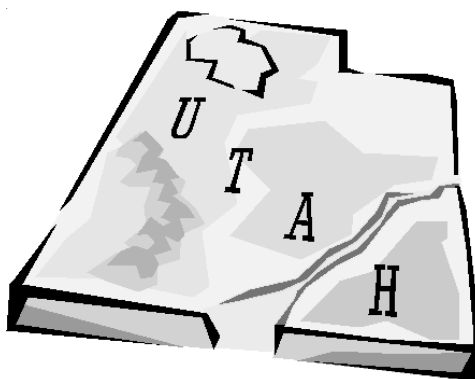




2001 Utah Health Status Survey Report

HEALTH STATUS IN UTAH: THE MEDICAL OUTCOMES STUDY SF-12



Office of Public Health Assessment
Center for Health Data
Utah Department of Health



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This report is also available on the Internet at URL:
<http://ibis.health.utah.gov/ophapubs.html>

Health Status in Utah: The Medical Outcomes Study SF-12

Office of Public Health Assessment
Center for Health Data
Utah Department of Health

March 2004

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Suggested citation

Office of Public Health Assessment. (2004). Health Status in Utah:
The Medical Outcomes Study SF-12 (2001 Utah Health Status Survey
Report). Salt Lake City, UT: Utah Department of Health.

Acknowledgments



The 2001 Utah Health Status Survey was funded by the Utah Legislature. The Center for Health Data, Office of Public Health Assessment, under the direction of Lois M. Haggard, Ph.D., provided general oversight for the project. It is the mission of the Office of Public Health Assessment to facilitate, coordinate, and assure the appropriate collection, analysis, and interpretation of accurate health data for purposes of surveillance, policy development, and program planning and evaluation.

2001 Utah Health Surveys Planning Committee, March 2001

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Co-Chair: Kathie Marti, RN, MPH, Utah BRFSS Coordinator, Office of Public Health Assessment, Utah Department of Health (UDOH)

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The Utah Department of Health would like to thank the citizens of Utah who participated in the 2001 Health Status Survey.



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The information in this report is based on data collected in the 2001 Utah Health Status Survey. The survey represents the fourth in a series, with previous surveys conducted in 1986, 1991, and 1996. This report deals specifically with data collected through the 2001 Utah Health Status Survey using the SF-12: Medical Outcomes Study instrument developed by QualityMetric Incorporated. It provides information on the self-reported physical and mental health status of adult Utahns. In addition to this report, other reports from the 2001 Health Status Survey include:

- Overview Report*
- Overview by Local Health District*
- Health Insurance Coverage*
- Overview for Children*
- Overview by Race and Ethnicity*

The survey was funded by a legislative appropriation and was designed, analyzed, and reported by the Utah Department of Health, Center for Health Data. The survey sample was designed to be representative of non-institutionalized Utahns living in households with phones, and is perhaps best described as a weighted probability sample consisting of 7,520 households disproportionately stratified by 12 local health districts that cover the entire state.

PEGUS Research Inc. of Salt Lake City conducted the telephone interviews using computer-assisted random digit dialing techniques. In each household, one adult (age 18 or older) was randomly selected to respond to survey questions about themselves, about the household as a unit, and with regard to each household member. The survey results were weighted to reflect the age, sex, geographic distribution, and Hispanic ethnicity of the population. Interviews were conducted over a seven-month period from May to November, 2001. A detailed description of the methodology can be found in the Technical Notes section of this report. The entire survey questionnaire may be found on-line at <http://ibis.health.utah.gov/ophapubs.html>.

The information in this report can be used to facilitate policy and planning decisions. While it is intended primarily for policy-makers, public health program managers, administrators, and other health care professionals in the public and private health care sectors, the report may also be of interest to anyone wishing to inform themselves on the current health status of Utahns.



The self-reporting of physical and mental health is an important tool in health research and the delivery of services. One's own perception of health status has been shown in many studies to be a better predictor of morbidity and mortality than many more objective measures of health (Idler and Benyamini, 1997) and has been used extensively to predict levels of future burden on the health care delivery system (Pijls et al., 1993).

The 2001 Medical Outcomes Study SF-12 Report provides information on the self-reported physical and mental health status of adult Utahns from the 2001 Utah Health Status Survey. This report is meant to complement the information found in other reports published by the Utah Department of Health, Office of Public Health Assessment.

Self-reported health was measured with the second version of a 12-question module called the SF-12 that was developed and tested by QualityMetric Incorporated. The SF-12 is a shortened version of the SF-36, which also measures self-reported physical and mental health. The questions in the SF-12 target eight dimensions of health and are weighted and summed to provide two composite measures, the Physical Composite Scale and Mental Composite Scale (PCS and MCS). The PCS and MCS are scored to range from 0 to 100, with 0 indicating the lowest level of health and 100 indicating the highest level of health. All other indicators of health used in this report [i.e. age-specific mean difference scores, above average/below average physical/mental health] are derived from these two original measures.

