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Men's Economic Dependency, Gender Ideology, and Stress at Midlife

Objective: *This study investigates the association between men's economic dependency during midlife and allostatic load, an indicator of chronic stress, and how this relationship varies with men's gender ideology.*
Background: *Women are primary breadwinners in almost a third of heterosexual couples in the United States. Emerging research finds that female primary breadwinning (or men's economic dependency) is a threat to masculinity that has negative implications for men's midlife health. However, there is no quantitative evidence of the mechanisms linking men's economic dependency and health, particularly the role of stress, and whether men's gender ideology moderates this relationship.*
Method: *Using two waves of Midlife in the United States data for men who remained with the same marital or cohabiting female partner between waves (*N = *332), the authors estimate the relationship between men's economic dependency in Wave 1 and allostatic load in Wave 2.*
Results: *There was no evidence of an association between men's economic dependency and higher allostatic load on average. However, gender ideology had a moderating influence; men's economic dependency was associated with higher allostatic load for those who espoused more traditional gender attitudes and lower allostatic load for those with the most egalitarian attitudes.*
Conclusion: *The findings underscore the existence of multiple masculinities and suggest that economic dependence has a negative or positive influence on men's health depending on the meanings men attach to female primary breadwinning.*

Women are increasingly out-earning their husbands and male partners. Among heterosexual couples in the United States, the percentage of women who were primary breadwinners (earning more than half of the couple's income) rose substantially from 16% in 1981 to almost 30% in 2017 (U.S. Census Bureau, 2017a). An emerging body of research finds that female primary breadwinning—also known as men's economic dependency—has negative implications for men's health (Rogers & DeBoer, 2001), particularly at midlife (Springer, 2010; Springer, Lee, & Carr, 2017). Gender scholars posit that men's economic dependency challenges the norm of male breadwinning and threatens one's masculinity (Atkinson, Greenstein, & Lang, 2005; Thébaud, 2010), which can adversely affect men's mental and physical well-being. In addition, there is some evidence that the effect of economic dependency is not uniform and

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is most deleterious among those who strongly adhere to the male-breadwinning norm, such as high-earning men (Springer, 2010).

We use data from the Midlife in the United States (MIDUS; http://midus.wisc.edu/) study to make two important contributions to this initial literature. First, there is little research on the mechanisms linking male breadwinning status and poor health. One main hypothesis is that threats to masculinity, such as men's economic dependency, lead to increased stress. We test this hypothesis by examining midlife men's levels of allostatic load, an indicator of the physiological wear and tear on the body resulting from chronic exposure to stress (McEwen, 1998; Seeman, Singer, Rowe, Horwitz, & McEwen, 1997). Second, we use men's gender ideology as an indicator of their adherence to gender norms and examine its moderating influence on economic dependency. We expect that economic dependency could be particularly emasculating and stressful for those who hold traditional gender attitudes.

Background

Male Breadwinning Status and Men's Health

Male breadwinning is an enduring social norm in the United States (Brennan, Barnett, & Gareis, 2001; Killewald, 2016) and a central component of hegemonic masculinity, the dominant form of masculinity, in most advanced industrialized countries (Springer, 2010; Thébaud, 2010). As such, scholars have been particularly interested in gender dynamics in nonnormative contexts where women are the primary earners and contribute more than half of a couple's income (e.g., Pierce, Dahl, & Nielsen, 2013; Springer, 2010; Springer et al., 2017). These arrangements have been labeled female primary breadwinning or male economic dependency.

Gender relations theory posits that men's failure to fulfill the social norm of main financial provider poses a threat to masculinity (Atkinson et al., 2005; Thébaud, 2010). The inconsistency between this social expectation and men's economic reality causes stress and frustration, which can trigger physiological and behavioral responses that have negative consequences for health and well-being (Hoffman, Demo, & Edwards, 1994; Springer, 2010). For example, Springer et al. (2017) found that long-term economic dependency was associated with midlife men's poorer self-rated health and the higher risk of stress-related illnesses, such as chronic lung disease and stomach ulcers, when compared with men who were long-term primary earners.

A key physiological mechanism believed to link economic dependency and men's health is stress (Springer et al., 2017). Several laboratory studies from psychology support the overall connection between masculinity threat and stress. For example, men who randomly received low masculinity scores in response to various tasks experienced more pronounced cortisol reactivity (Caswell, Bosson, Vandello, & Sellers, 2014; Scheepers, Ellemers, & Sintemaartensdijk, 2009) and vagal withdrawal (Kramer, Himmelstein, & Springer, 2017), indicators of adaptive responses to stressful events, relative to those who received the control. Qualitative social science research also reveals a connection between male unemployment, a particular form of economic dependency, and increased stress (Duke, Bergmann, Cunradi, & Ames, 2013; Sherman, 2017).

There are no quantitative studies that we know of, however, linking male breadwinning in general or male economic dependency in particular to stress. A major contribution of this study is the examination of men's levels of allostatic load, a marker of physiological imbalances and bodily deterioration resulting from constant psychological strain (McEwen, 1998; Seeman et al., 1997), and as such a proximate determinant of poor physical health (Juster, McEwen, & Lupien, 2010; Seeman et al., 1997). Allostatic load is a more reliable measure of cumulative stress than self-rated assessments (Seeman et al., 1997), particularly among men, who tend to underreport symptoms and health conditions associated with weakness (Courtenay, 2010; Scheepers et al., 2009).

