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Family Economic Hardship and Progression of Poor Mental Health in Middle-aged Husbands and Wives

K. A. S. Wickrama,
Department of Child & Family development, The University of Georgia, 403, Family Science Center, Stafford drive, Athens, GA 30602

Florensia F. Surjadi,
School of Family, Consumer, & Nutrition Sciences, Northern Illinois University, DeKalb, IL 60115

Frederick O. Lorenz,
Department of Statistics and Psychology, Iowa State University, Ames, IA 50011

Rand D. Conger, and
The Family Research Group, University of California, Davis, Davis, CA 95616

Catie Walker
Department of Child & Family development, The University of Georgia, Athens, GA 30602

K. A. S. Wickrama: wickrama@uga.edu

Abstract

Using prospective data from 370 middle-aged husbands and wives during a 12-year period, we investigated the intra-individual and dyadic influence of family economic hardship on the levels of depressive symptoms of husbands and wives over their middle years. The results suggest that family economic hardship during the early middle years contributes to subsequent increase in depressive symptoms of husbands and wives after controlling for family economic hardship in late middle years. Consistent with stress-process theory, economic hardship influences depressive symptoms directly and indirectly through its influence on self-esteem. The results also provided evidence for the scar hypothesis which suggests that depression predicts subsequent level of self-esteem and form a reciprocal process between depressive symptoms and self-esteem over time. In sum, for both husbands and wives, our findings showed that depressive symptoms progress over the middle years through a self-perpetuating reciprocal process between self-esteem and depression initiated by early family economic hardship and through cross-spouse influences involving self-esteem and depressive symptoms.

Keywords

couples; family economic hardship; mental health; midlife

A growing body of literature suggests that midlife is a sensitive developmental period during which mental and physical health problems proliferate with increasing health heterogeneity (Lachman & James, 1997; Wickrama, Kwag, Lorenz, Conger, & Surjadi, 2010). At least a portion of the increasing health heterogeneity in later life may be due to differential exposure to chronically stressful conditions over the life course (House et al., 1994; Lovallo, 2005; Lorenz, Wickrama, Conger, & Elder, 2006). Early economic hardship during the middle years has been shown to be a powerful stressor that plays an important role in this health differentiating process (Lorenz, Conger, Montague, & Wickrama, 1993; Lynch, Kaplan, & Shema, 1997).

In the present study, we draw on stress-process theory (Pearlin, Schieman, Fazio, & Meersman, 2005; Pearlin & Skaff, 1996) as a theoretical guide to elaborate on a process in which stressful experiences (economic hardship) contribute to poor mental health (depressive symptoms) directly and indirectly through its influence on personal resources, such as self-esteem (Turner, 2010; Wheaton, 2010; Figure 1). The direct influence equates the manifestation of chronic stressful experiences in terms of elevated levels of depressive symptoms (Pearlin, 1989). As shown in Figure 1, we refer to this direct influence as the *direct hypothesis*. Also shown in Figure 1, the indirect influence of stressful experiences on depressive symptoms consists of successively contingent paths: (a) stressful experiences erode self-esteem (*erosion hypothesis*), and in turn (b) eroded self-esteem fosters depressive symptoms (*vulnerability hypothesis*; Whisman & Kwon, 1993). These influences may linger over time. The elevated levels of depressive symptoms in turn damages one's personal resources such as self-esteem through 'scaring' ('*scar hypothesis'*; Coyne, Gallo, Klinkman, & Calarco, 1998). That is, depressive symptoms and self-esteem may reciprocally influence each other over time. Thus, as shown in Figure 1, we propose that depression progresses over middle years in husbands and wives through a reciprocal process involving self-esteem and depression (alternation of scaring and vulnerability) over time subsequently stemming from family economic hardship experienced in the early middle years (hereafter, we refer as early family economic hardship). However, to our knowledge no study has tested a comprehensive model that integrates both stress process theory and the scar hypothesis that also expands on the current stress-process literature.

Using prospective data collected from 370 middle-aged husbands and wives during a 12-year period, as shown in Figure 1, the present study specifically investigates (a) the direct and indirect influences of early family economic hardship on depressive symptoms, and (b) the subsequent reciprocal process involving depressive symptoms and self-esteem contributing to change in depressive symptoms over the middle years. We have carefully identified the temporal order of variables, depending on the availability of data, to particularly focus on depressive symptoms as our primary outcome.

Several researchers suggest that reports of family economic hardship are more immediately relevant measures of family economic difficulties than measures based on family income (McDonough & Berglund, 2003; Mirowsky & Ross, 1999). Although previous studies show that, on average, economic hardship declines and the levels of wealth increase successively in older age groups up to late middle age (Mirowsky & Ross, 1999; 2001; U. S. Bureau of the Census, 1994) there may exist inter-household differences in economic hardship experiences (Lorenz, Elder, Bao, Wickrama, & Conger, 2000). In the present study, we focus on early family economic hardship experienced by middle-aged husbands and wives. We expect that health consequences of early and chronic stressful experiences may manifest during the subsequent middle years, which have been shown to be a more vulnerable developmental period (Lorenz et al., 2006; Wickrama et al., 2002; Wickrama et al., 2010). We capture economic hardship in early middle years as a latent construct defined by repeated reports of family economic hardship.

Although some researchers conceptualize feelings of self-esteem and depression as opposite extremes of the same continuum (Watson, Suls, & Haig, 2002), a review of several studies by Orth and colleagues (2008) notes that there are empirical evidence suggesting they are distinguishably separate constructs. For example, the correlation between self-esteem and depressive symptoms is moderate (Abela, Webb, Wagner, Ho, & Adams, 2006), and the stability of self-esteem over time is larger than that of depression (Trzesniewski, Donnellan, & Robins, 2003). Finally, recent evidence has emerged suggesting that self-esteem and depression may be differentially influenced by genetic factors (Neiss et al., 2005). Thus, in the present study, we treat self-esteem and depressive symptoms as distinguishably separate

constructs and expect to examine how they are prospectively and reciprocally related to one another.

As shown in Figure 2, we investigate both husbands and wives in the same dyadic modeling framework in order to elucidate dyadic and transactional (cross-spouse) associations between husbands and wives. By doing so, we place intra-individual processes within the couple context. We discuss the hypothesized associations in Figure 1 and Figure 2 in the following paragraphs.

