a generalized female vulnerability. If anything, when male and female types of disorders are considered in a sample which includes married and unmarried employed parents, fathers appear to be more vulnerable than mothers—at least to certain types of stress.

#### *Marital Status Contingencies in Sex Differences Vulnerability*

Having confirmed recent research which finds that sex differences in vulnerability are highly specific and depend on the type of stressor and disorder involved, I return to the central issue posed by this research: whether gender

variation in stress-reactivity also depends on people's marital status. To assess marital status contingencies in the impact of work and family stress on the mental health of mothers compared to fathers, my next set of analyses examine sex differences in stress-responsivity, first among the married and then among the unmarried. If sex differences in response to stress are not contingent upon marital status, a similar pattern of vulnerability to stressors in work and family role domains would be evident for married and unmarried parents. However, if sex differences in stress-reactivity depend, at least in part, on marital status, a different pattern of vulnerability to work and family strains would be evident for married and unmarried parents. The next set of analyses examine these two possibilities by disaggregating the sample into the two marital status subgroups.

Note that the equations presented separately for married and unmarried parents in Table 3 are identical to those shown under Model 2 for the pooled sample in Table 2, except that they do not control for marital status. The first set of equations for married parents in Table 3 (equations 1 and 2), which include interactions between sex and marital strain, also control for the main effects of marital strain. However, in

**TABLE 3. Sex Differences in Stress-Reactivity Among Married and Unmarried Parents <sup>a,b</sup>**

Equations	(1)	(2)	(3)	(4)	(5)	(6)
	Married	Married	Married	Married	Unmarried	Unmarried
Independent Variables	CES-D	Heavy Drinking	CES-D	Heavy Drinking	CES-D	Heavy Drinking
Sex × Financial Strain	2.246 (1.642)	-.783* (.346)	2.587 (1.656)	-.743* (.350)	5.729 (4.454)	-.156 (.628)
Sex × Work Strain	-.626 (.385)	-.036 (.088)	-.477 (.380)	-.031 (.080)	-1.187 (1.048)	-.250 (.148)
Sex × Parental Strain	2.155* (.940)	-.145 (.215)	2.128* (.947)	-.065 (.200)	-1.931 (2.521)	-.853* (.356)
Sex × Marital Strain	.345** (.112)	.023 (.026)	_____	_____	_____	_____
R <sup>2</sup>	.200	.064	.105	.060	.101	.122
N	1658	1658	1867	1867	623	623

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

<sup>a</sup> Unstandardized regression coefficients are reported. Standard errors are shown in parentheses. R<sup>2</sup> is for the total equation.

<sup>b</sup> Each equation controls for respondents' sex, age, race, education, household income, and whether they reside with their children as well as financial strain, work strain, and parental strain. Equations for married parents also control for marital strains.

order to compare sex-by-stressor interaction terms across marital status subgroups, the second set of equations in Table 3 for married parents (equations 3 and 4) exclude marital strain and interactions between sex and marital strain. For simplicity in presentation, only the vulnerability coefficients are reported. Overall, when each type of stressor is examined for each type of disorder in each marital status subsample, sex differences in vulnerability that appear in Table 3 are consistent with my expectations for married parents but differ from my expectations for unmarried parents.

For example, consistent with prior work on sex differences in vulnerability based on married persons' depression (e.g., Kessler and McLeod 1984; Pearlin 1975; Turner and Avison 1989), married mothers are more reactive than married fathers to stressors that have implications for nurturant roles and interpersonal relationships. Equation one of Table 3 shows that the impact of both parental strain and marital strain on CES-D is significantly greater for married mothers than for married fathers. However, turning to alcohol use-abuse, married fathers clearly are more reactive than married mothers to stressors that have implications for the breadwinner role domain. Equation two of Table 3 shows that the impact of financial strain on heavy drinking is significantly greater for married fathers than for married mothers. Moreover, equations three and four reveal that these sex differences

in vulnerability among the married hold when marital strain and interactions between sex and marital strain are not included.

