Family Economics and Nutrition Review

Feature Articles

2 Construction and Evaluation of a Diet Status Index
P. Peter Basiotis, Joanne F. Guthrie, Shanthy A. Bowman, and Susan O. Welsh

14 Characteristics of Rural Residents and Vulnerability to Alcohol Problem Behaviors
Elizabeth B. Robertson

24 Housing Trends
Nancy E. Schwenk

Research Summaries

34 Gender-Related Shifts in the Distribution of Wages
36 Changing Eating Patterns: Grains, Vegetables, Fruit, and Sugars
38 The Development and Growth of Employer-Provided Health Insurance
40 Are Women Leaving the Labor Force?

Regular Items

42 Charts From Federal Data Sources
44 Recent Legislation Affecting Families
45 Data Sources
46 Journal Abstracts and Book Summary
47 Cost of Food at Home
48 Consumer Prices
49 Guidelines for Authors

UNITED STATES DEPARTMENT OF AGRICULTURE
Volume 8, Number 2
1995

To Our Readers:

This is the first issue published by the Center for Nutrition Policy and Promotion under our new name, *Family Economics and Nutrition Review*. Our intent is to include articles on nutrition policy and research as well as family economics.

We invite the submission of manuscripts in each of these areas. Please refer to "Guidelines for Authors," which appears on page 49. A distinguished and diverse Editorial Board reflecting both disciplines will help select manuscripts for publication.

Joan C. Courtless, Editor

Center for Nutrition Policy and Promotion

Family Economics and Nutrition Review

Family Economics and Nutrition Review is written and published each quarter by the Center for Nutrition Policy and Promotion, U.S. Department of Agriculture, Washington, DC.

The Secretary of Agriculture has determined that publication of this periodical is necessary in the transaction of the public business required by law of the Department.

 Family Economics and Nutrition Review is indexed in the following databases: AGRICOLA, Ageline, Economic Literature Index, ERIC, Family Resources, PAIS, and Sociological Abstracts.

Family Economics and Nutrition Review is for sale by the Superintendent of Documents. Subscription price is $7.50 per year ($9.40 for foreign addresses). Send subscription orders and change of address to Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. (See subscription form on p. 51.)

Suggestions or comments concerning this publication should be addressed to: Joan C. Courtless, Editor, *Family Economics and Nutrition Review*, Center for Nutrition Policy and Promotion, USDA, 1120 20th St., NW, Suite 200 North Lobby, Washington, DC 20036. Phone (202) 606-4816.

Feature Articles

2 **Construction and Evaluation of a Diet Status Index**
P. Peter Basiotis, Joanne F. Guthrie, Shanthy A. Bowman, and Susan O. Welsh

14 **Characteristics of Rural Residents and Vulnerability to Alcohol Problem Behaviors**
Elizabeth B. Robertson

24 **Housing Trends**
Nancy E. Schwenk

Research Summaries

34 Gender-Related Shifts in the Distribution of Wages

36 Changing Eating Patterns: Grains, Vegetables, Fruit, and Sugars

38 The Development and Growth of Employer-Provided Health Insurance

40 Are Women Leaving the Labor Force?

Regular Items

42 Charts From Federal Data Sources

44 Recent Legislation Affecting Families

45 Data Sources

46 Journal Abstracts and Book Summary

47 Cost of Food at Home

48 Consumer Prices

49 Guidelines for Authors

Volume 8, Number 2
1995

Construction and Evaluation of a Diet Status Index

By P. Peter Basiotis
Economist
Center for Nutrition Policy and Promotion

Joanne F. Guthrie
Nutritionist
Center for Nutrition Policy and Promotion

Shanthy A. Bowman
Nutritionist
Center for Nutrition Policy and Promotion

Susan O. Welsh
Nutritionist
Cooperative State Research, Education, and Extension Service

Because there is a well-established link between diet and health, it is important to be able to evaluate individuals' or groups' diets and to obtain information on their diets' determinants. However, because diets are complex, it is difficult to devise a summary measure of the overall diet to be used as an outcome—or dependent—variable in univariate or multivariate studies of diets' determinants. Current dietary guidance emphasizes both eating enough food to meet the body's needs and avoiding excess intakes of certain food components that have been linked to chronic diseases. Using USDA's 1989-91 Continuing Survey of Food Intakes by Individuals, this study incorporates these two aspects of current dietary guidance to explore the feasibility of constructing a Diet Status Index, a summary measure of the overall diet. This exploratory index consists of two subindices: a Dietary Adequacy Score and a Dietary Moderation Score. Conclusions from univariate analyses by several respondent characteristics using the three measures were similar with those from previous studies of diets' determinants. Based on these results, it appears that the index and subindices have promise for use as summary measures by researchers studying diet quality.

People's diets are complex. Every day in the United States, individuals choose—and consume—from a staggering array of foods available to them. The USDA Survey Nutrient Data Bank currently contains food composition data on almost 7,400 different foods. For each food there is information on about 30 nutrients and food components. At the same time, the importance of diet in maintaining good health is quite clear (*15*). A good, or healthy, diet can help people live longer and healthier lives, with enhanced well-being. It also means better economic productivity and lower health care costs. Thus, the Federal Government has a strong incentive to monitor the population's diets (typically through national food consumption surveys) and, when necessary, to help

improve dietary status through nutrition education and other efforts.

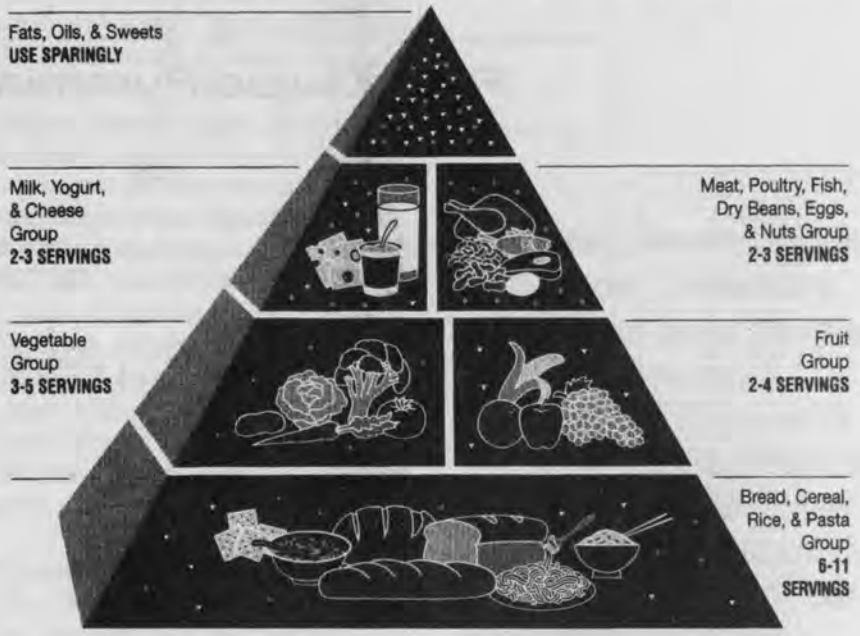
This raises two interesting questions for nutrition educators and others concerned with assessing diets and their determinants. First, what exactly is a good or healthy diet? And second, how can a person's or a group's diet be evaluated?

To answer the first question, since 1980 the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (DHHS) have issued principles of a healthful diet called the "Dietary Guidelines for Americans" (*14*). These Guidelines focus on obtaining a diet both sufficient in nutrients and without excesses, since excess intakes of certain food components have been linked to chronic diseases (*15*). The current Guidelines are:

- Eat a variety of foods
- Maintain healthy weight
- Choose a diet low in fat, saturated fat, and cholesterol
- Choose a diet with plenty of vegetables, fruits, and grain products
- Use sugars only in moderation
- Use salt and sodium only in moderation
- If you drink alcoholic beverages, do so in moderation

The Dietary Guidelines do not give specific and detailed recommendations on which foods to eat every day and how much. This is done by the USDA/DHHS Food Guide Pyramid (FGP) (*16*), shown in figure 1. To come up with these specific recommendations, USDA scientists considered, among other things, the number of servings per day from major food groups and subgroups that would ensure three dietary goals would be met (*17*). These goals were variety, proportionality, and moderation.

Figure 1. The Food Guide Pyramid: A guide to daily choices



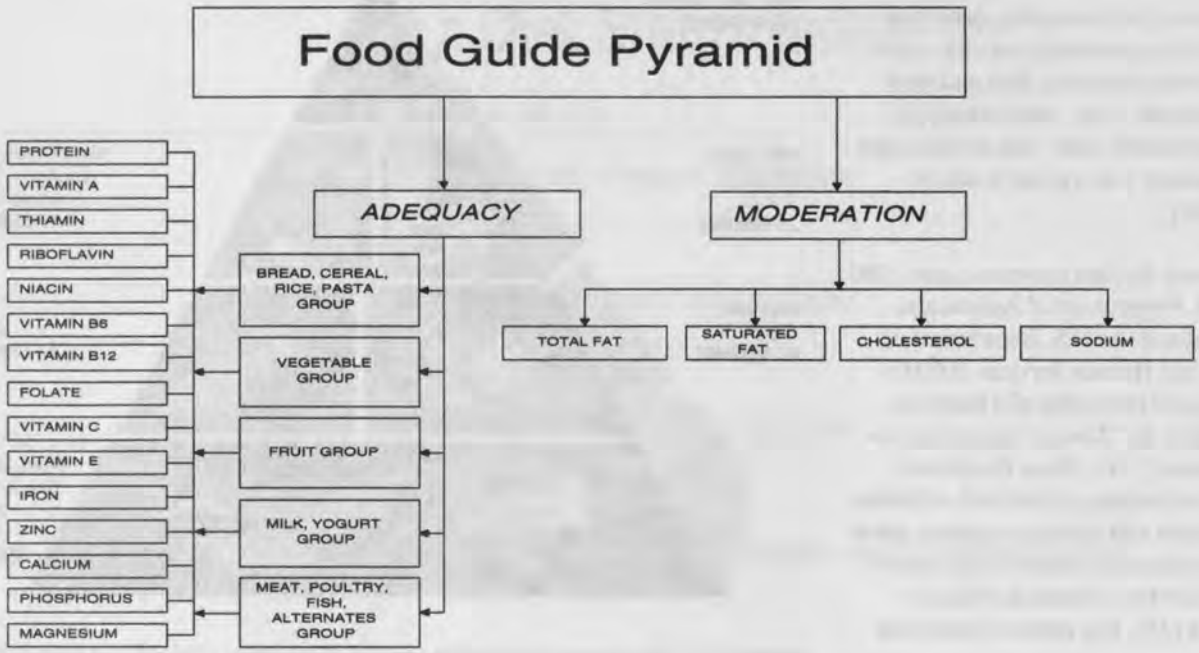
Source: U.S. Department of Agriculture and U.S. Department of Health and Human Services.

Variety means eating a selection of foods of various types that together meet nutritional needs. Proportionality means eating appropriate amounts of various types of foods to meet nutritional needs. And moderation means avoiding too much of food components in the total diet that have been linked to diseases (*17*). For practical purposes, variety and proportionality can be combined to reflect dietary adequacy (fig. 2, p. 4). In this context, adequacy means eating the quantity and quality of food that will satisfy the biological needs of healthy people, so that the recommended amounts of food energy (calories), vitamins, minerals, and other food components are consumed. The FGP shows these ideas by suggesting that people eat from all the food groups but proportionately more of the food groups at its base than at its top.

The answer to the second question—how can a person's or group's diet be evaluated?—had to await the answer to the first—what is a good or healthy diet? Because a diet comprises many components, it is difficult to judge one overall. Still, those wanting to relate overall diets to factors influencing those diets need a summary measure, or index, of the overall diet. Otherwise, researchers are required to consider multiple aspects of the diet, one at a time, greatly complicating inferences on determinants of the overall diet quality.

In this study, we propose a summary measure for assessing the overall quality of diets that can be used for identification of factors influencing overall diets and for prediction of dietary status of groups of individuals sharing common characteristics. This measure, the Diet Status Index (DSI), builds and improves upon previous measures of the overall diet in two important ways: (1) it incorporates aspects of both dietary adequacy and dietary moderation, and (2) it is a relatively simple measure, easy to calculate from data readily available in dietary survey data sets.

Figure 2. Conceptual framework for construction of diet status index



Previous Studies

A number of dietary summary measures have been proposed in the past. Two of the most popular ones have been the Mean Adequacy Ratio (MAR) (*1*), and the Index of Nutritional Quality (INQ) (*13*). Recently the Diet Quality Index (DQI) (*11*) was proposed.

The MAR is calculated by adding the intakes of a number of nutrients of interest expressed as a percentage of the Recommended Dietary Allowances (RDA)[1] (*9*) for an individual, but truncated at 100 percent, and then dividing by the number of nutrients to get the value of the index. A clear limitation of the MAR is that it only addresses the adequacy aspect of the diet.

[1]The Recommended Dietary Allowances are average daily intakes which, if met, will provide for individual variations in the nutritional needs of practically all healthy persons living in the United States under normal environmental stresses.

The INQ is calculated by dividing the diet's caloric content by the food energy intake recommended for the person's age and gender. Then, the intakes of a number of nutrients expressed as a percentage of the RDA are divided by this ratio and an MAR-type of index is constructed based on these imputed intakes. Because it is based on the nutrient density of the diet, the INQ evaluates the nutritional quality, not quantity, of the diet. In a sense, the INQ does not capture completely either the adequacy or the moderation aspect of the overall diet. Because people seem to underreport their food intakes during dietary survey interviews (*7*), the INQ may, however, be used to attempt to capture dietary adequacy while adjusting for possible underreporting.

The recently proposed DQI captures aspects of both adequacy and moderation in the diet. It is based on eight National Academy of Sciences (NAS) recommendations (*10*). The NAS recommendations are similar but not identical to the Dietary Guidelines. In addition, because of its relatively few components, the DQI may not reflect the quality of the total diet as well as possible, given the additional information available in the data sets (*8*). For practical purposes, the DQI is hard to calculate because it requires foods consumed to be grouped appropriately, a time-consuming task requiring considerable decision-making by nutrition experts. Variations in the food-grouping processes may reduce comparability of results across studies.

Sources of Data

Data used in this study are from USDA's Continuing Survey of Food Intakes by Individuals (CSFII), 1989-91. The sample used for construction and evaluation of the DSI consisted of adult (age 20 years or over) males and females who were not bedridden and females who were not pregnant or breastfeeding.

The CSFII 1989-91 yielded 3 years of data, with each yearly survey consisting of approximately 1,500 all-income households and a low-income sample of approximately 750 households. Data from the samples were combined using the appropriate survey weights that were supplied by the USDA. In the 1989-91 CSFII, USDA collected information from individual household members about what they eat and how much (through one 24-hour recall followed by a 2-day record), how they prepare food, the time and name of each eating occasion, and the source of the food. The amounts of nutrients and other food components from these food intakes, calculated using the USDA Survey Nutrient Data Bank, were provided by the USDA. These amounts exclude vitamin, mineral, and other supplements. In addition, economic and sociodemographic data and self-reported data on the respondent's diet and health were collected.

To ensure comparability across past and future surveys, only intake data obtained during the first 24-hour recall were used for this study. All samples were weighted to be representative of the respective age-sex groups of the U.S. population.

Methodology

Construction of the Diet Status Index was based on the conceptual framework shown in figure 2. This framework reflects the advice of the FGP in the context of the available data. Because data on consumption of FGP food groups are not readily available, nutrient and food component data already available in the data sets were used. Appropriate levels of consumption of these nutrients and food components result by following the dietary recommendations of the FGP (fig. 2) (*17*). Note, however, that the converse is not necessarily true. Adequacy is reflected in the daily consumption of 15 nutrients for which the RDA have been established and are also available in the USDA Nutrient Data Bank. These are: Protein, Vitamin A (in retinol equivalents), Thiamin, Riboflavin, Niacin, Vitamin B-6, Vitamin B-12, Folate, Vitamin C, Vitamin E, Iron, Zinc, Calcium, Phosphorus, and Magnesium. Nutrients and dietary components such as selenium and fiber were not included because either data were not available, or no established standards for consumption exist. Since the RDA take into account differences in requirements due to age and sex, use of the RDA allows interpersonal and interstudy comparisons. Although there may be some redundancy in using all 15 RDA nutrients available, statistical reliability of the index is increased (*4*).

To construct the Dietary Adequacy Score (DAS) component of the DSI, the following steps were followed:

1. For each of 15 nutrient intakes, the individual was assigned a 1 if the intake was equal to or exceeded the individual's RDA for the nutrient, or assigned a 0, otherwise.

2. The intake scores were added up for a possible minimum score of 0 and a maximum score of 15.

3. The sum was then multiplied by 6-2/3 to adjust it to a scale from 0 to 100. This was the individual's DAS.

To construct the moderation component, the following food components were used (fig. 2):

1. Percent of food energy from total fat (limit to 30 percent or less)

2. Percent of food energy from saturated fat (limit to 10 percent or less)

3. Amount of dietary cholesterol (limit to 300 mg or less)

4. Amount of sodium (limit to 2,400 mg or less)

A good, or healthy, diet can help people live longer and healthier lives, with enhanced well-being. It also means better economic productivity and lower health care costs. Thus, the Federal Government has a strong incentive to monitor the population's diets ...

To construct the Dietary Moderation Score (DMS) component of the DSI, the following steps were followed:

1. For each of the four moderation food components above, the individual was assigned a 1 if the intake was less than the recommended amount for that component (30 percent for food energy from total fat; 10 percent of food energy from saturated fat; 300 mg for dietary cholesterol; and 2,400 mg for sodium, *and* if the person said that he or she rarely or never adds salt to the food at the table), or assigned a 0, otherwise.
2. The scores were added up for a possible minimum score of 0 and a maximum score of 4.
3. The sum was then multiplied by 25 to adjust it to a scale from 0 to 100. This was the individual's DMS.

The individual's DSI was then constructed by adding the DAS and the DMS and dividing by 2.

Because of the possibility of underreporting of food intakes during survey interviews (*7*), energy-adjusted scores were also calculated. This was done by dividing each nutrient or food component above by the ratio of the individual's food energy intake to his or her recommended energy allowance (REA) and then calculating the index scores as above. However, this approach is valid only if there is no systematic, or selective, underreporting of specific foods.

Statistical tests were conducted using the statistical program SUDAAN which is designed for use with large complex surveys (*12*). Statistical significance was at the ($p \leq .05$) level. T tests were used for comparing means of two groups, and multiple contrasts were used for simultaneously comparing means of three groups (*12*).

Selected Limitations

An obvious limitation of the DSI is that the status of obesity is not reflected in the three summary measures, although it is a major diet-related health concern in the United States. Including a measure of obesity in the index construction would increase complexity at this initial, exploratory stage, and would complicate the measures' evaluation. Use of 100 percent of the RDA or the recommended limit specified in constructing the DAS and DMS is especially problematic, since it assigns consumption of, say, 99 percent of the RDA for some nutrient to the "inadequate" category. However, even though 67 percent of the RDA has been used as a cutoff point in the literature (*11*), it was decided to use 100 percent of the RDA because such intakes would clearly meet the adequacy criteria.

