

## GENDER, MARITAL STATUS AND THE SOCIAL CONTROL OF HEALTH BEHAVIOR\*

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**Abstract**—Mortality rates are lower for married individuals than they are for unmarried individuals, and marriage seems to be even more beneficial to men than women in this regard. A theoretical model of social integration and social control is developed to explain why this may occur. Drawing from this model, I hypothesize that marriage may be beneficial to health because many spouses monitor and attempt to control their spouse's health behaviors. Furthermore, the provision, receipt, and consequences of these social control efforts may vary for men and women. These hypotheses are considered with analysis of a national panel survey conducted in 1986 ( $N = 3617$ ) and 1989 ( $N = 2867$ ). Results show that: (1) marriage is associated with receipt of substantially more efforts to control health for men than women, (2) those who attempt to control the health of others are more likely to be female than male, (3) there is some support for the social control and health behavior hypothesis among the married, and (4) the transition from married to unmarried status is associated with an increase in negative health behavior while the transition from unmarried to married status seems to have little effect on health behavior. A theoretical explanation is developed to explain these marital status differences.

*Key words*—health behavior, gender, social integration, marital status

Durkheim argued in 1897 that social integration serves both regulative and integrative functions that reduce the propensity to commit suicide [1]. Although there is now strong empirical evidence that involvement in social relationships is associated with lower mortality generally, the specific theoretical mechanisms through which social relationships reduce mortality remain largely unexplored [2]. The present study focuses on a specific mechanism through which social relationships may reduce mortality: individuals may attempt to control significant others' health behaviors in an attempt to keep them healthy. I develop a theoretical framework to describe this process and how it may differ according to gender and marital status. Data from a national survey are used to test whether attempts to control health behavior occur, if these attempts differ according to gender and marital status of the respondent, and whether such control efforts are associated with subsequent health behavior. I further consider how the transition into and out of the marital relationship may affect health behavior.

### EMPIRICAL AND THEORETICAL BACKGROUND

Several prospective studies of community samples have examined the link between social integration and mortality [2-5]. These studies typically define social integration in terms of the existence or number of particular relationships or organizational involve-

ments. They consistently conclude that individuals who lack social ties are more likely to die in the years following interviews, even taking initial health status into account. Furthermore, these studies reveal a stronger association of social ties and subsequent mortality for men than for women. In the Tecumseh Community Health Study, for example, men with the lowest levels of social involvement in 1967-69 were two to three times more likely to die in the subsequent 10-12 year period than men with the highest levels of social involvement; women were about one and a half to two times more likely to die [5].

The gender difference in social involvement and mortality is perhaps most striking for the marital relationship. Being married is associated with reduced risk for mortality—and this benefit is greater for men than for women [2, 6]. Loss of the marital relationship may also affect mortality. Numerous studies suggest that widowhood contributes to a decline in physical health and an increase in mortality [7, 8]. These studies indicate that widowhood is more detrimental to the health of men than women. The divorced also exhibit higher mortality than their age-matched married peers and, again, this relationship is stronger for men than for women [9, 10].

Previous empirical research shows that social involvement is also inversely related to negative health behavior [11]. This finding has led several scholars to suggest that social relationships somehow affect an individual's inclination to engage in risky health behaviors, and that an important mechanism linking social integration and mortality may involve health behavior [12-20]. In a previous study, I developed a theoretical model of social control as a dimension of

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social integration to explain how this may occur [18]. Drawing from Durkheim's classic work on suicide and the literature on deviance and social control, I posit that social relationships control health behavior through both direct and indirect pathways:

... relationships may provide social control of health behaviors indirectly by affecting the internalization of norms for healthful behavior, and directly by providing informal sanctions for deviating from behavior conducive to health [18].

Individuals may attempt to directly control the health of others in an effort to affect the individual's health status [15, 18–20]: Social contacts may tell, remind, or threaten others in order to promote positive health behavior (e.g. to exercise or visit the doctor) or to deter negative health behavior (e.g. to avoid alcohol) [18]. Such external reminders may also lead individuals to further internalize a sense of commitment and responsibility for others—contributing to the indirect social control of health behavior.

Becker's theoretical work on commitment is useful in understanding how social relationships may constrain negative behavior [21]. Becker explains that an individual's prior actions (e.g. getting married) represent investments that may be at stake if the individual engages in behavior that is not consistent with this past commitment. For example, commitment to drinking with one's friends may be inconsistent with the prior commitment to one's marital relationship:

... [individuals] stake increasingly valuable things on continuing a consistent line of behavior, although the person hardly realizes this is happening ... [21].

Behaviors that are known to affect health and mortality include alcohol and tobacco consumption, diet, and sleep and exercise patterns [11]. Hamburg, Elliot and Parron estimate that as much as 50% of current mortality is caused by negative health behavior or could be postponed by protective health behavior [22]. If social relationships do affect health behavior, then social involvement may reduce mortality risk by influencing health behavior.

