

# RESEARCH REPORT

Michigan State University  
Agricultural Experiment Station  
East Lansing

## *Final Report*



## **Michigan Farm Families Coping With Stress**

### **1986-1991**

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# FINAL REPORT



## Michigan Farm Families Coping with Stress 1986-1991

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## **Introduction**

The economic crisis experienced by the national farm community in the 1980s was severe and long-lasting. Mounting surpluses, low commodity prices, high interest rates, and import quotas were taking a heavy toll on American farmers.

Michigan farmers were not exempt. Hard decisions about impending bankruptcy, finding another occupation, selling off a family farm that had long been a "generational trust," and plummeting land values resulted in extraordinarily high levels of stress for farmers. Because farming is an occupation that closely meshes work and family life, farm families also shared the strain.

By 1985, Michigan's Cooperative Extension Service staff were being inundated with requests to supply technological and financial counseling to help farm families deal with the any difficult decisions they needed to make. Heavy demands were also being put on state and field staff to help families deal with the increased emotional upset that individuals and families were experiencing.

In summer of 1986, a proposal to Michigan State University's Agricultural Experiment Station (AES) to study the short- and longterm effects of stress on the state's farm families was approved. Anne Soderman, an Extension specialist in human development from the Department of Family and Child Ecology, identified 12 regionally representative areas of the state (see Figure 1) for a five-year study of farm families. Extension offices in those regions were contacted for a listing of farm families, including not only those who were experiencing difficulty but also those who were dealing well with the increasing uncertainty.

One hundred and eighty-five families agreed to participate in a five-year study, which was to include periodic completion of questionnaires by each spouse and also completion of a health-risk appraisal at a local hospital at the beginning and end of the study. Contacts with hospitals or health clinics in the 12 areas were established by the local

Extension home economists. Health providers in 12 separate Michigan counties agreed to oversee health screenings of cholesterol levels, blood pressure, and weight management at little or no cost to the participating farm families in their communities.

Findings of the five-year study are reported here. The success of the project is due to sustained support and effort of Cooperative Extension staff in the participating counties, funding by AES, and health care administrators who provided the testing in the 12 regions.

On-campus staff from the MSU medical schools were consulted periodically and provided information related to the health risk assessment and evaluation. Over time, Judy Pfaff, a statistical consultant, and several graduate research assistants contributed considerable time and competence to the project.

Most important, of course, were the 125 farm families who faithfully filled out and returned the surveys mailed to them, also taking time to complete the health appraisals at their local health facilities. They did this at a time when, for most of them, maintaining the family farm was not only a challenge - it was an overwhelming struggle.

## **Need to Study Farm Family Coping**

Even in the best of times, farming has been ranked near the top of stressful occupations. Contributing to that are heavy financial investments, long work days and infrequent

Figure 1. Participating Extension staff and community health facilities



vacations, weather uncertainty, equipment breakdown livestock and crop disease, and safety threats. Pressure to keep up with growing technology, to remain competitive with world markets, and to develop more polished business strategies have also added to the strain that farm families experience.

Though most of the country's farms are still family owned and operated, there has been a significant decline in the number of middle sized family farms that produce 40 percent of the nation's food supply - those with annual sales of \$40,000 to \$200,000. Many of these farms have been faced for almost a decade now with very little profit, or even bankruptcy, as American agriculture continues to struggle with the loss of foreign markets and internal economic transitions. The current controversy with other countries such as Australia about continuing farm subsidies is only one example of the ambiguity contributing to a stressful economic climate in farming. In Michigan, where agriculture is the state's second largest industry, the number of farms has declined from 77,946 in 1969 to current Michigan Department of Agriculture estimates of 51,172, a loss of more than 26,000 operations.

The reasons for leaving farming today are not wholly related to lower profit margins. Many farm families have simply chosen to give up their continuous struggle to deal with dramatic supply and demand shifts in an increasingly complex world market.

Researchers who have closely studied distressed individuals and families maintain that under prolonged or intense pressure, human response becomes fairly predictable: increased physical complaints and disease, psychological upset that makes decision making more difficult, and a rise in addictive behaviors and fractured relationships both inside and outside the family.

As financial problems during the 1980s became more serious and the situation more hopeless, mental health workers were documenting such casualties as higher alcoholism, family abuse, and divorce in farm families. Suicide and a significant increase in suspicious "accidents" were forming an "out" for some farmers

and farm wives, with farmers in Missouri leading that state in suicides (Newsweek, February 18, 1985).

In Michigan, a variety of resources to help farmers cope were set in place. Extension Management Assistance Teams (EMAT) were set up to provide technical assistance and counseling. A hot line was established from the State Department of Agriculture, and specialists were lined up to respond to calls for help. Clergy and mental health workers were trained by state staff at Michigan State University to better understand the problems and respond to clientele needs. Job retraining centers were set up in the state, and Cooperative Extension Service personnel scheduled hundreds of information sessions in community centers and churches, which were well attended. Farm families were reminded often that the stress they were experiencing was not without long-term consequences and that it was important to find some healthy outlets to discharge it. It would do little good to save the farm at the expense of their own health or lasting family relationships.

While thousands of farm families did access the help provided, many others chose to suffer in silence, not willing to discuss their problems with their bankers or even their own families. Clergy noted a dramatic withdrawal of farm families from congregations because they were reluctant to face neighbors who were also their creditors. Mental health workers expressed frustration that farm families were hard to reach, despite additional resources being allocated to relieve the distress they were feeling.

Robert Eliot, Chair of the University of Nebraska Department of Preventive and Stress Medicine in Omaha, maintained during that dark period that "the world of agriculture has changed, and farmers need postgraduate skills in coping. Farmers are quick to seek information on the latest herbicide, but what kind of education do they have in self-help for their personal lives? What the farm crisis of the 1980s taught us is that we need to be much more knowledgeable about how farm families cope with severe personal crises and the kinds of information they need for more effective self-help."

Given the continued uncertainties related to global

agriculture, future crises in American farming are predictable. In order to find out more about how farm families cope with crisis, the Michigan Farm Family Stress Project was implemented in 1986.

## **Objectives of the Study**

### **Objectives were to:**

- Document farm and family demands experienced by Michigan farm families.
- Gain information about the health status of farm men and women as they coped with varied levels of stress.
- Identify the relationship between behavioral response patterns and coping abilities.
- Identify support resources used by farm families and levels of satisfaction with them.

As the study evolved and it became apparent that increasing numbers of farm wives were seeking off-farm employment to supplement farm-earned income, an additional objective was added, i. e.,

- Gain information about the impact on the family of farm wives' involvement in off farm employment.

