



Economic hardship, religion and mental health during the midwestern farm crisis[☆]

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Abstract

Macro-level economic decline is usually assumed to affect the mental health of individuals but the process by which this occurs and factors that moderate are still not well understood. This study builds from three bodies of literature to address how economic hardship, religion and psychosocial variables affect mental health outcomes in the context of widespread economic crisis in the farm sector. (Parallels exist with other sectors where plant closings, job loss and unemployment occur.) Differential effects of *economic hardship* and *religion* were examined using a sample of 800 Ohio farm men and women who experienced the 1980s Midwestern farm crisis. Findings demonstrated that economic hardship was a consistent predictor of stress and depression for both genders. Membership in Fundamentalist denominations increased men's well-being. Affiliation with any religious group enhanced women's mental health. Physical health and social support were associated with lower stress and depression. Coping techniques had mixed effects on stress and depression with both avoidance/denial and support seeking associated with more adverse mental health outcomes. This study shows that macro-level structural changes can result in a context of economic hardship where factors assumed to buffer adverse mental health outcomes fail to do so and where previously neglected factors, such as religion, become important mediators of hardship.

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1. Introduction

The mental health outcomes of economic change are a longstanding social science concern and immediate interest as new rounds of restructuring confront US populations. The compelling need to deal with rapid change affects not only farmers but also other segments of the population. From the 1970s onward, social scientists documented the process of plant closure and the social-psychological outcomes for former employees and their families (Hass, 1985; Perrucci et al., 1987). Research on job loss and unemployment using larger

samples also considered social psychological effects of major disorganizing events (Snyder and Nowak, 1984). There were also studies where rapid growth was the change event (e.g., Freudenburg, 1982).

While macro-level economic decline is widely acknowledged to negatively impact individuals' mental health, existing research has conceptual gaps and suggests that the process by which economic downturn affects mental health is more complex than previously assumed. Different research traditions also emphasize different predictors of mental health with the result that empirical analyses overlook potentially useful explanatory variables and fail to control for others, adding to inconsistency. This study identifies missing links in research assessing how macro-level economic change filters down to micro-level mental health outcomes and addresses two of them. Do commonly used predictors of mental health operate as expected from theory or is there reason to expect that macro-structural economic downturns are unique contexts where traditional buffers of adverse mental health have limited effect? And might factors overlooked in conventional literature, namely

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religion, moderate the effects of economic hardship in these contexts?

To address the previous questions, we draw from three distinct bodies of work dealing respectively, with economic hardship, religion and general psychosocial mental health processes. In addition to emphasizing distinct variables as predictors of mental health outcomes, these research traditions assume varying degrees of individualized action as opposed to external, structural forces in determining mental health outcomes. In the US context, the costs of market failure and other systemic economic downturns tend to be borne in an individualized manner (Aneshensel, 1992; Thoits, 1995). Systemic crises are typically interpreted as individual as opposed to structural failure. For example, both the individual at risk and the observing public often interpret those jeopardized by market dislocations as having made the wrong choice of occupation or industry. Public policy makes the same distinction: misfortune is largely treated by social programs targeted at individuals and families as opposed to entire economic sectors, communities or regions experiencing downturn.

Personal coping strategies, mental health or otherwise, are the default mechanism for weathering economic downturns among US populations. But is individualized mental health coping sufficient to counter experiences of structural change? In the US generally, the main institutional, group-oriented mental health resource available to populations dealing with change is religion. We thus question if religion might perform better as a moderator of adverse mental health outcomes than commonly used personal coping strategies.

To empirically analyze the mental health consequences of structural downturns, we use the case of the 1980s farm crisis, where Midwestern farm families were subject to acute economic restructuring. In addition to its relevance in examining downturns, the farm population is especially useful for assessing the alternative power of individualized coping as opposed to institutional strategies such as religion. In contrast to bucolic portrayals, farming is a highly competitive industry where success and failure are particularly individualized. Indeed, economic failure of one's neighbors is often a source of personal gain, as farmers seek to enlarge holdings by purchasing neighboring property. In rural areas, organized religion is a socially acceptable institution for dealing with mental health problems and churches are among the major providers of mental health services.

2. Economic hardship, mental health and the role of religion

The assumption that economic hardship negatively influences mental health pervades several bodies of

scholarly work. One studies mental health in the context of economic upheavals, such as the Great Depression and Black Tuesday (Clausen, 1995; Elder, 1998; Watkins, 2000), the 1980s farm crisis (Conger and Elder, 1994; Lasley et al., 1995; Rosenblatt, 1990), plant closings (Perrucci et al., 1988; Phillips, 1998; Camp, 1995), and corporate downsizing (Ayling and Ayling, 1997; *New York Times*, 1996). It develops the view that structurally induced financial downturns impact entire sectors of the economy and occupations within them, not just individuals and their households. It describes mental health outcomes along with other consequences of widespread economic change. This literature thus emphasizes the structural over individual factors that affect mental health. In so doing, it usually includes some predictors that receive primary attention in the second body of research, the psychosocial.

Psychosocial literature includes much sociological and social-psychological research and often incorporates economic well-being measures of individuals and/or households. Financial well-being, such as earnings and income levels, are typically treated as a background context for considering social psychological or other individualized processes of interest, such as the effectiveness of social support, personal efficacy, coping strategies and physical health. Financial well-being is viewed as a characteristic that is experienced personally or in conjunction with one's household. It is seldom linked to the macro-level economic system or crises within it.