#### *Gender roles: extending the social control model*

The social control model suggests a mechanism by which social relationships may affect health behavior and subsequent mortality, but does not explain why social relationships, especially marriage, would be more beneficial in preventing male mortality than female mortality. Gender and marital status differences in mortality and health behavior may be closely linked to gender and marital roles. Women generally possess more knowledge about health-related issues than men, are more likely to monitor their own health status, and are less likely to engage in a number of risky health behaviors such as excessive alcohol consumption and dangerous sports [23–27]. In fact, the strongest predictor of preventive health care is gender [24]. Gender differences in health behavior may arise from gender role socialization which directs females' concerns toward health and safety and

males' concerns toward competition, aggression, and risk-taking [25–27].

Traditional gender role socialization not only encourages females to guard their own their health and safety, but to be nurturing and attentive to the needs of others. If women assume these nurturing roles within marriage, then they are likely to monitor their spouses' health and health behaviors and to take some responsibility for their spouses' health. There is some evidence that women are more likely than men to assume responsibility for the health of their spouse. Women are more likely to organize living habits—such as preparing food and monitoring health supplies and prescriptions—that can have an impact on the health of household members [28–30]. Marketing researchers are well aware of women's efforts to produce family health; when selling preventive health care, margarine, bran cereal, and other allegedly healthful products, advertisers pitch their ads toward women, who they assume make most health decisions for the family.

Males are not only less stringently socialized to monitor their own health, but the health and well-being of others as well [26]. In turn, men may provide less social control to their spouses than do women, and marriage and social control efforts from spouses may not be as important to mortality among women as among men. McKinlay emphasizes that health is a norm shared by most groups, but that groups differ in the degree to which they coerce others to conform to health norms [31]. Although McKinlay's focus is on cultural and class differences, it can easily be argued that, due to their different gender roles and socialization experiences, men and women differ in the degree to which they attempt to coerce others to conform to health norms.

Although gender roles may steer men and women toward different health behavior orientations, gender differences in negative health behavior are not uniformly consistent across different kinds of health behaviors or across cultures, particularly within certain age groups [27]. For example, in some cultures, women are as likely as men to smoke or drink. And there are exceptions to higher rates of negative health behavior among men: women are more likely to diet excessively or exhibit health-damaging eating disorders. These findings lead one to expect that social control efforts would be more strongly associated with different health behaviors for men and women.

In sum, the literature on marital and gender roles suggests that (1) women are more likely than men to attempt to control the health of others and, consequently, marriage is more likely to be associated with exposure to social control efforts for men than for women, and (2) since men are more likely than women to engage in most negative health behaviors, marriage and social control efforts from a spouse may reduce male mortality more than female mortality. The social control hypothesis strongly suggests that the shift from married to widowed or divorced status

is detrimental to health partly because there is no longer a partner to monitor one's health behavior. If men experience more social control in marriage than do women, with an attendant effect on health acts, then men would lose more behavioral restraints through marital dissolution. While several authors suggest social control as a possible theoretical mechanism linking relationships and mortality, there have been no attempts to test whether or not social control attempts actually occur in relationships or whether control attempts have any impact on health behavior. The following hypotheses are derived from the theoretical model of social integration, social control, and health behavior:

I. Married men will report more exposure to social control efforts than unmarried men, but marital status will have little impact on women's exposure to social control attempts.

II. Married persons are more likely to receive control attempts from a spouse than from another person and this will be the case more often for men than women. Non-spousal control agents are more likely to be female than male.

III. Social control efforts in 1986 are inversely associated with negative health behavior in 1989.

IV. Transition into the married status is associated with a reduction in negative health behavior. The shift out of the married status (through divorce or widowhood) is associated with an increase in negative health behavior. Both of these associations are greater for men than for women.

#### DATA

The data for this study are from a national two-wave panel survey conducted in 1986 ( $N = 3617$ ) and 1989 ( $N = 2867$ ). Face-to-face interviews (1986) and reinterviews (1989), lasting approximately 90 minutes each, were conducted with individuals aged 24 and older in the contiguous United States. This survey was designed to assess social relationships, productive activity, and health over the life course. The sampling frame was selected to represent the population of the United States, with oversampling for blacks and persons over 65\*. Hypotheses I and II are

tested with the Wave I data [32]. Hypotheses III and IV involve an analysis of change in health behavior and marital status between 1986 and 1989, and are based on both waves of data.

In addition to the survey data used for the primary analysis, I conducted in-depth interviews with twenty-five individuals in a central Texas city (population = 748,500). These qualitative data were collected to supplement the quantitative survey data. This is an important supplement as the topic of social control and health behavior has not been empirically explored previously and the circumstances under which social control occurs and the dynamics of the social control process are largely unknown. In the discussion section of this paper, interpretation of the quantitative results is supplemented with the qualitative data results. In an attempt to control extraneous factors—particularly education and income, I confined the interviewees to one professional group. Interviewees include 15 male and 10 female attorneys, aged 28 to 51†.