## **Methodology**

### **Sample Selection and Description.**

Originally, 185 intact Michigan farm families in 12 participating counties were selected for study from lists of families supplied by the Cooperative Extension offices. A purposive sample was obtained to make sure that some balance was maintained between families experiencing financial difficulty and those who seemed to be coping well financially, in order to find out more about each group.

Families were informed that the study was a five-year effort that involved filling out individual questionnaires at three different points in the study and completing health risk appraisals at a local health facility in Years

1 and 5 of the study. One hundred and twenty-five families followed through on these requirements over the five-year period and constituted the final sample for analysis. Of these, ages ranged from 23 to 73 years (median age for women was 42 years; median age for men was 45 years). Educational attainment ranged from 7 to 21 years, with an average of 13.6 years.

Dairying was the most predominant type of operation (23.4%) in the families sampled, with cash crop following (19.5%), and a combination of the two commodities the third most frequently identified (10.9%). The remainder indicated primary investment in livestock, fruit and vegetable growing, or a variety of other combinations.

Mean number of acres owned in 1986 was 442.59, with another 286.88 acres rented, and a total of 688.17 acres farmed, on average (see Table 1).

Of the final sample, debt/asset ratios at the beginning of the study were 48.5 percent under .40 and 51.5 percent at .40 or over (see Table 2). In 1991, families were in better shape financially at 55.6 percent and 44.4 percent respectively.

**Table 1. Farm Acres Owned, Rented, Farmed, 1986 and 1991**

<b>Land</b>	<b>1986</b>	<b>1991</b>	<b>%Increase or Decrease</b>
Acres owned	442.59	456.95	+3.10 %
Acres rented	286.88	322.95	+11.17 %
Acres farmed	688.17	756.57	+9.04 %

**Table 2. Debt/Asset Levels, 1986 and 1991**

<b>Year</b>	<b>&lt; 40 %</b>	<b>≥ 40 %</b>
1986	48.50	51.50
1991	55.60	44.40

**Measures and Procedures.**

A questionnaire was developed for years 1 and 5 to elicit the following:

- 1) demographic information;
- 2) information related to the farming operation (number of years in the business; acres owned, rented, farmed; organization and type of operation; number of years in the family);
- 3) outside employment;
- 4) income (debts and assets);
- 5) health information (use of nicotine, alcohol, drugs; family and personal history of disease; exercise and nutrition; number of days ill per year);
- 6) personal style of coping with stressful events;
- 7) family qualities;
- 8) perception of stress related to family and farming demands; and
- 9) use of and satisfaction with available resources for coping.

independently and return individual responses in an enclosed envelope to Michigan State University. The first set of data was collected in Spring, 1986, and the last in Spring, 1991.

A form for recording assessment of cholesterol, blood pressure, and height and weight was developed for community health personnel to record information gained in the health risk appraisals performed in Years I and 5 of the study

Individual copies of the questionnaires were mailed to each spouse, with directions to complete them

In Winter, 1988, a six-page, self-report questionnaire was prepared to measure satisfaction and roles in those families more heavily involved in off-farm employment. It included measures of Farm Task Participation (FTP), Household Task Participation (HTP), Child Task Participation (CTP) and Dyadic Adjustment. The FTP, HTP, and CTP measures were adapted from two separate scales constructed by Fassinger and Schwarzweller (1984) to measure breadth and depth of spousal involvement in farm and household work. Scores for Farm Task Participation (FTP) and Household Task Participation (HTP) were derived from participants' weighted responses about 28 tasks specific to the farming operation and another 28 related to the running of the household and also to childcare.

To assess the current quality of each couple's marriage, the Dyadic Adjustment Scale (Spanier, 1976) was utilized. The 32-item scale yields an overall score with a theoretical range of 0-151, as well as four empirically verified components of dyadic adjustment that were used as subscales:

- 1) Dyadic Satisfaction (overall satisfaction with the marriage itself);
- 2) Dyadic Consensus (degree to which the couple agrees about family matters);
- 3) Dyadic Cohesion (couples' feelings of closeness or connectedness); and
- 4) Affectional Expression (expressed love, affection, sexual interest).

Internal consistency reliability for the four subscales (using Cronbach's Coefficient Alpha) is .94, .86, .90, and .73 respectively, with a reliability estimate of .96 for the complete scale.

## **Analysis.**

Independent and dependent T Tests were used when contrasting means between two groups, and analysis of variance (ANOVA)

was conducted when more than two groups were being compared. Alpha was set at .05, and significant differences between groups are reported by \* (significant at the .05 level), \*\* (significant at .01), \*\*\* (significant at .001), and \*\*\*\* (significant at .0001).

## **Farm and Family Demands**

There is little doubt that the 1980s were an extremely tough time for Michigan farm families. The boom years of the 1970s when there was high world demand for U.S. agricultural products were followed by sharply falling incomes and land values in the 1980s. In 1982, the average farm income was equal to what farmers had been earning in 1974, and by 1984 indebtedness had tripled. By 1985, more than 42 percent of Michigan farmers were reporting losses, and 25 percent of farms were in serious financial trouble, with many farmers facing bankruptcy (Herrick, 1986).

The financial difficulties being experienced turned to true crisis proportion for farm families in Michigan's lower peninsula when farmers experienced flood conditions and significant crop loss in 30 counties of the state. Michigan farm men and women interviewed during this period indicated significant increases in the attitudes and behaviors that often contribute to psychological upset, physical disease, and troubled interpersonal relationships.

Men reported increased muscle aches, feelings of fatigue, feelings of hopelessness and anxiety, depression, moodiness, sleep disturbances, confusion and a loss of motivation. Many reported significant increases in thoughts of leaving farming, feelings of dissatisfaction about farming, and a loss in optimism about the future of agriculture and their desire to have their children remain in farming. Wives reported similar responses that, in many cases, were more intensely felt.

Women cited increases in muscular aches, feelings of fatigue, a tendency to overeat, sleep disturbances, and feelings of hopelessness. They also indicated significant increases in moodiness, feelings of anxiety and anger, confusion and depression. Women, more often than their husbands, reported significant disruption in the family, citing increases in the number of arguments between parents and children as well as increases in conflict with their spouse, amount of expressed anger, overall bickering in the family, and arguments over money (Soderman and Brown, 1988).

The difficulty farm families have in separating the business from the family was expressed well by Roger Betz, Eaton County agricultural agent at the time of the study, who said, "The perception is that when the farm goes, everything goes. It is not treated as a business, which it is. The feeling is that your farm is your home and your life and your kids and your everything" (Lansing State Journal, February 3, 1985; Herrick, 1986). A 37-year-old farm wife described the complex spin-off effect of one event: "Because of the flood, we had to buy feed for the cows that was of poorer quality That affected the milk production and then milk prices went down. Our machinery is older and breaks down more. We would like to repair it but can't. We haven't had a vacation in three years, and we don't go many places or have as much time off. We're more irritable with each other, and church activity has decreased because we have chores every Sunday and there's never a letup!"