The development of these two bodies of research in independent directions is problematic in mental health research. In a seminal article on stress, Thoits (1995) noted that contractions in the macrolevel economic system are seldom linked directly to individuals' mental health, with work on unemployment by Catalano and Dooley serving as an exception. As a consequence, the relevance of mental health research to broader questions of structural persistence and social change is underexplored.

The independent trajectories have created a gap in our understanding of linkages between macro-level economic factors and micro-level experiences. Literature investigating structurally induced fiscal crises, such as plant closings, uses some psychosocial variables but bypasses the multi-faceted distinctions and subtleties related to them. Psychosocial literature uses some economic measures, such as income, but more routinely employs role strain statuses and powerlessness or lack of control to denote economic conditions faced by individuals. Psychosocial literature centers on finely grained examinations of coping resources and strategies; types, duration, meaning and carry-over of stressors; kinds and perceptions of social support; and structural constraints. Each body of research excludes or downplays variables found in the other. Thus, it is unclear

how predictors of mental health commonly used in sociological and psychosocial research operate in a situation of widespread economic strain.

A third body of research has also developed independently and centers on the importance of religion to mental health, e.g., depression, anxiety, life satisfaction. Summarizing it, [Ellison \(1998\)](#) noted empirical findings on the impact of religion, religious denominations and religious involvement. He pointed out the importance of exploring theories linking those components to health and personal lifestyles, social integration and support, psychological resources, coping processes and spiritual experiences. The religion-mental health literature underscores the importance of structural and institutional explanations of mental health. It emphasizes that religion is not simply a proxy for social support or a coping strategy, a supposition that seems prevalent in the psychosocial literature when it considers religion's effects. The religion-mental health literature distinguishes structural, behavioral and attitudinal components and maintains that religion is a structural status and cultural identity as well as a source of networks, beliefs and attitudes.

The religion-mental health literature shares gaps in common with the other two. Studies on religion and mental health seldom incorporate macro-level economic processes; in that, they are similar to the psychosocial body of research. Consequently, the efficacy of religion in countering widespread economic hardship is indeterminate. Studies of the religion-health connection seldom incorporate the conceptual distinctions that pervade social psychological research on outcomes such as stress and depression. They are similar to the macro-economic research in that aspect. Therefore, it is unclear whether or not the religion effect persists when religion variables are included in models with commonly used psychosocial predictors.

In this paper, we examine mental health outcomes for 800 Ohio farm men and women who experienced the widespread fiscal upheaval produced by the 1980s farm crisis. We include both objective and subjective indicators to link households' financial well-being to the broader economic restructuring that impacted agriculture and the farm occupations dependent on it. Linkages between external, macro-level structures and individuals' lives involve not only the economic sector but also other large scale institutions and organizations, such as religious denominations and belief systems. We incorporate religious denominations and a measure of religious coping into explanatory models along with psychosocial variables, such as social support, personal control, coping strategies, and individuals' characteristics like age, education, and physical health.

We used two measures of mental health, stress and depression, following [Aneshensel et al. \(1991\)](#) who argued for the importance of examining more than

one health outcome. Stress and depression are prominent in the literature, capture somewhat different psychological problems and allow for a robust analysis. We examine interaction effects particularly with gender, because of the accumulated research that reports differences between men and women and found them between gender and religion. Two questions guide our research: do commonly used predictors behave the same or differently in a situation of pervasive economic adversity and does religion affect mental health outcomes net of psychosocial variables?

3. The 1980s farm crisis as a context for examining mental health outcomes

The farm crisis of the 1980s subjected Midwestern farmers to an acute economic downturn in excess of the normal hardships farming entails. US farming is acknowledged as one of the most stressful occupations, even under relatively good conditions. Family owned and operated enterprises combine the economic spheres of both production and consumption which renders them doubly vulnerable to economic downturns. ([Hefernan, 1986](#)) While harsh and unpredictable weather is always a nemesis, shifts in land values, interest rates, consumer demands, export markets, and consumer prices engender additional risks and financial hardship. In the 1980s, the decline of land values, a recession of the US economy, and loss of overseas commodities markets contributed to the downturn in agriculture. Midwestern farms were hardest hit because they specialized in cash grains. Among these, medium sized farms that relied almost entirely on farming for livelihood were less able to manage high debt loads and, consequently, suffered the most.

The 1980s farm crisis provided an excellent context for studying widespread economic hardship. Scholarly publications identified the negative mental health outcomes associated with financial problems, characteristics of farming as an occupation, farmers' sociodemographic attributes, and selected variables that corresponded to ones used in the body of psychosocial research. (See [Armstrong and Schulman, 1990](#); [Belyea and Lobao, 1990](#); [Davis-Brown and Salamon, 1987](#); [Elder and Conger, 2000](#); [Geller et al., 1988](#); [Lorenz et al., 2000](#); [Walker and Walker, 1987](#); and others.) While the research did not always comprehensively consider psychosocial explanatory models, it studied many of the same concepts and confirmed findings characteristic of non-farm populations, such as the distress-reducing capability of social support and physical health. Sometimes, it was sensitive to gender differences, finding that women experienced significantly more distress as in the general population; occasionally, it included one or more coping strategies. Findings related to age and

education were different from those on non-farm samples. In particular, age was positively related to mental health; education was inversely related because younger farmers were more likely to have over-capitalized during the crisis.

Following findings from both farm crisis and psychosocial studies, we expected positive impacts from social support, age and physical health, mixed effects from coping strategies, and strong negative outcomes from economic hardship that persisted. We developed explanatory models for the Ohio sample that sequentially integrated sets of variables reflecting individuals' personal characteristics and resources for coping with variables reflecting the macro-level economic situation. We aimed to bring into dialog the research of scholars studying either the psychosocial or economic factors that is often constrained in rural or social psychological subfields. As Thoits pointed out, such constraints obscure the relevance of mental health research to broader questions of social change and individuals' experience dealing with it.