#### *Measurements for the quantitative analysis*

*Social control.* Exposure to social control from others was measured by asking respondents, "how often does anyone tell or remind you to do anything to protect your health? Would you say often, sometimes, rarely, or never?" Item responses were scored 1–4 with 4 indicating often. Excluding those who chose the "never" category, respondents were asked to identify up to two persons who served this role.

*Health behaviors.* The indicators of health behavior in this study are modeled after the measures developed by Berkman and Breslow in their longitudinal survey of health behaviors and health outcomes [11]. Berkman and Beslow found that their measures of health behavior were predictive of subsequent mortality. Body mass or relative obesity is created by dividing the respondent's weight by a squared value for the respondent's height [33]. Higher values indicate greater body mass. Number of drinks is the number of days in the past month on which the respondent drank multiplied by the number of drinks the respondent usually drinks on days that he/she drinks. Number of cigarettes refers to number of cigarettes the respondent usually smokes in a day. Respondents were asked "how many hours of sleep do you usually get in a 24-hour period", with responses coded in number of hours. Physical activity is measured with an index based on three questions: How often respondents typically "engage in active sports or exercise", "take walks", and "work in the garden or yard". Possible responses to each question include "often, sometimes, rarely, or never". Item scores are summed and standardized; higher values indicate greater physical activity (coefficient alpha = 0.43). Since men and women differ significantly in body mass as well as health risk and preventive health

\*This survey, entitled, *Americans' Changing Lives*, is based on a multi-staged stratified area probability sample of noninstitutionalized persons in the United States [NIA # AGO5562]. The survey was conducted under the auspices of the Institute for Social Research, The University of Michigan. Interviews were conducted between May and October of 1986, and between January and May of 1989. The response rate for Wave I was 67% and the response rate for Wave II was 83%. Small amounts of missing data on various items were imputed. The Wave I sample is comprised of respondents with a mean age of 53.64, and of whom 63% are female and 33% are black.

†While the quantitative data can reveal generalizable trends in the U.S. population, they cannot be used to provide detailed insights into processual issues such as social control efforts. The qualitative data serve this latter purpose and are not intended to be representative of the U.S. population.

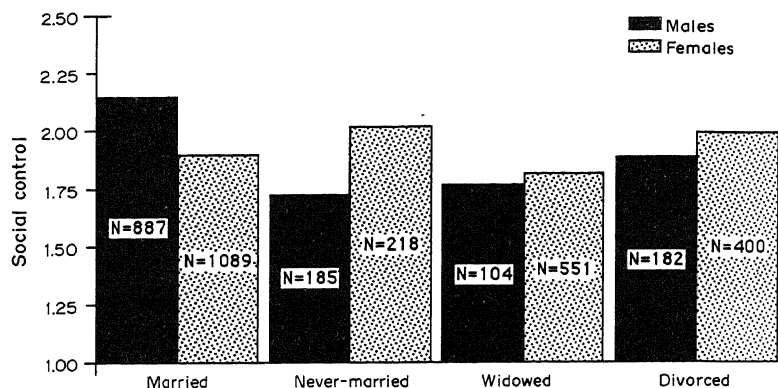


Fig. 1. Mean scores on exposure to social control.

behavior, all analyses pertaining to health behaviors are conducted separately for men and women [11].

**Independent variables.** Marital status, the primary indicator of social integration, is a four category variable comprised of divorced/separated, widowed, never-married, and married individuals with the married as the omitted category in regression analyses. In some analyses (always noted) marital status is considered as a two category variable (1 = unmarried, 0 = married). Marital status change is comprised of two variables. The first marital status change variable consists of all individuals who were married in 1986 and is divided into those individuals who remained married in 1989 and those whose marriages were dissolved through divorce or widowhood between 1986 and 1989. The second marital status change variable consists of all individuals who were unmarried in 1986 and is divided into those individuals who remained unmarried in 1989 and those who became married between 1986 and 1989. The "no-change" categories represent the excluded categories in regression analyses. Parental status is included as a control variable because previous research suggests that parenthood represents an additional source of social integration that may affect health behavior [18]. Parental status is comprised of three categories: individuals who are childless, individuals with at least one child over the age of sixteen, and individuals who have only minor children. The excluded category in regression analyses is the "childless" group. Demographic controls include race (1 = black, 0 = non-black), gender (1 = female, 0 = male), edu-

cation (in years), age (in years), and income (a ten category measure based on thousands of dollars in total income)\*.

## RESULTS

### *The social integration/health behavior link*

The social control hypothesis is based on the assumption that social integration is associated with health behavior. This association has been demonstrated in previous studies [11, 18]. The first analysis evaluates the evidence for this assumption in the present data by regressing each of the health behavior measures on the social integration measures and the demographic controls. These results are presented separately for men and women in Table 1.