The number of farm families in the current study who reported experiencing moderate to-extreme stress levels related to seven variables can be seen in Table 3. Though there was a significant decrease in numbers viewing maintenance of the farming operation as stressful by 1991, almost 63 percent still saw it that way, with men and women in agreement. Also highly significant

in contrasting differences between 1986 and 1991 was the apparent relief that families were feeling related to financial problems. In 1986, more than half the families sampled were experiencing financial pressures; however, 43 percent reported serious financial stress in 1991.

While not statistically significant, it is interesting to note that women were experiencing considerably more stress with the parent-child and extended-family relationships when farm and financial stress was greater. Increased concern related to health problems was expressed in 1991 by both men and women.

The significant amounts of stress related to the farming situation and financial problems can be better understood in this population when viewing Table 4. It is clear that those families with debt/ asset ratios of 40 percent or greater were more highly stressed in 1986 and continued to be so in 1991. Between 1986 and 1991, mean perceptions of stress decreased for families with lower debt load in every area but health. For families with debt load over 40 percent, stress decreased or remained the same in every area but legal problems. What is noteworthy, however, is that in 1991, the perceived level of stress for families with greater debt had increased in every area but health, particularly with respect to maintaining the farming operation, the husband-wife relationship, financial problems, relationship with extended family, and legal problems.

## **Coping with Stress**

### **Health Status of Sampled Farm Families.**

It is well documented that good health tends to increase our ability to withstand stress by improving our capacity to respond to demand. Also, when stress becomes excessive

**Table 3. Farm and Family Demands: Percentage Experiencing Moderate to Extreme Stress Levels, 1986 and 1991**

		1986	1991
<b>Maintaining the farming operation</b>			
	Men	79.2	62.4
	Women	75.4	63.3
	Total	77.3	62.9**
<b>Parent-child relationship</b>			
	Men	31.4	31.4
	Women	39.0	33.6
	Total	35.2	32.5
<b>Husband-wife relationship</b>			
	Men	27.5	26.7
	Women	26.7	26.7
	Total	27.1	26.7
<b>Health problems</b>			
	Men	18.5	22.3
	Women	20.8	23.3
	Total	19.7	22.8
<b>Financial problems</b>			
	Men	57.5	41.3**
	Women	55.8	45.0**
	Total	56.7	43.2***
<b>Relationship with extended family</b>			
	Men	32.5	26.4
	Women	37.5	30.5
	Total	35.0	28.5
<b>Legal problems</b>			
	Men	16.7	14.9
	Women	15.3	15.8
	Total	16.0	15.4

\*\* Decrease between 1986 and 1991 significant at .01

\*\*\* Decrease between 1986 and 1991 significant at .001

**Table 4. Stress Perceptions and Debt/Asset Ratio: Percentage Experiencing Moderate to Extreme Stress Levels, 1986 and 1991**

	1986		1991	
	<40%	≥40%	<40%	≥40%
<b>Maintaining the farming operation</b> 	76.1	80.0***	53.3	72.6***
<b>Parent-child relationship</b> 	40.0	37.2*	31.5	31.6
<b>Husband-wife relationship</b> 	26.1	31.6	23.9	31.6
<b>Health problems</b> 	15.4	23.2	20.7	18.9
<b>Financial problems</b> 	39.1	69.5***	28.3	58.9***
<b>Relationship with extended family</b> 	31.5	35.8	20.9	32.6
<b>Legal problems</b> 	17.4	13.8	12.0	15.8

\*Decrease between 1986 and 1991 significant at .05 (T-Test means); \*\*decrease between 1986 and 1991 significant at .01; \*\*\*decrease between 1986 and 1991 significant at .001

over long periods of time, it can be deleterious to the body. When the brain perceives demand or threat, it mobilizes the body's defensive systems, causing changes in life-sustaining functions. When threat continues for a long time (either imagined or real), maintained resistance eventually wears the body systems down (Selye, 1956; Pelletier, 1981). Bodies that are in poor shape to begin with may be more vulnerable to the effects of stress in response to threatening life events.

It is also well documented that many Americans "engage in a wide variety of unhealthy behaviors, including smoking, overeating, improper diet, lack of exercise, and excess use of drugs," (Ross, 1987:341) rendering us more vulnerable when life's pressures increase. While the farm families in this sample reported nicotine, alcohol, and drug use at below-national averages, they did not fare as well with respect to other health factors. Many reported diets high in salt, sugar, and fat. This was coupled with

indications of infrequent physical exercise and sedentary life styles. The result in the families sampled was that too many were at moderate- to high-risk for health problems related to high blood pressure, high cholesterol and obesity.

### Blood Pressure.

As can be seen in Table 5, almost a third of the males and more than 15 percent of the females were in medium- and high-risk categories for high blood pressure by the end of the study. Moreover, more males than females had moved into at-risk status over the five-year period of the study

Blood pressure is a complex, reciprocal system regulating blood pumped by the heart and resistance of blood vessels to that pumping. Prolonged or intense stress can upset this control system, as illustrated in Figure 2. The force of the blood as it pushes against artery walls is measured with both a systolic reading (maximum amount of

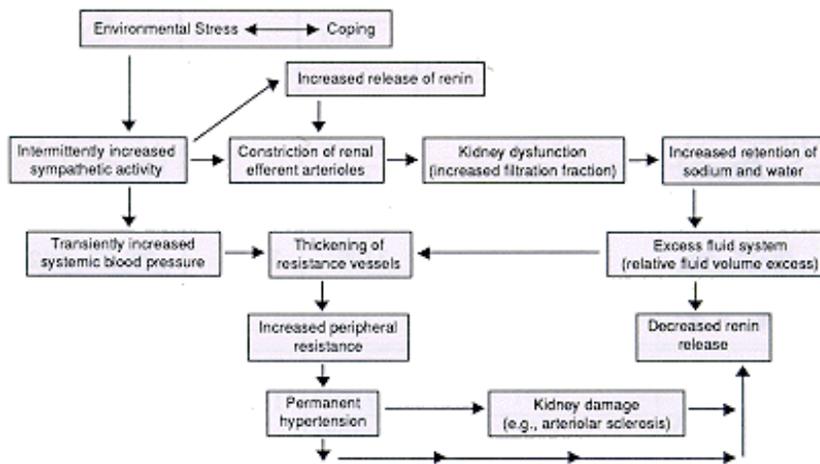


Figure 2. Model of the pathogenesis of essential hypertension in reaction to environmental stress and coping (adapted from Kaplan, 1979 and Meichenbaum and Jaremko, 1983).