4. Religion and mental health

The relationship of religion and religious coping to mental health has long been an issue of social scientific interest. Both sociologists and psychologists tackled the topic following different trajectories. One trajectory centered on the importance of the structural aspects of religion, such as denomination, level of involvement and commitment, local congregations and cultural frameworks. Levin and Chatters (1998) summarized the generally beneficial effects of these structural factors but also recounted insignificant or negative outcomes. Mirola (1999) and others identified the use of different measures of religion and mental health as one source of contradictory findings. In our study, we used respondents' denomination because it was available in the Ohio farm data. However, we think that it would be optimal to use a global measure of affiliation in conjunction with measures of religion-related behavior.

A second trajectory involves social psychological aspects of religion: its role as a cognitive framework, a source of meaning and purpose and a network for support (King and Schafer, 1992). Ellison (1998) reported variation in well-being across religious denominations and involvement, and called for research on the mechanisms through which religion operates. He suggested theoretical links with health behaviors and personal lifestyles, social integration and support, psychological resources, and coping. Park et al. (1990) found that life events and religious coping mechanisms mediated the denomination-specific buffering effects on depression. In our research, we incorporated theoretical

insights of King and Schafer, Ellison and other researchers in the religion and psychosocial traditions. We included perceived support and ties with networks that are not specifically religious, spousal support, individuals' personal characteristics and coping strategies. Although we expected non-religious variables to be beneficial, we speculated that religious denomination encompassed more than support, a cognitive frame or center of empowerment. We propose that it provides identity and social status and hypothesized that it has an effect net of individuals' social support, personal control or choice of strategies for coping. Religious denomination can be seen as an institutional identity that fills in the research gap between personal agency and the structural constraints of economic hardship.

The second trajectory of religion and mental health research involves an extensive literature on religious coping. Pargament (1997) and Pargament et al. (1998) reviewed it and suggested that methods of religious coping are important determinants for health and well-being. Pargament and his colleagues have developed and verified numerous scales measuring different factors. Although the variables available in the farm data did not capture the complexity and reliability of those scales, they were similar in some ways. We created a measure of religious consolation suggestive of Pargament's spiritually based and religious support activity measures. In combination with denomination, it represented our attempt to open dialog among researchers on mental health from the psychosocial, macro-economic and religion traditions.

Fundamentalist denominations have received a great deal of research attention in recent years. As Woodberry and Smith (1998) summarized, studies of Conservative Protestantism have enhanced our understanding of gender-role attitudes, tolerance, political behavior and child-rearing strategies. Work has begun to accumulate on mental health outcomes as well. For example, Genia (1996), Paulo (1997) and Nooney and Woodrum (2000) have studied different samples and aspects of the religion-health connection. King and Schafer (1992), in particular, denoted the social structures of Fundamentalist congregations that might affect men and women differently, such as the constraints on women's roles. Another way in which stress or depression may be affected by Fundamentalism is through its effect on educational attainment. Education is often viewed as an important mediator of stress because it provides cognitive skills that may aid in dealing with stressors such as financial hardship. Darnell and Sherkat (1997) reported that Fundamentalism negatively influences educational attainment. Therefore, we could expect Fundamentalism to increase depression and stress through lack of education.

5. Gendered outcomes

Although mental health research has been inconsistent in its sensitivity to gender, many studies have found important differences between men and women. Further, much of the past literature on farm populations and mental health tends to focus on farm men. For these reasons, we give particular attention to the question of gender variations in mental health outcomes. For example, regarding the farm crisis, Lobao and Meyer (1991) pointed out that household consumption, coping mechanisms and the gendered division of labor in farm work roles sensitizes women to issues of financial hardship more than men and may lead to greater stress among women. In summarizing the psychosocial literature on stress, Thoits concluded that men and women respond differently to stressors, and there is a great deal of social psychological work that accounts for gendered outcomes. Peek et al. (1991) stressed that gender is an essential factor to consider in any study of religion. They suggest that differences in how men and women interact with groups and networks may effect how each utilizes religion in coping.

Ozorak (1996) found that women benefited from their religious involvement despite the fact that most religious systems are patriarchal in belief and practice. Ozorak saw this as a paradox worthy of investigation and found that women cognitively reframe their religious structures and downplay or dismiss the gender inequality in their religious practices. King and Schafer (1992) suggested that the social structures associated with Fundamentalism constrained women more than men.

Taken together, the above research implied that men and women might be differentially impacted by economic hardship, religion, social support, personal characteristics and coping strategies. In this study, we attempted to parse out how each of these structures affected well-being for both men and women.

6. Research design

Our data are from the Ohio Study, part of a longitudinal project monitoring approximately 900 farms selected randomly from a list of all Ohio farms (about 70,000) that was provided by the Ohio Agricultural Statistical Service. We selected the data from 1988 because the effects of the farm crisis on individuals had become cumulative and pervasive by then and marked improvement in the farm economy did not begin until early in the next decade. The 1988 wave is also the only one that was designed to survey both farm women and men. The sample was stratified by gross sales class to insure adequate representation of farms of all sizes and weighted by sales class to reflect the distribution of farms from the 1987 Census of Agriculture.