Table 1. Estimated mean intakes of dietary components, U.S. adults, by sex:[1] 1989-91

Food component[2]	All	Males	Females
Sample size	10,088	4,169	5,919
Food energy[3]	78.0	82.2	74.2
Adequacy components[3]			
Protein	136.6	146.3	127.6
Vitamin A	113.0	111.8	114.2
Vitamin E	90.7	94.4	87.3
Vitamin C	159.4	173.0	146.8
Thiamin	122.8	127.0	119.0
Riboflavin	124.7	131.0	119.0
Niacin	135.9	145.9	126.6
Vitamin B-6	92.9	97.7	88.5
Folate	132.4	143.6	122.1
Vitamin B-12	250.3	309.7	195.6
Calcium	87.8	101.2	75.5
Phosphorus	143.1	167.8	120.4
Magnesium	82.4	85.3	79.7
Iron	127.8	164.7	93.9
Zinc	81.8	89.1	75.0
Moderation components			
% Calories from fat	34.5	35.1	34.0
% Calories from saturated fat	11.9	12.2	11.7
Cholesterol (mg)	285.5	345.1	230.6
Sodium (mg)	3,163	3,903	2,482

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population living in households.
[2]Estimates exclude vitamin, mineral, and other supplements.
[3]Percentages of Recommended Energy Allowances (REA) and Recommended Dietary Allowances (RDA) for protein through zinc.

The moderation food component cutoffs were decided through similar reasoning. Assigning equal weights, and thus importance, to each nutrient or food component in the index scores is also problematic. However, in the absence of comprehensive scientific guidance on the subject, weighting each nutrient and food component equally was deemed the least problematic alternative. Since the DSI, DAS, and DMS were constructed for use as outcome—or dependent—variables in multivariate analyses or for use with groups of individuals in univariate work, the statistically undesirable effects of large day-to-day variability in nutrient consumption should be alleviated by: The use of relatively many nutrients for the DAS (*4*); the use of cutoff points for the nutrients and food components (*5*); and the large number of individuals in the survey (*3*).

Table 2. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and age:[1] 1989-91

Sex/Age	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males (years)				
20 to 50	2,618	42.9[A]	54.5	31.3[A]
		48.7[A]	74.6[A]	22.7[A]
Over 50	1,551	46.7	55.3	38.1
		51.4	71.3	31.6
All	4,169	44.1[S]	54.7[S]	33.5[S]
		49.6[S]	73.5[S]	25.6[S]
Females (years)				
20 to 50	3,466	43.8[A]	42.0[A]	45.5[A]
		50.4[A]	66.5[A]	34.3[A]
Over 50	2,453	50.6	48.1	53.0
		57.4	71.1	43.8
All	5,919	46.3	44.3	48.3
		53.0	68.2	37.8
All				
20 to 50	6,084	43.3[A]	48.2[A]	38.4[A]
		49.5[A]	70.5	28.5[A]
Over 50	4,004	48.8	51.3	46.4
		54.8	71.2	38.3
All	10,088	45.2	49.3	41.2
		51.3	70.8	31.9

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation.

[2]Bottom number is energy-adjusted score.

"A" – Significantly different from the other age category at the $p \leq .05$ level.
"S" – Significantly different from the other sex category at the $p \leq .05$ level.

Evaluation

Evaluation of the DSI and its component subindices relies on criterion validity (*4*). That is, selected results obtained by use of the DSI, DAS, and DMS are compared with those of other studies that draw inferences on factors influencing the total diet.

Average intakes of food energy, the 15 adequacy nutrients, and the 4 moderation food components are shown in table 1. Average food energy intakes were substantially below the Recommended Energy Allowances (REA) for both men and women. Average intakes for 11 nutrients for men and 9 for women were above the RDA, whereas intakes of 4 nutrients for men and 6 for women were below. Of the four moderation food components, only average cholesterol intake by women met the moderation criterion.

Sex and Age

The DSI, DAS, and DMS for the period 1989-91 are shown in table 2. In each cell, the top number represents the actual score, and the bottom number represents the energy-adjusted score. For all adult persons the DSI was 45.2. The DAS, at 49.3, was higher than the DMS (41.2). The energy-adjusted scores were 51.3, 70.8, and 31.9, respectively. Predictably, adjusting for energy intake tends to increase the DAS and decrease the DMS. For the sake of simplicity, subsequent discussion will refer only to the actual scores, unless there is disagreement (in terms of statistical significance) between the actual score and the energy-adjusted score. Adult women had a higher level of the DSI than adult men, 46.3 and 44.1, respectively. However, men had a much higher mean DAS (54.7) than women (44.3). This situation was reversed for the DMS, where women had the higher score, 48.3 compared with 33.5 for men. These differences in the dietary scores may reflect lower average food intakes by women compared with those by men (table 1).

...the "Dietary Guidelines for Americans"...focus on obtaining a diet both sufficient in nutrients and without excesses, since excess intakes of certain food components have been linked to chronic diseases.

Table 3. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and household income:[1] 1989-91

Sex/ Income as percent of poverty threshold	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males				
At or below 130%	1,374	41.2[I]	47.5[I]	34.9
		47.6[I]	69.8[I]	25.4
Over 130%	2,795	44.5	55.7	33.4
		49.8	74.0	25.6
Females				
At or below 130%	2,565	43.9[I]	38.5[I]	49.3
		51.2[I]	64.4[I]	38.0
Over 130%	3,354	46.8	45.5	48.1
		53.4	69.0	37.7
All				
At or below 130%	3,939	42.9[I]	41.9[I]	43.9[I]
		49.8[I]	66.4[I]	33.3
Over 130%	6,149	45.6	50.5	40.8
		51.6	71.5	31.7

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation.

[2]Bottom number is energy-adjusted score.

"I" – Significantly different from the other income category at the $p \leq .05$ level.

With the exception of the DAS for males, older people (those over 50 years of age) had substantially higher scores for all three dietary measures (table 2). The differences were more pronounced for the DMS for both sexes, where people over 50 years old had a DMS of about eight points higher than those 20 to 50 years of age.

Income and Education

Averages of the three index scores by income category are shown in table 3. As expected (*6*), people from households with incomes over 130 percent of the Federal poverty threshold had higher average scores for the DSI and the DAS component than those from households with incomes at or below 130 percent of the poverty threshold. The DMS is very similar within sex groups across income levels. The statistically higher DMS for all adults at or below 130 percent of poverty may be an artifact of the significantly greater percentage of females in this low income group. Based on previous studies, the evidence on the relationship between income and diet quality is conflicting (*6*).

Higher education levels were associated with higher average levels for all three dietary status measures (table 4). This was true for both sexes. People with a more-than-high-school education averaged about four points higher on

Table 4. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and education level:[1] 1989-91

Sex/ Education	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males				
Up to high school	2,662	42.3[E]	52.6[E]	32.0[E]
		47.5[E]	71.1[E]	24.0[E]
More than high school	1,452	46.1	57.3	35.0
		51.8	76.2	27.3
Females				
Up to high school	4,088	44.5[E]	42.3[E]	46.6[E]
		51.1[E]	66.1[E]	36.1[E]
More than high school	1,758	48.7	47.0	50.3
		55.5	71.0	40.0
All				
Up to high school	6,750	43.5[E]	47.1[E]	39.9[E]
		49.4[E]	68.4[E]	30.4[E]
More than high school	3,210	47.4	52.2	42.6
		53.6	73.6	33.6

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation..

[2]Bottom number is energy-adjusted score.

"E" – Significantly different from the other education category at the p≤.05 level.

...we propose a summary measure for assessing the overall quality of diets.... This measure, the Diet Status Index (DSI)...incorporates aspects of both dietary adequacy and dietary moderation and is a relatively simple measure, easy to calculate from data readily available in dietary survey data sets.

the DSI than people with an up-to-high-school education. The largest differences were observed for the DAS. These results are in general agreement with those of previous studies (*6*).

Race

In general, people in the "Other" race category of table 5, p. 10, had the best scores for all dietary measures. The Other category includes Asian/Pacific Islander, Aleut, Eskimo, and American Indian, and all other race classifications. For almost all dietary measures, Whites had higher scores than Blacks, a finding in agreement with previous studies (*6*). This result seems to reflect statistical differences between the scores of White and Black females.

Self Report and Self-Perception of Diet Status

Persons who reported being on a special diet (such as weight loss, low sodium, diabetic, etc.) had substantially higher averages for the three dietary measures (table 6, p. 11). The exception was for the males' actual DAS. The differences were most pronounced for the DMS where those on a special diet had higher DMS by 9-12 points. Interestingly, those on a special diet also tended to have higher DAS than those not on a special diet.

As might be expected from previous research (*2*), there appeared to be a direct association between self-reported healthfulness of diet and dietary quality

as reflected by the three dietary measures, especially for males (table 7, p. 12). For females, those reporting that their diet was excellent or very good had higher DSI, DAS, and DMS averages than those who rated their diet as good. They, in turn, had better scores than those who rated their diets fair or poor. The pattern was similar for males, with the exception of the DMS.

Summary and Conclusion

This study incorporated two aspects of current dietary guidance to construct the Diet Status Index, an exploratory summary measure of the overall diet. This index consists of two component subindices, a Dietary Adequacy Score and a Dietary Moderation Score. The DAS is based on intakes of 15 nutrients, expressed as percentages of the Recommended Dietary Allowances. Because of standards and data availability, the DMS is based on intakes of only four dietary components that should be limited. These were: Percentage of calories from fat, percentage of calories from saturated fat, cholesterol, and sodium. In an attempt to examine effects of possible underreporting of food during dietary surveys, the energy-adjusted DSI, DAS, and DMS were also calculated and presented.

Several limitations were noted. Absence of an obesity measure was a major limitation. Future studies could incorporate an obesity measure such as the Body Mass Index (BMI) in the construction of a DSI. Weighting all nutrients and food components equally in the construction of the DAS and DMS was another major limitation. Refinement of a nutrient-based DSI will require scientific effort to determine nutrients' relative importance in the diet, once the minimum nutrient requirements have been met. In this vein, scientific research to determine the distribution of these requirements in the population is also needed. Although day-to-day variability in food intake should not be a problem for summary measures of groups' diets like the DSI, DAS, and DMS, it limits use of such measures for assessing individuals' diets. Research is needed to improve on estimation accuracy of individuals' usual intakes. Energy-adjusting nutrient and food component intakes might compensate for possible food underreporting in surveys, if underreporting is random with respect to individual foods. If, however, there is selective underreporting, energy-adjusting may lead to erroneous conclusions. More research is clearly needed to adequately assess the entire issue of underreporting in dietary surveys.

The results show that, in general, those who had better DSI scores were: Over 50 years of age, had household incomes above 130 percent of the Federal poverty threshold, and had more than a high school education. Those who reported being on a special diet and those who

Table 5. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and race:[1] 1989-91

Sex/Race	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males				
White	3,570	44.2[O]	55.4[B]	33.0[O]
		49.6[O]	73.7	25.5[O]
Black	400	41.7[O]	48.6	34.7
		47.7[O]	71.4	24.1[O]
Other	199	47.6	55.4	39.7
		53.2	75.4	31.0
Females				
White	4,738	46.9[B]	45.1[B]	48.6
		53.7[B]	69.1[B]	38.3[B]
Black	869	41.8[O]	38.2	45.4
		47.5[O]	62.2	32.9[O]
Other	312	47.2	44.9	49.5
		53.5	66.9	40.0
All				
White	8,308	45.6[B]	50.1[B]	41.1
		51.7[B]	71.3[B]	32.1[B]
Black	1,269	41.7[O]	42.7[O]	40.8
		47.6[O]	66.1[O]	29.1[O]
Other	511	47.4	49.9	44.8
		53.3	71.0	35.7

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation.

[2]Bottom number is energy-adjusted score.

"O" – Significantly different from the "Other" category at the $p \leq .05$ level.
"B" – Significantly different from the "Black" category of the $p \leq .05$ level.

Table 6. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and self-reported diet situation:[1] 1989-91

Sex/ Self-reported diet situation	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males				
On special diet	441	49.8[D]	58.5	41.1[D]
		56.1[D]	78.9[D]	33.2[D]
Not on special diet	3,694	43.3	54.2	32.4
		48.6	72.8	24.5
Females				
On special diet	1,046	53.0[D]	47.7[D]	58.3[D]
		60.5[D]	75.0[D]	45.9[D]
Not on special diet	4,831	44.9	43.7	46.2
		51.5	66.8	36.1
All				
On special diet	1,487	51.8[D]	51.8	51.8[D]
		58.8[D]	76.5[D]	41.1[D]
Not on special diet	8,525	44.1	48.9	39.4
		50.1	69.8	30.3

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation.

[2]Bottom number is energy-adjusted score.

"D" – Significantly different from those not on a special diet at the $p \leq .05$ level.

...those who had better DSI scores were: Over 50 years of age, had household incomes above 130 percent of the Federal poverty threshold, and had more than a high school education. Those who reported being on a special diet and those who described their diets as healthful also tended to have higher DSI scores.

described their diets as healthful also tended to have higher DSI scores. Energy-adjusting the index scores had only a minor effect on the results. For most groups examined, the subgroup with better DAS also had better DMS. This was true, for example, for groups compared by age, education, race, special diet status, and self-rated diet quality. It was not true, however, for groups compared by sex. Women had higher DMS, while men had higher DAS, resulting in overall DSI scores that differed far less than their components' scores. This was probably due, at least in part, to the large difference in caloric intakes between the two groups and because the upper limits for two of the four moderation factors—cholesterol and sodium—do not vary with caloric requirements. It appears then, that when comparing two groups of widely differing caloric intakes, it may be advisable to use the two component scores, rather than the combined score. Alternatively, researchers may wish to use energy-adjusted scores to examine diet quality of such groups, either in place of or in addition to absolute scores.

Based on these results, the DSI, DAS, and DMS all appear to have promise for use as summary measures by researchers studying diet quality. Future studies examining the properties of these measures, perhaps in comparison with other existing summary measures, such

Table 7. Estimated mean index scores: Dietary status, adequacy, and moderation, U.S. adults, by sex and self-perception of healthfulness of diet:[1] 1989-91

Sex/ Self perception of healthfulness of diet	Sample size	Dietary status index[2]	Dietary adequacy score[2]	Dietary moderation score[2]
Males				
Excellent of very good	1,778	46.1[G,F]	57.4[G,F]	34.9
		51.4[G,F]	76.2[G,F]	26.6
Good	1,653	43.0	53.9	32.0
		48.4	72.7[F]	24.2
Fair or poor	705	41.2	49.2	33.2
		47.0	68.3	25.6
Females				
Excellent or very good	2,268	49.6[G,F]	47.8[G,F]	51.4[G,F]
		56.4[G,F]	72.6[G,F]	40.2[G,F]
Good	2,413	45.1[F]	43.0[F]	47.2[F]
		51.8[F]	66.6[F]	37.0[F]
Fair or poor	1,203	41.2	39.4	43.0
		47.6	61.6	33.6
All				
Excellent or very good	4,046	47.9[G,F]	52.6[G,F]	43.1
		53.9[G,F]	74.4[G,F]	33.4
Good	4,066	44.1[F]	48.1[F]	40.1[F]
		50.2[F]	69.4[F]	31.0[F]
Fair or poor	1,908	41.2	43.9	38.5
		47.3	64.6	29.9

[1]Estimates are based on USDA's 1989-91 Continuing Survey of Food Intakes by Individuals and are weighted to represent the U.S. adult population. See text for definitions of Dietary Status, Adequacy, and Moderation.

[2]Bottom number is energy-adjusted score.

"G" – Significantly different from the "Good" category at the $p \leq .05$ level.
"F" – Significantly different from the "Fair" category at the $p \leq .05$ level.

...the value of the DSI could be enhanced by incorporating consumption of foods defined in the FGP in its construction and including the DSI in publicly released data sets.

as the MAR, the INQ, and the DQI, would further our understanding of their strengths and limitations.[2] Should results of these methodological studies prove encouraging, future studies could utilize the DSI to expand on the literature of determinants of diet quality, by using it in multivariate analyses, for example. In addition, the value of the DSI could be enhanced by incorporating consumption of foods defined in the FGP in its construction and including the DSI in publicly released data sets. This should make the DSI even more useful for relating overall diet behavior to its determinants.

[2]A promising future direction would utilize the rules of the newly developed fuzzy set theory ("fuzzy logic") to reconstruct the DSI and its component scores. This approach seems to address the uncertainty, or fuzziness, inherent in dietary assessment. For an informative, nontechnical overview of fuzzy logic see, for example, the article by Kosko and Isaka in the July 1993 issue of *Scientific American.*

References

1. Abdel-Ghany, M. 1978. Evaluation of household diets by the index of nutritional quality. *Journal of Nutrition Education* 10(2):79-81.

2. Basiotis, P.P., Guthrie, J.F., Keane, T., and Welsh, S.O. 1992. Profiles of adults with varying self-perceptions of dietary quality. *Journal of the American Dietetic Association* 92(9)(Suppl.):A-45.

3. Basiotis, P.P., Welsh, S.O., Cronin, F.J., Kelsay, J.L., and Mertz, W. 1987. Number of days of food intake records required to estimate individual and group nutrient intakes with defined confidence. *The Journal of Nutrition* 117(9):1638-1641.

4. Carmines, E.G. and Zeller, R.A. 1979. *Reliability and Validity Assessment.* Sage University Paper series on Quantitative Applications in the Social Sciences, Series No. 07-017. Sage Publications, Newbury, CA.

5. Greene, W.H. 1993. *Econometric Analysis* (2nd ed.). The MacMillan Publishing Company, New York.

6. Morgan, K.J. 1986. Socioeconomic factors affecting dietary status: An appraisal. *American Journal of Agricultural Economics* 68(5):1240-1246.

7. Mertz, W., et al. 1991. What are people really eating? The relation between energy intake derived from estimated diet records and intake determined to maintain body weight. *American Journal of Clinical Nutrition* 54:291-295.

8. Murphy, S.P., Rose, D., and Lane, S. 1994. What is the proper use of a diet quality index? *Journal of the American Dietetic Association* 94(9):968.

9. National Academy of Sciences, National Research Council, Food and Nutrition Board. 1989. *Recommended Dietary Allowances* (10th ed.). National Academy Press, Washington, DC.

10. National Academy of Sciences, National Research Council, Food and Nutrition Board. 1989. *Diet and Health: Implications for Reducing Chronic Disease Risk.* National Academy Press, Washington, DC.

11. Patterson, R.E., Haines, P.S., and Popkin, B.M. 1994. Diet quality index: Capturing a multidimensional behavior. *Journal of the American Dietetic Association* 94(1):57-64.

12. Shah, B.V., et al. 1991. *SUDAAN User's Manual: Professional Software for Survey Data Analysis for Multi-Stage Sample Designs.* Research Triangle Institute, Research Triangle Park, NC.

13. Sorenson, A.W., Wyse, B.W., Wittwer, A.J., and Hansen, R.G. 1976. An index of nutritional quality for a balanced diet. *Journal of the American Dietetic Association* 68:236-242.

14. U.S. Department of Agriculture and U.S. Department of Health and Human Services. 1990. *Nutrition and Your Health: Dietary Guidelines for Americans.* Home and Garden Bulletin No. 232.

15. U.S. Department of Health and Human Services, Public Health Service. 1988. *The Surgeon General's Report on Nutrition and Health. Summary and Recommendations.* DHHS (PHS) Publication No. 88-50211.