Moderating Role of Gender Ideology

Gender scholars also emphasize the existence of multiple masculinities and a range of gender beliefs (Coltrane, 1997; Connell & Connell, 2005; Connell & Messerschmidt, 2005). Thus, not all men support the breadwinning norm and would be equally affected by economic dependency. Among a sample of men at midlife, Springer (2010) found that men's economic dependency had a weaker negative association with self-rated health among the lowest earning men compared with the highest earners. She

reasoned that the hegemonic ideal of major breadwinner was historically less meaningful for men of lower economic status, who were thereby less strongly affected by economic dependency. Despite this research, there have been no assessments of other, perhaps more direct, indicators of men's adherence to gender norms and their moderating influence on the relationship between economic dependency and health.

In this study, we use men's gender ideology as an indicator of adherence to gender norms. Support for male breadwinning is based on the notion of gendered separate spheres in which men are primarily responsible for paid work and women for domestic labor, including housework and child care (Davis & Greenstein, 2009). We argue that men who endorse the strict division of gender roles will be more likely to view female breadwinning as threatening to their masculinity, with an attendant stress response. In contrast, those who espouse egalitarian attitudes will be more accepting of shared work and domestic responsibilities for men and women (Tichenor, 2005). In this case, the relationship between economic dependency and allostatic load would be weaker.

The study of gender ideology and breadwinning is particularly salient for middle-aged and older adult men who make up the MIDUS sample. The belief in separate spheres was particularly strong among these men, who were socialized during the mid-20th century when male breadwinning was at its peak (Ruggles, 2015; Thébaud, 2010; Wilkie, 1993). The norms of male breadwinning and avoidance of domestic labor have weakened over time and during the life course, however, as women entered the paid labor force in large numbers from the 1960s onward (Cotter, Hermsen, & Vanneman, 2011; Cunningham, 2008; Zuo, 2004). Thus, the MIDUS sample is likely to espouse a range of gender beliefs. How the combination of economic dependency and gender ideology impacts stress is an important question as these men pass through midlife and contribute to a rapidly aging population with a variety of health concerns (Lachman, 2004).

The prior discussion leads to the following two hypotheses among midlife men in the United States:

Hypothesis 1: Economically dependent men will exhibit higher levels of allostatic load compared to men who are the main breadwinners in their partnerships.

Hypothesis 2: The positive association between economic dependency and allostatic load will be strongest for men with traditional gender attitudes when compared with men with egalitarian attitudes.

Method

Data and Sample

We used data from the MIDUS study, a longitudinal study of health and aging among middle-age men and women. The first wave of MIDUS (MI1) was conducted in 1995 to 1996, when a national sample of 7,108 men and women was surveyed regarding their health status, daily experiences, and sociodemographic information. The following wave of MIDUS (MI2) was conducted 9 years later in 2004 to 2006. MI2 included a biomarker substudy in which 1,054 individuals from the full sample participated in a series of medical exams and the collection of biospecimens (e.g., fasting blood draw, 12-hour urine, saliva) conducted by trained staff from three clinical centers (Georgetown, DC; Los Angeles, CA; Madison, WI). Of these 1,054 participants, 45.3% ($n = 477$) were men. Because we were interested in men's breadwinning status within heterosexual couples, we focused on men who were in the same union (marriage or cohabitation) with a female partner between waves. Therefore, we first dropped men who were not in a union in Wave 1 ($n = 77$). We next dropped men who changed relationship status between waves due to becoming divorced ($n = 34$), widowed ($n = 6$), or separated ($n = 4$) from their partner by Wave 2. We further dropped men who reported their sexual oriental as homosexual ($n = 5$). Finally, we dropped $n = 3$ men who had missing values on all 24 biomarkers used to construct the measure of allostatic load. Our analytic sample included 348 married or cohabiting heterosexual men. The biomarker sample is disproportionally White, more highly educated, and healthier when compared with the nationally representative sample of MIDUS in Waves 1 and 2 (Radler & Ryff, 2010). Nevertheless, the inclusion of biomarkers related to allostatic load afforded us the opportunity to study stress and its potential relationship to male breadwinning status for the first time.

Measures

Dependent Variable. The measure of allostatic load was created using information collected in the biomarker substudy in MI2. We summed the risk scores of seven biological systems (cardiovascular functioning, lipids metabolism, glucose metabolism, inflammation, sympathetic nervous system, hypothalamic pituitary axis, and parasympathetic nervous system activity) following the procedure set out by Gruenewald et al. (2012). Specifically, we measured the risk score for each system by the proportion of biomarkers for that system in which the participant fell into the high-risk quartile of the distribution. Thus, the individual measure of allostatic load ranged from zero to seven, where seven indicated the respondent was in the high-risk quartile for all biomarkers in all seven systems. This measurement has been widely validated and replicated in previous studies of allostatic load using MIDUS data (Brooks et al., 2014; Gruenewald et al., 2012; Johnson, Cavallaro, & Leon, 2017). The mean level of allostatic load in our sample of men and the cutpoints of most individual biological systems are moderately higher than the full biomarker sample of MIDUS men and women used in the Gruenewald et al. (2012) study, which is expected given that men have poorer health indicators than women on average. The descriptive information of each biomarker and system used to construct the measure of allostatic load as well as comparisons with measures from Gruenewald et al. (2012) are included in Online Appendix A.