**Table 5. Health Risk, Three Health Factors, 1986 and 1991**

Blood pressure risk	Males		Females	
	1986	1991	1986	1991
Low	76.9	68.8	88.4	84.6
Medium	21.5	28.1	9.9	14.3
High	1.7	3.1	1.7	1.1

Increase in total risk between 1986 and 1991 significant at .001 (\*\*\*) for men and .0001 (\*\*\*\*) for woman

Cholesterol risk	Males****		Females**	
	1986	1991	1986	1991
Low	42.5	26.8	62.4	45.1
Medium	35.8	38.1	24.0	35.2
High	21.7	35.1	10.0	19.8

Increase in total risk between 1986 and 1991 significant at .0001 (\*\*\*\*) for men and .010 (\*\*) for woman.

Weight risk	Males ****		Females **	
	1986	1991	1986	1991
Low	34.7	21.1	49.2	42.2
Medium	21.6	22.1	21.0	16.7
High	43.5	56.8	29.6	41.1

pressure exerted in the arteries as the heart beats) and diastolic (minimum pressure on the arteries as the heart rests). The harder it is for blood to flow through the arteries, the higher both numbers will be - and the greater the stress will be on the heart, according to the American Heart Association.

Uncontrolled high blood pressure is eventually damaging to the body because it significantly increases the workload of the heart and arteries. Uncontrolled pressure also damages the kidneys and leads to incidences of heart attack and stroke. All families involved in the study were given information related to the dangers of uncontrolled hypertension and advised to seek the help of a physician if their tested levels exceeded 120/80 (systolic/ diastolic numbers). In terms of this study, levels at or above 140/90 constituted moderate risk, and high risk categories were constituted by systolic pressures of 160 or greater and diastolic levels of 120 or higher.

## **Cholesterol.**

Too much cholesterol in the bloodstream has been cited by the American Heart Association as the greatest risk factor in heart disease. While the body needs the substance for insulating nerve fibers and production of certain essential hormones, excess levels can build up on blood vessel walls, eventually cutting off circulation and producing heart attack or stroke. Cholesterol, a blood fat, finds its way into the bloodstream through consumption of animal products - meats, eggs, poultry, fish and dairy products - or by way of production in the liver.

Two main kinds of cholesterol are found in the body: High Density Lipoproteins (HDL), which are found in polyunsaturated fats consumed (corn, safflower, soybean, and sesame oils), and Low Density Lipoproteins (LDL) composed mainly of saturated fats which are generally solid at room

temperature (butter, bacon fat, fats that marbled beef) and saturated fats made by the liver. It is believed that LDL embeds itself in the arterial walls, narrowing and hardening the arteries. HDL, on the other hand, keeps arteries clean and elastic by carrying LDL away from the tissues and back to the liver for reprocessing and excretion.

Daily exercise, refraining from smoking, and keeping weight at an ideal level all contribute to controlling cholesterol levels which are determined by the units of HDL and LDL found in the bloodstream. A national cholesterol education expert panel has established desirable levels for total cholesterol as <200 mg/dl, borderline-high levels as 200-239 mg/dl and high CHD (Coronary Heart Disease) risk levels as >240 mg/dl. Ratios of total cholesterol and HDL are perhaps the single best predictor in determining risk (Castelli, 1985). For example, a total cholesterol of 200 and an HDL level of 45 would result in a ratio of 4.5 ( $200/45 = 4.5$ ). A ratio of 4.5 or less is desirable. As ratios increase, there is a concurrent increase in risk for heart disease. In analyzing cholesterol risk for this study, moderate risk was assigned to total cholesterol levels of 201-239 and/or ratios between 5.0 and 5.6. High risk was conservatively assigned to total values of 240 and greater and/or ratios higher than 5.6.

As can be seen in Table 5, a great number of these families sampled need to be concerned about their cholesterol levels. At the beginning of the study, more than half of all the males evaluated were at moderate or high risk. Five years later, almost three-fourths of the same group were at risk. A third of the women assessed were at risk at the beginning of the study; five years later, this number had very significantly grown to more than one-half. These findings must be viewed with caution since the presence of high-risk and moderate-risk blood cholesterol values can be

confirmed only by repeated analysis and also considered in relation to an individual's gender and age. However, participants with total cholesterol levels over 200 or ratios higher than 5 were advised to seek the advice of a physician and, if deemed necessary, to follow through with blood fat reduction.

**Weight.**

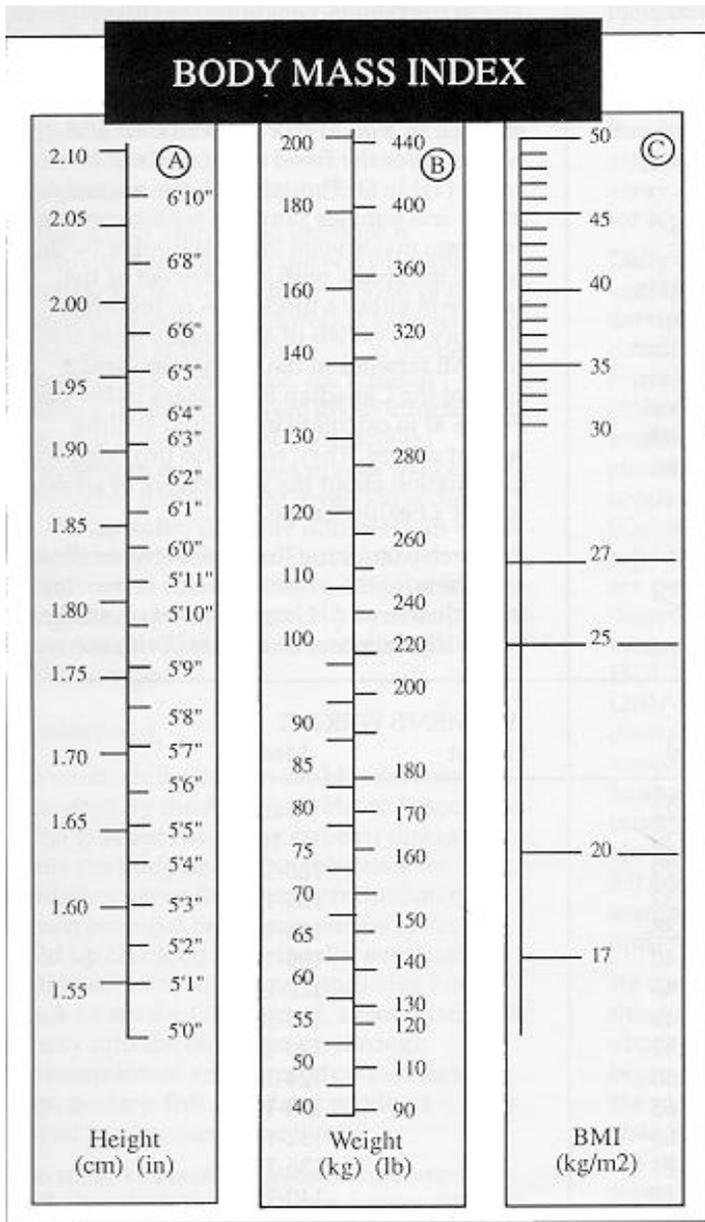
Maintenance of ideal weight is important in controlling both hypertension and cholesterol levels. People who are overweight (less than 20 percent over their ideal body weight) or obese (20 percent or more above their ideal body weight) are also more at risk for such diseases as cancer and osteoarthritis of the hips, knees and other joints, and more accident-prone because of increased awkwardness, according to Dr. Charles Lucas, obesity researcher at Wayne State University