The Direct Influence of Economic Hardship and Depressive Symptoms: Direct Hypothesis

Economic hardship may increase depressive symptoms as a direct reflection of stress and through adverse material and health conditions associated with economic hardship (Lovallo, 2005; Pearlin, 1989). Pearlin (1989) argues that depression is one of the most obvious reflections of stress. As shown in Figure 1, experiences with economic hardship may directly generate depressive feelings such as a sense of hopelessness and helplessness in husbands and wives. Previous research suggests that chronic stressful experiences such as prolonged economic hardship more powerfully predict depressive symptoms than acute stressful experiences such as discrete stressful life events (Mossakowski, 2003).

In addition, family economic hardship may influence husbands' and wives' depressive symptoms due to adverse material conditions. For example, studies have shown that nutrient deficiency (Bodnar & Wisner, 2005) and poor housing conditions (Evans, Wells, & Moch, 2003) can have a direct adverse influence on mental health. Furthermore, numerous studies have shown that chronic stressful experiences may influence physical health indirectly by causing deleterious effects through an interconnected set of physiological mechanisms (e.g., cardiovascular, hormonal, neurological and immunological; Lovallo, 2005) that may contribute to an increased level of depressive symptoms (Lewinsohn, Clarke, Rohde, Hops, & Seely, 1996; Wickrama, Conger, & Abraham, 2005).

The Influence of Economic Hardship on Self-esteem: Erosion Hypothesis

Self-esteem is comprised of feelings such as self-acceptance, self-worth, and self-respect (Rosenberg, 1965; Rosenberg, Schooler, & Schoenbach, 1969). Although, self-esteem is sometimes viewed as relatively stable, as shown in the Figure 1, the stress-process theory contends that stressful experiences erode personal resources such as self-esteem. Previous study has provided empirical evidence for the negative association between economic problems and self-esteem (Whitbeck et al., 1991).

This association may be attributed to several psycho-social mechanisms including *reflected appraisal*, *social comparisons*, and *self-evaluation*. Consistent with *reflected appraisal*, a person's self-esteem is a product of how that person believes others see him/her (Rosenberg, 1979). When individuals experience economic hardship, they may believe that others have a negative perception of them. When external sources of self-worth are lost, an individual's self-esteem erodes. The *social comparisons* perspective (Festinger, 1954; Rosenberg, 1979) argues that self-esteem is a consequence of individuals' propensity to compare themselves with others and make positive or negative self-evaluations based on such comparisons. For example, trying to escape from economic hardship may contribute to negative self-evaluations in middle-aged husbands and wives if they continue to experience family economic hardship despite their efforts (Festinger, 1954). That is, consistently experiencing failures to escape from economic hardship can erode feelings of self-worth of economically disadvantaged husbands and wives compared to economically advantaged husbands and

wives (Donnellan et al., 2009). Furthermore, *self-evaluation* (Bem, 1967) suggests that self-esteem results from evaluating one's own successes and failures. In a society that places great value on achievement, economic failures can contribute to negative views of self (Pearlin et al., 2005). This is also consistent with the identity perspective (Thoits, 1991) which suggests that identity disrupting experiences may diminish one's feelings of self-worth. Family economic hardship experiences may result in husbands' and wives' lacking competence in their parental, marital and care-giving roles which could undermine their self-esteem. Chronic economic hardship may diminish the self-esteem of husbands, particularly, because they possess higher salience in a 'breadwinner' identity (Wickrama et al., 1995).

The Influence of Self-esteem on Depression: Vulnerability Hypothesis

As shown in Figure 1, consistent with the *vulnerability hypothesis*, we expect that impaired self-esteem operates as a risk factor for depression (Ali & Avison, 1997; Lever, Pinol, & Uralde, 2005; Orth, Robins, & Roberts, 2008). Orth et al. (2008) listed several potential interpersonal and intra-personal mechanisms through which low self-esteem may contribute to increased level of depressive symptoms. First, individuals with low self-esteem excessively seek reassurance of their personal worth from others. This tends to increase the risk of being rejected, which contributes to increased levels of depressive symptoms (Joiner, 2000). Second, individuals with low self-esteem avoid social interactions which may decrease the available social support, thereby increasing the level of depressive symptoms (Ottenbreit & Dobson, 2004). Third, individuals with low self-esteem may engage in antisocial behaviors associated with depressive feelings (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005).

Finally, low self-esteem contributes to depression by rumination (Orth et al., 2008). Rumination of negative aspects of self is closely associated with depression (Nolen-Hoeksema, 2000). Previous studies have shown that ruminative self-focus has a stronger influence on depression than reflective self-focus (Mor & Winquist, 2002). Ross and Mirowsky (1989) posit that lack of self-worth, however, does not exist in a vacuum; instead, one's sense of powerlessness and worthlessness is a form of subjective alienation that generates depressive symptoms.

The Influence of Depression on Self-esteem: Scar Hypothesis

As shown in Figure 1, consistent with the scar hypothesis, low self-esteem can also be a consequence of depression (Rohde et al., 1990; Orth et al., 2008). Depressed individuals may focus on negative encoding of information and negative dimensions about the self resulting in a more adverse self-evaluation (Orth et al., 2008). Also, depression would have a negative impact on self-esteem through its adverse influence on social relationships. In addition, depressed individuals may be treated adversely by others, thus diminishing their self-esteem (Joiner, 2000).

We posit that the vulnerability hypothesis and the scar hypothesis are not mutually exclusive. Instead, as depicted in Figure 1, in the present study, we add the scar hypothesis to the typical stress-process model and expect that depression will predict subsequent self-esteem. Although there are important recent advances to stress-process theory (Avison, Aneshensel, Schieman, & Wheaton, 2010), less attention has been paid to its relation to the scar hypothesis.

Dyadic and Transactional Associations between Husbands and Wives

Family researchers increasingly focus on inter-dyadic and transactional processes (Lyons & Sayer, 2005; O'Brien, 2005). For example, one person's moods, behaviors, and beliefs have

been found to influence another's moods, behaviors, and beliefs (Benazon & Coyne, 2000; O'Brien, 2005). According to Hatfield et al. (1994), close relationship partners tend to be more attuned to each other's mood and symptoms and are more likely to experience their partner's emotions because of the investment in each other's welfare. The husband-wife dyadic relationship is often studied as a social unit. Thus, as shown in Figure 2, we expect dyadic associations between wives' self-esteem and husbands' self-esteem, and husbands' depressed mood and wives' depressed mood.