Key Independent Variables. We constructed all independent variables using men's reports of their and their female partners' characteristics from MI1. To construct the measures of breadwinning status, we used information on personal annual income for men and their partners. In their reports, men chose among 31 categories of annual income whose total range was $0 (U.S. dollars) to $100,000 (U.S. dollars), and MIDUS assigned the mean value of each income category to each individual. Information on personal annual income included wages, salaries, tips, and professional or trade income during the last 12 months. Information on social security was reported only at the household level, and information on pension, investment, or other sources of income was not included. Therefore, we did not include these other sources in the income measure for each partner. We created a measure of men's economic dependency following Springer (2010). Using the income for each partner, we created a measure of the man's share of total couple income. We then created a dichotomous variable to denote men's economic dependency as the man's share was less than 50% of the couples' income (1) or the man's share was 50% or greater (0).

With respect to gender ideology, respondents were asked their opinions regarding two statements related to gender role expectations in the domestic sphere: "Men should equally share housework" and "Men should equally share child care," with response categories 1 (*strongly agree*) to 7 (*strongly disagree*). We created a gender ideology variable by summing response values to both questions, where 2 indicated the most egalitarian gender ideology and 14 the most traditional. Cronbach's α of the two items was .67.

Men's Sociodemographic Characteristics. We coded age in years. We coded race as a dichotomous variable given there was a little racial variation in the sample: White (1) or non-White (0). Following the procedure in Gruenewald et al. (2012) using MIDUS data, we created a variable for men's socioeconomic status by summing the following four indicators: college education (1 = "some college or higher," 0 = "high school/GED or less"), self-assessed current financial situation (2 = "best possible," 1 = "average," 0 = "worst possible"), availability of money to meet basic needs (2 = "more than enough," 1 = "just enough," 0 = "not enough"), and difficulty level of paying bills (2 = "not at all difficult," 1 = "not very difficult," 0 = "very or somewhat difficult"). Socioeconomic status ranged from zero to seven, with seven indicating the best socioeconomic conditions. We created a dichotomous variable for retirement status (1 = "retired," 0 = "not retired"). Retirement could be a pathway to economic dependency for men that might not threaten masculinity given that earnings expectations are generally lessened after retirement (Springer et al., 2017).

Health-Related Covariates. We included several health assessments and health-related behaviors that could determine breadwinning status as well as be correlated with the level of allostatic load at midlife. Men's lower earnings could be driven by their physical and mental

constraints, and we created three variables related to men's current health status. First, the respondents were asked if they were unable to work due to any mental or physical problems, which we dichotomized as 1 = "yes" and 0 = "no." Second, we included self-reported health measured on a scale of 0 to 10, where 0 = *the worst possible health* and 10 = *the best possible health these days*. Third, we included a measure of smoking, coded dichotomously as 1 = "ever been a regular smoker" and 0 = "otherwise." Finally, early-life health status could determine one's financial earning potential and later health outcomes (Case, Lubotsky, & Paxson, 2002). We included a respondent's retrospective health assessment at age 16 on a scale of one to five, where 5 = *excellent health* and 0 = *poor health*.

Female Partners' Characteristics. We included background characteristics of men's partners that could affect relative breadwinning status and men's health. We coded female partners' age in years. We included a dichotomous variable of their college education (1 = "some college or higher," 0 = "high school/GED or less"). We created a dichotomous variable of partners' retirement status (1 = "retired," 0 = "not retired"). Last, we included men's assessments of their partners' health on a scale of one to five, where 1 = *poor health* and 5 = *excellent health*.

All respondents had valid scores on all covariates except socioeconomic status (4.3% missing) and female partners' health (3.1% missing). These missing data were handled through multiple imputation.

Analytic Plan

We examined whether men's economic dependency at MI1 was associated with men's allostatic load at MI2 using generalized estimating equation, which accounts for clustering by family membership (the sample included 32 pairs of siblings or twins). All controls were measured in MI1. We also assessed whether men's gender ideology moderated this relationship by adding an interaction term between economic dependency and men's gender ideology.

We were concerned that our small analytical sample and small cell sizes could have affected the reliability of our results. Therefore, we identified outliers based on the standardized residuals from an initial regression estimation. Standardized residuals indicate the degree of mismatch between predicted and observed regression values. Cases with an absolute value of the standardized residual greater than two are generally considered outliers (Osborne & Overbay, 2004). In total, we identified 16 outliers and removed them from the analysis, yielding a final analytical sample of 332 married or cohabiting heterosexual men. We note that the main associations were slightly weaker but maintained the same levels of significance if these outliers were included (not shown).