Table 1 shows that divorce is associated with more alcohol consumption and cigarette smoking for men and women, lower body mass for women, and less physical activity for men; widowhood is associated with more cigarette smoking and less physical activity for men, and lower body mass for women; and the never-married status is associated with lower body mass for men and greater physical activity for women†. With the exception of physical activity among unmarried women, these associations strongly suggest that being unmarried is associated with more negative health behavior. Having children under the age of sixteen is associated with less alcohol consumption for both men and women and lower body mass for women. Having adult children is associated with less alcohol consumption and more physical activity for women, supporting the social integration/health behavior link. On the other hand, having adult children is associated with more cigarette smoking for men and women and greater body mass for men. This latter finding on smoking may reflect cohort effects in that older individuals are more likely to have begun smoking before there was clear evidence that smoking is detrimental to health. Furthermore, previous work suggests that social

\*Income is a ten-category variable; cases within each category are assigned the midpoint value of that category. These values are then divided by 1000. Values range from 2.5 (indicating a midpoint value of \$2500) to 110 (indicating a midpoint value of \$110,000).

†An additional analysis (not shown) to determine the extent to which the body mass results reflect being substantially underweight show that divorced and never-married women are substantially more likely than married women to have a body mass index score that falls into the bottom fifth percentile of the population.

Table 1. Standardized regression coefficients for the estimated effects of social integration and demographic characteristics on health behaviors

	Health Behaviors											
	Cigarettes		Alcohol		Body Mass		Hours Sleep		Physical Activity		N	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female		
Marital Status:												
Divorced	0.147***	0.074**	0.063*	0.145***	-0.027	-0.083***	-0.038	-0.048	-0.088***	-0.024		
Widowed	0.059*	-0.004	0.039	0.049	-0.013	-0.080**	-0.004	0.007	-0.076**	-0.005		
Never Married (0 = Married)	0.019	-0.020	0.008	0.054	-0.076*	-0.045	0.022	-0.050	-0.050	0.084**		
Parental Status:												
Children < 16 only	0.013	0.047	-0.090*	-0.108**	0.007	-0.104**	-0.011	-0.054	-0.065	0.010		
Children ≥ 16 (0 = Childless)	0.195***	0.146***	0.051	-0.085*	-0.135**	0.054	-0.051	-0.043	-0.028	0.095**		
Education	-0.152***	-0.028	-0.056	0.032	-0.041	-0.123***	-0.006	-0.055*	-0.213***	0.148***		
Income	-0.026	-0.081**	0.062*	0.086**	0.053	-0.118***	-0.121***	-0.033	-0.014	0.102		
Race (1 = Non-white, 0 = White)	-0.013	-0.076***	-0.021	-0.003	0.018	0.162***	-0.047*	0.060*	-0.033	-0.047*		
Age	-0.273***	-0.246***	-0.206***	-0.073*	-0.097**	0.024	0.219***	0.022	-0.075*	-0.223***		
R <sup>2</sup>	0.074	0.059	0.031	0.040	0.026	0.103	0.064	0.016	0.078	0.119		
N	1688	1897	1688	1897	1694	1860	1688	1897	1688	1897		

\*\*\*P < 0.001.  
\*\*P < 0.01.  
\*P < 0.05.

Table 2. Standardized regression coefficients for the estimated effects of social integration and demographic variables on social control

	Social control	
	Males	Females
Marital Status:		
Divorced	-0.072**	0.028
Widowed	-0.055*	-0.003
Never Married (0 = Married)	-0.150***	0.038
Parental Status:		
Children < 16 only	-0.070	0.011
Children ≥ 16 (0 = Childless)	-0.013	0.030
Education	0.043	-0.075**
Income	-0.013	0.008
Race (1 = Black, 0 = Non-black)	-0.006	-0.016
Age	-0.029	-0.084*
R <sup>2</sup>	0.024	0.010
N	1705	1911

\*\*\**P* < 0.001.\*\**P* < 0.01.\**P* < 0.05.

control of health behavior out of a feeling of responsibility to others may be greater for parents when their children are young and dependent than when children are independent adults [18]. These findings roughly parallel previous findings on marital status, parental status, and health behavior, showing that being married and having minor children are associated with less negative health behavior [18].

#### *Hypothesis I: Gender and marital status differences in social control of health behavior*

Hypothesis I pertains to possible gender and marital status differences in exposure to social control. The mean differences in reported exposure to social control are presented graphically in Fig. 1 to illustrate the general pattern of results. These results are augmented by an analysis (not shown) in which the social control measure was regressed on gender, marital status (0,1), an interaction term for gender and marital status, and the demographic variables. The regression analysis and the graph in Fig. 1 reveal a clear interaction effect between gender and marital status, indicating that only among men do the married report more social control attempts than the unmarried.