The Metropolitan weight tables currently recommended by the Harvard School of Public Health were used for weight analysis in this study (see Figure 3). Significant increase in weight risk for both men and women over the five-year period can be noted (Table 5). Though both the majority of males and females sampled were overweight or obese, males were in more trouble by the end of the study, with 78.9 percent of the sample in either a moderate- or high-risk category. Over half of all females were also at risk. All families in the study were sent a copy of the Canadian Body Mass Index (see Figure 4) to calculate individual healthy weight ranges. They were also provided with information about the importance of staying within a healthy range.

Research examining linkages between illness and stressful life events remains somewhat inconclusive and is largely based on studies following the onset of disease. Evidence is

MEN'S WEIGHT		WOMEN'S WEIGHT	
Height	Ideal	Height	Ideal
5-1	111-122	4-9	94-106
5-2	114-126	4-10	97-109
5-3	117-129	4-11	100-112
5-4	120-132	5-0	103-115
5-5	123-136	5-1	106-118
5-6	127-140	5-2	109-122
5-7	131-145	5-3	112-126
5-8	135-149	5-4	116-131
5-9	139-153	5-5	120-135
5-10	143-158	5-6	124-139
5-11	147-163	5-7	128-143
6-0	151-168	5-8	132-147
6-1	155-173	5-9	136-151
6-2	160-178	5-10	140-155
6-3	165-182	5-11 plus	not available

Figure 3. Metropolitan Life Insurance Co. Desirable weight for men and women, non-age specific (Source: Detroit Free Press, 1/23/87: 3B).



### HOW TO FIND YOUR BMI--IT'S EASY

1. Mark an X at your height on fine A.
2. Mark an X at your weight on fine B.
3. Take a ruler and join the two X's.
4. To find your BMI, extend the line to line C.

### FOR EXAMPLE:

- If Michael is 5'11 " (1.80 m) and weighs 188 lbs (85 kg), his BMI is about 26.
- If Irene is 5'4" (1.60 m) and weighs 132 lbs (60 kg), her BMI is about 23.

**Under 20:** A BMI under 20 may be associated with health problems for some individuals. It may be a good idea to consult a dietitian and physician for advice.

**20-25:** This zone is associated with the lowest risk of illness for most people. This is the range you want to stay in.

**25-27:** A BMI over 25 may be associated with health problems for some people. Caution is suggested if your BMI is in this zone.

**Over 27:** A BMI over 27 is associated with increased risk of health problems such as heart disease, high blood pressure and diabetes. It may be a good idea to consult a dietitian and physician for advice.

Source: Expert Group on Weight Standards, Health and Welfare Canada

Figure 4. Canadian Body Mass Index

growing, however, that problematic life changes are more highly associated with heart and lung disease, diabetes, cell disease, accidents and other health-related conditions.

The most serious result of long-term stress is the compromising of the immunological system, which leaves us open to invading diseases. Because human ability to withstand pressure is not infinite, the organs or systems involved eventually wear out or break down and stress-related disease, or "diseases of adaptation," appear. According to Kenneth Pelletier (1981), author of *Mind as Healer, Mind as Slayer*, such disorders cannot be attributed to stress alone but to the fact that the body's attempt to adapt to stress may create conditions that lead toward pathology. When a machine is overworked, the weakest part breaks down first. It is the same with the human body. "Such factors as heredity, environment, general health habits, behavioral variables and past illnesses may all play a role in determining whether illness will occur as the result of prolonged stress," (p. 76), and the kind of illness that is experienced may well depend on ingrained personal response patterns in any particular individual.

Said one farm wife who was interviewed during this period, "We were within two weeks of foreclosure when FHA came through so we could restructure our finances. I know we had definite emotional and physical effects because of all this. My husband has high blood pressure now and the start of it coincided with all the stress" (Soderman and Brown, 1988).

### **Behavioral Response Pattern.**

When under pressure, people behave very differently. Some generally overreact whenever they perceive control is slipping away. Termed "Type A" personalities, they are likely to become somewhat more agitated and aggressive. Quite different are their

"Type B" counterparts who react more calmly, "rolling with the punches" and seeing a stressful event or necessary life change as perhaps troublesome, but also as one of the many challenges that can be expected as we round the curves of life. Paul Pearsall (1987), author of *Superimmunity*, calls the Type A a "hot reactor" and suggests that the competitiveness, hostility and continuous aggravation and overreactiveness characteristic of such individuals predict particular diseases of adaptation for this population: ulcers, irritable bowel syndrome, hypertension, and heart disease.

Behavior patterns such as these are believed to originate from early coping strategies that individuals employ to defend themselves in stressful situations. Those that work best are probably reinforced and become the ingrained patterns that are more or less characteristic in adulthood.

On the basis of their responses to 48 different personal statements and subsequent factor analysis, respondents in this study were termed either Type A or B. Respondents termed Type A characteristically scored high on such statements as: I often feel anxious and impatient, often have more than one thing going at once, am competitive, always in a hurry, often tend to feel angry or hostile, and tend to overreact to problems. These traits have been cited in stress research (Friedman and Rosenman, 1974; Newlin and Levenson, 1982; Meichenbaum and Jaremko, 1983) as characteristic of the Type A personality. Type Bs, on the other hand, scored consistently higher on such statements as tending to be easygoing, finding it easy to relax, being cheerful everyday, not being moody or impatient, and not overreacting to problems.