Furthermore, we expect transactional (cross-spouse) influences between husbands and wives. For example, husbands' beliefs about self-worth may influence wives' depressive mood and vice-versa. Similarly, husbands' depressive mood may deteriorate wives' self-esteem and vice-versa. Depressed individuals tend to seek but ultimately reject reassurance from others about their self worth, creating frustration for the partner (Coyne, 1976). The relationship partner might view the depressed spouse's negative emotions as reflective of his or her own worth or as personal failure which, in turn, influences the partner's self-esteem and risk for depression (Joiner & Katz, 1999). Such dyadic and transactional influences between a husband and wife may escalate through a self-perpetuating cycle over time.

Summary of Research Hypotheses

1. Early family economic hardship will directly and indirectly influence depressive symptoms of middle-aged husbands and wives through the erosion of self-esteem.
2. The influence of early economic hardship will progress through longitudinal reciprocal influences between depressive symptoms and self-esteem over time.
3. There will be dyadic and cross-spouse associations between depressive symptoms and self-esteem of husbands and wives.

METHOD

Participants and Procedures

The data used to evaluate our theoretical model are from the Iowa Midlife Transition Project (MTP), a study of 370 husbands and wives. These men and women were originally participating in the Iowa Youth and Families Project (IYFP) in 1989, 1990, 1991, 1992 and 1994 and then continued on to participate in the Midlife Transitions Project (MTP) in 2001. For both projects, trained field interviewers visited the families in their homes. During the visit, a trained interviewer asked each family member to complete a detailed questionnaire about family life, work, finances, friends, and mental and physical health status. Family members completed the questionnaires independently so that they could not see one another's answers.

The IYFP involved 451 families from eight counties in Iowa (see Conger & Elder, 1994). The site for the research was determined by our interest in rural economic stress (farm crisis) and well-being. Because many of the outcomes and processes considered in the overall study were concerned with children's development, families selected to participate had to have at least two children. Eligible families were identified through contacts with the public and private schools within the eight counties. Of the eligible families, 78% agreed to participate.

At the first wave of IYFP data collection in 1989, about 96% of the husbands and 78% of the wives were employed. Median yearly family income in 1989 was 33,240 (ranged from 0 to 259,000). In terms of occupational status, the men in this sample included craftsmen, foremen, and farmers (38.4%); professionals, managers, owners, and officials (23.8%); operatives and kindred workers (16.6%); salesworkers, clerical, service workers, private

household workers, and military service (14.4%); laborers (3.3%); and other (3.5%). Nineteen percent of the wives were homemakers. Occupations for the employed women included salesworkers, clerical, service workers, and private household workers (46.1%); professionals, managers, owners, and officials (23.7%); operatives and kindred workers (4.2%); craftsmen, foremen, and farmers (2.9%); laborers (.7%); and other (3.4%). In 1989, both husbands and wives were in their early middle years; the average ages of husbands and wives were 40 and 38 years, respectively. On average, the couples had been married for 17 years and had 3 children from their marriage together. The median age of youngest child was 10. In 1989, the average number of years of education for husbands' and wives were 13.68 and 13.54.

Because there are very few minorities in the rural area studied, all families in the combined sample were white. Adult participants (N=400) were interviewed again in the early months of 2001 as part of the MTP. The attrition rate for the combined sample was 11% across the 12-year period. We tested our theoretical model with a sample of 370 consistently married husbands and wives who provided complete data for all assessments in 2001. Out of the 370 complete cases in 2001, some cases were unavailable for a specific wave of data collection (nearly 9% of the data). This study used full information maximum likelihood (FIML), available in AMOS software, to test the hypotheses using all available data in the analysis (Enders, 2001). We further tested the model with and without the inclusion of the 9% missing cases and found no significant differences in the results.

Measures

Family Economic Hardship—The list of economic problems was adapted from Dohrenwend, Krasnoff, Askenasy, & Dohrenwend (1978). The measure of family economic hardship (one score per family) was created by summing the husband's and wife's "yes" responses to each of the 27 items in 1989, 1990, 1991, and 2001 that indicate economic problems experienced by the family (1=yes, 0=no). The list of economic problems included items such as "received government assistance," "borrowed money to help pay bills," "sold possessions or cashed in life insurance," "changed food shopping or eating habits to save money," and "sold property to raise money." Family economic hardship experienced during early middle years was captured as a latent construct using family economic hardship measures in 1989, 1990 and 1991 as multiple indicators. More importantly, this latent construct defined by repeated measures of family economic hardship reflected chronic family economic hardship in early middle years. Family economic hardship in late midlife was captured using the 2001 questionnaire and was included in the model as a control. Reliability statistics (alpha) across the years ranged from .84 to .89.

Self-Esteem—Self-esteem was measured in 1991 and 1994 using 10 items of the Rosenberg's self-esteem scale (Rosenberg, 1965). On a scale of 1 (strongly agree) to 5 (strongly disagree), participants were asked to rate items such as "I feel that I am a person of worth, at least on an equal level with others", "I feel that I have a number of good qualities", and "I am able to do things as well as most other people". Responses were coded and averaged so that higher score indicates higher self-esteem. Reliability statistics (alpha) in 1991 and 1994 ranged from .87 to .89.

Depressive Symptoms—Depressed mood was measured by the 13-item depressive symptomology subscale of the SCL-90-R (Derogatis & Melisaratos, 1983) in 1992 and 2001. Couples were asked to indicate on 5-point scale ranging from not at all (1) to extremely (5), how much in the past week they were bothered by symptoms of depressed mood, such as crying easily, feeling lonely, feeling blue, feeling worthless, and feeling hopeless about the future. Responses for all 13 items were averaged to create a depressive

symptoms subscale which could potentially range from 1 to 5. Reliability statistics (alpha) in 1992 and 2001 ranged from .89 to .91.

Education—Previous research suggested that the prevalence of depression tends to be higher among people with low levels of education (Ross, 2000). Therefore, to account for the influence of education on depressive symptoms, we included education as a control in the final model. Education was measured by the number of years of formal education completed in 1989.