Results

Descriptive Results

For descriptive purposes, Table 1 presents the mean or percentage and standard deviation of each variable of the final analytic sample ($N = 332$). The mean level of allostatic load for the midlife men in the sample was 1.72 (on a scale of 0–7). The mean couple income was $58,322 (U.S. dollars), which was higher than the mean of two-person household income in the United States in 1995 ($46,162 [U.S. dollars]; U.S. Census Bureau, 2017b). On average, men contributed 71% of the total couple income and were economically dependent in approximately 15% of couples. On the scale of 2 to 14, men's mean gender ideology was approximately 5, indicating that men were more egalitarian than traditional in their attitudes on average.

The mean age of the sample was 48.5 years, and men were born between 1923 and 1969 (not shown). The sample was disproportionately White (95%). More than three quarters of the men attended college or higher. Approximately 15% of men were retired. On the scale of 1 to 10, men's self-reported health was very good: 7.7 on average. A small percentage (4.2%) were unable to work for health reasons, and 15% of the sample smoked regularly at some point in their lifetimes.

With respect to female partner characteristics, 67% attended college or higher, and 8.7% were retired. Men rated their partners' health generally good (3.6 on the scale of 1–5).

Multivariate Results

Table 2 reports the results of generalized estimating equation models estimating the association between men's economic dependency in MI1 and their levels of allostatic load

Table 1. *Descriptive Statistics of Married and Cohabiting Men and Their Female Partners in the United States (*N = *332)*

Variables	MIDUS 1 (1995–1996) *M/%*	*SD*
Allostatic load (MI2)	1.72	1.01
Income variables		
Annual income (U.S. dollars)		
Total couple income	58,322	–
Men	41,179	–
Female partners	16,988	–
Men's income share		
Income share (%)	71.41	24.46
Economic dependency (%)	14.90	–
Men's characteristics		
Gender ideology (2–14)[a]	4.88	2.54
Age	48.51	11.59
White (%)	94.89	–
Socioeconomic status (0–7)[b]	4.02	1.19
Some college or higher (%)	75.90	–
Retired (%)	14.52	–
Health at age 16 (1–5)[c]	4.50	0.76
Self-rated health (1–10)[c]	7.75	1.27
Inability to work due to health (%)	4.20	–
Ever regular smoker (%)	14.98	–
Female partners' characteristics		
Some college or higher (%)	66.97	–
Retired (%)	8.71	–
Health (1–5)[c]	3.64	0.97

Note: MI2, second wave of MIDUS 2; MIDUS, Midlife in the United States. [a]Higher values indicate more traditional gender ideology. [b]Higher values indicate higher socioeconomic status. [c]Higher values indicate better health status.

in MI2. There was no statistically significant difference in allostatic load between economically dependent men and nondependent men in Model 1. Adding a two-way interaction between economic dependency and gender ideology in Model 2, we found that the interaction term was positive and significant. This indicated that the association between economic dependency and allostatic load was more positive for men who held increasingly traditional gender attitudes.

With respect to the controls that were statistically significant in both models, men's older age and having ever been a regular smoker were associated with higher levels of allostatic load. In addition, men who were White, of higher socioeconomic status, and had better self-rated health had lower levels of allostatic load.

To better illustrate the differential patterns of allostatic load by men's economic dependency and gender ideology, we used estimates from Table 2, Model 2 to produce the predicted levels of allostatic load in Figure 1 and marginal effects for each level of gender ideology in Figure 2, both with 95% confidence intervals.

Interpreting the findings in Figures 1 and 2 separately for the most traditional and the most egalitarian men revealed support for the theory of masculinity threat. Considering the group with traditional attitudes (higher values of the gender ideology index), they supported the notion of gendered separate spheres and were expected to most closely adhere to the male-breadwinning norm. Within this group, we found that those whose financial reality matched this normative expectation (the noneconomically dependent men) had relatively low predicted levels of allostatic load. The economically dependent men with traditional attitudes, in contrast, were expected to suffer masculinity threat given that their financial reality did not match their expectations. Their predicted levels of allostatic load were significantly higher when compared with the nondependent men, and these levels were higher for men with ever more traditional attitudes.

Looking at the most egalitarian men in Figures 1 and 2, they rejected the tenets of separate spheres and were expected to be least threatened by female breadwinning. Here, the economically dependent men had significantly lower predicted levels of allostatic load than the noneconomically dependent men. These findings support the view that breadwinning can be demanding, and for the most egalitarian men, the removal of this burden could lower their levels of stress.