16. U.S. Department of Agriculture, Human Nutrition Information Service. 1992. *The Food Guide Pyramid.* Home and Garden Bulletin No. 252.

17. Welsh, S., Davis, C., and Shaw, A. 1992. Development of the Food Guide Pyramid. *Nutrition Today* November/December, pp. 12-23.

Characteristics of Rural Residents and Vulnerability to Alcohol Problem Behaviors

By Elizabeth B. Robertson
Social Scientist
Agricultural Research Service

Alcohol is reported to be the most widely abused substance in rural areas. However, little has been done to identify alcohol consumption patterns and problems among rural adults. In this paper, data from the 1990 and 1991 National Household Surveys on Drug Abuse were combined to produce a sample of U.S. adults residing in areas outside urban settlements with fewer than 2,500 residents. Relationships between seven personal, family, and economic characteristics and the frequency of alcohol use, the quantity of alcohol consumed, and markers of alcohol-related problems were examined. Results indicate that some demographic characteristics are consistently related to alcohol problem behavior among rural adults. These characteristics include being male, being younger than the median age of 33, having attained a high school or greater education, being employed or unemployed (as opposed to being retired, disabled, a homemaker, or a student), and being unmarried. Findings may be helpful to cooperative extension specialists, other educators, and substance abuse prevention and treatment personnel.

There is evidence that alcohol is used at the same rate in rural as in nonrural areas of the United States (*12*). In most cases, the use of alcohol is not abusive. The majority of adults who consume alcohol are referred to as social drinkers because they rarely experience negative effects from alcohol use. The remaining drinkers fall into two categories: Alcohol abusers, those who are not dependent on alcohol but who abuse or misuse it; and alcoholics, those who are physically and psychologically dependent upon alcohol (*12*). The American Psychiatric Association reports that about 13 percent of the U.S. adult population experiences alcohol abuse or dependence at some time in their lives (*1*). The National Institute on Alcoholism and Alcohol Abuse (NIAAA) reports that about 10 percent of adult Americans fall into the alcohol abuse (4 percent) and dependent (6 percent) categories (*12*).

Individuals who fall into any of the three alcohol consumption categories may experience serious alcohol-related problems. For example, the impaired judgement of the social drinker who drives may result in a life-threatening accident; the poor nutritional intake of the abusive drinker may lead to long-term health consequences; and the lack of control of the alcoholic may lead to high-risk behavior.

Alcohol is reported to be the most widely abused substance in rural areas (*13*). However, little research has been done to identify alcohol consumption

patterns and problems among rural adults. Sociodemographic characteristics may be helpful in identifying rural adults at risk for problems associated with alcohol consumption. In this paper, the relationships between seven personal, family, and economic characteristics of rural adults and the frequency of alcohol use, the quantity of alcohol consumed, and markers of alcohol-related problems are examined.

Data and Sample

Combined data from the 1990 and 1991 National Household Surveys on Drug Abuse (NHSDA) were used in these analyses. The NHSDA utilizes a multistage area probability sample design. In 1990 and 1991, the sample sizes were 9,259 and 32,594, respectively. The 1990 target population was the household population of the 48 contiguous States. In 1991, this definition was broadened to include the civilian, noninstitutional population of the entire United States. This change introduces some minor inconsistencies between the 1990 and 1991 samples. However, its impact is considered to be generally inconsequential (*10*). For a more complete discussion of the limitations of the NHSDA data sets, see Robertson (*8*).

Only those respondents who were age 21 years and older and who resided in nonmetropolitan rural areas were eligible for inclusion in this study. The NHSDA uses the U.S. Census definition of nonmetropolitan rural; that is, the U.S. population residing in areas (such as counties) outside urban settlements including wilderness areas, sparsely settled areas, farmland, and small places with fewer than 2,500 residents (*2*). In all, 2,149 subjects fit the criteria for inclusion. Population weights of the NHSDA were corrected to accurately reflect the 1992 census of rural population by region.

Measures

Seven demographic characteristics were considered in this paper: Gender, age, race, education, work status, income, and marital status. Age was split at the rural subsample median of 33 years to make two categories: Those below the median and those at or above the median. Race was also divided into two categories: White and non-White. Small numbers of respondents with Native American, Alaskan Native, Asian, and Pacific Islander heritage prevented the construction of more descriptive race groups.

After analysis to confirm that there were no extreme outlier groups with regard to the percentage who reported any alcohol consumed in the past year, all non-White respondents were grouped into one category. Three levels of education were distinguished: Less than high school, high school, and more than high school. Work status also has three categories: Employed, unemployed, and other, with the other category including the retired, disabled, full-time students, and homemakers. Per capita income was split at the median of $8,000. Per capita income was calculated by dividing the household income by the number of household members. Those at and below the median were grouped together.

Three marital status groups were considered: Currently married, divorced or separated, and never married. A small number of respondents were widowed, and 72.9 percent of them had consumed no alcohol in the past year. This pattern of alcohol use was so different from those of the other marital status categories that they were eliminated from the analyses of marital status.

Frequency of alcohol consumption was assessed with a question that read "On the average, how often in the past 12 months have you had any alcoholic beverage, that is, beer, wine, or liquor?"

... results demonstrate that demographic characteristics are consistently related to alcohol problem behaviors among rural adults.

Frequency of use was coded as daily, weekly, monthly, less than monthly, and no alcohol used in the past year. For the majority of the analyses, the daily and weekly categories were collapsed because cell sizes for daily use were too small to produce reliable population estimates. Three measures were used to assess quantity of alcohol consumed: Having three or more drinks in one sitting at least once in the past month, having five or more drinks in one sitting at least once in the past month, and being drunk three or more times in the past year. Twenty-one problems related to alcohol consumption in the past year were examined individually (see table 1) and were used to create three dichotomous alcohol problem-behavior measures.

Analysis

Population weights of the NHSDA were corrected to accurately reflect the 1992 census of rural population by region. Following the derivation of population estimates, population data were reverse weighted and Chi Square analyses run. All comparisons reported in this paper were significant at $p \leq .05$.

Table 1. Frequency of selected problems related to alcohol consumption among rural adult drinkers

In past year	Percent
1. Felt aggressive or cross while drinking	13.0
2. Got into a heated argument while drinking	6.6
3. Nearly lost job due to drinking	1.1
4. Told by spouse/date to cut down drinking	6.4
5. Told by relative to cut down drinking	5.8
6. Told by friend to cut down drinking	3.4
7. Tossed down drinks fast to get quick effect	8.3
8. Was afraid might be/become an alcoholic	6.2
9. Stayed drunk for more than 1 day	2.4
10. Could not remember things done while drinking	9.1
11. Had a quick drink when no one was looking	2.4
12. Hands shook after drinking day before	3.6
13. Sometimes got high/drunk while alone	11.2
14. Stayed out of work due to hangover	2.8
15. Was high or little drunk on the job	3.3
16. Could not stop drinking until completely intoxicated	5.0
17. Often had a drink first thing in morning	1.2
18. Kept drinking after promised self to quit	5.2
19. Needed more alcohol to get the same effect	20.7
20. Felt dependent on alcohol	10.5
21. Felt sick when tried to cut down on alcohol	6.3

Results

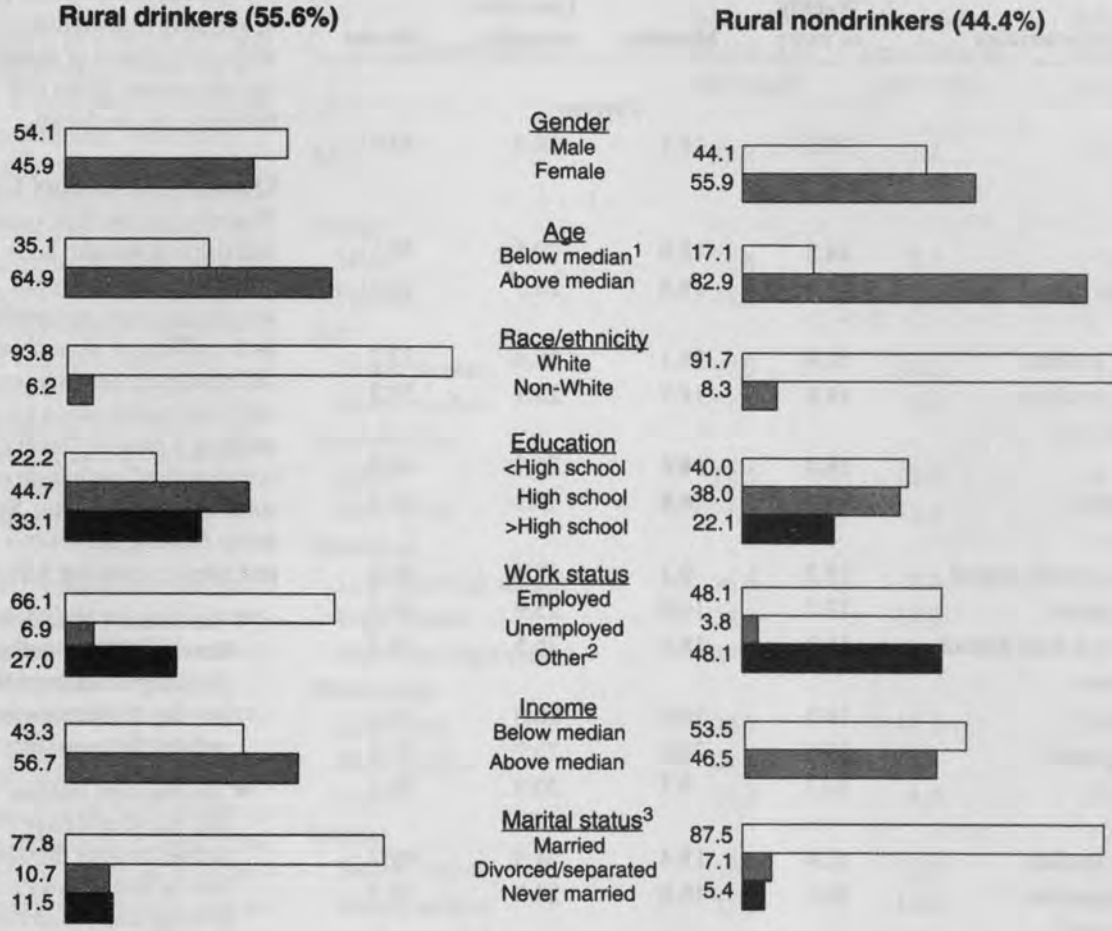
In all, 55.6 percent of rural adults, age 21 years and older, reported consuming alcohol in the past year. The figure compares rural drinkers and nondrinkers with regard to seven demographic characteristics. The profile that emerges of the typical rural alcohol user is of an older, White, married male who has a high school education, a job, and an above-median income. In contrast, the typical rural nondrinker is an older, White, married female, with less than a high school education, who either works or is not in the labor force by choice, and who has a below-median income. Thus, while the profiles of the drinking and nondrinking segments of the rural adult population are the same with regard to age, race, and marital status, they differ with regard to gender, education, work status, and income.

Use of alcohol is not necessarily an indication of alcohol problem behavior. Thus, the profile of the typical problem drinker in rural areas may not match that of the typical user. Moreover, the definition for problem drinking may vary depending on the orientation of the definer (*1,3,5*). In general, the following factors are considered when defining problem alcohol behavior: Frequency of use, quantity consumed, and the consequences of consumption. In this paper, each of these three factors is considered separately.

Frequency of Alcohol Consumption

Assessing frequency of alcohol consumption may help to define problem behavior through identifying those individuals who drink regularly, such as on a daily, weekly, or periodic (for example, weekends) basis. Those who drink with greater regularity may be more likely to overindulge during periods of heightened stress or celebration. Hence, they may be more likely to experience consequences associated with errors in judgement or lack of impulse control such as accidents and aggressive encounters (*12*).

Percentage distribution by demographic factors



[1]Median scores based on entire rural sample data, whereas percentages are for rural adults age 21 years and over.
[2]Retired, disabled, homemaker, student.
[3]Widowed were excluded.

Who are the most frequent alcohol consumers? Sample size restrictions make generalizations about daily use problematic, thus drinking weekly or more is used as the marker of most frequent use. Table 2, p. 18, presents frequency of use for the total rural adult population by demographic characteristics. Presumably, those in the groups that report using alcohol weekly or more frequently would be more likely to experience alcohol-related problems than those who consume alcohol less frequently. However, binge drinkers may participate in less frequent but more intense bouts of alcohol consumption that can lead to serious social and health consequences. The weighted population estimates reported at the top of table 2 are the self-reported frequency of alcohol use by rural adults. The largest group is that which reported no use in the past year. Only 3.9 percent reported daily use and 12.6 percent reported weekly use; these numbers were collapsed to create the weekly or more frequent category.

The demographic categories with the highest weekly or more frequent use rates are male, below-median age, high school or greater educational attainment, employed and unemployed, above-median income, and not currently married. A comparison of data from the figure and table 2 reveals that the profile of the frequent (weekly or more) alcohol consumer differs somewhat from that of the typical alcohol consumer. Like the typical consumer, the typical frequent consumer is male and has an above-median income. The two classifications differ but overlap with regard to education and employment status. Rates for the frequent consumer group were

Table 2. Frequency of alcohol consumption by rural adults (past year)

Characteristics	Weekly or more	Monthly	Less than monthly	No use
		Percent		
All	16.5	14.7	24.4	44.4
Gender				
Male	24.2	15.9	20.5	39.5
Female	8.9	13.5	28.3	49.3
Age				
Below median	21.4	23.1	28.4	27.2
Above median	14.9	11.9	23.1	50.2
Race/ethnicity				
White	16.4	14.6	25.1	43.9
Non-White	18.3	14.8	15.3	51.6
Education				
Less than high school	13.2	9.2	18.6	59.0
High school	17.7	16.0	25.9	40.4
More than high school	18.2	18.4	28.5	34.8
Work status				
Employed	19.8	16.8	26.6	36.8
Unemployed	19.6	24.8	25.2	30.4
Other[1]	10.7	9.7	20.9	58.8
Income				
Below median	12.4	13.4	24.5	49.7
Above median	20.1	16.0	24.3	39.7
Marital status[2]				
Married	14.7	14.9	25.6	44.8
Divorced/separated	23.4	19.5	24.8	32.2
Never married	35.9	17.5	21.2	25.4

[1]Retired, disabled, homemaker, student.
[2]Widowed were excluded.

more inclusive than the groups defining the typical drinker in that weekly or more drinkers can be characterized as having attained high school or greater education and being either employed or seeking employment, whereas the typical drinker is employed and has a high school education. Finally, the typical user and the typical frequent drinker differ with regard to age, race, and marital status. The frequent user can be typified as younger rather than older than the median age and not married as opposed to married. Moreover, among frequent users, similar rates of weekly alcohol use were evident for the two race groups, whereas the typical drinker is White. Thus, making distinctions between all rural adult alcohol consumers and frequent consumers does yield a somewhat different profile. These distinctions offer some hints about groups that are at risk for problem alcohol behavior. However, consuming alcohol daily or weekly is not a problem unless consumption is at a level that interferes with social, occupational, psychological, or physical functioning (*1*). Clearly, without evidence of quantity consumed, no conclusions about risk of problem behavior can be drawn.

Quantity of Alcohol Consumed

The effect of alcohol varies with an individual's weight, body chemistry, and tolerance for alcohol. For example, women are more susceptible than men to the effects of alcohol because of differences in metabolic enzyme activity and body composition (*9,14*). Thus, creating a generic "level of alcohol consumption" definition or measure is somewhat problematic. Several of the many existing definitions of moderate and heavier drinking follow:

- The Human Nutrition Information Service (HNIS) defines moderate drinking as no more than one drink per day for women and two drinks per day for men (*9*).
- The National Institute on Alcoholism and Alcohol Abuse (NIAAA) defines heavier drinking as drinking two or more drinks per day or an average daily intake of 1 or more ounces of ethanol (*7*).
- The National Institute on Drug Abuse (NIDA) defines heavy drinking as five or more drinks in a row, at least once in the past 2 weeks (*4*).
- The Substance Abuse and Mental Health Services Administration (SAMHSA) defines heavy drinking as drinking five or more drinks per day on each of 5 or more days in the past 30 days (*11*).

In this study, three definitions of quantity consumed are used. The first, three or more drinks during at least one sitting in the past month, is used as a threshold measure between moderate and heavier drinking. The second and third measures, five or more drinks during at least one sitting in the past month and being drunk at least three

times in the past year, are viewed as indicators of heavier use. These categories are not mutually exclusive.

Table 3 shows that a substantial percentage of individuals report alcohol use at or above the level indicated by the three measures of consumption. With few exceptions, the percentage reporting consumption by category for the demographic variables is over 10 percent. In addition to these generally high rates of moderate to heavier alcohol consumption, there are many strong categorical differences. For example, more men than women, more of those below the median age than above the median age, and more people who are not currently married than who are, report moderate to heavier consumption practices.

The profile of the drinker who consumed three or more drinks in one sitting in the past month matches that of the frequent drinker. Thus, the profiles of weekly consumers and the threshold to heavier drinking consumers are very similar. Also, the typical pattern for those who reported drinking five or more drinks at one sitting in the past month matches that for those who report three or more drinks except that the prevalence rate is lower for those in the higher consumption category.

The final measure of quantity consumed, being drunk three or more times in the past year, results in a somewhat different pattern of demographic categories than the other two quantity measures. Patterns for gender and age are similar with more younger people and males reporting this consumption behavior. However, several demographic categories emerge that were not prominent before. First, non-Whites report a higher prevalence of this behavior than do Whites. Further, those who were unemployed have higher prevalence rates than those in the other two categories, and those who had never married have higher prevalence rates than those who had ever married. Finally, the high school category has a higher percentage of people who got drunk three or more times in the last year than the other two education categories. Thus, the typical pattern that emerges with regard to the third measure—got drunk three or more times in the past year—can be described as including younger, unemployed, never married, minority, males who have a high school education.

Table 3. Percentage of rural adults reporting moderate to heavier drinking

Characteristics	3+ drinks[1] per sitting in past month	5+ drinks per sitting in past month	Drunk 3+ times in past year
All	22.2	12.7	18.3
Gender			
Male	31.6	18.7	23.9
Female	13.9	7.1	14.9
Age			
Below median	37.9	24.8	38.7
Above median	17.7	8.8	12.8
Race/ethnicity			
White	22.5	12.8	18.9
Non-White	25.0	12.9	25.0
Education			
Less than high school	16.6	9.7	12.8
High school	26.3	14.8	24.4
More than high school	23.8	13.3	18.9
Work status			
Employed	28.9	17.6	23.6
Unemployed	29.9	18.4	34.2
Other[2]	11.7	4.4	10.2
Income			
Below median	19.6	11.6	19.5
Above median	25.5	14.0	19.2
Marital status[3]			
Married	20.3	10.6	17.7
Divorced/separated	40.0	26.6	29.4
Never married	42.7	30.3	37.6

[1]One drink is equivalent to 12 fluid ounces of beer, 5 fluid ounces of wine, or 1-1/2 fluid ounces of distilled liquor.
[2]Retired, disabled, homemaker, student.
[3]Widowed were excluded.