Analysis

A series of models were tested within a Structural Equation Modeling (SEM) framework (AMOS version 7). First, we tested separate models (M1) for husbands and wives including reciprocal influences between self-esteem and depressive symptoms as influenced by family economic hardship. Second, we tested dyadic models (M2) for self-esteem and depressive symptoms separately including contemporaneous and longitudinal dyadic associations between husbands and wives. Finally, we tested our comprehensive theoretical model as shown in Figure 1 (M3) including reciprocal influences between self-esteem and depressive symptoms, dyadic and transactional associations between husbands and wives as influenced by early family economic hardship. We used a range of indices to evaluate model fit including the chi-square statistic. The chi-square test statistic divided by degrees of freedom can provide a preliminary and approximate guideline for overall fit. When chi-square divided by the degrees of freedom is below about 3.0, the model fits the data well (Carmines & McIver, 1981). In addition, we used the Comparative fit index (CFI) and Root Mean Squared Error of Approximation (RMSEA) to evaluate the SEM models because these two indices are not directly related to the sample size. The cutoff value of the CFI should be close to or greater than .95 and the cutoff value of the RMSEA should be close to or less than .06 to indicate that the model fits the data well (Hu & Bentler, 1999).

RESULTS

Descriptive statistics and zero-order correlations among the study variables are presented in Table 1. For both husbands and wives, the mean levels depressive symptoms increased over time whereas the mean levels of self-esteem decreased. Each of the early family economic hardship indicators were significantly correlated with each other. At all measured waves, husbands' and wives' self-esteem were negatively correlated with economic hardship. Husbands' self-esteem in 1991 and 1994 were positively correlated, and both were negatively correlated with depressive symptoms in 1992 and 2001. Husbands' depressive symptoms in 1992 and 2001 were positively correlated. Similarly, wives' self-esteem in 1991 and 1994 were positively correlated, and both were also negatively correlated with wives' depressive symptoms in 1992 and 2001. Wives' depressive symptoms in 1992 and 2001 were also positively correlated.

Early family economic hardship had a long term influence on husbands' depressive symptoms at Time 4 after controlling for family economic hardship in 2001. Figure 3a presents the results of the husband model, including the *direct, erosion*, and *vulnerability* hypotheses. For husbands, although the *direct effect* of economic hardship on depressive symptom (1992) was not significant ($\beta = .071$, $t = 1.29$), early economic hardship in 1989–1991 influenced husbands' depression at Time 4 through continuing economic hardship in 2001 ($\beta = .530$, $t = 10.35$ for the path from economic hardship 1989–1991 to economic hardship in 2001 and $\beta = .177$, $t = 3.84$ for the path from economic hardship 2001 to husbands' depression at Time 4). Consistent with the *erosion hypothesis*, early family economic hardship negatively contributed to husbands' self-esteem at Time 1 ($\beta = -.293$, $t =$

−5.36). Consistent with the *vulnerability hypothesis*, self-esteem at Time 1, in turn, negatively influenced husbands' depressive symptoms at Time 2 (β = −.362, t = −6.77). Consistent with the *scar hypothesis*, depressive symptoms at Time 2 were negatively associated with husbands' self-esteem at Time 3 (β = −.164, t = −3.63). Self-esteem at Time 1 negatively influenced husbands' depressive symptoms at Time 4, which shows *subsequent reciprocal influences* between self-esteem and depressive symptoms (β = −.243, t = −3.89). The stabilities of self-esteem and depressive symptoms over time were .589 (t = 12.82) and .331 (t = 6.49), respectively.

Early family economic hardship also had a long term influence on wives' depressive symptoms at Time 4 after controlling for family economic hardship in 2001. Figure 3b presents the results of wife model including *direct, erosion*, and *vulnerability* hypotheses. For wives, the *direct effect* of economic hardship on depressive symptom (1992) was statistically significant (β = .119, t = 2.29). Early economic hardship in 1989–1991 also influenced wives' depression at Time 4 through continuing economic hardship in 2001 (β = .535, t = 10.47 for the path from economic hardship 1989–1991 to economic hardship in 2001 and β = .204, t = 4.45 for the path from economic hardship 2001 to wives' depression at Time 4). Consistent with the *erosion hypothesis*, early family economic hardship negatively contributed to wives' self-esteem at Time 1 (β = −.183, t = −3.33). Consistent with the *vulnerability hypothesis*, self-esteem at Time 1 negatively influenced wives' depressive symptoms at Time 2 (β = −.384, t = −7.68). Consistent with the *scar hypothesis*, depressive symptoms at Time 2 were negatively associated with husbands' self-esteem at Time 3 (β = −.135, t = −3.16). Self-esteem at Time 1 exerted a marginally significant negative influence on wives' depressive symptoms at Time 4 (β = −.108, t = −1.66). The stabilities of self-esteem and depressive symptoms over time were .624 (t = 14.75) and .234 (t = 4.53), respectively. Both models presented in Figures 3a and 3b fit the data reasonably well.

Next, we tested the direct hypothesis and cross-spouse associations between husbands and wives using dyadic models for depressive symptoms (Figure 3c) and self-esteem (Figure 3d). As shown in Figure 3c, early family economic hardship contributed to husbands' and wives' depressive symptoms at Time 2 (β = .189, t = 3.34 for husbands and β = .191, t = 3.44 for wives). For both husbands and wives, depressive symptoms at Time 2 significantly predicted depressive symptoms at time 4, after controlling for family economic hardship in 2001 (β = .459, t = 9.39 and β = .361, t = 7.47 for husbands and wives, respectively). The results also showed that husbands' depression at Time 2 influenced wives' depression at time 4 after controlling for economic hardship in 2001. However, wives' earlier depression did not influence husbands' depression at time 4. As shown in Figure 3d, early family economic hardship contributed to husbands' and wives' self-esteem at Time 1 (β = −.295, t = −5.40 for husbands and β = −.176, t = −3.20 for wives). The results also showed that husbands' self-esteem at Time 1 influenced wives' self-esteem at Time 3. In contrast, for both time points, husbands' self-esteem was relatively independent from wives' self-esteem. Both models presented in Figures 3c and 3d fit the data reasonably well.