Robustness Checks

We conducted several additional analyses to check the robustness of our results. One concern was that, although our analyses revealed that men's gender ideology moderated the association between men's economic dependency and allostatic load, our estimates could have been inflated by very few cases in the right tail of the gender ideology distribution. To partially alleviate this concern, we constructed a trichotomous measure of gender ideology roughly based on

Table 2. *Unstandardized Coefficients From Generalized Estimating Equation Model Estimates for Allostatic Load and Married or Cohabiting Men in the United States* (N = *332*)

	Model 1		Model 2	
Variables	*B*	*SE*	*B*	*SE*
Men's characteristics				
Economic dependency	−0.19	0.14	−0.81**	0.25
Gender ideology[a]	0.01	0.02	−0.01	0.02
Economic Dependency × Gender Ideology			0.18**	0.06
Age	0.04***	0.01	0.04***	0.01
White	−0.54*	0.24	−0.53*	0.24
Socioeconomic status[b]	−0.19***	0.04	−0.20***	0.04
Retired[c]	−0.18	0.18	−0.15	0.17
Health at age 16[d]	−0.05	0.06	−0.04	0.06
Self-rated health[d]	−0.16**	0.06	−0.16**	0.06
Inability to work due to health	−0.17	0.24	−0.20	0.24
Ever regular smoker	0.46**	0.14	0.69***	0.15
Female partner characteristics				
Some college or higher	−0.16	0.10	−0.15	0.11
Retired[c]	0.31	0.20	0.32	0.20
Health[d]	0.04	0.05	0.05	0.05
Constant	−0.70	0.58	−0.69	0.57

[a]Higher values indicate more traditional gender ideology. [b]Higher values indicate higher socioeconomic status. [c]Retired in MIDUS 1. [d]Higher values indicate better health status.

*$p < .05$. **$p < .01$. ***$p < .001$.

Figure 1. Predicted Values of Allostatic Load by Men's Economic Dependency and Gender Ideology, With 95% Confidence Intervals.

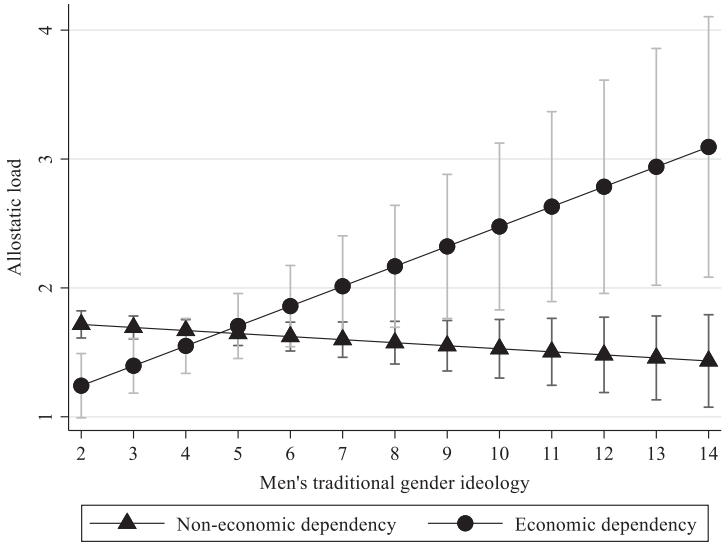
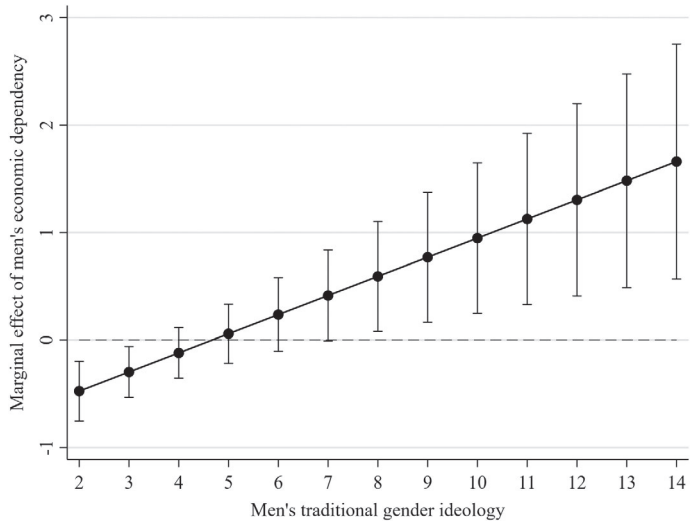


Figure 2. Marginal Effects of Men's Economic Dependency and Gender Ideology, With 95% Confidence Intervals.



the tercile distribution. We found that the results were robust across these categories of gender ideology. See Online Appendix B for a more detailed discussion.

Another concern with our analytic sample was that 15% of men and 9% of their female partners were retired. For retired individuals, nonmarket earnings, such as social security or pension income, could form a nontrivial share of their total individual income. The measure of individual income did not include these or other nonwage sources of income, and thus we were unable to sufficiently capture the total individual income of retired persons (and hence retired men's share of couple income), which could have biased our results. We reran the analysis restricting the sample to nonretired men and nonretired couples and found that our substantive findings remained. See Online Appendix C for a more detailed discussion.

Extensions to the Analysis

We used available data from MIDUS Wave 2 to conduct two extensions to our analyses. First, given that men's and their partners' income contributions could change over time, periods of economic dependency could vary (Raley, Mattingly, & Bianchi, 2006), with longer term durations of dependency being particularly detrimental to men's health (Springer et al., 2017). In additional analyses, we examined whether men's sustained state of economic dependency across the 9 years between MI1 and MI2 was associated with higher levels of allostatic load.