The data came from telephone interviews and a mailed survey. The interviews collected basic farm production and household demographic information in 1988. The survey focused on farm and household labor as well as social psychological and personal attributes. They were sent to each operator and spouse/household partner in 1989. We analyzed the data from the 531 men and 497 women who completed the mailed survey and whose farms were included in the telephone interview. About 94% of the sample was married.

Farm characteristics in the sample typified the pattern of smaller commercial family farms found in the Midwest's Corn Belt (Ohio, Illinois, Indiana, Iowa and Missouri). The Ohio sample is similar to the other Corn Belt states at the time of the survey on major farm-related characteristics. About 15% of farmers had debt-to-asset ratios exceeding 40%, indicating serious or extreme financial difficulty. Most farmland was owned by the household and the enterprises used little hired labor. Median family income in 1987 was \$26,331 for the sample, about \$4,500 below that for the nation for the same year (US Bureau of the Census 1991). Forty-three percent had family incomes lower than \$20,000; 42% of farm family incomes in the Midwest were lower than \$20,000 for the same year. The Ohio data were thus representative of the broader Midwestern Corn Belt.

7. Stress and depression

Stress was measured by eight questions about how frequently respondents experienced stress and specific pressures associated with farm life. Three commonly used questions measured perceived stress (Bultena et al., 1986; Lasley et al., 1995). They were: (1) On a day to day basis, how much stress do you experience? (2) How concerned are you with your level of stress? (3) During your farming career, how much would you say stress has increased? Five questions addressed role stress by asking how frequently respondents worried about the continued financial viability of the farm and problems in balancing work and family responsibilities, felt pressured by having too much to do in too little time, and were frustrated at having no control over weather and commodity prices (Lobao and Meyer, 1995). Possible responses ranged from (1) almost never to (4) very often. Responses to each of these items were summed and then divided by eight to calculate the overall stress score. Cronbach's alpha for this scale was 0.83.

The second dependent variable, depression, was measured using the long version of the CES-D scale (Radloff, 1977), which has been used with rural as well as general populations (Hoyt, 1995) and in research incorporating religion (Levin and Chatters, 1998). Respondents were asked how often they felt or behaved a certain way in the last week and responses range from

(1) rarely to (4) all the time. The overall depression score was calculated by summing the responses and dividing by twenty items; Cronbach's alpha was 0.89. Correlation between the measures of stress and depression was 0.54.

8. Economic hardship and religion

Analysis employed economic hardship and denominational affiliation variables with controls for personal characteristics, social support, and coping strategies.

8.1. Economic hardship

We used indicators that included both wealth and income, and we employed objective and subjective or perceptual indicators of household adversity to identify variation in the economic well-being of farm households. The *debt-to-asset ratio* is a measure frequently used to indicate financial solvency and the risk associated with farms' financial structures (Conger and Elder, 1994). It was the ratio of total farm and household liabilities to total assets for the year prior to the study, 1987. Economists denote cut-off points for the debt-to-asset ratio, which classify farm operations by their degree of financial stress (Harrington, 1985). The categories were: (1) under 40%, no apparent financial problems; (2) 40–70%, serious financial problems; (3) 71–100%, extreme financial problems; and (4) over 100%, technically insolvent. (Because of collinearity, we did not include household income in models with the debt-asset ratio. However, in analyses not shown here, we did substitute income in all models and found the same direction of effect.)

Household adversity was measured by a commonly used and previously validated three item scale used by Pearlin et al. (1981) as well as by researchers studying other national and rural populations (e.g., Armstrong and Schulman, 1990; Mirowsky et al., 1996); its response categories ranged from 1 (never) to 4 (very often). The scale items questioned how often respondents felt that the household lacked food, clothing and medical care in the past year. Cronbach's alpha was 0.86.

Since *medium-sized farms* were hardest hit by the farm financial crisis of the 1980s, we grouped farms into dichotomy as an indicator of vulnerability to hardship (Albrecht and Murdock, 1988; Belyea and Lobao, 1990). Medium sized farms were those with sales between \$40,000 and \$249,999. They depended on farming as opposed to off-farm jobs yet were too small to capitalize on farming alone. Nationally, they were the ones hit hardest by the crisis. This variable represented the connection between the macro-level process of economic restructuring and crisis in the farm sector

and micro-level susceptibility to it in one's home and business; it is a macro-micro link variable. *Control of farm problems* was a three item scale reflecting respondents' sense of mastery. Respondents were asked how they felt after their last stressful farm situation: did they see it as something they could change or affect, did they see it as something that was not inevitable, and did they have enough information to act? Response categories ranged from 1 (not at all) to 4 (very much); Cronbach's alpha was 0.55.

8.2. Denominational affiliation

We measured respondents' affiliations with religious denominations and classified them based on the scheme developed by Roof and McKinney (1987) and used by Darnell and Sherkat (1997) among others. This classification was better suited to the churches named by the Ohio farm sample than either the scheme developed by Smith (1990) for General Social Survey data or the newly developed measure of Steensland et al. (2000) that critiqued Smith while attending to racial and regional diversity. Owners of Ohio farms were racially homogeneous; too fine a division of church affiliation rendered some categories unduly small for analysis. The Roof and McKinney model simultaneously allowed for variation within and across denominational categories and included denominations that have similar cultural attributes, community life, and shared understandings. The five groups were Fundamentalists, Moderate Protestants, Liberal Protestants, Catholics and no religious preference. These groups represented virtually all farmers in Ohio; 7% of the sample were members of denominations classified as "other."¹

We used a second measure of religion, religious coping that we entered into analysis with other social-psychological scales. We extracted from thirty-seven items used to measure coping strategies those that specifically referred to using faith or religion to cope and created a scale called "religious consolation" with a reliability coefficient of 0.58. Gil et al. (1989) and others have reported that the effect of religious coping is often obscured because single indicators of it are merged with broader scales of coping strategies. During the 1990s,

¹We paid particular attention to the effects of the liberal and Moderate Protestant groups because of the potential for misclassification noted by Steensland et al. (2000). Neither group predicted strongly or consistently; we tried reclassifying a few groups but it did not alter the predictability of either denomination.