In short, my analyses of this national sample of employed married parents indicate that role strain is damaging to wives and husbands, but their vulnerability is limited to certain types of stressors and manifested as sex-typical disorders. Women's vulnerability is expressed as depression, whereas men's vulnerability is manifested as alcohol use-abuse. These findings suggest that by focusing on depression, prior research on sex differences in stress-reactivity among the married (e.g., Kessler and McLeod 1984; Pearlin 1975; Turner and Avison 1989) may have underestimated husbands' vulnerability. However, because financial, parental, and marital strain differentially affect husbands and wives even when male and female disorders are considered, these findings also suggest the meaning and significance of stressors that have implications for breadwinner and nurturant roles may differ for married women and men.

Is this pattern of sex differences in vulnerability among the married also evident among the unmarried? In other words, is parental strain more harmful for unmarried mothers than for unmarried fathers, and is financial strain more damaging to unmarried fathers than to unmarried mothers? Or, as hypothesized earlier, are unmarried mothers just as, if not more, vulnerable than unmarried fathers to

stressors that have implications for breadwinner and nurturant role domains? By shifting our attention to the unmarried subsample, these questions can be answered.

As expected, the pattern of sex differences in vulnerability that was evident for married parents does not generalize to unmarried parents—providing support for the central hypothesis of this paper that sex differences in stress-reactivity depend on people's marital status. However, although I expected that unmarried mothers would be just as, if not more, vulnerable than unmarried fathers to stressors that have implications for both breadwinner and nurturant role domains, it appears that unmarried fathers are actually more vulnerable than unmarried mothers to certain types of role strain. While there are no significant sex differences in the impact of work or family strain on depression in equation five of Table 4, the gender interaction term for parental strain is both significant and negative for alcohol use-abuse in equation six.

Thus, my analyses of this national sample of employed unmarried parents indicate that when male and female types of disorders are both considered, parental strain is more damaging to unmarried fathers than to unmarried mothers—suggesting the meaning and emotional significance of this stressor differ for unmarried women and men. Here again, by focusing on depression previous studies on sex differences in vulnerability among the unmarried (e.g., Newmann 1986; Pearlin and Johnson 1977) may have underestimated men's reactions to these (and perhaps other)

types of stress. In addition to identifying the types of stressors that are particularly problematic and etiologically important for married and unmarried mothers and fathers, these findings illustrate that marital status is an additional source of variation of sex differences in stress-reactivity.

In order to assess whether these marital status differences in the impact of stress on mothers compared to fathers are themselves statistically significant, I conducted difference-of-slope tests using the sex-by-stressor regression coefficients for each marital status subgroup in Table 3 (Kmenta 1971). This test (comparable to testing for significant triple interactions between sex, marital status, and each of the three role strain variables) indicates that marital status contingencies in the impact of stress on mothers' compared to fathers' distress are significant for parental strain but not significant for financial strain.<sup>10</sup>

As a final step in my analysis, I assessed marital status differences in stress-reactivity among mothers and among fathers by conducting separate analyses on men and women. This time, I computed interaction terms by multiplying each role strain variable by marital status and estimated them for mothers and for fathers. In these analyses, a positive vulnerability coefficient indicates unmarried parents are more reactive to stressors than married parents, whereas a negative vulnerability coefficient indicates married parents are more reactive than unmarried parents. Results of these within gender analyses are shown in Table 4. Again, for simplicity in presentation,

**TABLE 4. Marital Status Differences (Unmarried = 1) in Stress-Reactivity Among Mothers and Fathers<sup>a, b</sup>**

Independent Variables	Mothers	Mothers	Fathers	Fathers
	CES-D	Heavy Drinking	CES-D	Heavy Drinking
Marital Status × Financial Strain	.116 (2.288)	.060 (.250)	-2.012 (2.919)	-.436 (.813)
Marital Status × Work Strain	-.239 (.530)	.029 (.058)	.285 (.686)	.251 (.191)
Marital Status × Parental Strain	-.038 (1.294)	.012 (.141)	3.492* (1.664)	.730 (.463)
R <sup>2</sup>	.107	.018	.123	.070
N	1279	1279	1211	1211

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

<sup>a</sup> Unstandardized regression coefficients are reported. Standard errors are shown in parentheses. R<sup>2</sup> is for the total equation.