The comprehensive theoretical model in Figure 4 combines the reciprocal influences between self-esteem and depressive symptoms with the dyadic and cross-spouse associations between husbands and wives, as influenced by early family economic hardship (after controlling for family economic hardship in 2001). The results show that early family economic hardship was negatively associated with both husbands' and wives' self-esteem at Time 1 (β = −.296, t = −5.41 and β = −.186, t = −3.37 for husbands and wives, respectively). For both husbands and wives, self-esteem at Time 1 was negatively associated with depressive symptoms at Time 2 and positively associated with self-esteem at Time 3. Husbands' and wives' depressive symptoms at Time 2 contributed to the erosion of their

own self-esteem at Time 3 (β = −.164, t = −3.65 for husbands and β = −.137, t = −3.23 for wives). However, self-esteem at Time 3 predicted increased depressive symptoms at time 4 for wives only (β = −.212, t = −3.28). For both husbands and wives, depressive symptoms at Time 4 were predicted by their earlier depressive symptom levels at Time 2 (β = .353, t = 7.01 for husbands and β = .236, t = 4.61 for wives). Husbands' depressive symptoms at Time 4 were influenced by husbands' self-esteem at Time 1 (β = −.219, t =−3.74), and wives' self esteem at Time 3 (β = −.101, t = −2.20). Husbands' self-esteem at Time 1 significantly contributed to wives' self-esteem at Time 3 (β = .083, t = 2.07). Husbands' depressive symptoms at Time 4 was significantly associated with wives' depressive symptoms at Time 4 (r = .134, t = 2.37). In addition, for both husbands and wives, depressive symptoms at Time 4 were predicted by family economic hardship through the continuing influence of economic hardship in 1989–1991 on economic hardship in 2001. Higher education for husbands, but not for wives, was associated with greater depressive symptoms at Time 2 (β = .104, t = 2.02). Overall, this model fit the data well. In addition to testing the model as outlined in Figure 4, we also tested an alternative model that omitted the paths from husbands' self-esteem at Time 1 to wives' self-esteem at Time 3 and from wives' self-esteem at Time 3 to husbands' depressive symptoms at Time 4. Compared to the model in Figure 4, the alternative model significantly worsens the model fit [χ^2 (2 df) = 10.04] suggesting that the model in Figure 4 represents the data better than the alternative model.

DISCUSSION

The findings generally supported our theoretical model drawn from stress-process theory (Pearlin & Skaff, 1996) and the scar hypothesis (Coyne et al., 1998). Consistent with the stress-process theory, the results showed that early chronic economic hardship influenced depressive symptoms directly and indirectly through its influence on self-esteem after controlling for late economic hardship. The results also provided evidence for the scar hypothesis which suggests that depression predicts subsequent level of self-esteem. That is, for these middle-aged husbands and wives, longitudinal mutual influences between self-esteem and depressive symptoms form a reciprocal process over time. Our study findings showed that depression progresses over the middle years through a self-perpetuating reciprocal process between self-esteem and depression (alternation of scaring and vulnerability) initiated by early economic hardship. It appears that midlife is a sensitive developmental period during which mental health consequences of early stressful experiences progress with increasing health heterogeneity. Particularly, early economic hardship during the middle years has been shown to be a powerful stressor that plays an important role in this process. Although there seems to be some differences between husbands and wives, in general, these associations exist for both husbands and wives.

These study findings advance our knowledge about the stress-distress process. The stress-process theory contends that the influence of early stressors progresses mainly through stress proliferation (Pearlin et al., 2005). This is consistent with the notion of 'social chain of risk' from the life course perspective in that early socioeconomic failures are linked to later socioeconomic failures in a successively contingent manner, creating a *social chain of risks* (a chain of insult) over the life course (O'Rand & Hamil-Luker, 2005). Our findings suggest that the health influence of a stressor may also progress over the life course through a 'chain of insult' in that depression damages individuals' self-esteem which in turn places them at risk of increased depressive symptoms in a successively contingent manner. That is, loss of one's self-esteem can also be considered as an individual failure. These findings are particularly important in that they provide previously absent evidence for the scar hypothesis (e.g., Orth et al., 2008).

Consistent with the life course perspective, the study showed that, for both husband and wives, experiencing economic hardship in the early middle years (for the study sample, the financial farm crisis in the late 80's) influences depressive symptom levels over a 10–12 year period through adverse intra-individual and inter-spouse processes. That is, early economic hardship produces a cumulative health disadvantage over the middle years through a 'path-dependent' mechanism (O'Rand & Hamil-Luker, 2005) producing a socioeconomic gradient in mental health (Link & Phelan, 1995).

As noted previously, husbands and wives form a dynamic social unit. Thus, we expected dependency between husbands and wives in that the depressive mood of husbands may lead to a depressed mood in their wives (O'Brien, 2005). This is also consistent with the life course 'interlocking trajectory' notion which suggests parallel changes in attributes of husbands and wives over time (Elder, George, & Shanahan, 1996). According to the results of our dyadic models, although there is a lack of dependency, or correlation, between husbands and wives in terms of depressive symptoms in early middle years, couples' dependency in depressive symptoms increases as they age.

Similarly, we expected an association of husbands' beliefs about self-worth (self-esteem) with those of wives. However, the results showed a lack of dependency between husbands' self-esteem and wives' self-esteem except for a path that showed that husbands' self-esteem longitudinally influences wives' self-esteem, not vice versa. Furthermore, for both husbands and wives, the moderate correlations between self-esteem and depressive symptoms provided evidence for the discriminant validities of measures used for these two constructs.

It appears that husbands' self-esteem plays a more important role in the early stage of the process whereas wives' self-esteem plays a prominent role in the later stage. Moreover, husbands' self-esteem was more powerfully eroded by economic hardship than was wives' self-esteem. As noted previously, consistent with the identity perspective, the influence of life experiences in different role domains are a function of its salience (Thoits, 1992). Thus, the associations between economic hardship and self-esteem may be stronger for husbands because these rural husbands in the study sample may possess a higher salience of the 'breadwinner' role than do wives (Wickrama, Conger, Lorenz, & Matthews, 1995).

Although the findings from the present study are generally consistent with the hypothesized model, several factors may limit the generalizability of the results. First, our sample included all whites from rural mid-west counties. These analyses must be replicated with more representative samples in terms of ethnicity, family demographic characteristics including family size and urban and rural places of residence. Second, this research should be replicated with clinical mental health measures to assure that the outcome of interest involves serious health problems. Future research should also seek to extend these findings by examining additional factors that may operate to mediate or moderate the observed associations among study constructs. Particularly, given the complexity of our theoretical model, we have not included the potential moderating role of self-esteem (multiplicative influences) in the model (Wheaton, 2010). Instead, we limited our model only to the additive influences.

Despite these limitations, the results presented here make an important contribution by demonstrating the long-term direct and indirect mental health consequences for middle-aged men and women due to early family economic hardship. In addition, the present study addresses important theoretical implications such as the need for the integration of different theoretical orientations.