In analyses not presented here, we examined the effects of excluding first one and then another as the reference category since "other" had so few people. Here, we displayed models with the Liberal Protestant category excluded because it consistently had no effect on stress or depression for men or women. Hence, it was possible to compare the impact of denominational categories to one that was not predictive. Also, it facilitated visual comparison of both Fundamentalists and Catholics to all other Protestant groups.

Pargament and his colleagues published numerous articles that generated twenty-one finely tuned subscales of RCOPE. These explained variation in well-being above and beyond measures of nonreligious coping and are well summarized in Pargament's *The Psychology of Religion and Coping* (1997).

Ellison (1998) noted that students of coping processes have amassed compelling evidence that religious cognitions and behaviors are valuable resources in dealing with problematic events and conditions. The Ohio data provided us with only a few variables that dealt with religious coping: found new faith; talked to a minister, priest or other spiritual counselor; hoped for a miracle; and believed in God. We used them as a scale and also entered them separately into analysis because our scale's reliability was moderate and items within it represented different dimensions of the many distinct scales identified by psychologists of religion.

9. Variables from the psychosocial literature: personal and social resources and coping

9.1. Personal characteristics and social support variables

Personal characteristics included respondents' *gender*, *age*, *education*, and *health*. Gender was coded female (1), male (0); the sample was 48% female. We conducted all analyses within gender categories for two reasons—one theoretical and one empirical. Research on stress and depression has found different predictors for men and women and emphasized the importance of analyzing models separately (e.g., Peek et al., 1991; Lorenz et al., 1993; Mirola, 1999), and we found interaction outcomes by gender in preliminary analysis. Age was coded in years, and the median was 51.9. Education was measured with a 7 point scale, ranging from none (1) to graduate school (7). Nearly half of the sample completed high school and only 11% had less than a high school education.

Perceived health was assessed by asking respondents to describe their current physical health on a four-point scale, ranging from poor (1) to excellent (4). The reliability and validity of this often used measure is summarized by van Willigen (2000). Marital status and race were not included in our analytic models, because there was practically no variation in marital status among Ohio farmers (94% married), and nearly all in the sample were Caucasian as is characteristic of the Ohio farm population.

Perceived support networks was a frequently used scale of three items; respondents indicated the number of close friends, close relatives and people that would help in times of trouble. A scale of such items is often referred to as "structural support," "social integration" or "social embeddedness" and distinguished from

functional or emotional support (Thoits, 1995). Items were summed and divided by four to calculate an overall score. Cronbach's alpha was 0.79. *Spousal support* was measured by two items that asked how satisfied respondents were with the support and understanding they received with farm duties and with the time their spouse contributed to family and home responsibilities. Response categories ranged from completely satisfied (5) to completely dissatisfied (1). Correlation between the items was 0.68.

9.2. Coping strategies

We asked respondents how often they used different coping mechanisms from a list of thirty-seven items routinely used to create coping scales (Meyer and Lobao, 1991). The items' range was from (1) never used to (4) used a great deal. Each coping scale was constructed by principal factor analysis with varimax rotations and included items found by other researchers to similarly group together in factor analyses of other populations. Four scales were similar to those in the literature on coping (e.g., Pearlin and Lieberman, 1979; Folkman et al., 1986; Scherer and Brodzinski, 1990). Although some scales were more problem-focused and others, emotion-focused, we, like Bowman (1990), found that they could not be completely differentiated on that basis.

Withdrawal/denial, measured respondents' attempts to cope with farming problems by attempting to avoid or to not think about them, e.g., "I refused to think about it," "I went on as if nothing was happening," "I didn't let it get to me; refused to think too much about it," and "I wished the situation would go away." Nine items were summed to calculate an overall score; Cronbach's alpha was 0.78.

Plan of action involved taking direct actions to handle farm problems or adopting a mindset that viewed hardships as obstacles to be overcome. The scale of eight items included statements such as "I talked to someone to find out about the situation," "I made a plan of action and followed it," "I knew what had to be done so I doubled my efforts to make things work," and "I promised myself things would be better next time." Cronbach's alpha was 0.79.

Adjustment/comparison measured respondents' attempts to cope with hardship by shifting their outlooks so that reality seemed more positive. This scale consisted of six items that referred to concentrating on other important aspects of life, thinking about others who were even worse off and lowering expectations. Adjustment/ comparison included statements such as "I noticed people who have more difficulties in life than I do," "I told myself that success in farming is not the only important thing in life," and "I didn't expect to make too much income from farming." The items in this

scale were summed and then divided by six to calculate an overall score. Cronbach's alpha was 0.75.

Support seeking was a scale of four items based upon interactions between relatives and friends in a time of need. Support seeking included statements such as "I talked with friends about staying in farming," "I talked with relatives about staying farming," and "I asked a respected friend or relative for advice." The items were summed to calculate an overall score. Cronbach's alpha was 0.69.