<sup>b</sup> Each equation controls for respondents' marital status, age, race, education, household income, and whether they reside with their children as well as financial strain, work strain, and parental strain.

I report only the vulnerability terms. Two findings are noteworthy.

First, Table 4 shows that there are no significant marital status differences in stress-reactivity among mothers. That is, in contrast to my expectations, unmarried mothers are not more vulnerable than married mothers to stressors that have implications for either breadwinner or nurturant role domains. Second, while married and unmarried employed mothers do not significantly differ in their response to stress, Table 4 shows that there are significant marital status differences in stress-reactivity among men. However, although I expected unmarried fathers to be less vulnerable than married fathers—especially to stressors that have implications for the breadwinner role domain—it appears as though unmarried fathers are more vulnerable than married fathers to stressors that have implications for nurturant roles. In other words, parental strain is significantly more distressing (and in this case, more depressing) for unmarried than for married fathers. Again, I conducted a difference-of-slope test using the coefficients from the equations for mothers and for fathers. This test indicates that marital status is significantly more important for understanding the impact of parental strain on men's than on women's depression.

## CONCLUSIONS AND DISCUSSION

Despite earlier claims that women are generally more vulnerable than men to stressors, recent research indicates that sex differences in vulnerability are highly specific and depend on the type of stressor and disorder involved. My paper extends work on this topic by suggesting that gender variation in stress-reactivity also depends on marital status. I argue that marital status is an important aspect of the context surrounding stressors which differentially influence their meaning and emotional significance. To the extent that men's and women's work and family roles are defined on the basis of marital status, I expect that stressors which have implications for breadwinner and nurturant roles would have different effects on the mental health of married compared to unmarried men and women.

To illustrate the importance of marital status for gender variation in stress-reactivity, I assessed sex differences in the impact of work

and family strains on depression and alcohol use-abuse among married and unmarried employed parents who participated in the second wave of the National Survey of Families and Households (NSFH). Consistent with epidemiological studies, these men and women manifested distress as sex-typical disorders. Irrespective of marital status, mothers exhibited significantly more depression than fathers, but fathers consumed significantly more alcohol than mothers. My analyses also indicated that gender differences in stress exposure depend on marital status and do not account for gender differences in CES-D or in heavy drinking.

Moreover, my regression analyses confirmed recent research by showing that gender variation in vulnerability was highly specific and depended on the type of stressor and disorder involved. In fact, when male and female types of disorders were investigated in a sample which included married and unmarried employed parents, fathers were found to be more vulnerable than mothers to certain types of role strain. My subsequent analyses on samples which were disaggregated into two main marital status subgroups further revealed that gender variation in stress-reactivity was also contingent upon individuals' marital status—providing support for the paper's central hypothesis; the pattern of sex differences in vulnerability that was evident among married parents was not evident among unmarried parents.

Consistent with my expectations based on previous research on depression among married people, wives were significantly more depressed than husbands by parental and marital strains, stressors that have implications for nurturant roles and interpersonal relationships. However, husbands consumed significantly more alcohol than wives in response to financial strain, a stressor that has clear implications for the breadwinner role. To the extent that husbands and wives responded to stress with mental health problems that are typical of their gender, I interpreted these findings as suggesting the meaning and emotional significance of stressors in work and family role domains differed for married women and men.

Furthermore, although I expected that stressors with implications for breadwinner and nurturant roles would be just as, if not more, damaging to unmarried mothers than to unmarried fathers, my analyses showed that

unmarried fathers drink more in response to parental strain than unmarried mothers. These results are puzzling and contradict an assumption underlying this research which is that individuals are vulnerable to stressors in role domains for which they feel responsible. While I can only speculate, it is possible that this unexpected finding is due partially to the characteristics of these unmarried fathers. Recall that the NSFH-2 may underrepresent unmarried fathers not living with their children (and, conversely, may overrepresent unmarried custodial fathers). In fact, even though the majority (63%) of the unmarried fathers in the study did not have children at home, one-third of them (37%) were living with at least one of their children. However, I hypothesized that unmarried fathers would be least reactive to stressors in work and family role domains because they tend to assume relatively little responsibility for their children. In order to rule out this possibility, all of my analyses were replicated on the T1 sample of employed parents. Interestingly, these supplemental analyses (not shown) produced virtually identical results. To further explore this idea, I also conducted additional analyses on a T2 subsample of unmarried parents that included custodial mothers and non-custodial fathers as well as a subsample that was restricted to unmarried custodial parents of both sexes. Consistent with my hypotheses, these analyses revealed that unmarried custodial mothers are more depressed by parental strain than unmarried noncustodial fathers, but that unmarried custodial mothers and fathers do not significantly differ in their response to role-related stress. Since my analyses are based on data from a single point in time, it is also possible that unmarried fathers' heavy drinking is a cause rather than a consequence of parental strain.