As can be seen in Table 6, a majority of the respondents (and more women than men) in the study (65.2%) reported behaviors that characterized them as Type Bs. The number

**Table 6. Response Pattern to Stressful Events by Gender**

	Type A	Type B
Men	39.8	60.2
Women	29.7	70.3
Total	34.8	65.2

**Table 7. Response Patterns and Percentage Experiencing Moderate to High Risk on Three Health Factors, 1986 and 1991**

	1986	1991	
Cholesterol	Type A	59.2	71.4
	Type B	48.8	72.1
Blood pressure	Type A	20.0	32.0
	Type B	14.9	19.5
Weight	Type A	59.5	67.3
	Type B	59.3	69.7

of reported Type As (34.8%) is significantly less than found in the general population. Two things might account for this: either the respondents' self-perceptions and self-reports were somewhat erroneous or there is a higher incidence of Type B personalities that naturally migrate toward farming as an occupation.

In looking at response patterns and health risk (Table 7), there did not appear to be notable differences between these two groups

with respect to increased risk in cholesterol levels and weight. However, much greater differences were apparent with respect to blood pressure risk over the five-year period, with far more of the Type A personalities in, the moderate- to high-risk categories in 1991 than Type Bs (32%, versus 19.5%). Though caution must be assigned to these findings because of the numbers of persons constituting the Type A category, the finding is consistent with findings in the literature

about the long-term effects of biological and behavioral overresponses to stress.

Examining the specific stressors experienced (Table 8), Type As were significantly more stressed than their Type B counterparts in three areas. In 1986, maintaining the farming operation was highly stressful for both A and B personality types. However, almost all of the type As (90%) reported high stress in 1986, versus only 70 percent of the Bs. In the post-crisis period in 1991, both personality types reported decreased stress levels; however, the drop in the stress level of the Type As in 1991 was more significant than that of the Type Bs. Yet the perceived stress level for Type As in 1991 was still reported to be as high as that experienced by the Bs in the midst of the crisis.

Highly related here was the perceived stress felt about financial problems. Again, while this decreased significantly in both groups, the Type As were as highly stressed in the post crisis period as the Bs were in the height of the crisis. Stress over legal problems rose slightly for both groups in 1986, with Type As more highly stressed, and then dropped to slightly over 11 percent for both groups in 1991.

Interpersonal stress inside the family is reportedly higher for Type As than for Type Bs, with husband-wife stress twice as high for the Type As at both points in the study. Stress perceived in the parent-child relationship was much greater for the Type As while in the midst of the crisis, but very parallel to that of the Bs in 1991 when financial and farming demands had normalized. In relationships with the extended family, Type A respondents reported a great deal more stress at both points in the study. Almost a third of them were reporting the same levels of stress in 1991 as were experienced by the Type Bs in 1986.

A wife who was interviewed explained the kind of squeeze that was being felt in the

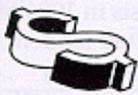
midst of the financial crisis by several generations in a family: 'We are less easygoing with the children. My husband's parents are retired and are always on our case about financial matters, including how we spend our money. We've borrowed money from my parents, and they seem to be worried about whether or not they'll get it back. They keep a very close tab on how much we pay for things. We find it harder to live up to what we want to be for our children. Everyone in the family is shorter and less patient with each other" (Soderman and Brown, 1988).

Findings related to perceived stress and health problems over the five-year period were difficult to interpret. Although almost three times as many of the Type As were reporting health-related stress in 1986, the groups were more parallel in 1991 when a higher percentage of Type As continued to report stress. However, there had also been an increase, rather than decrease, in the number of Type Bs seeing health problems as a stressor over the five-year period. It is probable that, over time, concern increased naturally in both groups as they experienced natural age-related health concerns. The large differences indicated between the groups in the midst of the crisis in 1986 may be related to certain documented tendencies of Type As. (Rice 1987:97) suggests they "...experience no more stressful events than (others). However, they appear to translate their emotional upsets into bodily symptoms more frequently As a result they seem to suffer more from digestion and sleep disturbances..."

### ***Familial and Extra-Familial Support Sources.***

Whether or not a crisis is being experienced, it is obvious that these farm families find their greatest support inside the family. When asked who they most often turn to for support or advice when they are dealing with difficulties, both men and women in this

**Table 8. Response Patterns and Perceptions of Events as Moderately to Extremely Stressful, 1986 and 1991**

		1986	1991
<b>Maintaining the farming operation</b> 	Type A	90.0	70.0**
	Type B	70.0	60.0
<b>Parent-child relationship</b> 	Type A	45.0	30.0*
	Type B	25.5	29.1
<b>Husband-wife relationship</b> 	Type A	37.1	33.9
	Type B	14.4	17.1
<b>Health problems</b> 	Type A	32.8	26.2
	Type B	12.5	19.6
<b>Financial problems</b> 	Type A	69.4	46.8**
	Type B	45.5	37.5*
<b>Relationship with extended family</b> 	Type A	43.3	30.0
	Type B	26.8	21.4
<b>Legal problems</b> 	Type A	19.7	11.5
	Type B	15.2	11.6

\* Decrease between 1986 and 1991 significant at .05

\*\* Decrease between 1986 and 1991 significant at .01

study indicated that the immediate family was an important source of support in both 1986 and 1991 (see Tables 9A and 9B). While the crisis brought many families closer together, that additional closeness was sometimes accompanied by less than positive feelings.

According to one farm wife: "We started our partnership with our sons about four years ago. With the way things are going now, I wonder if we should have done that." Her husband agreed. "I feel guilty that I was part of involving them. We don't seem to have the closeness as a family that we did before. We've lost a lot. We don't have dinners together, for example. We're all too busy. It shows in our conversations, too. We don't have the same talk and joking that we used to have. Before we could talk and talk. Now .. we watch TV or read a book instead of talk."

Overall, the numbers of men and women were fairly even in their reported attempts to seek help outside the family in 1986. However, there were marked differences in the perceptions of men and women related to how helpful they found those sources.

Men were far more likely than women to find other farm families with the same problem to be helpful, both in 1986 and 1991. Men were also more likely than women to report the church and clergy to be helpful in 1986. When the crisis had lessened in 1991, many more women were finding religious resources to be helpful. As can be seen in Table 9A, far more men than women reported the church and clergy to be a source of support at the height of the crisis.

The numbers of men and women who reported reaching out to a counselor were notably low. Personal interviews with the families, more than the returned surveys, revealed both the positive and negative feelings families had about support outside the family. A farm husband said: "Friends shied away from us when we were at the peak of our troubles (but) have gotten closer for the most part because they now realize our difficulties can happen to anyone."

Another person reported: "When we filed for Chapter 11, we felt like rejects and outcasts. We felt people were looking; it's a small, narrow community, where everyone thinks they know everything about everyone. I think some in the community like to see people fail." A wife said, "That (going to the food bank) was the hardest thing I ever did, to go down there and sign my name and get a box of food. I saw men that stood there like bashful little boys looking at their shoes, not wanting to look at other people's faces. They would look away and out the window and take their boxes and get out." Another farmer summed up the pervasiveness of worrying about debt: "One thing I've always enjoyed when the sun goes down, there's nobody that's going to bother me. The guys at the bank - they don't work at night. That's the only safe time." (Soderman and Brown, 1988.)