We constructed measures of individual income in MI2 using a similar procedure for personal annual income in MI1 with the addition of men's and women's individual social security and pension income, which were reported by men in MI2. Using the income for each partner, we created a measure of the man's share of total couple income in MI2. We then created a dichotomous variable to denote men's economic dependency in MI2 as the man's share was less than 50% of the couples' income (1) or the man's share was 50% or greater (0). Finally, we created a dichotomous variable for men's sustained economic dependency if a male respondent was economically dependent in MI1 and MI2 (1) or otherwise (0).

We reran our original generalized estimating equation regression analysis from Table 2, Models 1 and 2, replacing the variable for men's economic dependency with the new variable for men's sustained economic dependency and using the original analytic sample. Given that the number of sustained economically dependent men was small ($n = 24$), we were concerned that a few outliers could inflate our interaction estimates. We identified 19 outliers

Table 3. *Unstandardized Coefficients From Generalized Estimating Equation Model Estimates for Allostatic Load and Married or Cohabiting Men in the United States Using Men's Sustained Economic Dependency (*N = *329)*

	Model 1		Model 2	
Variables	*B*	*SE*	*B*	*SE*
Men's characteristics				
Sustained economic dependency	0.18	0.21	−0.73*	0.30
Gender ideology[a]	0.01	0.02	−0.01	0.02
Sustained Economic Dependency × Gender Ideology			0.25***	0.07
Age	0.04***	0.01	0.04***	0.01
White	−0.41†	0.24	−0.41†	0.24
Socioeconomic status[b]	−0.19***	0.04	−0.21***	0.04
Retired[c]	−0.11	0.17	−0.14	0.17
Health at age 16[d]	−0.04	0.07	0.004	0.06
Self-rated health[d]	−0.12**	0.04	−0.12**	0.04
Inability to work due to health	−0.14	0.27	−0.16	0.23
Ever regular smoker	0.44***	0.14	0.40**	0.13
Female partner characteristics				
Some college or higher	−0.21*	0.11	−0.19†	0.10
Retired[c]	0.33	0.20	0.31	0.19
Health[d]	0.01	0.05	0.02	0.05
Constant	−0.91	0.57	−1.06	0.56

[a]Higher values indicate more traditional gender ideology. [b]Higher values indicate higher socioeconomic status. [c]Retired in MIDUS 1. [d]Higher values indicate better health status.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

($n = 2$ sustained economically dependent men, $n = 17$ nondependent men), which we removed for the analysis.

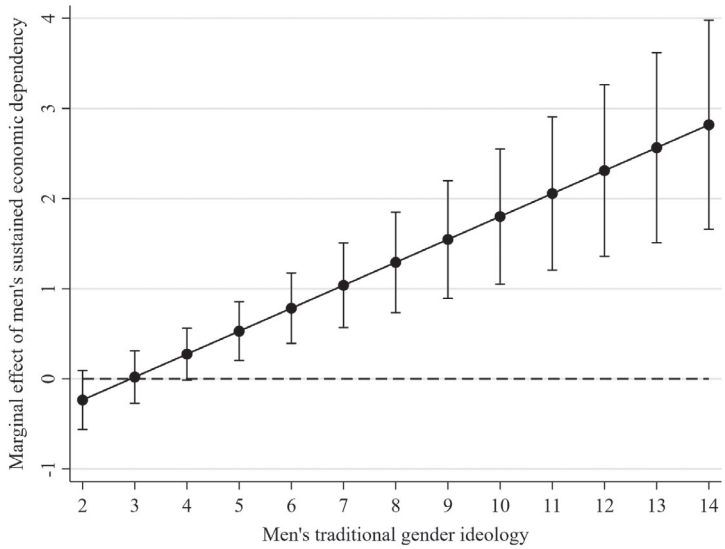
The regression results are presented in Table 3. Consistent with the original results, we found no significant difference in the level of allostatic load between sustained economically dependent men and the rest of the sample in Model 1. Adding a two-way interaction between sustained economic dependency and gender ideology in Model 2, we found that the interaction term was positive, significant, and slightly stronger than the results in Table 2, Model 2. We produced a graph of marginal effects of men's economic dependency in Figure 3. We noted that the differences between sustained economically dependent and nondependent men in their levels of allostatic load increased with more traditional gender attitudes. There were no statistically significant differences in allostatic load among the men with the most egalitarian gender attitudes, however.

Taken together, these results suggested that sustained economic dependency produced a similar association with allostatic load as the original analysis using the measure of economic dependency in MI1. Indeed, sustained economic dependency might have a greater influence on men's levels of stress among men holding more traditional gender attitudes than the one-time measurement. It also appeared that, contrary to the original analysis, sustained economic dependency was not associated with lower levels of allostatic load for men with the most egalitarian gender attitudes. One possible explanation was that a limited number of cases of sustained economic dependency might have reduced the statistical power.

One limitation to this analysis is that we measured dependency at only two points in time (MI1 and MI2); men's economic dependency could have changed in the 9 years between MIDUS waves or prior to the study period. Nevertheless, the finding that economic dependency status across two points was associated with men's levels of allostatic load illustrated the importance of men's breadwinning status over time.

In a second extension to the analysis, we examined the relationship between men's economic dependency and self-reported stress as an alternative measure to allostatic load.