This analysis is extended in Table 2 where the social control measure is regressed on the demographic characteristics of respondents separately for men and women. Table 2 shows that men in any

unmarried status—whether divorced, widowed, or never-married—report that they experience less social control from others than men who are married. Among women, marital status is not associated with reported exposure to social control. These findings provide strong support for Hypothesis I.

Parental status, income, and race do not have significant estimated effects on frequency of social control attempts for men or women. Education and age are inversely associated with social control among women only. It is possible that marital status differences in social control vary further depending on other characteristics of respondents. This possibility is tested by regressing the social control measure on marital status, parental status, the demographic variables, and an interaction term for each demographic variable (i.e. race, age, education, income) and marital status. This analysis, conducted separately for men and women, suggests that the estimated effects of parental status, race, education, and income on social control do not differ for the unmarried compared to the married. However, there are differences according to age. Among married men and women, exposure to social control efforts remains fairly consistent across the life course. But age is associated with social control in different ways for unmarried men and women. Unmarried men consistently report less social control than married men across the life course. Unmarried women, however, report more social control than married women from their twenties through their forties, and less social control than married women in their fifties and beyond. One may speculate that this occurs because the behaviors of younger unmarried women have been traditionally perceived by others as requiring more supervision and monitoring.

#### *Hypothesis II: Agents of social control*

Who reminds or tells individuals to do things to protect their health? In Table 3, the identity of the primary social control agent specified by the respondents is reported.\* These results are presented separately by gender and marital status of respondent. The chi-square statistic was calculated to consider whether men and women differ in who they report as their primary social control agent.

Married persons are most likely to identify a spouse as their primary social control agent. However, men (80%) are more likely to name a spouse than are women (59%). Married women are more likely than married men to identify a parent figure (women, 13%; men, 7%) or a child (women 11%; men 3%) as a control agent. Of those married respondents who identify a second control agent (not shown), married women are again more likely to name a child (women 32%; men 21%), and men are more likely to name a parent figure (women 24%; men 35%).

\*Respondents identified a number of different persons who acted as social control agents. Several different categories of people are combined into five summary categories for Table 3. The spouse category includes current spouse, ex-spouse, and cohabiting partners. The child category includes natural, foster, step, and adopted children, and children in-law. The parent figure category includes natural, step, grand and great grandparents, and parents-in-law. Unrelated persons include friends, neighbors, employers, employees, and miscellaneous others. Professionals include clergy, physicians, lawyers, therapists, law enforcement officials, and accountants.

Table 3. Identity of social control agents

Social control agent:	Marital status and gender of respondent <sup>a</sup>							
	Married		Divorced/Separated		Widowed		Never Married	
	Men N(%)	Women N(%)	Men N(%)	Women N(%)	Men N(%)	Women N(%)	Men N(%)	Women N(%)
Spouse/Partner	590 (80)*	344 (59)*	10 (13)	11 (8)	—	1 (1)	14 (16)	17 (20)
Children—Total	19 (3)*	65 (11)*	2 (3)*	30 (23)*	8 (25)*	56 (56)**	—	3 (4)
—Son	6 (1)	9 (2)	—	3 (3)	2 (10)	15 (15)	—	—
—Daughter	5 (1)	38 (6)	2 (3)	22 (16)	6 (24)	34 (34)	—	3 (4)
Parents—Total	47 (7)*	75 (13)*	13 (18)*	40 (31)*	1 (4)	—	38 (43)*	22 (26)*
—Father	9 (1)	9 (2)	3 (4)	3 (3)	—	—	5 (6)	1 (1)
—Mother	38 (6)	66 (11)	10 (14)	37 (28)	1 (4)	—	33 (37)	21 (25)
Other—Total	9 (1)	22 (3)	5 (7)	9 (7)	2 (7)	15 (14)	9 (11)	13 (15)
Relatives—Father	3 (—)	2 (2)	—	3 (2)	—	2 (2)	5 (6)	4 (5)
—Mother	3 (—)	17 (3)	2 (3)	5 (4)	2 (7)	11 (10)	3 (3)	7 (8)
Unrelated—Total	76 (10)	83 (14)	41 (56)*	45 (28)*	11 (48)*	28 (24)*	26 (30)	28 (33)
Persons—Professionals	31 (4)	25 (4)	9 (11)	8 (6)	1 (6)	4 (4)	5 (6)	4 (4)
Total N	741	589	71	135	22	100	87	83

<sup>a</sup>Gender of child, parent, and other relative was not identified in some cases.

\*\*Chi-square statistic calculated to test for sex differences in social control source;  $P \geq 0.05$ . Significance tests were calculated only for each category total.