When the farm financial crisis was at its peak, of 12 accessible support systems (Tables 9A and 9B), the five that the men found to be most helpful were: (*Note: Parenthetical figures indicate percentages identifying the resource as helpful.*)

- 1) clergy members (65.5%);
- 2) the church (63.2%);
- 3) the immediate family (63.1 %);
- 4) other farm families with the same problem (50.5%); and
- 5) the Cooperative Extension Service (37.3%).

For women at this same time, relief was found most often in:

- 1) the immediate family (63%);
- 2) friends (31.9%);
- 3) relatives (31.3%);
- 4) the Cooperative Extension Service in their county (28.1 %), and

Table 9A. Coping with Stressful Events: Perceptions of Familial and Extra-Familial Support, 1986 and 1991 as Moderately to Extremely Helpful (n=number reporting contacting source for help)

Support source		n	1986	n	1991
<b>Immediate family</b> 	Men	85	63.1%	56	68.3%
	Women	75	63.0%	50	65.8%
<b>Relatives</b> 	Men	37	31.1%	36	52.1%
	Women	36	31.3%	18	34.0%
<b>Friends</b> 	Men	36	30.7%	36	52.9%
	Women	37	31.9%	23	38.3%
<b>Other farm families with same problem</b> 	Men	25	50.5%	25	65.8%
	Women	30	26.3%	13	36.2%
<b>Church</b> 	Men	18	63.2%	19	41.3%
	Women	21	18.5%	13	33.3%
<b>Clergy</b> 	Men	22	65.5%	17	37.0%
	Women	22	19.8%	14	38.9%

**Table 9B. Coping with Stressful Events: Perceptions of Familial and Extra-Familial Support, 1986 and 1991 as Moderately to Extremely Helpful (n=number reporting contacting source for help)**

Support source	n	1986	n	1991	
<b>Health professionals</b> 	Men	14	12.1%	34	43.7%
	Women	13	11.8%	14	38.9%
<b>Legal system</b> 	Men	11	9.5%	10	23.2%
	Women	10	9.1%	15	36.6%
<b>Financial institutions</b> 	Men	20	17.0%	13	28.9%
	Women	17	15.2%	19	35.2%
<b>Counselor</b> 	Men	2	1.8%	6	18.8%
	Women	4	3.7%	8	33.3%
<b>Government programs</b> 	Men	18	15.6%	12	32.4%
	Women	13	11.8%	17	29.8%
<b>Cooperative Extension Service</b> 	Men	44	37.3%	21	42.8%
	Women	32	28.1%	27	38.5%

5) other farm families with the same problem (26.3%).

When farm and financial stress had lessened in 1991, men were most likely to look for support from:

- 1) the immediate family (68.3%);
- 2) other farm families with the same problems (65.8%);
- 3) friends (52.9%);
- 4) relatives (52.1 %); and
- 5) health professionals (43.7%). Women in 1991 still found the most helpful sources to be:

- 1) the immediate family (65.8%);
- 2) health professionals and clergy (38.9%);
- 3) the Cooperative Extension Service (38.5%);
- 4) friends (38.3%); and
- 5) the legal system (36.6%).

**Off-Farm Employment.**

One of the most obvious coping strategies for farm families dealing with mounting expenses and severely restricted cash flow during the 1980s was to find employment elsewhere. However, when maintaining the farm remained a priority, adding off-farm

employment to the farm work load seemed to be a more viable alternative than selling off and getting out of farming altogether. The tremendous shift to full- and part-time work off the farm by the families sampled in this study is illustrated in Table 10. In 1986, only 10.3 percent of males were working off the farm full-time and another 12.9 percent were working part-time, for a total of 23.2 percent. By 1991, this had changed dramatically. Seventy-five percent of the men in the sample were now involved in off-farm employment, with 47.5 percent working part-time and 27.5 percent fully employed off the farm.

Midway through the proposed study, there were increased reports of wives seeking off farm employment to supplement income and provide health insurance that could no longer be paid for with dwindling farm income. Though data presented in Table 10 do not indicate as many farm women as men moving to off-farm employment (38.8%, females employed part- and full-time in 1986 IL and 53.7% in 1991), the change is significant. Moreover, it seemed to be causing a fair amount of disruption for some of the families. Farm families attending CES workshops and obtaining assistance from Extension Management Assistance Teams often talked about how different family life had become. A farmer noted, "My day's all

**Table 10. Off Employment by Gender, 1986 and 1991**

	1986	1991
Male part-time	12.9%	47.5%
Male full-time	10.3%	27.5%
Female part-time	24.8%	29.2%
Female full-time	14.0%	24.5%

broken up. I have to be back at the house for the kids when they get off the school bus because she's gone to work!"

Two brothers who were in dairying together and barely making a profit reported they saw their wives' jobs as embarrassing and a public indication that their farm operation "was not in the best shape." Said the oldest, "There was a time when our wives didn't have to work. I get really tired of coming in and no dinner waiting. That was something my dad would never have put up with." Ironically, one of the wives whose husband had expressed embarrassment over his wife's "having to work" commented privately that she would never let her husband know it but she "loves" her job as a rural mail carrier and wouldn't want to quit, even if they could afford it.

In order to better understand how wives' off farm employment was affecting roles and relationships inside the family, the subjects participating in the ongoing farm family stress project were sent an additional questionnaire to fill out in the winter of 1988. This centered on farm, household, and childcare task participation by both spouses and marital adjustment between the couple. Informal interviews with a subsample of 15 of the families also yielded important information about farm and family participation of the wives and also about the perceived quality of the couples' marriages. Families in which wives were employed 21 or more hours per week were compared with those whose wives were employed less than 21 hours per week or not at all.

### **Farm Household and Childcare Task Participation.**

One place that women differed significantly when they were working 21 or more hours off the farm was in their contribution to the overall farming operation. This finding supports that of Jones and Rosenfeld (1981) who found that decreased farm task participation paralleled women's off-farm employment.

Division of farm, household, and childcare task participation based on gender seemed more pronounced for these farm men than for the women,

at least in the sample studied here. That is, women seemed to participate more fully in all three than did men, who continued to view household chores and care of children primarily the wife's responsibility-whether she worked outside the home or not. It was only when they were employed 21 or more hours off the farm that the women indicated significantly decreased participation in the farming operation.