Figure 3. Marginal Effects of Men's Sustained Economic Dependency and Gender Ideology, With 95% Confidence Intervals.



The biomarker substudy in MIDUS included information to create the perceived stress scale (PSS), which is a well-validated global measure of subjective psychological stress (Cohen, 1988). PSS is based on a battery of 10 questions measuring the degree to which situations in respondents' lives are stressful, with responses on a scale of one to five (full range of PSS scale 10–50, higher values indicate higher levels of perceived stress). We constructed a measure of PSS in MI2 for each male respondent (sample range 10–45; mean = 20.97, $SD = 5.78$).

We next reran our original generalized estimating equation regression analysis from Table 2, Models 1 and 2, replacing the dependent variable for men's allostatic load with the new variable for men's perceived stress. We identified 30 outliers from the original analytic sample and removed them from the analysis. The regression results are presented in Table 4, and the predicted values are shown in Figure 4. The results of Model 1 showed that there was no statistically significant association between economic dependency and perceived stress, and Model 2 showed that the interaction term between men's economic dependency and gender ideology was also not statistically significant. Nevertheless, the pattern of associations was very similar to our original analyses (see Figure 4), and the p value for the interaction term approached statistical significance ($p = .114$).

One explanation for the lack of statistical significance on the interaction term is measurement bias given that men tend to underreport their psychological symptoms because mental health conditions are often associated with weakness (Emslie, Ridge, Ziebland, & Hunt, 2006). We would expect that men who hold more traditional gender attitudes would be more likely to underreport their symptoms or stressful experiences when compared with those who hold egalitarian attitudes. In this case, our estimates of the interaction between men's economic dependency and gender ideology could be underestimated. An additional explanation could be due to greater variability in the PSS scale given it relies on subjective reporting of various daily experiences, and therefore we were unable to detect significant differences with our small sample. A study by Glei et al. (2013) found a positive association between perceived stress and allostatic load among women, but not among men, indicating that self-reports of men's stress could indeed be less reliable than women's self-reports. The results of this exercise also underscored the advantages of the physiological measure of allostatic load, which is likely a more reliable measure of cumulative stress

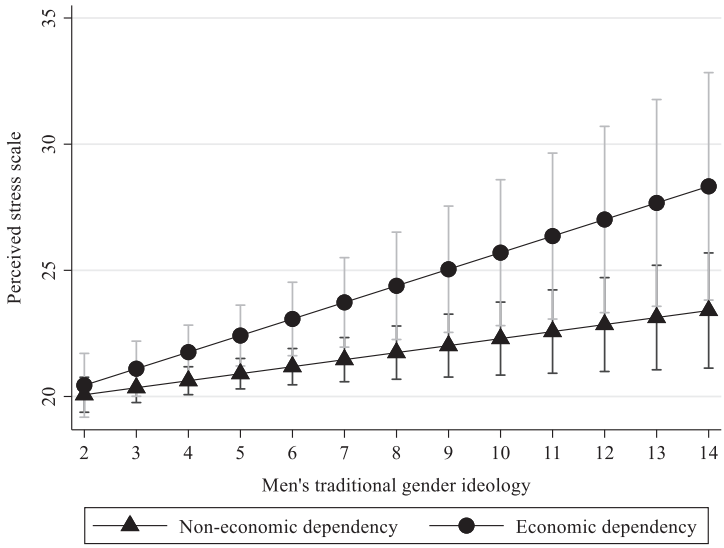
Table 4. *Unstandardized Coefficients From Generalized Estimating Equation Model Estimates for Perceived Stress and Married or Cohabiting Men in the United States* (N = *318*)

	Model 1		Model 2	
Variables	*B*	*SE*	*B*	*SE*
Men's characteristics				
Economic dependency	1.27	0.80	−0.38	1.38
Gender ideology[a]	0.42**	0.13	0.28†	0.14
Economic Dependency × Gender Ideology			0.38	0.30
Age	−0.11**	0.04	−0.11**	0.43
White	0.20	1.40	−0.09	1.39
Socioeconomic status[b]	−0.68*	0.28	−0.62*	0.28
Retired[c]	1.16	0.41	1.28	1.24
Health at age 16[d]	−0.65	0.25	−0.67	0.41
Self-rated health[d]	−0.62*	0.25	−0.69**	0.24
Inability to work due to health	−0.12	1.52	−0.19	1.52
Ever regular smoker	0.32	0.84	0.23	0.84
Female partner characteristics				
Some college of higher	−1.001	0.69	−0.96	0.69
Retired[c]	1.25	1.29	1.28	1.29
Health[d]	−0.14	0.32	−0.12	0.32
Constant	30.94***	3.97	31.09***	3.99

[a]Higher values indicate more traditional gender ideology. [b]Higher values indicate higher socioeconomic status. [c]Retired in MIDUS 1. [d]Higher values indicate better health status.

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Figure 4. Predicted Values of Perceived Stress by Men's Economic Dependency and Gender Ideology, With 95% Confidence Intervals.



than self-rated assessments such as the PSS (Seeman et al., 1997).