10. Models of stress and depression by gender

We examined models explaining stress and depression for both genders through OLS regression. In these models, we introduced sets of explanatory variables through progressive adjustment, a technique that enabled us to track effects that persist as sets of variables are added. First, stress and depression were regressed separately on economic hardship variables, representing the farm crisis context. Models then were enlarged by the addition of denominational affiliation, a religious structural concept with often studied effects on education, social support and coping. The next set of variables, personal characteristics and social support, was entered together as is frequently done in psychosocial literature. Finally, models incorporated coping strategies, including the religious one. The models integrated the ordering of variables suggested by mental health research done in rural, psychosocial, religion and economic hardship literatures.

Our goal was to examine two general hypotheses: (1) how do commonly used predictors of mental health work in the context of widespread economic change in farming, that is, how strong are their effects and do they persist as models are more fully identified; (2) how does religion affect mental health, net of other predictors commonly examined in the psychosocial literature.

We examined the potential for multicollinearity. Although the coping variables correlated somewhat, no variance inflation factor exceeded 2.05; thus, collinearity was not a problem. We tested for interaction and found it between gender and religion variables; thus, regression analyses were done separately for men and women. In all, there were 16 models examined: 8 for stress and 8 for depression, 4 each for men and women.

Tables 1 and 2 display these models, their significance and *t* values and the amount of variance explained by each model. In the discussion below, we focus on predictors that were significant and trace the persistence of that significance as additional sets of variables are added to models. Because two measures of mental health were used, we emphasize in discussion the findings that were important to both, with attention to gender differences where relevant.

11. Effects of economic hardship

Subjective measures of *economic hardship* were strongly related to both stress and depression. Problems with affording food, clothing or medical care during the past year had consistent, positive, direct and deleterious effects on mental health for men and women. This finding was consistent with conclusions by [Pearlin et al. \(1981\)](#) and much other subsequent research.

Farmers' sense of mastery over challenges to their farms also strongly affected well-being — but not beneficially. Those who felt that they could change stressful farm situations and felt knowledgeable enough to do so were stressed and depressed. Personal characteristics, social support or effective use of coping techniques only slightly mitigated poor mental health outcomes. Summarizing numerous research findings on the limits of mastery, [Aneshensel \(1992\)](#) noted that belief in personal control may be counterproductive when stressors cannot be controlled. More recently, the *New York Times* (2001) noted similar findings by psychophysiologists from The Ohio State University and the University of Amsterdam. We speculate that farm culture, which has traditionally nourished a psychology of individualism ([Heffernan and Heffernan, 1986](#); [Davidson, 1990](#)), not only fostered farmers' sense of personal competency but also consequently led them to feel accountable for the economic problems of their enterprises. Personal control in an individualistic culture during a period of widespread economic crisis may simply overwhelm people with a sense of doom and culpability. Further, the close association between work and family life on farms can render those who both own and manage the operation susceptible to close observation by other family members, whose judgments may appear as an additional pressure ([Lasley et al., 1995](#)).

Objective indicators of economic hardship only predicted stress — not depression. Ownership of medium-sized farms, the ones hit hardest during the 1980s crisis, was stressful for both genders, regardless of individuals' personal characteristics, social support or use of coping strategies. Although these personal and social variables often reduced stress in circumstances where financial problems were more individualized, they did not here. Owning a business vulnerable to the macro-level changes occurring in agriculture consistently produced stress. These findings supported the cumulative work by [Catalano and Dooley](#) on the effects of macro-level economic process on negative psychological outcomes for individuals (e.g., see [Dooley and Catalano, 1984](#)). Similar outcomes are found in the literature on plant closings and unemployment during the 1980s (e.g., [Kessler et al., 1988](#)).

Farm indebtedness, as measured by the debt-to-asset ratio, was important only to men's and women's stress not depression, although other researchers who studied

the farm crisis reported that it produced depression (Bultena et al., 1986; Belyea and Lobao, 1990; Ortega et al., 1994). We found a reduced effect on stress when physical health and social support were added into models 3 and 4. Then, it became less important for men's stress and insignificant for women's. Also, debt did not stress older and healthier farmers who experienced social support, especially women.

Our findings about economic hardship underscored its detrimental effects. They clearly emphasized that experiencing monetary constraints and feeling accountable for making ends meet were harmful perceptions. Owning mid-sized farms that were the most vulnerable to widespread economic change, especially indebted ones, increased the personal toll. Although some individual attributes of farmers and their interpersonal associations partly moderated the impact of economic crisis, they did not eradicate it. Micro-level experiences of the pervasive financial downturns that buffeted the macro sector of farming were devastating.

12. Religious denomination

We turn to findings about mediating effects. *Denominational affiliation* lessened the impact of economic hardship, and gender differences were apparent. Membership in Fundamentalist denominations directly and clearly enhanced men's mental health, decreasing both their stress and depression. This findings persisted as controls for personal characteristics, social support and coping strategies were introduced into models. (Catholic men were also less stressed and Moderate Protestant men, less depressed, than Liberal Protestant men.) The pervasive effect of Fundamentalist affiliation led us to speculate about the role in men's mental health of clearly defined gender expectations, proscriptions regarding social and moral conduct and frequent interaction with like-minded people sharing those roles and norms. As Hunter (1987), Smith et al. (1998) and others point out, subcultural identities, such as found in Conservative Protestant denominations, may sustain and orient people and satisfy their need for meaning.

Denominational affiliation mattered only for depression for women. Those with no religious preference were significantly more depressed than members of any other denomination. This finding confirmed popularly held notions that church membership is important to women's well-being (Ellison and George, 1994). The depressive outcome of not identifying with a church was persistent for women and not mediated by their age, education, health, social support or use of coping techniques. In short, though belonging to a church did not buffer stress for women, it did reduce their chances of being depressed. We conducted further analyses not presented here in which we systematically excluded

various groups of women and found that when we excluded unchurched women, no group was more depressed than they. It would seem that research on mental health that includes only personal characteristics, coping styles and networks can miss the fact that religion matters for men and women, net of their individual attributes.