Problems Related to Alcohol Consumption

The third means of defining problem alcohol behavior is self-reported problems that result from alcohol consumption. The presence or absence of 21 individual problems was assessed. Then the problems were grouped in three ways. First, a count of all measures was used to identify those individuals who had experienced one or more

The consistent pattern of associations between being younger in age and alcohol problem behaviors...points to this group as a target for interventions.

alcohol-related problems in the past year. Second, a count of two measures related to aggressive feelings and behavior was made to identify those individuals who had experienced one or both of those problems in the past year. Finally, a count of eight items that measure symptoms of alcohol dependency as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R)[1] (*1*) was made to identify those individuals who had experienced one or more symptoms of alcohol dependence in the past year.

Table 1 presents rates of problems associated with alcohol consumption for rural adult drinkers. Items are grouped by content. The first two items refer to aggressiveness while drinking. Relatively high rates for both items, but especially the items that refer to aggressive feelings (13.0 percent), were reported. Items 3 through 13 include social and physical consequences of alcohol consumption. The content of these items and the rates of experiencing the problems they represent were varied. Some problems had relatively high rates: Getting high or drunk alone (11.2 percent); not remembering things done while drinking (9.1 percent); and tossing down drinks (8.3 percent). Others had low rates: Nearly lost job due to drinking (1.1 percent); stayed drunk for more than one day (2.4 percent); and had a quick drink when no one was looking (2.4 percent).

The last eight items measure aspects of eight of the nine symptoms of alcohol dependence as defined by the DSM-III-R (*1*). To be diagnosed as alcohol dependent an individual would have to exhibit three or more of these symptoms. For those who reported drinking in the past year, five of these eight measures have prevalence rates of 5 percent or greater. Most startling is the percentage of rural drinkers who report needing more alcohol to get the same effect (20.7 percent) and feeling dependent on alcohol (10.5 percent).

When the 21 measures reported in table 1 were grouped, the percentages of rural adults experiencing one or more problems in the past year were high, ranging from 9.2 percent to 34.1 percent (table 4). Those who experienced one or more problems can be characterized as younger, single, male, with a high school or greater educational attainment, and either employed or unemployed (compared with those who are retired, disabled, homemakers, or students). With two exceptions, those who reported one or more problems related to alcohol consumption are demographically similar to those who were frequent drinkers, and to those who reported having three or more and five or more drinks in a sitting in the past month. The exceptions are income, for which there is little difference across the two categories, and employment status, for which the unemployed have the highest rate followed by the employed.

Aggression can be one of the most serious problems related to alcohol consumption because it is linked to other problems including assaultive behaviors (*12*). The *aggressiveness related to drinking* measure presents a profile similar to that of the *one or more problems associated with alcohol* measure. However, the magnitude of differences in rates for some categories makes conclusions about the typical profile somewhat different. The most notable difference is the lack of the major disparity in rates between males and females that was evident for all other frequency, quantity, and consequence measures. For the education categories, those with high school or more than high school education generally are similar with regard to alcohol problem behaviors. However,

[1]Within the United States, this manual is the most widely used among psychiatric clinicians for the classification of mental disorders.

Table 4. Percentage of rural adults experiencing alcohol-related problems

Characteristics	One or more problems associated with drinking	Aggressiveness related to drinking	One or more symptoms of dependency
All	17.9	7.7	9.2
Gender			
Male	23.9	9.2	13.6
Female	12.1	6.2	4.9
Age			
Below median	32.8	16.3	15.6
Above median	13.0	4.9	7.1
Race/ethnicity			
White	17.9	7.7	8.9
Non-White	18.6	8.5	13.3
Education			
Less than high school	13.8	5.9	7.9
High school	19.7	9.8	10.1
More than high school	19.8	6.5	9.4
Work status			
Employed	21.8	10.0	11.3
Unemployed	34.1	19.9	16.5
Other[1]	9.2	2.2	4.7
Income			
Below median	18.4	8.5	9.9
Above median	17.6	7.0	8.5
Marital status[2]			
Married	16.3	6.4	7.5
Divorced/separated	30.7	15.3	20.9
Never married	32.6	18.0	19.4

[1]Retired, disabled, homemaker, student.
[2]Widowed were excluded.

for aggressiveness while drinking, the high-school graduate group reported the highest rate of aggressiveness, but its rate was only 3.3 percentage points higher than that of the *more-than-high-school education* group and 3.9 percentage points higher than the *less-than-high-school education* group.

The final measure of consequences or problems related to alcohol use is: one or more symptoms of alcohol dependency based on the DSM-III-R (*1*). Interestingly, the pattern of demographic characteristics that emerges for this measure is very similar to that for the *drunk three or more times in the past year* measure. Like the profile for that measure, the typical demographic profile for the dependency measure is younger, unemployed, single, minority male. The one area of difference between the profiles for the dependency and the drunk measures was education. The magnitude of the difference in rates for the three educational categories was very small. This pattern is similar to that seen for the aggressiveness measure, though in the case of the dependence measure, the differences are so small that they are meaningless.

Conclusion

Seven measures of frequency of alcohol consumption, quantity of alcohol consumed, and problems associated with alcohol consumption were examined in conjunction with seven demographic variables. The combined results demonstrate that demographic characteristics are consistently related to alcohol problem behaviors among rural adults. With few exceptions, these demographic characteristics include being male, being younger than the median age of 33, having attained a high school or greater education, being in or seeking to be in the labor force, and being unmarried.

What were the exceptions to this profile? First, the male-dominated pattern of alcohol problem behavior was less evident for the aggressiveness measure than for the other alcohol problem behaviors. That is, the percentage of women reporting one or both aggressive feelings or actions was lower than that of men, but the magnitude of the difference between the two genders was not as great for this measure as it was for the other alcohol problem-behavior measures. Many studies have noted the connection between alcohol consumption and aggression (*12*). Although aggressive behavior is more often reported by males than females, aggressive feelings are likely to be experienced by both genders under the influence of alcohol.

Second, education was important in defining those who drink more frequently, drink moderate and heavier quantities, and who experience one or more problems related to alcohol consumption. Specifically, higher percentages of those with high-school or greater educational attainment fit this profile. However, education was not as important in characterizing those who experienced aggressiveness when drinking and symptoms of alcohol dependency. That is, there was little difference in rates for these problem behaviors among members of the three education categories.

Finally, the pattern of rates for the employment categories was consistent across all seven measures of alcohol problem behaviors. In all cases, the employed and unemployed categories had higher rates than the "other" (those who are retired, disabled, homemakers, or students) category. However, there also were differences in the rates of the employed and unemployed groups. For the number of drinks measures, three or more and five or more drinks per sitting in the past month, rates were similar. For the remaining alcohol problem-behavior measures, members of the unemployed category had appreciably higher rates than members of the employed category. Thus, in most cases, the highest rates of problem behaviors were for the unemployed, followed by the employed, and then relatively low rates for the "other" category. It is not surprising, given the stress of being unemployed, that this category has the highest rates of alcohol problem behaviors. What *is* surprising is the relatively high rates for the employed group.

Categories for two of the demographic variables, race and income, were not as consistently related to the alcohol consumption and problem behaviors as other demographic factors. However, some patterns were evident. For race, the only differences between Whites and non-Whites were for being drunk three or more times in the past year and experiencing one or more symptoms of alcohol dependence. Prevalence of drunkenness and dependence were higher for the non-White group. Being drunk is, to an extent, a subjective state. That is, at what point is someone drunk and does the definition of drunkenness differ across cultural contexts? If definitions do differ, the results of this analysis may be masked by those cultural differences. On the other hand, if subjective appraisals of drunkenness do not differ across subcultures, then more precise measures of race/ethnicity should be employed to identify race/ethnic groups where drunkenness occurs more frequently and the personal and cultural reasons for that behavior.

Those in the non-White category also reported higher rates of one or more alcohol dependence behaviors. This finding appears to support the previous finding; however, the diverse membership of the non-White group offers no insights into which particular group(s) account for these findings. Several race/ethnicity minority groups have substantial rural populations. Moreover, some of these groups live in relative physical and social isolation and experience problems associated with poverty and limited educational and occupational opportunities which may exacerbate dependency problems (*6*). Careful study of patterns of consumption and problems associated with alcohol consumption among rural minority groups is called for.

Income was interesting in that those above the median income were more likely to drink, to drink more frequently, and to drink moderate-to-heavier amounts. However, differences in rates for the two income groups were not evident for the heavier quantity measures and the alcohol problem measures. Thus, while it appears that in rural settings having a higher income is related to drinking, it is not related to the experience of alcohol problem behaviors. Perhaps having more expendable income makes it more likely that one will drink at all, but does not influence the likelihood of drinking to excess or experiencing the consequences associated with excessive drinking.

Implications

Low population and distance between settlements in rural areas influence the availability of health care services, including alcohol prevention and intervention programming for adults (*15*). These factors also make it especially important that rural populations at high risk for alcohol problem behavior be clearly identified and that programs be designed with specific groups in mind. Results of this study give some insight into the demographic characteristics of those who would benefit from alcohol prevention and intervention programs. However, multivariate studies are needed to determine combinations of factors and processes that contribute to high percentages of specific demographic groups experiencing alcohol problem behaviors. For example, what factors account for rural males experiencing higher rates of alcohol problem behaviors than rural females? Are males who earn their living in high-risk occupations such as mining, forestry, firefighting, and farming more likely to experience alcohol problems than other men? Is the seasonality of many rural occupations related to patterns of alcohol consumption?

The consistent pattern of associations between being younger in age and alcohol problem behaviors also points to this group as a target for interventions. However, much remains unclear from these findings. For example, when did these problem behaviors begin, what aspects of the rural environment support and encourage these problem behaviors, and will these problem behaviors naturally decrease with age or is the current group of rural young adults likely to experience alcohol problems across the life course?

Alternately, one could examine characteristics of the demographic categories with lower prevalence of alcohol problem behaviors for insights to what factors and processes influence the absence and presence of alcohol problem behavior.

For example, why do those with less than a high school education drink less and have fewer problems associated with drinking than those with high school and more? Does the educational experience in the higher grades and in college support the initiation and perpetuation of alcohol problem behaviors? If this is the case, rural alcohol prevention programs need to continue to target schools. Further, what aspects of the marital relationship contribute to the absence of these alcohol problem behaviors? Perhaps in rural areas where distance, poor transportation, and lack of recreational facilities limit the sphere of positive social interactions, supportive family relations are especially important. Other sources of meaningful interaction and social support such as extended family, church, and civic group memberships should be examined to see if they are also related to lower rates of alcohol problem behaviors. If so, an important aspect of prevention and intervention programming in rural areas would be the inclusion of social activity.

Finally, although all the problem behaviors examined in this paper are of concern, the findings regarding aggressiveness while drinking may be of particular importance. The limited difference between males and females with regard to this problem behavior suggests that marital conflict among couples where one or both partners drink may be particularly volatile and may spill over into parent-child relationships. Aggressive conflict in isolated rural settings is of particular concern as there are fewer social controls to prevent conflict from getting out of hand. Moreover, distance in rural settings may become a factor if aggressive feelings are more likely to be played out behind the wheel of a moving vehicle.

References

1. American Psychiatric Association. 1987. *Diagnostic and Statistical Manual of Mental Disorders.* Third Edition, Revised.

2. Dahmann, D.C. and Dacquel, L.T. 1992. *Residents of Farms and Rural Areas: 1990.* Current Population Reports, Population Characteristics. Series P-20, No. 457. U.S. Department of Agriculture, Economic Research Service and U.S. Department of Commerce, Bureau of the Census.

3. Hilton, M.E. 1988. Trends in U.S. drinking patterns: Further evidence from the past 20 years. *British Journal of Addiction* 83:269-278.

4. Johnston, L.D., O'Malley, P.M., and Bachman, J.G. 1991. *Drug Use Among American High School Seniors, College Students and Young Adults, 1975-1990.* Volume 1. High School Seniors. The University of Michigan Institute for Social Research and U.S. Department of Health and Human Services, National Institute on Drug Abuse. DHHS Publication No. (ADM)91-1813.

5. Knupfer, G. 1987. New directions for survey research in the study of alcoholic beverage consumption. *British Journal of Addiction* 82:583-585.

6. O'Hare, W.P. and Curry-White, B. 1992. *The Rural Underclass: Examination of Multiple-Problem Populations in Urban and Rural Settings.* Population Reference Bureau.

7. Piani, A.L. and Schoenborn, C.A. 1993. *Health Promotion and Disease Prevention: United States, 1990.* U.S. Department of Health and Human Services, Public Health Service. DHHS Publication No. (PHS)93-1513, Series 10, No. 185.

8. Robertson, E.B. 1994. Trends in drug use: A comparison of metropolitan and non-metropolitan areas of the United States from 1975-1991. *Family Economics Review* 7*(4)*:2-10.

9. U.S. Department of Agriculture, Human Nutrition Information Service. 1993. *If You Drink Alcoholic Beverages, Do So In Moderation. Dietary Guidelines for Americans.* Home and Garden Bulletin Number 253-8.

10. U.S. Department of Health and Human Services, Public Health Service. 1993. *National Household Survey on Drug Abuse: Main Findings 1991.* DHHS Publication No. (SMA)93-1980.

11. U.S. Department of Health and Human Services, Public Health Service. 1993. *Preliminary Estimates From the 1992 National Household Survey on Drug Abuse.* Advance Report Number 3.

12. U.S. Department of Health and Human Services, Public Health Services. 1990. *Alcohol and Health.* DHHS Publication No. (ADM)90-1656.

13. U.S. General Accounting Office, Program Evaluation and Methodology Division. 1990. *Rural Drug Abuse: Prevalence, Relation to Crime, and Programs.* GAO/PEMD-90-24.

14. Wisconsin Clearinghouse. 1991. *Mind-Altering Drugs Series: Alcohol.* Wisconsin Department of Health and Social Services, Office of Alcohol and Other Drug Abuse.

15. Witherspoon, J.P., Johnstone, S.M., and Wasem, C.J. 1993. *Rural TeleHealth: Telemedicine, Distance Education and Informatics for Rural Health Care.* U.S. Department of Health and Human Services, Public Health Service.

Housing Trends

By Nancy E. Schwenk
Consumer Economist
Center for Nutrition Policy and Promotion

Recent trends in U.S. residential housing are reported using data from the Federal Government and trade associations. Between 1992 and 1993, prices for housing rose 2.7 percent, less than the overall inflation rate of 3.0 percent. Home sales in 1993 were at near-record levels; low mortgage interest rates made entry into the housing market easier for first-time buyers. Home prices have fluctuated over the past few years in all regions of the country. Home ownership rates remain highest in the Midwest and the South. The South accounts for 52 percent of the Nation's mobile homes, compared with 35 percent of all housing units. The Department of Housing and Urban Development is promoting the concept of universal design in housing, implying that the housing components may be used by everyone, including the elderly and disabled.

The impact of the housing industry on the U.S. economy is significant. New housing construction stimulates the economy through the creation of jobs, wages, and tax revenues, and the demand for goods and services created by new construction is felt throughout the economy. In addition, housing is the biggest expenditure category of American households, accounting for nearly one of every three dollars spent (*13*). The American dream of owning a home has been realized by about two-thirds of households (*1*). However, many first-time buyers were able to enter the housing market in 1993 because of lower mortgage interest rates—a key determinant of home sales and starts (*2*). This article presents findings from various Federal Government and trade association publications that survey trends in U.S. residential housing. Topics include prices, expenditures, demographic characteristics of homeowners and home buyers, and housing characteristics.

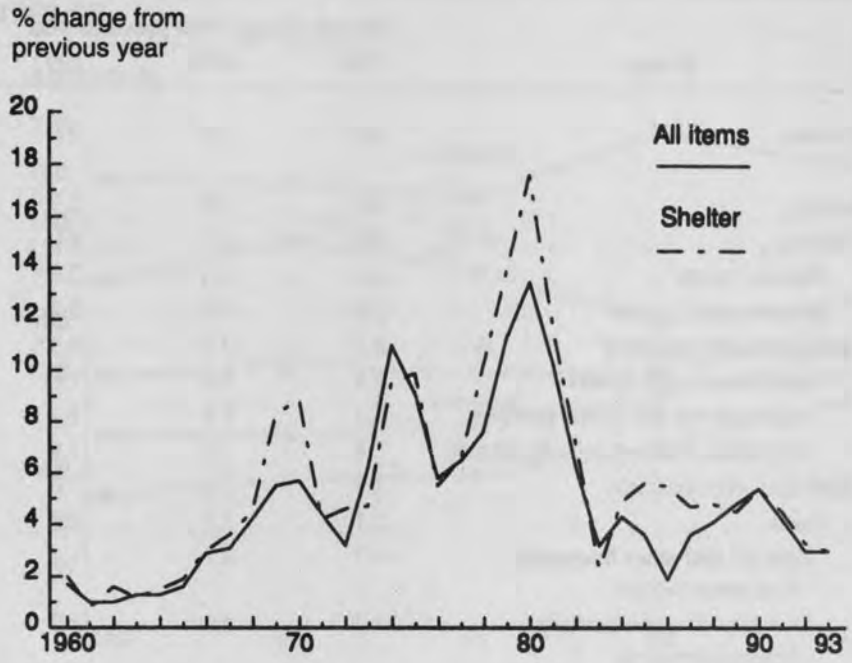
Housing Prices

Consumer Price Index

The shelter component of the Consumer Price Index (CPI) consists of renters' costs, homeowners' costs (including household insurance), and maintenance and repairs. Since 1960, the prices for shelter have risen at about the same rate as prices for all items, with three exceptions: 1969-70, 1978-80, and 1986 (fig. 1) (*12*). During these periods, the rise in shelter prices outpaced the rise in prices for all items by more than 2 percentage points.

In addition to shelter, the housing category of the CPI includes utilities, furnishings, and housekeeping supplies and services. The 2.7-percent rise in the CPI for housing between 1992 and 1993 was less than the increase for all items, 3.0 percent (table 1, p. 26). The housing component that showed the greatest increase was household insurance, up 3.3 percent. The prices of piped gas, electricity, and other utilities and public

Figure 1. Changes in consumer prices for shelter and all items, 1960-93



Source: U.S. Department of Labor, Bureau of Labor Statistics, CPI Detailed Report.

... 5.1 million homes were sold in the United States in 1993, just 5 percent below the all-time record high ...

services were also up more than the overall inflation rate. Increases of less than 1 percent were observed for furnishings and housekeeping supplies. The price of fuel oil and other household fuel commodities decreased 0.4 percent from 1992 (*12*).

Between 1983 and 1993, the CPI for all items was up 45 percent, whereas the CPI for housing rose 42 percent. During the 10-year period, the price of household insurance increased 42 percent; fuels and other utilities, 21 percent; and homefurnishings, 9 percent (*12*).

Sale Prices

Despite soft economies on the east and west coasts, 5.1 million homes were sold in the United States in 1993, just 5 percent below the all-time record high of 1978[1] (*2*). Selling prices for homes have fluctuated slightly over the past few years (fig. 2, p. 27). In 1993, the median sale price of a new single-family home sold in the United States was $126,500, up $6,500 from 1989, whereas the median sale price of an existing single-family home was $106,800, up $13,700 from 1989 (*4*).

Home prices in 1993 were above the national median in the Northeast and the West and below the national median in the Midwest and the South (*2*). The Northeast had the highest priced new homes and the West had the highest priced existing homes, whereas the South had the lowest priced new homes and the Midwest had the lowest priced existing homes (*5,9*). According to the National Association of Realtors' forecast, home prices in 1995 should rise at an annual rate of over 4 percent and outpace the rise in consumer prices (*5*).