Divorced and separated men are most likely to identify an unrelated person as their primary social control agent (56%); only 28% of divorced and separated women identify an unrelated person—the majority of these unrelated persons are referred to as friends. Women identified two other sources with similar frequency—parent figures (women 31%, men 18%) and children (women 23%, men 3%).

Among the widowed, women are most likely to identify a child as someone who reminds them to protect their health. While 56% of widowed women name a child as the person most likely to attempt to control their health, only 25% of widowed men name a child. Widowed men are much more likely to identify an unrelated person (men 48%, women 24%)—usually a friend. Widowed respondents are less likely than other respondents to identify a second person as a social control agent.

Never-married men are most likely to name a parent—almost always a mother—as their primary control agent (43%); women are much less likely than men to identify a parent (26%). Never-married men and women, with about equal frequency, identify unrelated persons (30 and 33%) and partners (16 and 20%) as providing this health function.

#### Hypothesis III: Are social control attempts associated with health behavior?

The social control hypothesis suggests that exposure to social control in 1986 should be associated with a reduction in negative health behavior over time. The social control hypothesis is tested by regressing Time 2 health behavior on the demographic controls, Time 1 social control, and Time 1 health behavior. Because of the probable confounding of marital status change, change in social control, and health behavior change, this analysis is confined to those individuals who were either consistently married or unmarried in both 1986 and 1989.

The results presented in Table 4 indicate that, among the consistently married, Time 1 social control is associated with a subsequent decrease in cigarette smoking (for men and women) and an increase in average hours of sleep and physical activity (women only). These results suggest that, over time, social control may have some beneficial consequences for health behavior among those individuals who remain married. Among the consistently unmarried, there is a different pattern of results. Time 1 social control is associated with reduced physical activity for un-

Table 4. Standardized regression coefficients for the estimated effect of Time 1 social control on Time 2 health behavior<sup>a</sup>

	Time 2 Health Behaviors									
	Cigarettes		Alcohol		Body Mass		Hours Sleep		Physical Activity	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Time 1 social control (consistently married)	-0.060**	-0.043*	0.004	-0.016	0.026	0.002	-0.052	0.061*	-0.015	0.055*
Time 1 social control (consistently unmarried)	0.076*	0.010	0.017	-0.013	0.051	-0.004	0.087	0.023	0.003	-0.060*

<sup>a</sup>Analysis includes controls for parental status, age, race, education, income and Time 1 health behavior.

\*\*\* $P < 0.001$ .

\*\* $P < 0.01$ .

\* $P < 0.05$ .

Table 5. Standardized regression coefficients for the estimated effect of marital status change on Time 2 health behavior<sup>a</sup>

	Time 2 Health Behaviors									
	Cigarettes		Alcohol		Body Mass		Hours Sleep		Physical Activity	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Marital status change:										
Married to										
unmarried	0.073**	0.018	0.158***	0.023	-0.039**	-0.047***	-0.012	-0.086**	-0.032	-0.027
Unmarried to										
married	0.022	-0.030	-0.044	-0.069*	0.035	0.008	0.037	0.028	-0.048	-0.035

<sup>a</sup>Analysis includes controls for parental status, age, race, education, income and Time 1 health behavior.

\*\*\* $P < 0.001$ .

\*\* $P < 0.01$ .

\* $P < 0.05$ .

married women and more cigarette smoking among unmarried men.

*Hypothesis IV: Is change in marital status associated with health behavior?*

The 1989 survey did not include the social control question, therefore, I cannot assess whether change in marital status is associated with change in social control. However, I can assess how marital status change between 1986 and 1989 is associated with health behavior in 1989. This is accomplished by regressing the Time 2 health behavior measure on the marital status change variable, the remaining demographic variables, and a control for the health behavior at Time 1. Approximately 8% of the sample experienced a shift from married to unmarried or unmarried to married status between 1986 and 1989.

Table 5 shows that the shift from unmarried to married status seems to have little effect on the health behavior of men or women. The important exception is that unmarried women who become married report drinking less in 1989 than women who remain unmarried. Shifting from the married to the unmarried status is associated with several Time 2 health behaviors. Men who were married in 1986, and experienced either divorce or widowhood by 1989 report a greater increase in their tobacco and alcohol consumption and greater weight loss than their male counterparts who remained married during the same time period. An additional analysis (not shown) to examine extent of weight loss shows that men who experience marital dissolution are substantially more likely than consistently married men to fall into the bottom fifth percentile on body mass. Women who were married in 1986, and experienced either divorce or widowhood by 1989, report weighing less and sleeping fewer hours per night than their female counterparts who remained married during the same time period. Although the body mass index scores for women suggest a substantial number of women fall into the lowest 30% of body mass scores following marital dissolution, these changes are not as extreme as those seen for men.