13. Variables from psychosocial models: personal characteristics, social support and coping

Findings regarding *personal characteristics* confirmed some existing literature but failed to support other findings. As expected, *perceived physical health* amplified mental health for both men and women, a finding of numerous studies (e.g., Aneshensel et al., 1984; Murphy et al., 1992). It counteracted and served as an antidote to the force that the perceptual measures of economic hardship had on stress and depression. Additionally, physical health moderated the impact of farm indebtedness on stress.

Much research has demonstrated a positive or u-shaped relationship between *age* and stress and depression (Kessler et al., 1992; Mirowsky and Ross, 1992). We did not find compromised mental health was higher among older farmers. In contrast, age offset the stress precipitated by financial difficulties and a sense of mastery over farm predicaments. Age was unrelated to depression. In sum, age tended to be an advantage, not a disadvantage, to mental health.

We considered the tendency of older respondents to agree with statements regardless of content as a possible explanation of the findings (Mirowsky and Ross, 1996); however, since agreement bias here would render those older more stressed and depressed, their better mental health is likely not attributable to a survey response pattern.

We conducted a profile analysis (not shown here) of the elderly in order to understand the negative and null associations between age and mental health. On average, older farmers experienced neither objective nor subjective economic hardship. They were not overburdened by farm solvency and other business problems. Probably, if they considered retiring from farming production, they could still reside on their farms without needing another full-time job for family survival. Like Lin et al. (1986), we did not observe the commonly reported decrease in perceived support with age. Older farmers had more social support and eschewed all coping techniques, except religious consolation. Kaplan et al. (1988) found subjective health assessments inadequate for older populations. Even though the elders of our sample generally reported poorer physical health and less education, they discerned a helpful network and relied on a religious faith. Those older

^a *t* values are in parentheses.
^b Liberal Protestants as reference group.
 *Sig= 0.05, one-tailed, 10 two-t-tailed test.
 ***Sig= 0.05, two-tailed test.
 *****Sig= 0.001, two-tailed test.

Coyne and Downey (1991) noted in their numerous studies that coping strategies more often appeared damaging rather than beneficial. Other studies showed variability by samples; for example, viewing one's situation as relatively positive benefited both Minnesota

Table 2
Progressive adjustment of depression by gender on economic hardship, denominational affiliation, personal characteristics, social support, and coping strategies

	Male				Female			
	1	2	3	4	1	2	3	4
Independent variables	<i>B</i>	β	<i>b</i>	β	<i>b</i>	β	<i>b</i>	β
<i>Economic hardship</i>								
Debt asset ratio	0.050	0.035 (0.836) ^a	0.060 (1.005)	0.017 (0.284)	0.014 (-0.358)	0.015 (0.269)	0.015 (0.363)	0.018 (0.426)
Household adversity	0.101***	0.320	0.100***	0.080***	0.153	0.114***	0.349	0.225
Medium-size farm	0.037	(7.802)	0.041	(5.992)	(3.955)	(8.448)	(8.310)	(5.506)
Control of farm	0.087***	0.043 (1.044)	0.048 (1.178)	0.043 (1.248)	0.041 (1.114)	0.013 (0.302)	0.010 (0.240)	-0.017 (-0.432)
Problems		0.149	0.089***	0.113	0.062	0.095***	0.151	0.122
<i>Denominational Affiliation^b</i>		(3.598)	(3.693)	(2.809)	(1.567)	(3.568)	(3.613)	(3.095)
Fundamentalists		-0.138**	-0.112	-0.086*	-0.073	-0.029	-0.024	-0.016
Moderate protestants		-0.091**	-0.110	-0.070	(-1.681)	(-0.486)	0.003	(-0.337)
Catholic		-0.065	(-1.994)	(-1.477)	-0.068	0.003	0.041	0.039
No preference		0.053	-0.054	-0.044	(-1.407)	(0.054)	-0.009	(0.937)
<i>Personal characteristics</i>			(-1.096)	(-0.746)	(-0.111)	(-0.547)	(0.161)	(0.898)
Age			0.037	-0.024	0.044	0.260***	0.117	0.019
Education			(0.790)	(0.526)	(1.031)	(2.675)	0.272**	(-0.333)
Health			-0.003	-0.078	-0.028	-0.000	0.119	0.269**
<i>Social Support</i>			-0.013	(-1.668)	(-0.638)	-0.000	(2.845)	(2.869)
Support networks			-0.023***	-0.032	-0.016	-0.013	-0.010	0.000
Spousal support			-0.150***	(-0.765)	(0.254)	-0.013	(-0.213)	(0.093)
<i>Coping</i>			-0.023***	(-5.807)	(-5.292)	-0.013	-0.034	-0.008
Withdrawal/denial			-0.023***	-0.177	-0.024***	-0.023***	-0.162***	-0.020***
Plan of action			-0.085***	(-4.209)	(-4.767)	-0.120***	(-4.046)	-0.149
			(-3.791)	-0.159	-0.075***	-0.120***	-0.256	(-3.667)
					(-3.621)	(-6.080)	-0.105***	(-5.322)
					0.028***	0.022***	0.022***	0.222
					(6.409)	(4.324)	-0.071*	(4.324)
					-0.148***	-0.090	-0.071*	(-1.635)
					(-3.800)			