[1]The Atlanta metropolitan area led the Nation in 1993 in the number of residential building permits issued, up 27 percent over 1992 (*4*). The Chicago area was second in building permits issued, and the Washington, DC, area was third.

Table 1. Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average [1982-84 = 100]

Group	Percent change from previous year		
	1991	1992	1993
All items	4.2	3.0	3.0
Housing	4.0	2.9	2.7
Shelter	4.5	3.3	3.0
Renters' costs[1]	6.1	3.4	2.5
Homeowners' costs[1]	3.9	3.4	3.2
Household insurance[1]	2.3	2.7	3.3
Maintenance and repairs	3.4	1.8	1.6
Maintenance and repair services	3.1	2.1	1.4
Maintenance and repair commodities	3.8	1.2	1.8
Fuel and other utilities	3.3	2.2	3.0
Fuels	2.1	1.3	2.9
Fuel oil and other household fuel commodities	-4.7	-4.1	-.4
Gas (piped) and electricity (energy services)	3.0	2.0	3.2
Other utilities and public services	4.7	3.3	3.2
Household furnishings and operation	2.4	1.7	1.1
Housefurnishings	.7	1.4	.5
Housekeeping supplies	3.0	.5	.8
Housekeeping services	6.2	3.6	2.8

[1] Indexes on a December 1982 = 100 base.

Source: U.S. Department of Labor, Bureau of Labor Statistics, CPI Detailed Report.

In 1993, mortgage interest rates hit their lowest level in 25 years with long-term fixed rates as low as 6.5 percent.

Mortgages

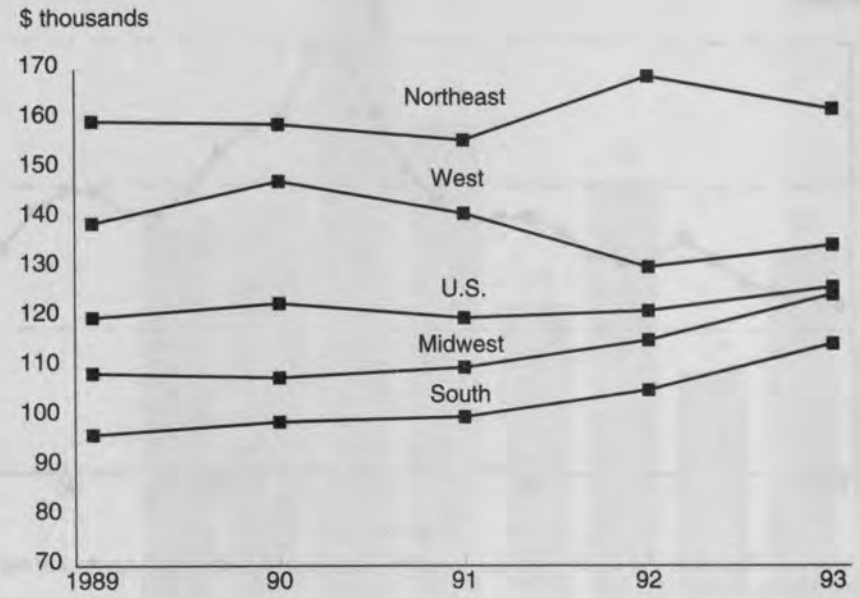
Mortgage interest rates affect both the number of homes sold and the type of loan home buyers choose. Mortgage interest rates peaked in 1982 at an annual average of 14.8 percent and then declined rapidly (fig. 3, p. 28). Adjustable-rate mortgages (ARM's) reached their peak in popularity in 1984 when 64 percent of mortgage loans for existing homes (fig. 4, p. 29) and 59 percent of mortgage loans for new homes were adjustable (*8*). For the past several years, ARM's have accounted for between one-fifth and one-fourth of all loans. ARM's are more popular in the West than in the other regions of the country (*3*).

Fixed-rate mortgages are more desirable during periods of declining rates, such as during the past several years. In 1993, mortgage interest rates hit their lowest level in 25 years with long-term fixed rates as low as 6.5 percent (*3*).

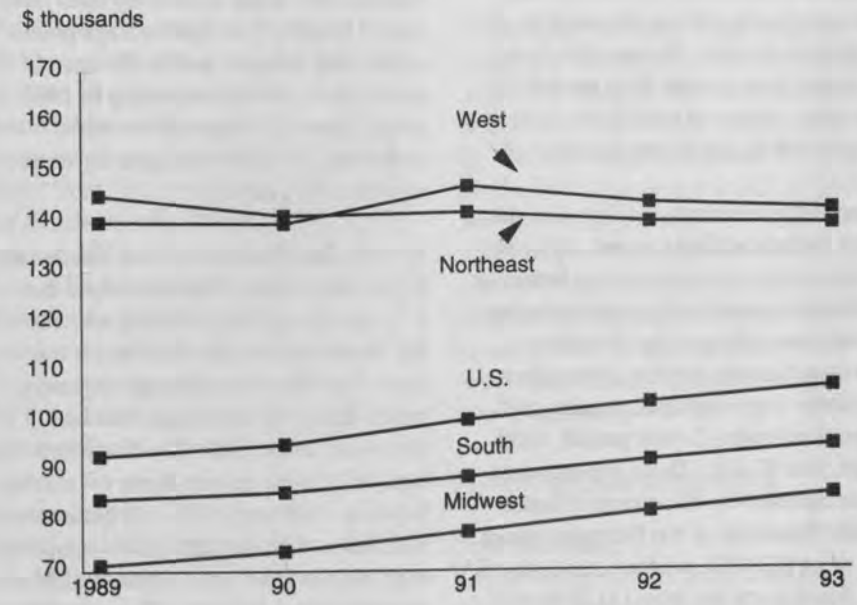
Between 1989 and 1993, the percentage of home buyers financing their home with a conventional loan, provided by a private mortgage insurance company, increased from 62 to 72 percent, whereas the percentage using Federal Housing Administration (FHA) loans, insured by the Federal Government, dropped from 14 to 9 percent. The percentage of home buyers paying cash also dropped during this period from 18 to 13 percent (*9*).

Figure 2.

Median sale price of new single-family houses sold, by region, 1989-93



Median sale price of existing single-family houses sold, by region, 1989-93



Source: U.S. Department of Commerce, Bureau of the Census, 1994, Characteristics of New Housing: 1993, Current Construction Reports, C25/93-A and National Association of Realtors, 1974, Real Estate Outlook: Market Trends and Insights, Vol. 1, No. 4.

Expenditures

Consumer Expenditure Survey

According to the 1992 Consumer Expenditure Survey, housing expenditures accounted for 31 percent of household expenditures—the largest expenditure share. By comparison, transportation accounted for 17 percent and food, 14 percent of expenditures.

Households headed by people age 35 to 44 and households living in the West had the highest housing expenditures, whereas those under age 25 and Black households had the lowest (table 2, p. 30). The percentage of total expenditures allocated to housing was highest for households headed by people age 25 to 34, households living in the Northeast, renters, and Black households (*13*).

Similar housing expenditure patterns were found in 1982. However, compared with 1992, the proportion of expenditures allocated to housing in 1982 was lower for nearly every demographic group (*13,14*).

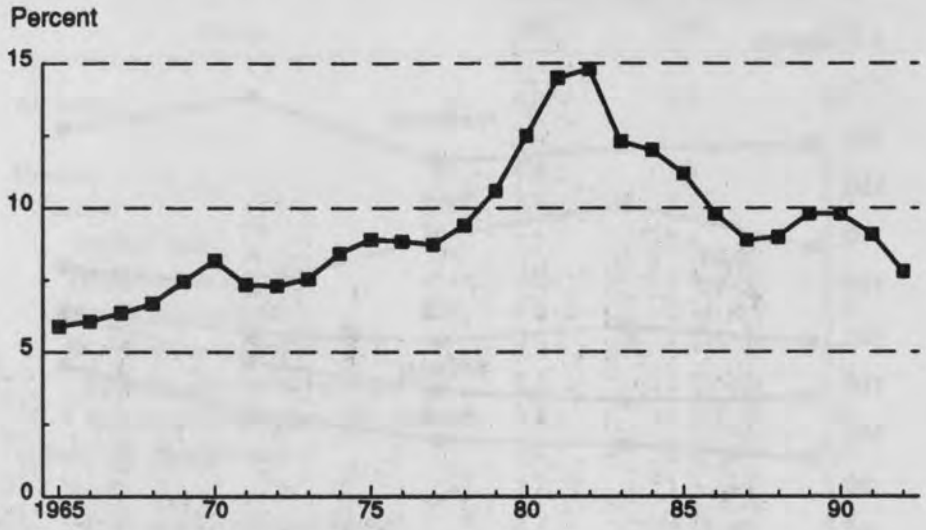
"Who's Buying Homes in America" Survey

Data from this annual nationwide survey (2) show that in 1993, first-time home buyers saved for an average of 2.8 years for the downpayment and looked at 12.9 houses before making a purchase. They had an average mortgage payment of $950, down from $1,046 in 1991. Repeat buyers looked at 15.6 houses before making a purchase and had an average mortgage payment of $1,076, down from $1,230 in 1991.

Maintenance and Repairs

Home maintenance includes painting, replacing broken windows, and repairs to air conditioning, walls, plumbing, and so on. Maintenance does not include landscaping and gardening costs. Median home maintenance expenditure in 1991 was $315. Maintenance expenditures were reported by 63 percent of households. Residents of the Northeast

Figure 3. Contract interest rates, conventional first mortgage loans for purchase of existing single-family homes, 1965-92 annual averages



Source: U.S. Department of Commerce, Bureau of the Census, 1993, Statistical Abstract of the United States, 1993 [113th ed.]

spent the most ($400), whereas residents of the Midwest spent the least ($253). Maintenance expenditures increased as home size increased. Old homes were not associated with significantly larger maintenance costs. Households living in homes built before 1950 spent $329 per year, compared with $310 spent by households living in newer homes (*6*).

Old homes were not associated with significantly larger maintenance costs.

Home improvements, repairs, and alterations include adding a room, replacing a basic system such as a water heater or central air-conditioning, and replacing a roof. According to the American Housing Survey, median expenditure for home improvements, repairs, and alterations over a 2-year period, 1990-1991, was $2,101. These expenditures were reported by 49 percent of households. Residents of the Northeast spent the most ($2,409), whereas residents of the South spent the least ($1,874) (*6*).

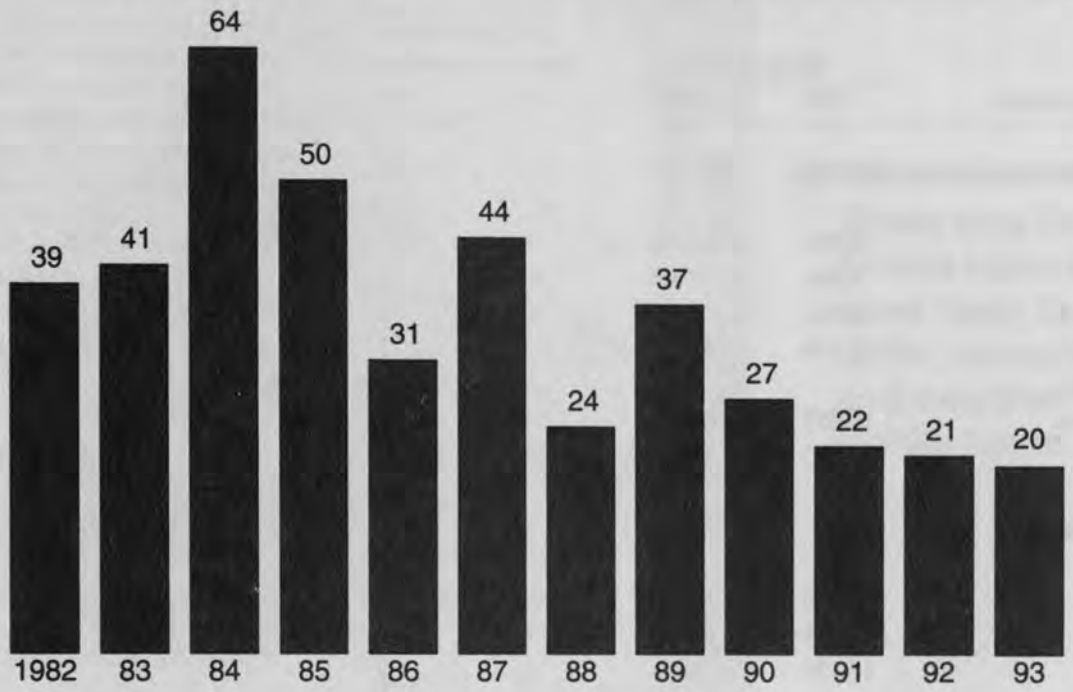
Demographic Characteristics

Homeowners

Nationwide, home ownership rates have varied by only 2 or 3 percentage points since 1960 (table 3, p. 30). By age of householder, home ownership in 1993 ranged from 15.0 percent for those under age 25, to 80.9 percent for those age 60 to 64 years (*1*).

In 1993, the Midwest and the South had higher home ownership rates than the U.S. average of 64.5 percent, whereas the Northeast and the West had lower rates. The West was the only region in which the home ownership rate had decreased since 1960. The Northeast had the greatest gain in home ownership between 1960 and 1993—12 percent. The States with the highest home ownership rates in 1993 were Delaware (74.4 percent), West Virginia (73.3 percent), and Michigan (72.6 percent); whereas Hawaii (53.2 percent), New York (53.5 percent), and Alaska (56.0 percent) had the lowest rates (*1*).

Figure 4. Percentage of mortgage loans for existing homes with adjustable rates, 1982-93



Source: U.S. Department of Commerce, Bureau of the Census, 1994, Statistical Abstract of the United States, 1994 [114th ed.] and U.S. Department of Commerce, Bureau of the Census, 1993, Statistical Abstract of the United States, 1993 [113th ed.]

The home ownership rate in 1993 was 79.1 percent for married-couple families, up from 78.3 percent in 1983. For male householders with no wife present, the home ownership rate was 54.6 percent, down from 59.2 percent in 1983; and for female householders with no husband present, the rate was 44.5 percent, down from 47.0 percent. Among one-person households, the 1993 rate was 43.2 percent for males living alone, up from 38.3 percent in 1983; and 54.8 percent for females living alone, up from 52.0 percent (*1*).

Home Buyers

During the 1980's, first-time buyers accounted for less than 40 percent of home buyers, but in 1993 they made up 46 percent of the market (*3*). The percentage of first-time buyers ranged from 41 percent in the South to 55 percent in the Northeast (*2*). Never-married single buyers accounted for about one-third of first-time buyers in 1993, the highest percentage in 18 years (*3*). First-time buyers' average age was 31.6 years in 1993, compared with 41.0 years for repeat buyers. Of first-time buyers, 20 percent bought new homes and 82 percent bought single-family homes. Of repeat buyers, 24 percent bought new homes and 87 percent bought single-family homes (*2*).

Housing Characteristics

New Housing

Single-family houses being built today are bigger than those built in years past. In 1993, new single-family homes were an average of 2,095 square feet and a median of 1,945 square feet (table 4, p. 32), 40 percent bigger than those built in 1970 (*4,8*). Only 34 percent of new single-family homes nationwide had central air-conditioning in 1970, but this proportion jumped to 63 percent in 1980 and to 78 percent in 1993 (*4,8*). There is also a trend toward more homes with 2-or-more-car garages, 4-or-more bedrooms, and gas heat (*4*).

New housing characteristics vary among regions of the country. The largest homes were built in the Northeast and the smallest, in the West. Installed central air-conditioning was most prevalent in new homes in the South (97 percent) and least prevalent in the West (50 percent) (*9*). On exterior walls, the use of brick is increasing in the South, but decreasing in the Northeast and Midwest, whereas the use of wood is increasing only in the West. Vinyl siding is being used increasingly in all regions (*9*).

Table 2. Average annual expenditures for housing, by demographic characteristics, 1992 and 1982

Characteristic	Mean dollars		Percent of total annual expenditures	
	1992	1982	1992	1982
All households	$9,477	$5,582	32	31
Region				
Northeast	10,701	5,378	34	32
Midwest	8,504	5,595	30	31
South	8,422	5,323	30	30
West	11,150	6,251	33	32
Housing tenure				
Homeowner	10,855	6,480	31	30
Renter	7,252	4,218	34	32
Head of household				
Age (years)				
<25	5,135	3,462	30	30
25 - 34	10,018	6,283	34	33
35 - 44	12,120	7,080	33	30
45 - 54	11,036	6,631	29	28
55 - 64	9,436	5,280	30	29
65 and over	6,733	3,851	33	34
Race				
White and other	9,833	5,765	32	31
Black	6,718	4,158	34	31

Source: U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Surveys: 1992 Interview Survey Documentation; and Interview Survey, 1982-83, Bulletin 2246.

Table 3. Home ownership rates, by region, selected years, 1960-93

	1960	1970	1980	1990	1993
U.S.	62.1	64.2	65.6	63.9	64.5
Northeast	55.5	58.1	60.8	62.6	62.4
Midwest	66.4	69.5	69.8	67.5	67.4
South	63.4	66.0	68.7	65.7	66.1
West	62.2	60.0	60.0	58.0	60.4

Source: U.S. Department of Commerce, Bureau of the Census, 1994, Housing Vacancies and Homeownership, Annual Statistics: 1993, Table 18, H111/93-A.

Future Trends

Universal Design (*11*)

Many people have physical or mental disabilities that threaten their independent living. With the increase in the number of older and disabled Americans, there is a growing market for housing that can be adapted for use by more people—children, older adults, and physically handicapped—at little or no cost. This concept has been called "universal design." A universal feature is any component of a house that can be used by everyone. The following are examples of universal design modifications:

- Replacing the traditional front door knob with a level handle that requires no gripping or twisting to operate.
- Providing wider passageways and doors between rooms, providing easier access for wheelchair users.
- Placing clothes closet rods at adjustable heights to accommodate people of all heights and those in wheelchairs.
- Locating the bathtub faucet close to the outside rim of the tub, making it easy for everyone to reach.
- Reinforcing the wall above the bathtub with blocking so that the wall can accept grab bars.
- Installing side-by-side refrigerator/freezers, placing both the refrigerator and freezer components within reach of everyone.
- Installing stoves with front or side mounted controls.
- Placing standard electrical receptacles higher than usual above the floor.

All too often, elderly or disabled people cannot remain in their homes because their housing no longer meets their needs. Housing with universal features such as those listed above allows people to age in place if they wish. The families and friends of disabled and elderly people can also benefit from universal design.

Mobile Homes

In 1991, 14.3 million Americans, about 6 percent of the total population, lived in mobile homes[1] (*10*). In 1993, the number of mobile homes shipped from factories to dealers was 254,000. However, the National Association of Realtors projects that the number of mobile homes shipped will decrease in 1995 and again in 1996 (*5*). Median sale price of a new mobile home in 1993 was $27,700, up $2,200 from 1992 (*9*).

Those who live in mobile homes are more likely to be White, nonelderly, and own their mobile home. In 1991, 80 percent of mobile homes were owner-occupied, compared with 64 percent of all housing units. The majority of mobile homes (79 percent) are located outside urbanized areas, with very few (5 percent) located in central cities. Nationwide, the percentage of housing units that were mobile homes ranged from 3 percent in the Northeast to 10 percent in the South. Although 35 percent of all U.S. housing units were in the South, 52 percent of the mobile homes were in the South (see figure below) (*10*).