Conclusion

Women are increasingly out-earning their male partners, and several studies have documented that female primary breadwinning—or men's economic dependency—is linked to poor health, particularly among men at midlife. Gender theory holds that economic dependency threatens men's masculinity, producing stress and frustration from not fulfilling the male-breadwinner norm. Stress could therefore be an important mechanism linking men's economic dependency and poor health; however, no quantitative studies to date have directly measured the role of stress. In this study, we were the first that we know of to consider the association between men's economic dependency and allostatic load, a physiological marker of chronic exposure to stress. Studies have shown that elevated levels of allostatic load contribute to the development of chronic disease, such as diabetes, coronary heart disease, dementia, and higher mortality risk (Karlamangla, Singer, McEwen, Rowe, & Seeman, 2002; Robertson, Beveridge, & Bromley, 2017; Seeman, McEwen, Rowe, & Singer, 2001).

We also recognized that threats to masculinity could be particularly salient among men who adhere more closely to the male-breadwinning norm, and thus the relationship between economic dependency and allostatic load could be conditioned by gender ideology. We used data from the MIDUS study, which included middle-age and older adult men. This unique data set contains information on men's breadwinning status, gender ideology, and levels of allostatic load, which enabled us to test two hypotheses.

Our first hypothesis was that men's economic dependency will be associated with higher allostatic load at midlife, and we found no support for this hypothesis across men on average. Our second hypothesis asserted that men's gender ideology will have a moderating influence on the association between economic dependence and allostatic load, which was supported by our results. We found that economic dependency was associated with higher of allostatic load for men who espoused more traditional gender ideology. We found the opposite for the most egalitarian men: Economic dependency was associated with a lower level of allostatic load for them. These results indicate that men's economic dependency is not always a threat to masculinity and can be detrimental or advantageous to health, depending on men's views about gender.

Our study had several limitations. We used the MIDUS biomarker subsample of midlife men for the analyses, which was disproportionately White and of higher socioeconomic status when compared with the nationally representative full MIDUS sample (Radler & Ryff, 2010). We also restricted the sample to heterosexual men. The hegemonic ideal of male breadwinning is primarily reflective of White, heterosexual, older, and largely middle-class men (Connell & Connell, 2005), such as those in our analytic sample. The statistical associations we uncovered might therefore operate differently for men with different racial or socioeconomic characteristics, different gender or sexual identities, or for younger cohorts, many of whom could hold varying expectations regarding male breadwinning. In addition, we restricted our analytical sample to men in relationships that remained intact through the 9 years between study waves. These men, and particularly those with female primary breadwinning partners, could be select types of men less strained by masculinity threat. In this case, our estimates of the impact of economic dependency are likely to be conservative.

Our measure of male breadwinning status relied on men's reports of each partners' personal income. Some important nonwage sources of income, such as social security, pensions, and investments, were not included in Wave 1, and these could be particularly relevant for older couples (see also Online Appendix C). In addition, men's reports of each partners' income could potentially be biased; men who hold more traditional gender attitudes and are more threatened by female primary breadwinning could overestimate their own income and underestimate their partners' income. In this case, our estimates of the association between men's economic dependency and stress could be underestimated.

Although the MIDUS data set afforded the opportunity to study the moderating role of men's gender ideology, the information collected on gender ideology was related to men's views on gendered roles in the domestic sphere, including housework and child care. There were

no questions on men's attitudes toward the primacy of the male-breadwinner role specifically. Nevertheless, the male-breadwinning ideal is based on the broader notion of gendered separate spheres, in which men provide for the family while women are responsible for domestic labor (Davis & Greenstein, 2009). We therefore made the assumption that support for strict gender domestic roles were a credible proxy for support of strict breadwinning roles. Future research would benefit from the inclusion and testing of views on breadwinning specifically as well as other domains of gender ideology that could tap into masculinity threat.

A benefit of MIDUS was the longitudinal design, which allowed us to examine the influence of breadwinning status on subsequent levels of men's allostatic load. Furthermore, in our extended analyses, the measure of sustained economic dependency captured continued dependency over time. Nevertheless, the availability of income data at only two points in time (Waves 1 and 2) precluded a more detailed analysis of change in and duration of breadwinning statuses between waves, as in previous studies (Springer et al., 2017). Given that allostatic load is a measure of prolonged exposure to stress rather than an immediate response, future research should address how men's economic dependency across the life course impacts this indicator of stress. Furthermore, there were few economically dependent men in our sample, which precluded us from examining heterogeneity among dependent men and whether the associations we uncovered differed for men who contributed little or were unemployed and contributed nothing to a couple's income, for example. A more fine-grained exploration of variations in partners' breadwinning statuses is another area for future research.

Our study underscores the importance of gender ideology for understanding how breadwinning status affects men's health. The findings show that economic dependence could have a negative or a positive association with stress depending on the meanings men attach to female primary breadwinning. As men appear to support alternative masculinities and more egalitarian gender ideology over time in the United States (Cotter et al., 2011; Courtney, 2009), our results suggest that, for more recent cohorts, female primary breadwinning could signal an overall decrease in levels of stress among men. Further efforts to encourage gender equality in attitudes as well as breadwinning practices could serve as a potential avenue to improve men's well-being.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1: Supporting information.

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