Implications for Practice

The present study points to important practical implications. First, although midlife is a sensitive developmental period, it has been understudied. The findings of this study reveal a prolonged mental health influence of family economic problems for husbands and wives in the middle years. Whereas practitioners often treat clients' depression by emphasizing the more proximal contexts, such as individuals' cognitions and behaviors (Segal, Whitney, Lam, & CANMAT Depression Work Group, 2001), this study suggests that attention should also be directed toward the effects of environmental contexts, such as family economic problems. Moreover, the strong relationship between early and late economic hardship indicates that this is a chronic stressor, rather than an acute stressor, for many families and practitioners should take the history of this hardship into consideration when developing their treatment or prevention plan.

Our findings also suggest that practitioners should focus not only on current economic difficulties but also on early or prior experiences with economic difficulties because these difficulties can have a lingering influence on mental health. It appears that even when the early economic problems are resolved, its adverse influence can continue. Thus, the findings emphasize the need for programs to address this lingering effect. Individuals may fail to see a connection between their current mental health difficulties and their past economic hardships unless it is made explicit. Once families are aware of this possibility programs can more successfully facilitate healthy adjustment strategies. Furthermore, individuals may benefit from programs that promote participants' resilience to economic stress in order to moderate this mental health risk over the middle years.

Second, for both federal and state level policy makers, the middle-aged cohort (i.e., 'baby boomers') is an important demographic group because they have already experienced several historical economic down turns. Some of these families suffered sudden economic hardships during the 'farm crisis' of the 1980s. Now these same men and women are experiencing the worst economic recession in the U.S. since World War II (Ekerdt, 2010) at an age when many are preparing to retire from the work force. The current economic downturn has created economic difficulties affecting some families more than others, determined by their dependence on Social Security, Medicare, and pension funds. Back and DeVaney (2004) reported that 64% of the baby boom cohort is not financially healthy with little savings and few assets. In the coming years, a large number of baby boomers will be experiencing longer periods of retirement than ever before, during which they may experience rather unexpected economic difficulties due to the recession (Adams & Rau, 2011). Thus, many in this generation will continue to face economic hardships created, or at least affected by government policies. For these reasons, this age cohort should be considered a target group in need of special consideration and specific assistance. Future policies and programs should focus on protecting this unique demographic group of families from the adverse influence of economic difficulties.

In addition to the practical implications linked specifically to the mental health outcomes examined in this study, previous research has documented that mental health problems are associated with marital relationship quality (Lorenz et al., 1993). The study findings also enhance our knowledge about the influence of early family economic difficulties on husbands' and wives' intra-individual mental health processes, reciprocities, and the cross-spouse influences that may be associated with the marital relationship within couples. Moreover, these findings are evidence of the interdependent nature of marriage partners. Programs and therapeutic interventions may benefit from incorporating this perspective into their work. Intervention leaders can use this information to educate the public about the tendency for an individual's mental health difficulty to affect their partner. This insight could also be used by practitioners to reduce depression and bolster self-esteem by building

each partner's skills. This improved understanding may lead to more effective mental health and therapeutic interventions both at individual and couple levels.

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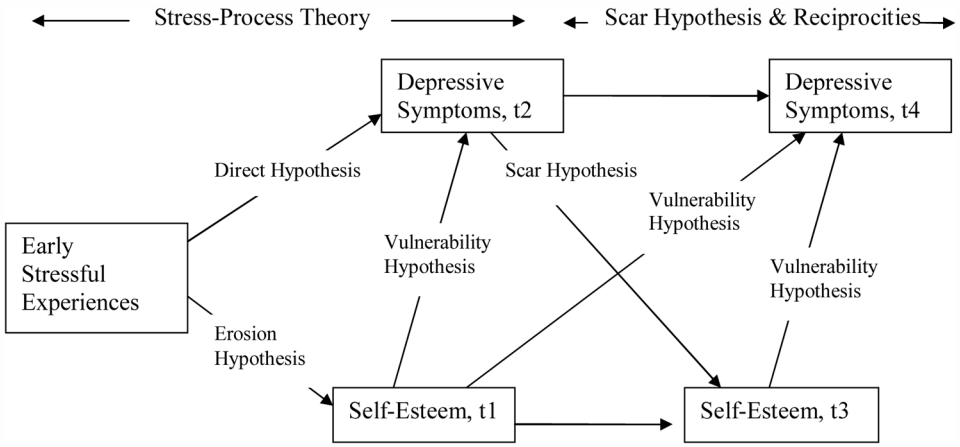

FIGURE 1.
The Intra-Individual Theoretical Model

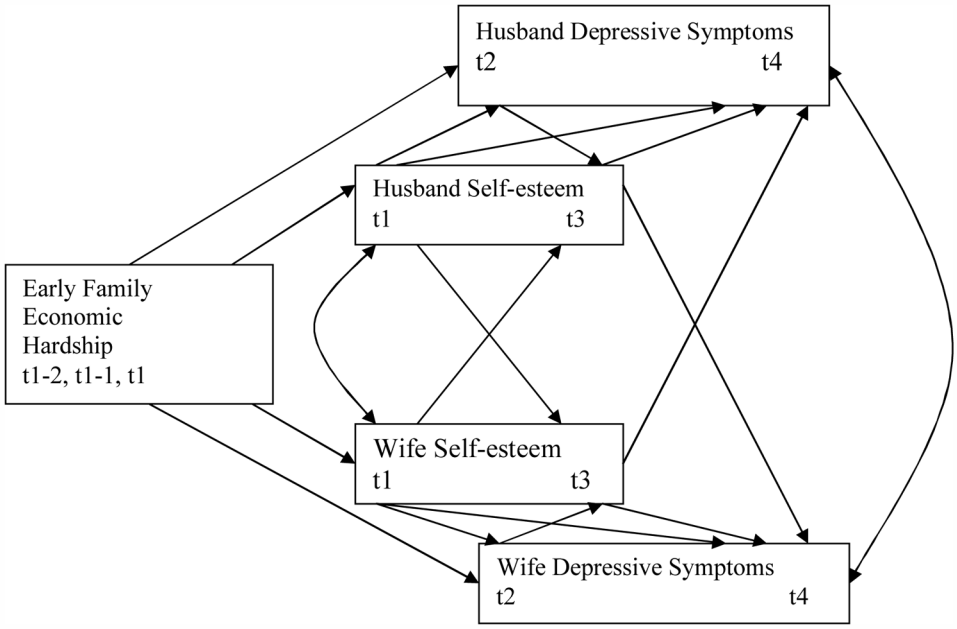

FIGURE 2.
The Dyadic Theoretical Model

FIGURE 3a.