With a median of 1,295 square feet in 1993, new mobile homes are considerably smaller than the median size for all new housing units (*9*). There is a trend toward more mobile homes with 3-or-more bedrooms, installed central air-conditioning, and placement outside of mobile-home communities (*9*).

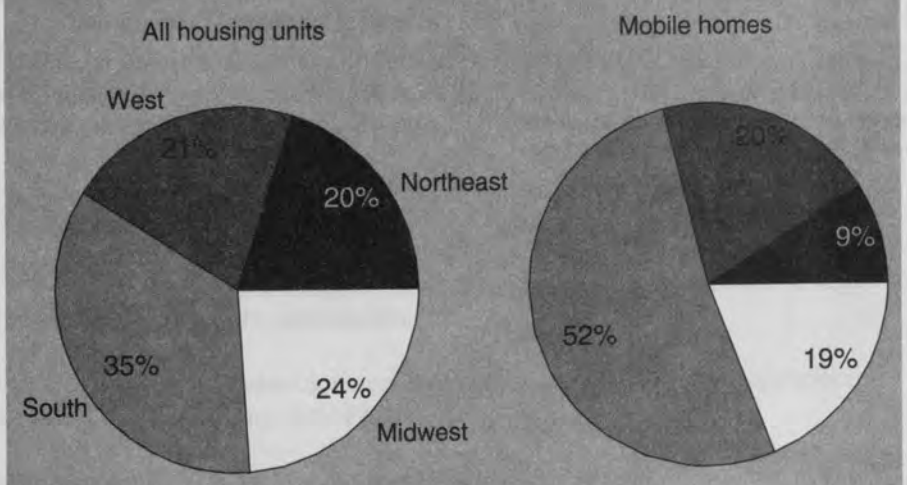
According to the 1991 American Housing Survey, households living in mobile homes in 1991 had monthly housing expenses (mortgage payments or rent, real estate taxes, property insurance, homeowners' fees, fuels and utilities, and trash collection) of $297, compared with $459 for all households (*10*). Many of these households bought their homes years ago and had very small mortgage payments or had paid off their mortgages.

Median maintenance expenditure in 1991 for households living in mobile homes was $191. Median expenditure for home improvements, repairs, and alterations among those living in mobile homes was $837 for the 2-year period, 1990-91 (*6*).

[1]The Census Bureau defines a mobile home as "a movable dwelling 8 feet or more wide and 40 feet

Those who live in mobile homes are more likely to be White, nonelderly, and own their mobile home.

Percent distribution of U.S. housing units, by region, 1991



Source: U.S. Department of Commerce, Bureau of the Census and U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 1993, American Housing Survey for the United States in 1991, Current Housing Reports, H150/91.

Table 4. Characteristics of new, privately owned, single-family houses completed, selected years, 1970-93

Characteristic	1970	1980	1990	1993
Total completed (in thousands)	793	957	966	1,039
Floor area				
Average (sq. ft.)	1,500	1,740	2,080	2,095
Median (sq. ft.)	1,385	1,595	1,905	1,945
		Percent distribution		
Number of stories				
1	73	61	47	48
2 or more	17	31	49	48
Split level	10	8	4	4
Bedrooms				
2 or less	13	17	15	12
3	63	63	57	58
4 or more	24	20	29	30
Bathrooms				
1-1/2 or less	20	10	13	12
2 or more	80	90	87	88
Heating fuel				
Gas	62	41	59	66
Electricity	28	50	33	29
Oil	8	3	5	3
Other or none	1	5	3	2
Parking facility				
Garage	58	69	82	84
Carport	17	7	2	2
No garage or carport	25	24	16	14
Central air conditioning	34	63	76	78

Source: U.S. Department of Commerce, Bureau of the Census and U.S. Department of Housing and Urban Development, 1994, Characteristics of New Housing: 1993, Current Construction Reports C25/93-A and U.S. Department of Commerce, Bureau of the Census, 1993, Statistical Abstract of the United States, 1993 [113th ed.].

Future Home (*15*)

In June 1994, Future Home, the first facility in the country designed to demonstrate home automation for the disabled, opened in Baltimore County, Maryland. Developed by Volunteers for Medical Engineering at a cost of over $500,000 in public and private funds, electronic and automated features include: a remote control device that signals a master computer to open doors, shut windows, turn on the shower, make telephone calls, or check the temperature. Also, buttons, knobs, and switches are marked in Braille, and telephones have enlarged numbers for the visually-impaired and voice amplification for the hearing-impaired. To accommodate wheelchairs, doorways are extra wide and floors are flat with no raised thresholds. The bathroom features a wheelchair-accessible shower and push-button faucets that control both water flow and temperature. Wheelchair users can also electronically lower shelves and counters.

The technology developed for Future Home is also helpful to the elderly, who are the largest potential group of users. Features designed with the elderly in mind include television-based reminders to take medication and an "anti-wandering" alarm that summons neighbors or family by telephone when a resident leaves and fails to return.

References

1. Callis, R.R. 1994. *Housing Vacancies and Homeownership, Annual Statistics: 1993*. Current Housing Reports, H111/93-A. U.S. Department of Commerce, Bureau of the Census.

2. Chicago Title and Trust Family of Title Insurers. 1994. *Who's Buying Homes in America*. Chicago, IL.

3. Chicago Title and Trust Family of Title Insurers. 1994. *Low Interest Rates Drove 1993 Home Buying to Near Record Levels*. News Release. Chicago, IL.

4. National Association of Home Builders, Public Affairs Division. 1994. *Housing Backgrounder*.

5. National Association of Realtors. 1994. *Real Estate Outlook: Market Trends and Insights*, Vol. 1, No. 4.

6. Norry, L.J. and Williams, B.T. 1994. *Homeowners, Home Maintenance, and Home Improvements: 1991*. Current Housing Reports, Series H121/93-4. U.S. Department of Commerce, Bureau of the Census.

7. U.S. Department of Commerce, Bureau of the Census. 1994. *Statistical Abstract of the United States, 1994*. [114th ed.]

8. U.S. Department of Commerce, Bureau of the Census. 1993. *Statistical Abstract of the United States, 1993*. [113th ed.]

9. U.S. Department of Commerce, Bureau of the Census. 1994. *Characteristics of New Housing: 1993*. Current Construction Reports, C25/93-A.

10. U.S. Department of Commerce, Bureau of the Census, and U.S. Department of Housing and Urban Development, Office of Policy Development and Research. 1993. *American Housing Survey for the United States in 1991*. Current Housing Reports, H150/91.

11. U.S. Department of Housing and Urban Development, Office of Public Affairs and Office of Intergovernmental Relations. 1988. *Universal Design: Housing for the Lifespan of All People*. HUD-1156-PA.

12. U.S. Department of Labor, Bureau of Labor Statistics. 1984 and 1994. *CPI Detailed Report*. January issue.

13. U.S. Department of Labor, Bureau of Labor Statistics. Consumer Expenditure Surveys: 1992 Interview Survey Documentation.

14. U.S. Department of Labor, Bureau of Labor Statistics. 1986. *Consumer Expenditure Surveys: Interview Survey, 1982-83*. Bulletin 2246.

15. Valentine, P.W. 1994. The future at his fingertip. *The Washington Post*, June 28 issue.

Gender-Related Shifts in the Distribution of Wages

The U.S. wage distribution grew more dispersed and unequal in the 1980's. The middle of the distribution thinned out, with more wage earners located at the upper and lower ends. In addition, earnings of women grew faster, on average, than those of men during this period. This analysis focuses on the gender-related shifts that took place in the Nation's wage distribution in the 1980's. Income and work experience data collected in the March supplement to the Current Population Survey are used to approximate the wage distribution. Annual wage and salary earnings received from all jobs by people 15 years of age and older who usually worked 35 or more hours a week for 50 or more weeks in the years 1979, 1989, and 1992 were included. All earnings are reported in 1992 dollars.

Annual employment categories used in this analysis were: low-wage employment (earnings less than $12,000), low-to-middle-wage employment ($12,000 to $23,999), middle-wage employment ($24,000 to $47,999), middle-to-high-wage employment ($48,000 to $59,999), and high-wage employment ($60,000 or more). Mean earnings of year-round, full-time workers rose from $30,485 in 1979 to $31,728 in 1989, whereas median earnings stayed about the same (see table). The proportion of workers in the middle and in the low-to-middle wage categories declined, while that of workers earning lower and higher wages each increased.

Shifts in the earnings distribution for men were more pronounced than for workers overall. The thinning of the middle was more severe for men than for all workers—the middle proportion dropped from 53 percent of all men in 1979 to 45 percent in 1989. The proportion with earnings below $24,000 increased from 29 percent to 35 percent, while the proportion with earnings above $48,000 rose from 18 percent to 20 percent.

The earnings situation for women was quite different. Among full-time, year-round workers, the proportion of women with earnings between $24,000 and $48,000 increased from 27 percent in 1979 to 35 percent in 1989. The proportion of women earning between $12,000 and $24,000 declined from 57 percent to 45 percent, and the proportion earning under $12,000 increased slightly from 14 to 15 percent.

During the 1980's, the median wage and salary earnings of men fell from $32,231 to $30,549 (in 1992 dollars) or 5.2 percent. At the same time, wage and salary earnings of women increased from $18,960 to $20,932 or 10.4 percent. The proportion of women working full time, year round rose from 43 percent to 51 percent, partly because of the growing proportion of college-educated women.

Of the nearly 15 million full-time, year-round wage and salary workers added to the labor force between 1979 and 1989, 45 percent were men and 55 percent were women. Nearly 4.6 million women entered the middle-earnings ranks between 1979 and 1989, and nearly 1.0 million women moved into the upper ranks (earnings over $48,000). During this period, the number of men in the middle-earnings category declined by 90,000, while those earning in excess of $48,000 increased by 2.4 million.

For young adults age 20 to 29 years with a high school education or less, the proportions with low-wage employment increased from 10 to 17 percent for men and from 19 to 28 percent for women. For college-educated women in this

Distribution of wage and salary earnings of full-time, year-round workers, by gender, 1979 and 1989 (in 1992 dollars)

Intervals	Total		Men		Women	
	1979	1989	1979	1989	1979	1989
Total (in thousands)	57,209	72,120	36,277	42,987	20,932	29,133
			Percent			
Less than $12,000	8.4	10.5	4.9	7.2	14.4	15.3
$12,000 to $23,999	36.2	34.6	24.0	27.4	57.2	45.3
$24,000 to $35,999	26.2	25.0	29.1	25.3	21.2	24.6
$36,000 to $47,999	17.4	15.9	24.3	19.6	5.4	10.3
$48,000 to $59,999	5.9	7.1	8.7	9.9	1.0	2.8
$60,000 to $71,999	2.4	2.6	3.7	3.9	.3	.8
$72,000 to $83,999	1.4	1.4	2.1	2.1	.2	.3
$84,000 and over	2.1	2.9	3.2	4.5	.3	.6
Mean	$30,485	$31,728	$36,065	$37,051	$20,816	$23,874
Median	$26,543	$26,023	$32,231	$30,549	$18,960	$20,932

Source: Ryscavage, P., 1994, Gender-related shifts in the distribution of wages, Monthly Labor Review 117(7):3-14.

age group, there was a large relative increase into middle-wage employment from 38 to 53 percent. Among young college-educated men, there was a modest decline in middle-wage employment from 64 to 60 percent.

Of college-educated men age 30 to 54, there was a slight increase in the percentage of low-to-middle-wage employment and a rise from 43 to 48 percent in the proportion in middle-to-high-wage and high-wage employment. Among college-educated women in this age group, most remained concentrated in middle-wage employment, but the proportions in middle-to-high- and high-wage employment rose from 7 to 15 percent.

The shift in employment from industries involved in the production of goods to industries that provide services is considered a primary contributor to growing wage inequality. For men, 43 percent of the employment gain between 1979 and 1989 was in low-paying service-producing industries. For women, 29 percent of the employment gain was in low-paying service-producing industries, whereas 61 percent occurred in high-paying service-producing industries.

The onset of the recession in 1990 changed the labor market situation. The impact of the recession was felt more strongly by men than by women, with men's employment level declining by 900,000 between 1989 and 1992. During this period, employment for women increased by 1.9 million.

Source: Ryscavage, P., 1994, Gender-related shifts in the distribution of wages, *Monthly Labor Review* 117(7):3-14.

Changing Eating Patterns: Grains, Vegetables, Fruit, and Sugars

Although diets are changing, a substantial gap remains between public health recommendations and consumers' practices. Americans have shifted to a lower fat, higher carbohydrate diet in the past decade but are still not eating the amounts of high-fiber foods that are recommended in the latest dietary guidance. Furthermore, Americans are eating more foods that contain large amounts of refined sugar. This report, using data from the U.S. Food Supply Series, focuses on the change in American eating patterns with regard to grain products, legumes, vegetables, fruit, caloric sweeteners, and beverages.

Whole-grain products, legumes, vegetables, and whole fruit are high in fiber, vitamins, and minerals—and contain little added sugar. These foods are consumed in relatively low amounts, compared with more processed foods that are stripped of fiber.

According to USDA surveys, the average intake of carbohydrates increased from 43 to 49 percent of caloric intake between 1977-78 and 1989-91. The American Cancer Society and the American Heart Association, among others, recommend that the carbohydrate content of the diet be increased to 55-60 percent of the caloric intake. The Daily Reference Value (daily values on food labels) for total carbohydrates is calculated as 60 percent of calories, or 300 grams in a 2,000-calorie diet. The Daily Reference Value for fiber is based on a recommended intake of 25 grams in a 2,000-calorie diet.

Nationwide surveys demonstrate that consumers are using nutrition labels in making food selections; yet, only one in four people consistently consider the information about carbohydrates or fiber. Concern about fiber in the diet has changed little since 1985, never exceeding 5 percent of the population.

The USDA/DHHS Food Guide Pyramid suggests that daily intake include 2-4 servings of fruit, 3-5 servings of vegetables, and 6-11 servings of grain products—including several servings of whole-grain products. Also, frequent use of legumes as meat alternates or as starchy vegetables is recommended.

Grain Products

Americans have increased their consumption of grain products in recent years. From an annual average of 135 pounds in 1970-74, per capita use of flour and cereal products increased to 146 pounds in 1980-83 and 187 pounds in 1992.

Wheat is the major grain eaten in the United States; wheat flour and other products represented 74 percent of total grain consumption in 1992. With increased consumption of rice, corn, and oat products since 1980-83, however, wheat's share of total grain consumption declined 6 percentage points.

Despite the 28-percent increase in per capita consumption from 1980-83 to 1992, average grain consumption is still below recommended levels. Many people continue to think that starchy foods, such as bread and potatoes, are fattening, but starches provide only about 4 calories per gram, whereas fat provides about 9 calories per gram. Most calories in fact come from the foods eaten with starchy foods, such as butter or margarine, sour cream, gravy, and jam or jelly. Six servings from the bread and cereal food group represent just over 20 percent of the day's total on a 2,000-calorie diet.

In a study sponsored by the Food Marketing Institute (FMI) and *Prevention* magazine, only 14 percent of shoppers reported eating more fiber in 1993 than in 1990; in another study conducted for the American Dietetic Association, only 15 percent had increased their consumption of grains, cereal, or fiber to achieve a more healthful diet.

Fruit and Vegetables

Consumption of fruit and vegetables increased about 10 percent in the past decade; vegetables accounted for most of the increase, on a farm-weight basis. The variety and seasonal availability of fresh fruit and vegetables have expanded because improved refrigeration and transportation have created global markets.

Prepared salads and salad bars have become more popular over the past decade. Restaurants introduced salad bars in the late 1970's, and supermarket chain stores added salad bars during 1982-84 and, more recently, a wide array of prepared salads, as well. Fast-food chains now offer prepackaged salads.

Consumption of fresh fruit rose 15 percent above the 1980-83 annual average. Americans' favorite fresh fruit is bananas, followed by apples, watermelons, oranges, cantaloupes, and grapes. The per capita consumption of apple juice has increased 47 percent, accounting for 41 percent of total apple consumption—on a farm weight basis—in 1992.

Beans and other legumes have returned to the American culinary mainstream. Dry bean, pea, and lentil use increased 26 percent, from 6.4 pounds per person a year during 1980-83 to 7.9 pounds by 1992.

Although fruit and vegetables have become more popular and available in the past decade, consumption remains well below the levels recommended by government and health authorities. More than a fourth of the population ate no fruit and drank no fruit juice during the 3 consecutive days of recordkeeping in a 1989-90 USDA food intake survey.

Several factors influence the consumption of fruit and vegetables. Between 1980 and 1992, retail prices more than doubled (up 109 percent) for fresh produce, while costs of other food items rose at a much slower rate. Moreover, consumers tend not to be aware of the importance of eating recommended amounts. Also, consumers' desire for greater convenience has created a trend toward drive-thru, carryout, and home-delivered meals that has diminished the popularity of salad bars at many fast-food places.

Industry has responded by adding convenience to the produce department. New products and services have been introduced, such as pre-cut fruit and vegetables—often prepared for stir-frying or microwaving with preparation instructions provided. Packaged, fresh-cut salad mixes have experienced a 93-percent increase in sales in 1 year.

Caloric and Low-Calorie Sweeteners

Between 1980-83 and 1992, total per capita use of caloric sweeteners rose 16 percent. Each American consumer averages more than one-third pound of added sugars a day.

The consumption of specific sugars has changed over the past decade. Sucrose's share in total caloric sweetener consumption dropped from 62 percent in 1980-83 to 45 percent in 1992, while corn sweetener's share increased from 37 percent to 54 percent during the same period. Most of the increase in corn sweeteners reflects an increased use of high-fructose corn syrup (HFCS), which is significantly less expensive than sucrose. Use of HFCS rose from 18 pounds per person in 1980 to 52 pounds in 1992. The low-calorie sweetener (mainly aspartame and saccharin) market grew from less than 6 percent of the total sweetener market in 1980 to 15 percent in 1992; per capita use has more than tripled since 1980.

Nutritionists are concerned about the rise in consumption of fructose. Each American now consumes significantly more added fructose than in 1980. Sucrose is half fructose; HFCS is 42 to 55 percent fructose. Evidence implicates diets high in fructose with increased blood lipid levels. Some researchers suggest that although there is no conclusive evidence that a high sugar intake is a risk factor for heart disease in the general population, a small number of "carbohydrate-sensitive" individuals may be particularly sensitive to sugar (especially fructose) and respond with raised cholesterol and triglyceride levels. Research in this area is ongoing.

Food processors are introducing new products with "no added sugar" and "reduced sugar." New sweeteners will likely enter the market in the next decade. In addition, the new food label, which lists the amount of sugars in a serving of food, can help those who are trying to moderate their sugar intake.

Beverages

U.S. per capita soft drink consumption increased 29 percent between 1980 and 1992. Supermarket customers spend more money on carbonated soft drinks than any other product scanned at the checkout counter, excluding meat and poultry. Soft drink makers have created huge marketing and promotional campaigns to encourage this growth. Sales of fountain drinks are increasing because they are promoted with "combo-meals" at fast-food places and because the fast-food drink sizes have increased.