As a final step in my analysis, I examined marital status differences in the impact of work and family strains among mothers and among fathers by conducting separate analyses on males and females. These analyses indicated that the only significant marital status difference in vulnerability was among fathers. That is, although married and unmarried mothers did not significantly differ in their response to stress, unmarried fathers were more depressed by parental strain than married fathers. While these findings were in contrast to my expectations as well as Pearlin and

Johnson's (1977) research on life strains and depression, they were consistent with Hughes' (1989) study which showed that the strongest effects of parenthood on mental health are for unmarried men (see Gove 1972). To the extent that most unmarried fathers do not live with their children (and, in many cases, lose everyday contact with them), they may be more depressed than married fathers by their health and/or behavior problems because of feelings of guilt and/or their perceived inability to help them. Despite some discrepancies, my study is consistent with recent work that illustrates the importance for research on sex differences in vulnerability to include not only a range of stressors (Umberson, Wortman, and Kessler 1992), but also disorders that are prevalent among males and females (Riessman 1990). As others have argued (Aneshensel et al. 1991; Dohrenwend and Dohrenwend 1976; Lennon 1987), by focusing on depression earlier work may have inadvertently underestimated men's distress and vulnerability and overestimated women's.

Family scholars have long noted that men's and women's work and family roles are defined and organized on the basis of marital status (Bernard 1981; Hochschild 1989; Simon 1995; Thompson and Walker 1989). Earlier research on gender and mental health has tended to focus on sex differences in depression, anxiety, and distress among people with different marital statuses—consistently finding the largest gender gap to be among married persons (e.g., Gove and Tudor 1973; Thoits 1986). These findings led mental health scholars to conclude that marriage produces sex differences in emotional well-being and psychological disturbance through the social roles that are assigned to women and men. However, by focusing on the impact of marital status on sex differences in stress-reactivity (rather than on sex differences in distress), my findings suggest that through the gendered nature of family organization and responsibilities, marriage (and the lack thereof) produces gender based vulnerabilities to stressors in work and family role domains which usually (though not always) show up as male and female types of disorders.

In this paper, then, I argue and find that sex differences in vulnerability are contingent upon not only the type of stressor and disorder considered but also people's marital status. While the argument about the highly specific

nature of stress-reactivity has previously been made with respect to gender as well as social class (McLeod and Kessler 1990), this is the first time the argument has been extended to marital status differences in vulnerability. The next step for research is to assess the impact of both chronic and acute stressors on female and male types of disorders among individuals with a variety of different constellations of social statuses. By assessing sex differences in vulnerability to stressors in work and family role domains among married and unmarried employed parents, my research represents a first step in this direction.