### **Marital Satisfaction of the Couples.**

Are farm couples happier or less happy when wives are working off the farm? In this study, the farm husbands who had wives working 21 or more hours a week viewed their marriages, on average, as less satisfying and also perceived a diminished "togetherness" (Table 11). They were significantly more likely to indicate frequent quarreling -"getting on one another's nerves"-and consideration of divorce. In general, these husbands were also more unhappy than other husbands with sexual aspects of their marriages. One husband who was also working off the farm in a construction company talked about the deterioration in his relationship with his wife: "We have no prime time together. We haven't had a vacation in the past year. We have coffee together in the morning and at dinner time. The amount of time we spend together is about zero. I am too tired. We do get in the same bed at night but if I stop and take the time to shower, she is asleep when I come to bed." His wife added, "I am almost 60, and the time comes when you want to slow down. We've put everything back into the farm, and we don't have anything. We're in limbo, and I don't see any light at the end of the tunnel."

Table 11. Wife's Off-Farm Employment and Husband and Wife's Satisfaction with Marriage (Mean Scores on Dyadic Adjustment Inventory)

	Men		Women	
	Fewer than 21 hours per week	21 or more hours per week	Fewer than 21 hours per week	21 or more hours per week
Overall adjustment to marriage	111.43	105.88*	110.94	105.52
Consensus	48.30	47.22	49.69	47.07*
Satisfaction	36.80	35.42	35.97	34.96
Cohesion (closeness)	17.76	15.00**	16.15	15.26
Affection	8.97	8.25	9.20	8.47*

\* Significant at .05

\*\* Significant at .01

Most problematic from the working wives' point of view were disagreements with their husbands over affectional expression, including demonstrations of affection and sex relations, and consensus or disagreements about how to handle money and decision making in general. There is evidence that some farm wives employed off the farm were beginning to be somewhat resentful of pouring hard-earned resources into farms that were making little profit and wanted more power in making the decision about whether or not to continue farming. This was painfully obvious in one of the couples interviewed. In response to her husband's comment that they just had to wait out the farm financial crisis, his wife burst forward emotionally, "I drive 45 miles each way (to her job). It's my paycheck that buys the groceries, fills the oil tank (used for home heating), and buys the kids' tennis shoes. We have health insurance only because it's attached to my job. If not, we couldn't afford it. I want him (gesturing toward her husband) to give it up (farming). We haven't made a dime on this farm for over five years, and I'm sick and tired of everything I earn going down a rat hole just to support this farm!"

Changes in the American agricultural scene predict that farm men and women will continue moving into the off-farm labor market to support the small- and middle sized farming operations. These changes obviously have the potential to induce stress in couple relationships as a consequence role overload and marital dissatisfaction in both husbands and wives. Moreover, as spouses invest more of their time and energy away from the farm, they may become less enthusiastic about keeping the family farm afloat unless it promises to be more profitable.

While the findings in this study may not be applicable to farm families in general, the results suggest that long-held traditional values about what "good" husbands or "good" wives do within the family will eventually be challenged in the farm family, just as they have been in non-farm families. The continued high rate of divorce in the United States and in other societies where dual employment is high is, in part, a reflection of couples' inability to effectively mesh occupational and family task loads. Perceived and real inequities often get in the way of satisfied feelings about what each spouse is contributing to the other's well-being.

## Summary and Conclusions

Fortunately, over the five-year period of this study, the high levels of stress experienced by many Michigan farm families in the 1980s had diminished considerably by 1991. Only two groups of individuals continued to experience significantly high demand with respect to the farming operation: those who are operating with debt/asset ratios of 40 percent and above, and those who tend to have overreactive, or Type A, personalities.

In analyzing the coping abilities of the 125 families who remained in the study over the five years, the strengths of the families under study were clearly apparent: Michigan farm families are close to one another. They are accustomed to and willing to work extremely hard with very little financial or personal reward, and many more of them have found it necessary to take off-farm jobs in order to support low-profit farming operations. A surprisingly high number of them appear to have personalities that buffer them against pressures that other populations would find overwhelming.

Other findings in this study indicate that farm families in Michigan may want to increase their attention to health and fitness. The human body is a marvelous machine that appears to stand up under a great deal of neglect and abuse - but it can do this for only so long before it breaks down, showing signs of excessive wear and responding poorly when subjected to more extreme tests such as those experienced in the 1980s. Modern technology has dramatically altered the physical demands of farming. In addition, many farmers go from relatively inactive periods in the winter to overly active ones in the spring, summer and fall that overtax physical and mental stamina. When crises such as drought, floods or severe economic problems are added, bodies and minds maintained in top condition have better long-range ability to withstand the pressure.

The role of personality in stress management is also important. In this study, easygoing attitudes and effective behavioral responses to very demanding circumstances were found in over half the sample. However, more than a third of the sample described less positive patterns of responding. Finding out more about ourselves and the way we react as individuals to demand and pressure can be advantageous in staying healthier and being more productive. Overreacting to stressful situations or withdrawing and failing to deal assertively enough with a stressor are behaviors that invite an additional set of problems and, in the long run, illness and/or troubled relationships.

Findings here also suggest that marital satisfaction in farm families with wives employed off the farm is generally lower than that of families where both spouses are concentrating more of their efforts solely on farm/family participation. Obviously, more information needs to be obtained about relationships in the family related specifically to husbands' off-farm employment, since changes documented there are even more dramatic and may well have similar effects on family life. Since the off-farm labor of husbands and wives is increasingly needed for family income maintenance to insure survival of family farms, it seems clear that more attention must be paid to this aspect of family life.

Family life educators frequently deal with issues related to role strain, role conflict, and communication between couples. Less often talked about and addressed are issues revolving around couples' affectional and sexual relationships with one another for, though there were other areas of dissatisfaction, this was a common one found operating in both farm men and farm women. Whether or not spouses talk openly with one another about a relative balance in task participation and decision making in the marriage, perceived inequities can lead to

resentment. This, in turn, can operate negatively on affectional behavior between the couple.

The opportunity to study this sample of farm families over a five-year period at both the height of the financial crisis in agriculture and after the pressure had normalized was greatly appreciated. Making sense of what most influenced the demands families were feeling, and also to these families' ability to cope with pressure over time could not have been accomplished with a one-shot survey in either 1986 or 1991. Clearly, there is still work to be done in identifying and describing the coping abilities of Michigan's farm families. The contributions made by the families who participated in this study hopefully will serve to expand the awareness and skills of policy makers, clergy members, family life educators, Michigan State University Extension staff, health and mental health professionals, agency personnel, and Michigan farm families themselves as they continue to cope with challenging futures in agriculture.

More information about wellness and fitness and the emotional aspects of dealing with stress, change, and conflict is available in both videotape and bulletin form in Stress and Change, a video and Bulletin E-2201, and Positive Confrontation, a videotape with Bulletin E-2205. Farm families and helping professionals can obtain these resources through their local county Cooperative Extension Service offices.

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