Per capita consumption of alcoholic beverages declined steadily between 1981 and 1992. Annual average beer consumption declined 11 percent, wine consumption declined 18 percent, and distilled spirits declined 50 percent. These trends for decreased alcohol consumption may reflect the smaller percentage of the population at peak drinking age, since the proportion of the population over age 60 is increasing and less likely to indulge. Sharply higher Federal excise taxes on alcoholic beverages beginning in 1991 may have decreased alcoholic beverage consumption. Furthermore, retail prices (as measured in the Consumer Price Index (CPI)) for packaged alcoholic beverages increased 15.6 percent between 1990 and 1992, compared with a 3.4-percent increase for the CPI for food at home.

Putnam, J.J., 1994, American eating habits changing: Part 2, Grains, vegetables, fruit, and sugars, *FoodReview* 17(2):36-48.

Dietary Guidelines for Americans

- Eat a variety of foods
- Maintain healthy weight
- Choose a diet low in fat, saturated fat, and cholesterol
- Choose a diet with plenty of vegetables, fruits, and grain products
- Use sugars only in moderation
- Use salt and sodium only in moderation
- If you drink alcoholic beverages, do so in moderation

The Development and Growth of Employer-Provided Health Insurance

According to the Current Population Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS), about 35.7 million people under the age of 65 were not covered by health insurance in 1990. This is an increase of 2 million persons since 1988. Because of this increase, as well as rising costs for health care services, interest has intensified in reforming the health care system. In recent years, the Congress has introduced many bills that attempted to improve access, reduce the cost, and modify the tax treatment of health care benefits. In 1994, efforts focused on changing the national health care system, which relies heavily on health insurance provided by employers.

Early Coverage

The earliest coverage for health services began in 1798, when the Congress established the United States Marine Hospital Services for seamen. Compulsory deductions for hospital services were made from the salaries of seamen.

At first, most insurance policies protected against lost income due to accidents, rather than covering health services. In 1850, the Franklin Health Assurance Co. of Massachusetts provided the first accident policy. Travelers Insurance Co. entered the field in 1863 and developed accident insurance that provided a death benefit and a weekly disability benefit.

During the 1870's and 1880's, companies in the mining, lumber, and railroad industries developed plans that covered medical services. Group industrial clinics were established to provide medical care to employees for industrial accidents and common illnesses. Many historians credit the growth in health insurance to the growing industrialization of America. Employers and labor unions realized that workers needed economic protection against unforeseeable losses, which can result from premature death and disability.

In 1899, the Aetna Life Insurance Co. and Travelers Insurance Co. offered a new type of health plan that provided coverage against loss due to temporary total disability resulting from certain diseases. This coverage was issued to select, preferred-risk residents of towns with a population of 5,000 or more. By 1908, most of the restrictions on these plans were eliminated: most diseases were no longer excluded, the premium rate was abandoned, the 7-day waiting period was no longer in effect, and a medical examination was no longer required for insurance.

In 1910, Montgomery Ward and Co. sought a plan for its employees to protect them from financial loss due to illness or injury. The plan is regarded as the Nation's first group health insurance policy. The policy provided weekly benefits equal to one-half of the employee's weekly salary, with a minimum benefit of $5 and a maximum of $28.85 per week, if the employee was unable to work due to illness or injury. These benefits were paid directly to the employee; the company did not reimburse for medical services.

Early in the 20th century, many people advocated compulsory health insurance. Proponents of compulsory insurance sought to achieve two goals. First, they wanted to "relieve poverty caused by sickness by distributing individual wage losses and medical costs through insurance." Second, they wanted to "reduce the social costs of illness by providing effective medical care and creating monetary incentives for disease prevention." However, unions, physicians, and insurance companies mounted strong opposition to compulsory insurance and all resolutions brought before the U.S. House of Representatives were defeated.

Blue Cross and Other Plans

Significant development in health insurance took place in the 1930's because of the Depression. Few people could pay for hospital care, so most hospitals were in serious financial straits. In the first years of the Depression, more than 100 hospitals nationwide had failed, and those that remained in business had only about a 50-percent occupancy rate. In 1929, a group of teachers at Baylor University and the University Hospital in Dallas, Texas, made arrangements to provide coverage for room and board and for specified ancillary services for 21 days at an annual premium of $6 per teacher. This development is considered a forerunner of what is now known as Blue Cross.

Later came citywide plans with more than one hospital. Individuals contributed a small amount monthly to a central fund that was redistributed to participating hospitals. This fund allowed hospitals to remain solvent with payment of hospital bills guaranteed, although coverage for dependents was excluded. By 1935, 19 plans had been created in 13 States.

Prepayment plans to cover physicians' services (Blue Shield) paralleled the development of Blue Cross plans. The first Blue Shield plan—the California Physicians Service—was founded in California in 1939 and provided physician services to employee group members for $1.70 per month for each member of the group. However, the plan was limited to employees earning less than $3,000 annually.

On the West Coast, at the same time Blue Cross and Blue Shield plans were being formed, Health Maintenance Organizations (HMO's) were developing. HMO's provide a wide range of comprehensive health care services to subscribers for a predetermined rate. The largest and most widely known HMO that was formed during the 1930's was Kaiser Permanente.

Employer-Provided Health Insurance

By 1940, the population of the United States was 132 million, but only 12 million people were covered by health insurance. Blue Cross/Blue Shield dominated the market with 50 percent of those individuals with coverage, followed by commercial insurance with 31 percent, and other plans including HMO's, with 19 percent.

In 1942, the Congress enacted the Stabilization Act, which limited the amount of employer wage increases but permitted the adoption of employee insurance plans. This stimulated the growth of plans through collective bargaining agreements.

In 1949, the Liberty Mutual Insurance Company introduced major medical insurance to supplement basic medical care expenses. Basic plans usually cover facility and physician care in the hospital. Major medical plans protect individuals against extended illnesses or injuries by providing coverage for services not included in a basic plan plus supplemental benefits after coverage under the basic plan has expired. Comprehensive major medical plans—rather than offering "additional" coverage to a basic plan—cover a wide range of medical services in one package.

Managed Care Plans

Between December 1971 and December 1991, the medical care component of the Consumer Price Index increased 70 percent faster than the all-items category. In an effort to slow the rapid rise in health care costs, new health care delivery systems, known as managed care, have emerged. Managed care integrates the delivery and financing of appropriate health care services to covered individuals and has the following common elements:

- Arrangements with selected providers to furnish a comprehensive set of health care services to members;
- Explicit standards for the selection of health care providers;
- Formal programs for ongoing quality assurance and utilization review;
- Significant financial incentives for members to use providers and procedures covered by the plan.

Congress passed the Health Maintenance Organization Act in 1973. This act was designed to stimulate the formation of comprehensive prepaid health care programs by:

- Providing grants, loans, and loan guarantees to HMO's;
- Preempting State laws and practices impeding the development and operation of qualified HMO's;
- Requiring employers[1] to include the option of membership in a qualified HMO in any employee health benefit package.

HMO enrollment has increased rapidly, rising from fewer than 2 million members in 1970 to more than 39 million in July 1992. Two major types of HMO's are available: group/staff arrangements and individual practice associations (IPA). The group/staff arrangement delivers health services at one or more facilities with groups of salaried physicians. The IPA contracts with physicians who maintain their own offices and usually are paid by the HMO according to an agreed-upon fee-for-service schedule.

[1]Includes only employers who are covered by the minimum wage provisions of the Fair Labor Standards Act, have at least 25 employees residing within an HMO's service area, have an employee health benefit plan to which the employer contributes, and have received a written request from a qualified HMO for inclusion in the employer's health benefit program.

Surveys of Employer-Provided Health Insurance

BLS has documented the expansion of employer-provided health insurance through various surveys. In the late 1940's, the Occupational Wage Survey Program was the first effort at regular collection and publication of health insurance data. From 1950 to 1974, the BLS Digest of Selected Health and Insurance Plans provided a detailed look at health insurance benefits. Information included the principal features of health plans of selected employers, including maximum lengths of hospital stays, maximum payments for selected surgical procedures, coinsurance rates, and maximum major medical benefits.

In 1979, BLS began the Employee Benefits Survey, which provides comprehensive information on the occurrence and characteristics of employee benefits plans, including health, life, and disability insurance, retirement plans, and paid leave. The survey also collects data on the percentage of employees participating in health insurance plans and the percentage of participants who have coverage available for selected types of care. The survey monitors the growth in managed care plans as well as managed care features within traditional health insurance plans that were developed as a way to hold down costs. Policymakers can use the survey to determine the extent of current benefits and design future health care programs.

Source: Scofea, L.A., 1994, The development and growth of employer-provided health insurance, *Monthly Labor Review* 117(*3*):3-10.

Are Women Leaving the Labor Force?

Women's labor force participation rate—the proportion working or looking for work—rose consistently for nearly three decades, regardless of the economy. Between 1989 and 1991, however, the trend was interrupted and, although the proportion increased again in 1992, it flattened out in 1993 (table 1). Using data from the Current Population Survey, this report examines trends in labor force participation among women and trends in employment patterns in two-parent families.

The Bureau of Labor Statistics attributed the 1989-91 interruption to the business cycle, a pronounced rise in births, and changes in the participation trends of 16- to 24-year-old women. The labor force attachment of women in this age group is often erratic, as teenagers make the transition from school to work. Their labor force participation rate appears to parallel the business cycle, growing during periods of economic expansion and shrinking during periods of contraction. Between 1989 and 1993, the labor force participation rate of teenagers age 16 to 19 dropped from 54 to 50 percent (table 1). School enrollment appears to play a role in this decline, as the percentage of teenage girls in school was up 4 percentage points over the period. The proportions who were married (5 percent) or had children (8 percent) were unchanged over the period.

The labor force participation rate of women age 20 to 24 peaked at 73 percent in 1987, then edged downward to 70 percent in 1991. Again, school enrollment is probably the biggest factor influencing this decline. The proportion who were in school increased from nearly 20 percent in 1987 to 26 percent by 1993. The proportion who were married declined from 33 percent in 1987 to 28 percent in 1993, whereas the proportion with children remained at 30 percent.

The increase in the labor force participation rate for women age 25 to 34 and age 35 to 44 began slowing in the late 1980's. Their participation rates appear to have flattened since 1990. The rates of women age 45 to 54 continued to rise through the early 1990's, whereas those for women age 55 and older remained flat.

Table 1. Labor force participation rates of women by age, annual averages, 1980-93

Year	Total, 16 and older	Age 16 to 19	20 to 24	25 to 34	35 to 44	45 to 54	55 and older
				Percent			
1980	51.5	52.9	68.9	65.5	65.5	59.9	22.8
1981	52.1	51.8	69.6	66.7	66.8	61.1	22.7
1982	52.6	51.4	69.8	68.0	68.0	61.6	22.7
1983	52.9	50.8	69.9	69.0	68.7	61.9	22.4
1984	53.6	51.8	70.4	69.8	70.1	62.9	22.2
1985	54.5	52.1	71.8	70.9	71.8	64.4	22.0
1986	55.3	53.0	72.4	71.6	73.1	65.9	22.1
1987	56.0	53.3	73.0	72.4	74.5	67.1	22.0
1988	56.6	53.6	72.7	72.7	75.2	69.0	22.3
1989	57.4	53.9	72.4	73.5	76.0	70.5	23.0
1990	57.5	51.8	71.6	73.6	76.5	71.2	23.0
1991	57.3	50.2	70.4	73.3	76.6	72.0	22.8
1992	57.8	49.2	71.2	74.1	76.8	72.7	23.0
1993	57.9	49.9	71.3	73.6	76.7	73.5	23.0

Source: Hayghe, H.V., 1994, Are women leaving the labor force? Monthly Labor Review 117(7):37-39.

Table 2. Two-parent families with children under age 18, by earner status of father and mother, 1987-92

Year	Total two-parent families	Father earner, not mother	Father and mother earners	Father not earner[1]
	Thousands		*Percent*	
1987	24,635	26.6	69.5	3.9
1988	24,751	26.2	70.0	3.9
1989	24,552	25.8	70.5	3.7
1990	24,435	26.0	70.4	3.6
1991	24,460	24.6	71.0	4.3
1992	24,746	25.4	69.8	4.8

[1]Includes families in which mother and/or other family members are earners or in which there are no earners.

Source: Hayghe, H.V., 1994, Are women leaving the labor force? Monthly Labor Review 117(7):37-39.

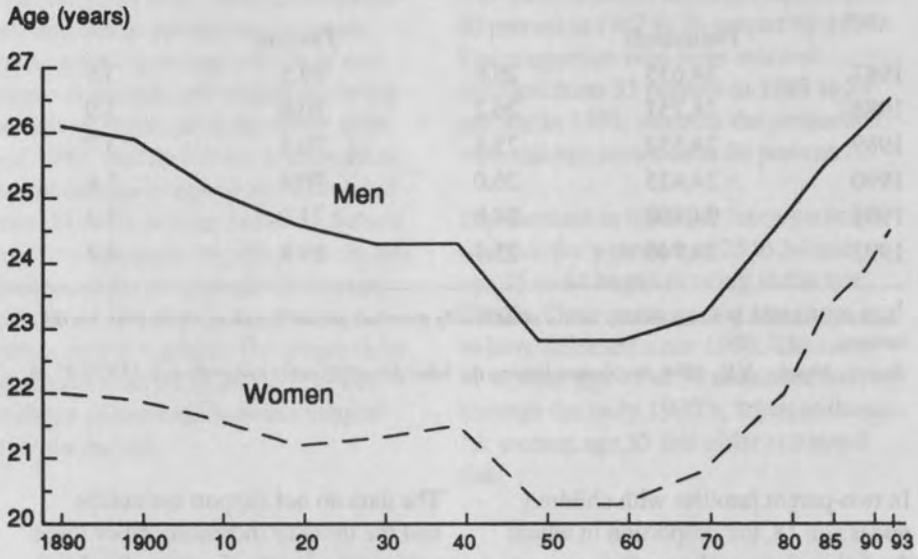
In two-parent families with children under age 18, the proportion in which the father, but not the mother, was an earner declined between 1987 and 1992 (table 2). Therefore, women were not leaving the work force to return to homemaking roles. The proportion of families in which both father and mother were earners remained about the same at 70 percent. However, between 1990 and 1992, there was an increase in the proportion of families in which the father was not an earner. Such families may have had the mother and/or other family members as earners, or there may have been no earners. In most of these situations, only the mother was an earner. This appears to reflect the recessionary labor market of the period.

The data do not support the notion that the trend of increasing labor force participation rates of women has been halted. Although large numbers of women enter or leave the labor force over the course of a year, major new shifts are not occurring in women's labor force participation or in family employment patterns.

Source: Hayghe, H., 1994, Are women leaving the labor force? *Monthly Labor Review* 117(7): 37-39.

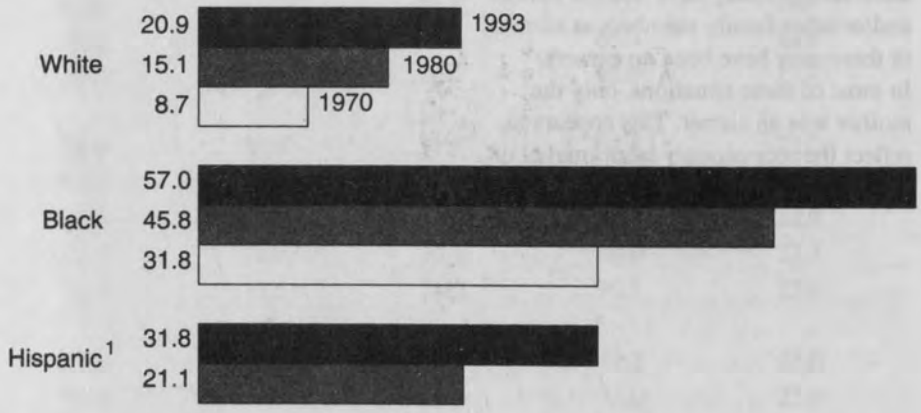
Charts From Federal Data Sources

Median age at first marriage, by sex: 1890 to 1993



Saluter, A.F., 1994, Marital Status and Living Arrangements: March 1993, Current Population Reports, Population Characteristics, P20-478, U.S. Department of Commerce, Bureau of the Census.

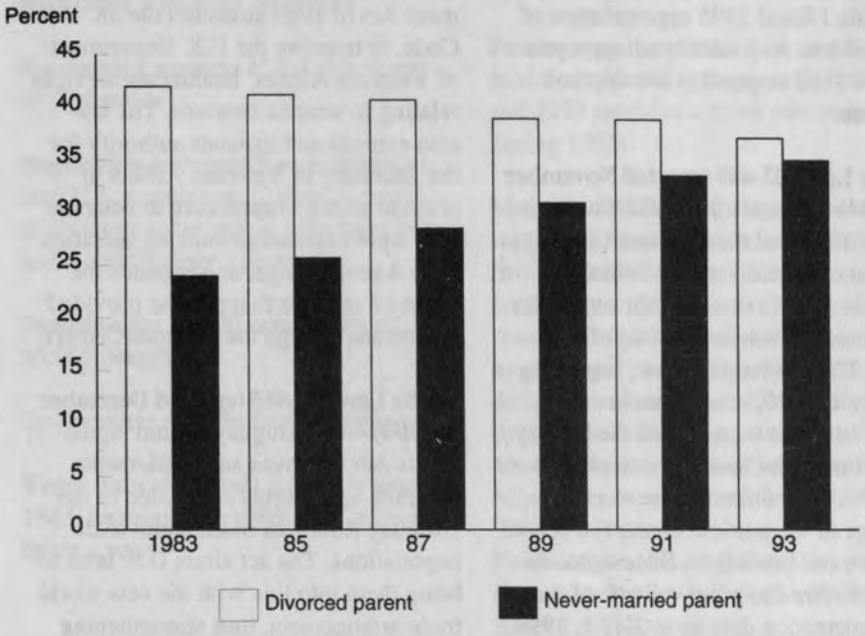
Percentage of children under 18 years old living with one parent, by race and Hispanic origin



[1]Persons of Hispanic origin may be of any race.

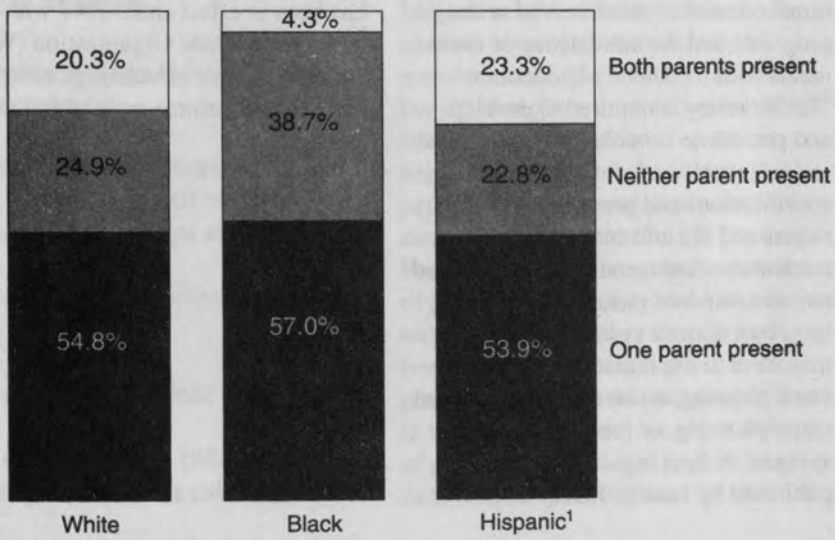
Saluter, A.F., 1994, Marital Status and Living Arrangements: March 1993, Current Population Reports, Population Characteristics, P20-478, U.S. Department of Commerce, Bureau of the Census.