## NOTES

1. While epidemiological studies document that males and females manifest psychological problems in sex-typical disorders, lifetime and recent prevalence rates for overall mental illness are comparable for men and women (Robins et al. 1984, Meyers et al. 1984). Two decades ago, Dohrenwend and Dohrenwend (1976) argued that the failure of research on sex differences in psychological disturbance to examine a range of disorders, including disorders that are more prevalent among men, had resulted in biased estimates of sex differences in mental illness. More recently, Aneshensel et al. (1991) extended this argument to the topic of sex differences in vulnerability, arguing that the failure of research to examine a range of disorders had also resulted in biased estimates of sex differences in the impact of stressors.
2. Authors have attributed women's psychological vulnerability to deficits in their intra-psychic and social resources, such as their low sense of mastery and control (e.g., Pearlin and Schooler 1978); learned helplessness (Radloff 1975); and low levels of social support (Belle 1982). However, research which has tested this hypothesis finds that women's vulnerability is not explained by deficits in coping and social support resources (Thoits 1984, 1987).
3. Parallel findings are evident in research on women which shows that marital problems have a greater impact on depression than occupational problems (Kandel et al. 1985).
4. Although Turner and Avison (1989) found that employed wives were more depressed than employed husbands by negative events occurring to oneself, they also showed that employed wives were more vulnerable than employed husbands to undesirable events that occurred to one's spouse. Moreover, while Kandel et al. (1985) found that certain role constellations buffered the effects of stress in some roles, they also showed that they exacerbated the effects of stress in other role domains. For example, among married women, employment buffers the effects of marital strains but parenthood exacerbates the effects of work problems.
5. I conducted auxiliary analyses on the panel data in order to determine whether stressors experienced at T1 predict stressors experienced at T2 as well as T2 CES-D and heavy drinking. Not surprisingly, results of these analyses (not shown) indicated that stress experienced at T1 significantly predicts stress experienced at T2, reflecting the on-going nature of role strains. However, my analyses also revealed that stress experienced at T1 did not predict depression or drinking at T2 once T1 distress and/or T2 stressors were held constant. Tables are available upon request.
6. An examination of the marital status characteristics of full-time employed parents at T1 and at T2 confirmed that unmarried parents were more likely to exit the study; compared to the NSFH-2, the NSFH-1 included 65 percent married and 35 percent unmarried employed parents. However, while the percentage of unmarried parents declined relative to married parents, the proportions of parents within each unmarried status at T2 remained identical to those at T1.
7. All reported regressions involve listwise deletion of cases. Models contain all respondents with full information on all variables included in the equations. Approximately 15 percent (N = 447) of the 2937 employed parents had missing data on at least one variable. Logistic regression analyses were conducted in order to determine whether respondents with missing data significantly differed from those who were included in the multivariate analyses. These supplemental analyses (not shown) indicated that neither the sex nor the marital status of the respondent predicted the likelihood of having missing data (though the likelihood of having incomplete information was significantly greater for nonwhites, older persons, and those with lower levels of household income). Models (not reported) were also run using pairwise and mean-substitution case selection criteria which produced similar results.
8. Separate models, which were estimated for the married subsample, showed that marital strain also has a significant main effect on married parent's alcohol consumption.
9. Analyses on married parents also indicated that sex differences in CES-D and heavy drinking were not explained by exposure to role strains, including exposure to marital problems.
10. Although all reported regression equations were based on married and nonmarried parents, additional analyses (not shown) were conducted in order to assess sex differences in stress-reactivity among parents within each unmarried

status (i.e., among separated, divorced, widowed, and never married parents). While the pattern of findings for unmarried parents that appears in Table 3 was similar to those found in supplemental analyses, there were some notable exceptions. For example, while separated fathers consumed significantly more alcohol in response to parental strain than separated

mothers (similar to unmarried parents in general), separated mothers were significantly more depressed by financial strain than separated fathers. Overall, these analyses indicated that sex differences in stress-reactivity among unmarried parents tended to be greatest among the formerly married and least among never married parents.

APPENDIX  
Selected Characteristics of the Analysis Sample by Marital Status and Gender

Characteristics	Married			Unmarried		
	Total (N=2045)	Male (N=1171)	Female (N=874)	Total (N=892)	Male (N=286)	Female (N=606)
Age (Mean Years)	37.9	38.4	37.3	37.6	37.5	37.6
Race						
White	78.3%	80.1%	75.8%	58.3%	61.8%	56.6%
Black	12.1%	10.7%	14.0%	32.2%	29.1%	33.6%
Other	9.6%	9.2%	10.2%	9.6%	9.1%	9.8%
Education (Mean Years)	13.6	13.7	13.3	12.7	12.5	12.8
Household Income (Mean Dollars)	\$56,234	\$56,564	\$55,793	\$30,564	\$38,712	\$28,254
Parental Status						
Children <19 Living at Home	94.8%	92.7%	97.6%	73.9%	36.7%	91.4%

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