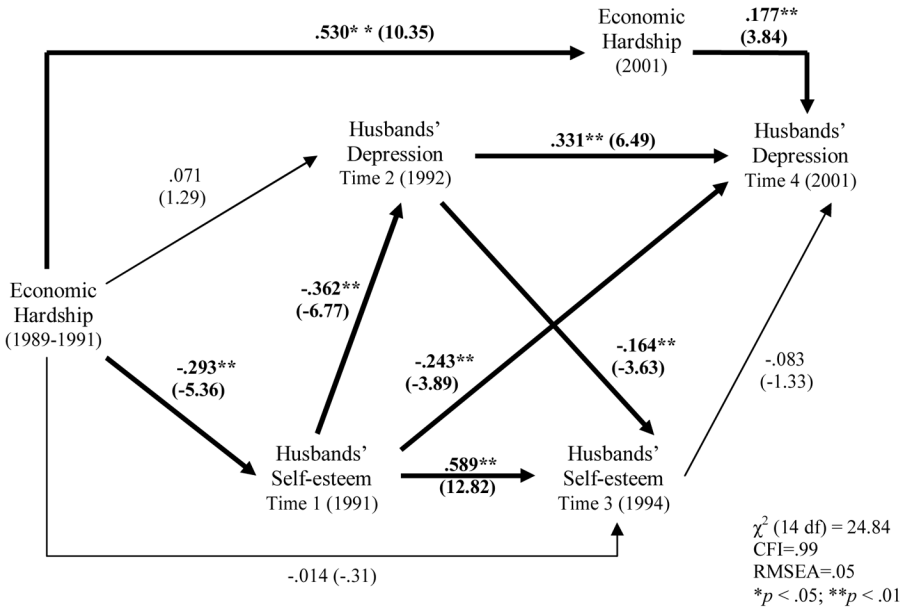

FIGURE 3b.

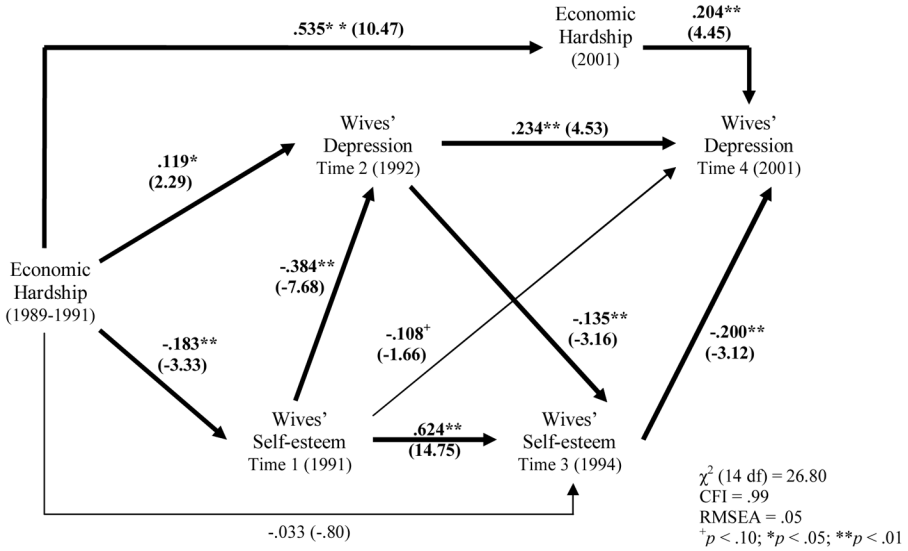

FIGURE 3c.

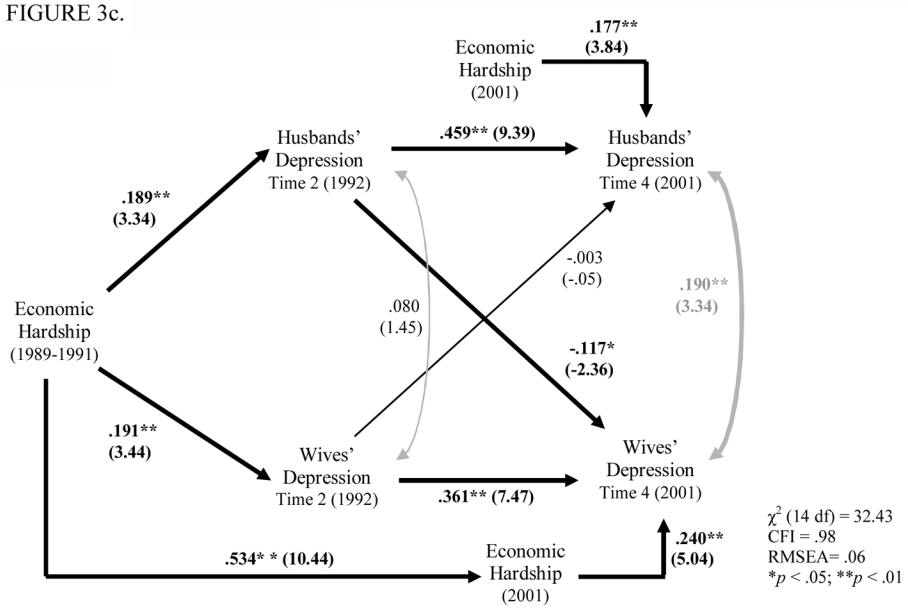

FIGURE 3d.

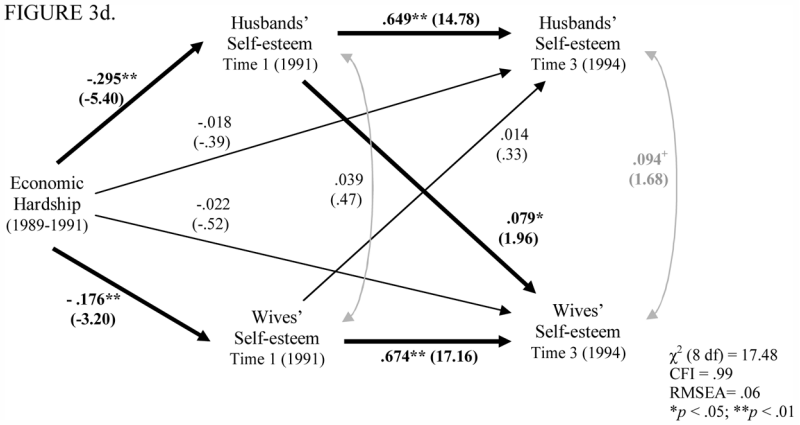

FIGURE 3.