These changes in health behavior may occur, in part, because there is no longer a spouse available to facilitate, monitor, and attempt to affect one's health behaviors. However, negative health behavior may

also increase in response to the stress associated with marital dissolution. To indirectly test this latter possibility, the regression analysis in Table 5 was reestimated and those individuals who experienced marital dissolution were compared to the consistently unmarried rather than the consistently married. A comparison of the newly unmarried to the consistently unmarried provides an indirect test of the possibility that negative health behavior occurs in response to the strain of becoming unmarried rather than being unmarried. These results (not shown) suggest that, compared to the consistently unmarried, men who have been recently widowed or divorced smoke more and experience greater weight loss; women who have been recently widowed or divorced report that they sleep fewer hours than do their consistently unmarried counterparts. This suggests that the stress of the transition to becoming unmarried may contribute to some changes in health behavior. However, the higher rates of alcohol intake among men and weight loss among women found in the comparison to the consistently married do not occur in this latter comparison—suggesting that these changes in health behavior occur not entirely in response to the transition to becoming unmarried but due to some other aspect of being unmarried. A similar reanalysis, comparing individuals who recently became married to those who were consistently married over time, shows that the decrease in alcohol consumption reported by women who become married does not seem to be due to the transition to becoming married.

#### DISCUSSION

Previous research shows that men engage in less preventive health behavior, less self-monitoring of health, and more negative health behavior than do women [23, 25, 27]. The present findings show that married men are also more likely than married women and unmarried men and women to report that others attempt to control their health. Furthermore, married men are most likely to identify a spouse as the person who tries to control their health. These findings support Hypothesis I and suggest that marriage may benefit the health of men more than women partly because marriage provides more social control for men.



As predicted in Hypothesis II, the identity of social control agents depends on both gender and marital status of the respondent. Among the married, regulating agents are usually spouses—although more often for men than for women. Overall, married and unmarried women report more variety in the types of people who attempt to control their health. When the gender of social control agents is examined, regardless of gender and marital status of respondents, a very consistent theme emerges: respondents are more likely to name women than men as people who attempt to control their health. This gender difference is illustrated in an in-depth interview with a 28 year old married male when asked who it is that reminds him to protect his health:

... my wife, my mother, my sisters. Everyone seems to be interested in my health. They tell me to eat better, they tell me to get more exercise, they tell me not to work so hard ...

"Everyone" may be interested in this subject's health, but he spontaneously identified three gender-specific categories of social control agents—all female.

One recurring gender difference in the in-depth interviews strongly parallels the survey results. When asked if they ever told or reminded anyone to protect their health, the female respondents almost always responded affirmatively and provided specific examples of this:

My husband, I feel free to nag. He comes from a high risk family for heart disease. And I nag him regularly—about exercise primarily. (33 year old female, married.)

However, male respondents frequently were unable to identify such instances and often indicated that such efforts were invasive and should be avoided:

People handle their own affairs ... As far as being a busybody about other people's health, I don't do it. (28 year old male, married.)

These gender differences parallel previous research showing that women feel more responsibility for and are more responsive to the well-being of others, and are more likely to provide care to others [34, 35].

Although these results strongly suggest that social control of health behavior and the predicted gender and marital status differences in the tendency to control the health behavior of others do occur, the data provide mixed results concerning the impact of social control on health behavior. The social control hypothesis receives some support when tested among married individuals, but it is not supported for unmarried individuals. These results may occur because access and exposure to social control is not the same experience for married and unmarried persons. McKinlay's argument that social groups differ in the degree to which they attempt to coerce others to conform to health norms is applicable here [31]. Norms of health and health protective behavior may be stronger among the married than the unmarried.

This notion is central to Durkheim's work on social integration which suggests that individuals benefit from marriage partly because marriage uniquely imposes normative constraints over individuals [1]. Social control efforts may be more effective among the married because married individuals are more motivated to reduce negative behavior—because of responsibilities and commitments to others and a normative desire to avoid divorce [21]. Married individuals are also under more constant surveillance than unmarried individuals, as one long-term smoker illustrates:

... (my wife) really got on me about quitting smoking and I did for a while but I used to sneak—literally go behind the garage and have a cigarette ... (42 year old male, divorced.)

This man did not stop smoking while he was married, but without his wife's constant monitoring and social control efforts he certainly would have smoked more cigarettes.

Social control attempts may be less effective among the unmarried than the married partly because it is easier for the unmarried to change their friends or to avoid social contacts that are perceived as a nuisance, and control attempts may be perceived as a nuisance. The unmarried may find it easier to escape relationships with people who attempt to control their behaviors. When the unmarried exhibit disruptive behaviors (e.g. excessive smoking or drinking), other people (i.e. potential control agents) may also avoid them. It is much more difficult to avoid a spouse with disruptive behaviors. The positive association of social control with negative health behavior among the unmarried may occur because negative behaviors of the unmarried are less likely to be observed and reacted to until they become blatantly problematic.