Proportion of children in single-parent situations living with a divorced or a never-married parent: 1983-93



Saluter, A.F., 1994, Marital Status and Living Arrangements: March 1993, Current Population Reports, Population Characteristics, P20-478, U.S. Department of Commerce, Bureau of the Census.

Grandchildren of the householder, by presence of parents: 1993



[1]Persons of Hispanic origin may be of any race.

Saluter, A.F., 1994, Marital Status and Living Arrangements: March 1993, Current Population Reports, Population Characteristics, P20-478, U.S. Department of Commerce, Bureau of the Census.

Recent Legislation Affecting Families

Public Law 103-328 (enacted September 29, 1994)—the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 allows out-of-state banks to open branches across State lines. Currently, Federal law prohibits interstate branching unless out-of-state banks own separately chartered and capitalized banks in each State in which they do business. The law's interstate branching provisions would allow banks to consolidate these banks into branches of a single bank. As the law takes effect over the next few years, a significant streamlining of the Nation's more than 10,000 banks is expected, resulting in a more profitable banking system.

Public Law 103-354 (enacted October 13, 1994)—the Federal Crop Insurance Reform and Department of Agriculture Reorganization Act of 1994 overhauls the Agriculture Department and establishes a new Consolidated Farm Service Agency to merge programs on crop subsidies, crop insurance, and farm lending. The reorganized U.S. Department of Agriculture elevates nutrition with an expanded mission and a clear responsibility as a lead Federal agency for human nutrition.

Public Law 103-382 (enacted October 20, 1994)—the Elementary and Secondary Education Amendments of 1994 authorizes $12.7 billion over the next 5 years to revise and expand elementary and secondary school programs. Enacted in 1965 as the Elementary and Secondary Education Act, the law aims to support educationally disadvantaged students. Federal money is distributed to States under the act's Title I State grants program, reaching nearly every school district in the country. Beginning in fiscal 1996, Federal money will be allocated to counties using the current formula for amounts appropriated up to the Title I fiscal 1995 appropriation of $6.6 billion. Any additional appropriations will be targeted at low-income children.

Public Law 103-448 (enacted November 2, 1994)—amends the Child Nutrition Act of 1966 and the National Lunch Act to promote healthy eating habits for children and to extend certain authorities contained in such acts through fiscal 1998. The law requires that, beginning on July 1, 1996, school lunches and breakfasts must comply with the Dietary Guidelines. The basis for compliance shall be, at a minimum, the weekly average of the nutrient content of school lunches and breakfasts. State agencies are authorized to grant waivers of the implementation date up to July 1, 1998. Not later than July 1, 1996, the Secretary of Agriculture, State educational agencies, schools, and school food service authorities shall, to the maximum extent practicable, inform students and their parents or guardians of the nutritional content of meals served under the programs and the consistency of those meals with the Dietary Guidelines. The Secretary is required to develop and provide to schools (1) standardized recipes, menu cycles, food product specifications and preparation techniques and (2) information regarding nutrient standard menu planning, assisted nutrient standard menu planning, and food-based menu systems. Schools may elect to use nutrient standard menu planning, assisted nutrient standard menu planning, or food-based menu systems. A final regulation must be published by June 1, 1995.

Public Law 103-452 (enacted November 2, 1994)—the Veterans Health Improvement Act of 1993 amends Title 38, U.S. Code, to improve the U.S. Department of Veterans Affairs' health care services relating to women veterans. The law also extends and expands authority for the Secretary of Veterans Affairs to provide priority health care to veterans who were exposed to ionizing radiation or to Agent Orange, and expands the scope of services that may be provided to veterans through the Veterans Centers.

Public Law 103-465 (enacted December 8, 1994)—the Uruguay Round Agreements Act approves and implements the trade agreements concluded in the Uruguay Round of multilateral trade negotiations. The act alters U.S. laws to bring them into line with the new world trade arrangement, thus strengthening the General Agreement on Tariffs and Trade (GATT). The GATT pact, endorsed by 124 nations, slashes tariffs worldwide by nearly 40 percent and sharply reduces other trade barriers. It replaces the informal GATT system that has been in effect since 1947 with a new World Trade Organization (WTO), which will have enhanced powers to oversee and enforce multilateral trade agreements.

Data Sources

Survey of Income and Program Participation (SIPP)-Child Support Topical Module

Sponsoring agency: U.S. Department of Commerce

Population covered: Noninstitutionalized U.S. population. Custodial parents of children under age 21 who have ever had a child support agreement.

Sample size: 21,500 households or 55,000 persons

Geographic distribution: Nationwide

Years data collected: Annually since 1983; beginning in 1986, data collected twice a year.

Method of data collection: Personal interviews. Telephone follow-ups were conducted for missing information.

Future surveys planned: A new module is started each year. The 1992 and 1993 modules will be released Spring 1995.

Major variables: Information on child support agreements such as: number of children included, type of agreement (voluntary written and ratified by the court, court ordered, other written, or nonwritten), year of agreement, original dollar amount received, changes in dollar amount, and current dollar amount received. Also, characteristics of people who receive child support.

Publications: Findings from the survey are reported in the P-70 Series of Census Bureau publications.

Sources for further information and data: Information about publications and data products can be obtained from:

Customer Services Branch
Data User Services Division
U.S. Bureau of the Census
Washington, DC 20233
(301) 457-4100

For questions about the Child Support Topical Module contact:

Housing and Household
Economic Statistics Division
U.S. Bureau of the Census
Washington, DC 20233
(301) 763-8018

Survey of Income and Program Participation (SIPP)-Support for Nonhousehold Members Topical Module

Sponsoring agency: U.S. Department of Commerce

Population covered: Noninstitutionalized U.S. population. All household members 15 years of age and older.

Sample size: 21,500 households or 55,000 persons

Geographic distribution: Nationwide

Years data collected: 1984, 1985; beginning in 1986, data collected twice a year.

Method of data collection: Personal interviews. Telephone follow-ups are conducted for missing information.

Future surveys planned: 1992 and 1993 modules will be released May 1995. Future surveys are planned.

Major variables: Information about cash assistance by adult household members to people residing elsewhere. For child support: amount paid in the last 12 months, number of children being supported, and conditions of payment (court-ordered payments, health care provisions, and method of payment). For payments to other people: number of people being paid, relationship to respondent, where they live (private home or apartment, nursing home, someplace else), and the amount paid to them in the last 12 months. Also, characteristics of people who pay child support or give cash assistance to others.

Publications: Findings from the survey are reported in the P-70 Series of Census Bureau publications.

Sources for further information and data: Information about publications and data products can be obtained from:

Customer Services Branch
Data User Services Division
U.S. Bureau of the Census
Washington, DC 20233
(301) 457-4100

For questions about the Support for Nonhousehold Members topical module contact:

Population Division
U.S. Bureau of the Census
Washington, DC 20233
(301) 457-2422

Journal Abstracts and Book Summary

The following abstracts are reprinted verbatim as they appear in the cited source.

Posner, B.M., Franz, M.M., Quatromoni, P.A., Gagnon, D.R., Sytkowski, P.A., D'Agostino, R.B., and Cupples, L.A. 1995. Secular trends in diet and risk factors for cardiovascular disease: The Framingham Study. *Journal of the American Dietetic Association* 95(2):171-179.

Dietary intake data collected over three decades indicate that there has been a considerable reduction in cholesterol intake between 1957-1960 and 1984-1988 although intake of macronutrients and fatty acids has not changed appreciably. Total fat intakes fell slightly between 1957 and 1988, but mean levels remained well above published recommendations. Serum cholesterol levels and blood pressure levels were lower, and fewer persons were smoking cigarettes in 1984-1988 than in 1957-1960, but more persons were overweight or had hypertension in 1984-1988, despite higher levels of reported physical exercise.

Ballard-Barbash, R., Thompson, F.E., Graubard, B.I., and Krebs-Smith, S.M. 1994. Variability in percent energy from fat throughout the day: Implications for application of total diet goals. *Journal of Nutrition Education* 26(6):278-283.

In spite of the general agreement that dietary recommendations apply to the diet over time, the quantitative levels for total and saturated fat have been used in establishing federal policy related to intakes for a single day, meal, and even an individual food. Application of these recommendations uniformly to meals across a day implies that fat intake is uniform throughout the day. This analysis of the 1985 Continuing Survey of Food Intakes by Individuals demonstrates that percent energy intake from fat across eating occasions within a day is not uniform. Percent energy intake from total and saturated fat is lower at the morning meal and at snacks among women at all levels of fat consumption, suggesting that fat is restricted more often at these two eating occasions. Intake of total and saturated fat was also more variable at these two eating occasions. These findings suggest that restricting fat intake at these eating occasions and liberalizing fat intake at midday and evening meals occurs commonly and may be an effective fat-reduction strategy. Daily variability in percent energy from fat should be considered in designing dietary fat reduction interventions and in applying quantitative recommendations for percent energy from total and saturated fat in nutrition guidance directed to individual meals.

Pienta, A.M., Burr, J.A., Mutchler, J.E. 1994. Women's labor force participation in later life: The effects of early work and family experiences. *Journal of Gerontology: Social Sciences* 49(5):S231-S239.

The purpose of this study was to develop and evaluate a model of labor force participation among a group of older women in the United States. A comprehensive measure of women's combined work and family experiences across the adult life course was created. Employing data from the 1984 Survey of Income and Program Participation, we applied multinomial logistic regression techniques to examine the association between work-family experiences and later life labor supply. Our findings generally support an attachment hypothesis, showing that women who were the most work-oriented throughout the life course were more likely than women who experienced family-related spells of nonlabor-market activity to participate in the labor force, either full-time or part-time, later in life.

Golant, S.M. 1992. *Housing America's Elderly: Many Possibilities, Few Choices*. Sage Publications, Inc., Newbury Park, CA.

Older people's housing needs can change in response to retirement, widowhood, reduced income, or chronic health problems. Many have physical or mental disabilities that threaten independent living, while others live in dwellings in physical disrepair or in neighborhoods that have become unsafe. Finding solutions to the housing problems of the elderly can take many forms. Some older people rely solely on their own resources, whereas others must depend on family members or friends. Some turn to: private, for-profit organizations; nonprofit organizations such as charities, foundations, religious or fraternal groups; or public agencies of the Federal, State, or local government. The author examines the appropriateness of these options, considers the strengths and weaknesses of each, and looks at the extent to which older people have adopted them. Topics of interest include planned age-segregated housing, rent-subsidized housing, group housing, home- and community-based formal care, and life, or continuing, care. Also, included are over 300 references. Housing professionals, practitioners, and academics, as well as older consumers of housing and their families, will find the book useful.

Cost of Food at Home

Cost of food at home estimated for food plans at four cost levels, March 1995, U.S. average[1]

Sex–age group	Cost for 1 week				Cost for 1 month			
	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan	Thrifty plan	Low-cost plan	Moderate-cost plan	Liberal plan
FAMILIES								
Family of 2:[2]								
20 - 50 years	$53.20	$67.30	$83.40	$104.20	$230.70	$292.10	$361.60	$451.30
51 years and over	50.30	64.90	80.30	96.40	217.80	280.90	348.10	417.60
Family of 4:								
Couple, 20 - 50 years and children—								
1 - 2 and 3 - 5 years	77.30	96.80	118.60	146.30	335.10	419.70	514.30	634.00
6 - 8 and 9 - 11 years	88.70	113.70	142.40	172.00	384.30	493.10	617.50	745.30
INDIVIDUALS[3]								
Child:								
1 - 2 years	13.90	17.10	19.90	24.20	60.40	73.90	86.40	104.80
3 - 5 years	15.00	18.50	22.90	27.40	65.00	80.30	99.20	118.90
6 - 8 years	18.40	24.60	30.70	35.80	79.70	106.50	133.10	155.20
9 - 11 years	21.90	27.90	35.90	41.50	94.90	121.10	155.70	179.80
Male:								
12 - 14 years	22.80	31.60	39.40	46.40	98.80	137.10	170.80	200.90
15 - 19 years	23.50	32.60	40.70	47.10	101.90	141.40	176.30	204.30
20 - 50 years	25.40	32.50	40.80	49.60	110.00	141.00	176.90	214.90
51 years and over	23.00	31.10	38.40	46.10	99.50	134.60	166.40	200.00
Female:								
12 - 19 years	22.80	27.40	33.30	40.30	98.80	118.70	144.30	174.70
20 - 50 years	23.00	28.70	35.00	45.10	99.70	124.50	151.80	195.40
51 years and over	22.70	27.90	34.60	41.50	98.50	120.80	150.10	179.60

[1]Assumes that food for all meals and snacks is purchased at the store and prepared at home. Estimates for the thrifty food plan were computed from quantities of foods published in *Family Economics Review* 1984(*1*). Estimates for the other plans were computed from quantities of foods published in *Family Economics Review* 1983(*2*). The costs of the food plans are estimated by updating prices paid by households surveyed in 1977–78 in USDA's Nationwide Food Consumption Survey. USDA updates these survey prices using information from the Bureau of Labor Statistics, *CPI Detailed Report*, table 4, to estimate the costs for the food plans.

[2]Ten percent added for family size adjustment. See footnote 3.

[3]The costs given are for individuals in 4-person families. For individuals in other size families, the following adjustments are suggested: 1-person—add 20 percent; 2-person—add 10 percent; 3-person—add 5 percent; 5- or 6-person—subtract 5 percent; 7- or more-person—subtract 10 percent.

Consumer Prices

Consumer Price Index for all urban consumers [1982-84 = 100]

Group	Unadjusted indexes			
	March 1995	January 1995	February 1995	March 1994
All items	151.4	150.3	150.9	147.2
Food	147.4	147.5	147.4	143.2
Food at home	147.6	148.2	147.9	142.8
Food away from home	148.1	147.4	147.6	144.8
Housing	147.4	146.4	147.0	144.1
Shelter	164.5	162.9	163.8	159.8
Renters' costs[1]	174.6	170.7	172.9	170.1
Homeowners' costs[1]	169.8	168.4	168.9	164.1
Household insurance[1]	157.1	155.9	156.1	150.0
Maintenance and repairs	134.2	133.1	133.8	129.3
Maintenance and repair services	138.8	137.3	137.9	131.8
Maintenance and repair commodities	128.2	127.5	128.2	126.1
Fuel and other utilities	122.3	122.9	122.6	122.4
Fuel oil and other household fuel commodities	89.0	89.4	89.6	92.5
Gas (piped) and electricity	117.1	118.0	117.6	118.1
Household furnishings and operation	122.6	121.8	122.4	120.6
Housefurnishings	111.2	110.5	111.1	110.5
Housekeeping supplies	135.7	133.8	134.6	132.3
Housekeeping services	142.9	142.4	142.8	137.8
Apparel and upkeep	134.4	129.4	131.1	136.1
Apparel commodities	131.3	126.0	127.7	133.4
Men's and boys' apparel	127.2	124.0	125.6	125.6
Women's and girls' apparel	131.5	123.0	125.9	137.2
Infants' and toddlers' apparel	127.1	129.0	126.8	125.8
Footwear	125.9	124.0	124.8	127.0
Apparel services	157.6	157.0	157.3	154.2
Transportation	138.0	137.3	137.5	132.2
Private transportation	135.2	134.9	135.0	128.6
New vehicles	140.7	140.6	140.7	136.8
Used cars	154.8	152.4	153.3	133.6
Motor fuel	97.5	98.7	98.0	93.3
Maintenance and repairs	152.7	152.0	152.5	149.0
Other private transportation	170.2	168.8	169.4	160.2
Other private transportation commodities	104.6	104.2	104.6	103.5
Other private transportation services	185.6	184.0	184.6	173.3
Public transportation	174.5	168.4	169.9	178.5
Medical care	218.4	216.6	217.9	208.3
Medical care commodities	203.7	203.1	203.5	199.1
Medical care services	221.8	219.8	221.3	210.4
Professional medical services	199.1	197.2	198.5	190.3
Entertainment	152.6	152.1	152.5	149.6
Entertainment commodities	137.3	137.5	137.4	135.2
Entertainment services	170.7	169.4	170.2	166.6
Other goods and services	204.0	203.0	204.1	195.5
Personal care	146.0	145.7	146.2	143.0
Toilet goods and personal care appliances	142.2	142.2	142.6	139.7
Personal care services	150.2	149.4	150.1	146.6
Personal and educational expenses	232.0	230.2	232.0	219.1
School books and supplies	212.6	211.9	212.5	204.0
Personal and educational services	233.6	231.8	233.6	220.4

[1]Indexes on a December 1982 = 100 base.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Guidelines for Authors

Family Economics and Nutrition Review is a peer-reviewed quarterly published by the Center for Nutrition Policy and Promotion; Food, Nutrition, and Consumer Services; U.S. Department of Agriculture.

Family Economics and Nutrition Review follows the guidelines of the *Publication Manual of the American Psychological Association*, Fourth Edition.

1. Manuscripts may not be submitted elsewhere while under consideration by the *Review*.

2. To ensure anonymity, include a separate title page with author's full name, title, affiliation, full address, and telephone number. There should be no reference to the authors in the text or footnotes.

3. Manuscripts should be double-spaced, on 8-1/2" x 11" paper, have 1-1/4" margins, and use 10 or 12 pitch type size.

4. Manuscripts should include an abstract of no more than 150 words.

5. Abstract, text, references, tables, and figures should not exceed 30 pages.

6. Each table or figure should be placed on a separate page.

7. Upon acceptance, authors must send a 3-1/2" computer disk copy of the final accepted version of the manuscript in WordPerfect 5.1 or higher. Disks and manuscripts will not be returned.

8. All authors and coauthors must sign a release acknowledging that contents of the *Review* are in the public domain.

9. Please send four copies to:

   Joan C. Courtless, Editor
   Family Economics and Nutrition Review
   USDA, Center for Nutrition Policy and Promotion
   1120 20th Street, NW, Suite 200 North Lobby
   Washington, DC 20036

Order Processing Code:
*** 5141**

Superintendent of Documents Order Form

Charge your order.
It's Easy!
To fax your orders (202) 512-2233

☐ **YES,** enter my subscription as follows:

____ subscriptions to **FAMILY ECONOMICS AND NUTRITION REVIEW (FAMER)** for $7.50 per year ($9.40 foreign).
(**NOTE**: Formerly **FAMILY ECONOMICS REVIEW**)

The total cost of my order is $_____. Price includes regular domestic postage and handling and is subject to change.

_____
(Company or personal name) (Please type or print)

_____
(Additional address/attention line)

_____
(Street address)

_____
(City, State, ZIP Code)

_____
(Daytime phone including area code)

_____
(Purchase Order No.)

For privacy protection, check the box below:

☐ Do not make my name available to other mailers.

Please choose method of payment:

☐ Check payable to the Superintendent of Documents

☐ GPO Deposit Account ☐☐☐☐☐☐☐-☐

☐ VISA or MasterCard Account

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐ (Credit card expiration date)

Thank you for your order!

_____
(Authorizing Signature)

Mail to: New Orders, Superintendent of Documents
P.O. Box 371954, Pittsburgh, PA 15250-7954