FIGURE 3a. The Influence of Family Economic Hardship on Husbands' Self-esteem and Depressive Symptoms (results are standardized coefficients with corresponding t-ratios)

FIGURE 3b. The Influence of Family Economic Hardship on Wives' Self-esteem and Depressive Symptoms (results are standardized coefficients with corresponding t-ratios)

FIGURE 3c. The Influence of Family Economic Hardship on Husbands' and Wives' Depressive Symptoms: Testing the Total Effect (results are standardized coefficients with corresponding t-ratios)

FIGURE 3d. The Influence of Family Economic Hardship on Husbands' and Wives' Self-esteem: Testing the Erosion Hypothesis (results are standardized coefficients with corresponding t-ratios)

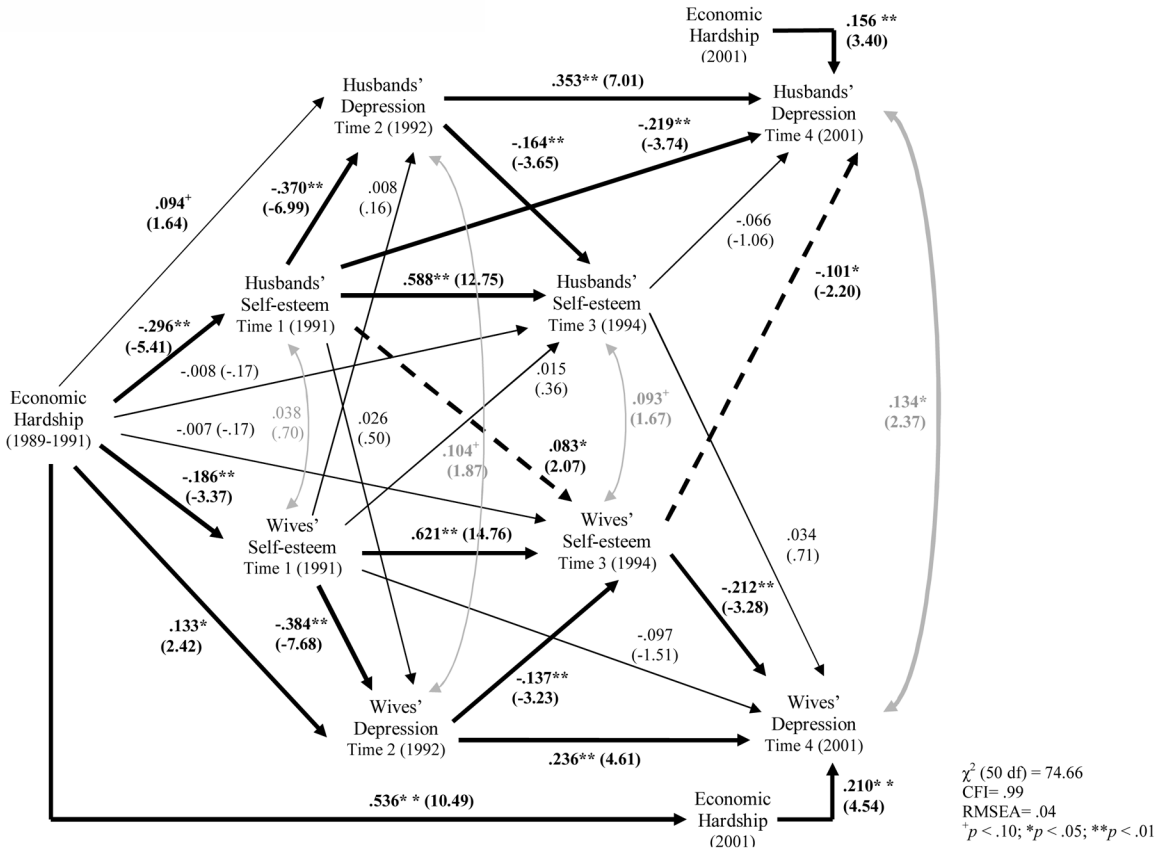

FIGURE 4.

The Influence of Family Economic Hardship on Husbands' and Wives' Self-esteem and Depressive Symptoms (results are standardized coefficients with corresponding t-ratios)

Note: Broken lines indicated significant dyadic and transactional associations between husbands and wives. The paths from husbands' education to husbands' depression and the paths from wives' education to wives' depression are included as controls (see texts for results).

Table 1

Correlations among the Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Economic Hardship – 1989	---													
2. Economic Hardship – 1990	.76**	---												
3. Economic Hardship – 1991	.67**	.78**	---											
4. Economic Hardship – 2001	.44**	.48**	.47**	---										
5. Husbands' Self-esteem – 1991	−.21**	−.26**	−.30**	−.12*	---									
6. Husbands' Depression – 1992	.10	.15**	.17**	.09	−.38**	---								
7. Husbands' Self-esteem – 1994	−.14**	−.18**	−.14*	−.11*	.66**	−.40**	---							
8. Husbands' Depression – 2001	.13*	.26**	.21**	.24**	−.44**	.48**	−.40**	---						
9. Wives' Self-esteem – 1991	−.20**	−.17**	−.12*	−.21**	.09	−.03	.06	−.17**	---					
10. Wives' Depression – 1992	.17**	.16**	.16**	.28**	−.04	.09	−.02	.11	−.41**	---				
11. Wives' Self-esteem – 1994	−.16**	−.15**	−.11*	−.19**	.15**	−.07	.15**	−.20**	.69**	−.40**	---			
12. Wives' Depression – 2001	.16**	.17**	.14*	.32**	−.04	−.05	−.06	.17**	−.38**	.41**	−.40**	---		
13. Husbands' Education	−.20**	−.17**	−.19**	−.11*	.14**	.04	.10	−.07	.13*	−.08	.07	−.08	---	
14. Wives' Education	−.10	−.12*	−.15**	−.09	.03	−.03	−.05	.01	.03	.01	.02	−.01	.24**	---
Mean	4.65	4.28	4.38	3.71	4.01	1.29	3.96	1.41	3.98	1.47	3.89	1.53	13.68	13.54
SD	3.67	3.60	3.82	3.62	.49	.41	.48	.44	.54	.53	.58	.50	2.21	3.24