Individuals who shifted from the married to the unmarried status between 1986 and 1989 exhibit more negative health behavior in 1989 than their counterparts who remain married, and these estimated effects are greater for men than women. These results provide support for the first part of Hypothesis IV which suggests that the loss of a spouse who may provide social control will result in an increase in negative health behavior. Furthermore, a comparison to the consistently unmarried, suggests that those individuals who have recently experienced divorce or widowhood exhibit a change in health behavior not simply in response to the stress of marital dissolution. Negative health behavior may increase both in response to the stress of marital dissolution and in response to the absence of a potential source of social control. The second part of Hypothesis IV which suggests that becoming married will result in improved health behavior receives little support. Although shifting from the unmarried to the married status is associated with a reduction in alcohol consumption for women, other health behaviors do not seem to be affected. This apparent lack of change in most health behaviors may occur because individuals

who become married have typically been involved with each other for some period preceding the marriage—and their health habits may be largely unchanged by the formal entry into marriage.

#### *Measurement issues*

The conclusions that can be drawn from this study are limited by the use of a single-item indicator of social control that is measured at only one point in time. There are many conceptual and measurement issues that complicate the social control process and that should be considered in future research on the social control of health behavior. It may be that the types of control efforts most likely to be reported in response to the social control question are those that are most direct and obvious. For example, individuals may be much more aware of others' attempts to thwart an obviously excessive drinking habit than a spouse's time-consuming efforts to serve low cholesterol meals and encouragement to eat those meals. Therefore, the social control measure may not reflect most of the small daily reminders to protect one's health—and these small daily reminders may be strongly associated with health behavior, especially among the married. On the other hand, the unmarried may receive few of these daily reminders; health behavior among the unmarried may not be the object of much attention until it is clearly obvious to others that the behavior is problematic. If so, this could partly explain the association of social control exposure with worse health behavior among the unmarried. It should be noted that even if negative behavior sometimes elicits social control efforts from others, this does not necessarily indicate that social control attempts provide no health benefits. Negative behavior may elicit social control from others and, at the same time, those efforts to control may have a positive impact on a heavy drinker or smoker's behavior—even if the behavior is not eliminated entirely.

There are other less direct ways that social integration may control health behavior. Social control of health behavior may occur because individuals feel a responsibility to stay healthy in order to meet their commitments to others, or simply because the presence of others facilitates positive health behavior [18]. The present data do not include measures of more indirect mechanisms such as responsibility and facilitation. However, respondents in the in-depth interviews reiterated these themes as important ways in which relationships affect their health behavior. Future research should identify the specific methods men and women use to control others' behaviors and what prompts them to use those methods.

#### *Theoretical concerns*

Social integration means much more than the mere presence or absence of a social tie, as integration is typically operationalized. Theoretical discussions on the essence of social integration have focused on a

sense of coherence, meaningfulness, an absence of alienation, and perceived emotional or social support [14, 36–39]—all of which may affect health behavior. These possible integrative mechanisms are largely unexplored in empirical research on social relationships and mortality, and should be considered in addition to the social control dimension of social integration [39]. It may be important to study other dimensions of social integration in order to better understand the social control dimension of relationship involvement. Social integration may contribute to felt responsibility for others and self-protective behavior or make the individual more amenable to control attempts from others. The intimate balance of social control and the emotionally-sustaining aspects of social integration is illustrated in the words of a thirty-three year old woman who has been married and sober for seven years:

We were both alcoholics . . . When we first married, we both quit smoking and quit drinking together. We sort of acted as AA for one another . . . We were in love . . . It was like a new life, a new beginning . . .

Other possible mechanisms that may help explain the social integration/health behavior association include personality characteristics of individuals that may affect both the formation of social ties and health behavior, physiological or biochemical mechanisms that are triggered by the presence of others, and buffering mechanisms by which relationships prevent stress or events that contribute to negative health behavior [40, 41].

#### CONCLUSION

The evidence is mounting that involvement in social relationships is very important for physical health and even mortality:

The evidence regarding social relationships and health increasingly approximates the evidence in the 1964 Surgeon General's report that established cigarette smoking as a cause or risk factor for mortality and morbidity from a range of diseases [2].

Previous research on social involvement and mortality has not identified the specific mechanisms through which social involvement reduces mortality risk. A previous study developed a theoretical model of social control as a dimension of social integration in an attempt to explain how relationships may affect health behaviors that, in turn, affect mortality [18]. The present study extends this theoretical argument to suggest why and how gender and marital status differences in the social integration/mortality link may occur. The data used to test hypotheses from this theoretical model include the first available measure of social control in a national survey. While this measure is limited in its scope, the findings strongly suggest that social ties do attempt to affect significant others' health behavior and that there are important gender and marital status differences in this process.

These findings further suggest that the social control process may differ in important ways for married and unmarried individuals. The present findings suggest the importance of conducting additional studies on specific mechanisms through which social relationships may affect health.

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