*** Significant at $\alpha = 0.001$, one and two-tailed test.

Given the many detrimental effects of the five coping strategies, we concluded that stress and depression were particularly contumacious in a period of widespread economic crisis, despite individuals' usage of them. Like [Coyne and Downey \(1991\)](#), we found that coping strategies more often damaged well-being than enhanced it. [Aneshensel \(1992\)](#) noted that their effectiveness depended on the nature of the problem confronted. The farm crisis was a problem of enormous magnitude and no strategy was useful across the board. [Pearlin \(1991\)](#) pointed out that individuals' efforts provided little resistance for certain kinds of life exigencies, and problem-solving was not a realistic option in all situations. Here, only having a plan of action was a somewhat helpful strategy. Comparing one's situation to that of other people, selectively ignoring or being resigned to problems, actively seeking support or

religious consolation actually increased stress, depression or both. Like other researchers on stress and/or depression, we found that not only could individuals' coping efforts fail to constrain distress but also they could exacerbate it (Mattlin et al., 1990; Pearlin, 1989).

14. Discussion: impact of macro-level economic hardship, religion and gender

Much research acknowledges the effect of macro-level economic conditions, but few studies have examined how macro-level processes influence micro-level experiences and how economic upheaval alters the association between psychosocial variables and mental health outcomes. The 1980s farm crisis presents a case where widespread financial hardship altered the operation of some psychosocial factors, such as individuals' youth, education and sense of control, in combating stress and depression. Personal mastery, which often enhances well-being, actually hindered it. Macro-level economic change set up a situation that rendered impotent farmers' sense of enlightenment and capability; it made formal education irrelevant and youth, a liability. In contrast, older age was an advantage. Those whose future in farming production was short were less stressed and depressed than others, even when they claimed less than perfect physical health.

The pervasive 1980s economic crisis that infiltrated households and the individuals within had an effect that persisted through progressive adjustment of theoretical models. Although commonly used predictors of mental health operated the same here as in research on other populations and in studies where financial problems were measured by income alone or conceptualized as unique to individuals or households, no predictors weakened the significance of fiscal hardship. Perceptions of family deprivation affected negatively both men's and women's well-being even though good physical health and social support had positive outcomes. Healthy farmers with strong networks and supportive spouses experienced poor social-psychological well-being, just not so poor as those more sickly and alone. Coping strategies, such as withdrawing from or denying problems failed to ameliorate stress and depression; having a plan of action helped somewhat. These findings confirmed much research on the importance of physical health and perceptions of economic well-being and social support. As noted by Tigges et al. (1998), social relationships in rural settings are intertwined with the restructuring process. Our research made clear how difficult it is for individuals to view their futures as viable when an entire economic sector and the occupations within it experience restructuring. Such findings have implications for research on unemployment, job loss and plant closings.

During the 1980s, rural mental health centers and other public and private agencies stretched their resources to serve distressed populations. Practitioners personally counseled farmers and developed programs that aimed to sustain and help them. But strategies directed towards individual and household adjustments could scarcely confront the economic crisis set up by a global economic restructuring of agriculture and the slowness of US government farm policy to respond. To reduce stress and depression, structural change in the farm economy was required more than individuals' actions and the support of others. Farmers who experienced insecurity from externally driven structural changes and who feared additional loss were aggrieved and angered; the Iowa rural longitudinal study points out that these sentiments continue (Lasley, 2001).

Religion affected mental health net of other predictors. Our findings about denomination and the modest one about religious coping underscored its importance. Ellison (1998) aptly summarized the theoretical links often made between religious involvement and well-being: social integration and support, feelings of personal efficacy, coping resources, and regulation of health-relevant conduct. These concepts mirror those found in mental health research that employs mostly psycho-social variables. We included perceptions of social support, membership in voluntary organizations, satisfaction with spousal support, sense of personal mastery and four coping strategies other than religious ones. Perhaps some would concede that we measured the potential for regulating conduct by including education. Denomination still mattered; our results imply that being affiliated with an organized religion makes a difference not captured by social support, efficacy and coping resources—a difference requiring further exploration. We did not have data to examine effects of religious factors other than denomination, such as public participation (e.g., church attendance, strength of identification with group, leadership in group activities, financial contributions), private participation (e.g., prayer, reading of sacred texts) religious beliefs and attitudes about a higher power and sacred texts, and religious orientation (e.g., intrinsic, extrinsic, quest, spiritual maturity). But our findings on denomination suggest that scholars studying psycho-social effects on stress, depression and such would benefit from including religion when studying mental health outcomes.

Religion variables accentuated the importance of gendered analyses as advocated by Peek et al. (1991) in their research on Fundamentalism and by Ellison and Levin (1998) in their discussion of future directions in the religion-health field. Mirola (1999) demonstrated that religious involvement decreased women's depression and did not affect men's. We found that women claiming a denomination were less depressed than those

not. Perhaps as Mirola speculated, gender influences the integrative nature of religion, an hypothesis meriting further study.

Fundamentalism decreased men's stress and depression. This finding can be added to the small amount of research on the association between Fundamentalism and mental health beginning to cumulate (Altemeyer and Hunsberger, 1992; Genia, 1996). Most studies of the religion-health connection pursue distinct lines of inquiry favored by sociologists or psychologists. The former explore how institutionalized religion provides social support; the latter, how positive coping mechanisms reinforce privatized religion. Nooney and Wooldrum (2000) examined both paths and found that each was important. Our findings centered only on the effects of Fundamentalist affiliation and an approximation of religious coping but they highlight the importance of a consistently overlooked interaction with gender.

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