The PCS and MCS were calculated for several socio-demographic groups, such as sex, age, sex and age groups, education level, annual household income, and poverty status, to assess the health of different population groups in Utah. Measurements of chronic disease and medical problems were also tabulated for socio-demographic groups to assess the association that these factors have with health outcomes (as measured by the PCS and MCS). It is hoped that this report will provide a portrait of the general health status of adult Utahns, as well as provide a profile of Utahns who suffer from poor physical and mental health, as measured by the SF-12.

Questions from the SF-12 (with the exception of the general health question) were asked only of randomly chosen adult respondents. This is because it was believed that the respondent would be unable provide accurate proxy answers for other SF-12 items for other household members. Because of this, the following report is representative of the adult population in Utah, but does not apply to those under 18 years of age. Within this report, it is common for a measure to be reported for only a sub-population of Utahns. For example, several tables provide a profile of only those Utahns with poor physical health or poor mental health. Other tables provide information for only those Utahns who suffer from specific chronic illnesses or medical problems. The sub-population of inference is always indicated in the title of the figure or table.

An attempt was made to present the information in this report in a meaningful manner. Reference tables are embedded within the report and follow the graphic presentation of results (i.e. pie charts and bar charts). Additional information, not presented in figures, is also provided in the reference tables. There are two types of reference tables used in this report. The first type provides average measures for the PCS/MCS scores and their respective difference scores, by various socio-demographic variables. The second type of reference table typically reports an overall percentage for the relevant Utah population, and for that population by demographic grouping variables such as sex, age group, age group by sex, annual household income, educa-



tion level, employment status, Hispanic status, marital status, and poverty status. Additional comparisons for each measure may be found in that measure's detailed health status survey report, or by requesting it through the Center for Health Data at the address listed inside the front cover of this report.

The information in the tables and figures is presented for different sex and age groups, different lifestyle factors and the presence of chronic illnesses. By presenting the information this way, it is not meant to imply that differences in a measure are caused by a person's sex, age, presence of chronic illness, or any other variable in the survey. Data collected in a single-point-in-time survey will never provide sufficient evidence of a cause and effect relationship between two variables. For instance, although a relationship between obesity and overall ill health has been observed, the data do not suggest whether being obese causes ill health, being ill causes one to be obese, or whether some third variable, such as a chronic condition, causes a person to be obese and to experience overall ill health.

This report does not include all of the information necessary to understand the health of populations in Utah. There is other relevant information that should be taken into account in order to gain perspective on Utahns' overall health status, such as leading causes of death, trends in hospitalization for various conditions, infectious disease rates, characteristics of mothers and newborns, injury deaths and hospitalizations, and many other factors. Some of this information can be found in other Center for Health Data publications and on Utah's Indicator-Based Information System for Public Health (IBIS-PH) at <http://ibis.health.utah.gov/>. In addition, the Behavioral Risk Factors Surveillance System is a source for additional survey information on adult Utahns' health behaviors.



The Medical Outcomes Study 12-Item Short Form Health Survey (SF-12) is a nationally standardized health questionnaire used widely in clinical settings and survey research to measure self-reported health. It is composed of twelve questions (subdivided into eight sub-domains of health) that are weighted to provide two scales, the Physical Composite Scale (PCS) and Mental Composite Scale (MCS). Each scale ranges from 0 to 100 with a national mean of 50 and standard deviation of 10. The SF-12 is used extensively in health science research. Some of its uses include the tracking of differences before and after an intervention, and observing differences between subgroups, such as persons in poverty, or those with various medical conditions. For this report, SF-12 scores have been tabulated by a variety of demographic, socioeconomic, lifestyle factors and health conditions variables in order to provide a picture of the health status of different groups of adults in Utah.

- The physical health status of Utahns is very similar to the U.S. overall. In fact there is no notable difference in physical health status for different age groups in Utah compared to the U.S.
- The mental health status of Utahns was above that of the U.S. for every age group. Mental health status improves with age at both the state and national levels.
- Although women tend to live longer than men, their self reported physical and mental health status was significantly lower. These sex differences are probably due to a combination of factors, including actual health status and differences in response tendencies among men and women.
- Socio-economic indicators (income, education level, poverty level) are strongly related to health status. It is not clear whether SES influences health status or health status influences educational attainment and income earning potential. It is likely that all are mutually reinforcing to one another.
 - For example: Utahns with higher levels of education had significantly better physical and mental health status than Utahns with low levels of education. Similar associations hold for health status and education, income level, and poverty level.
 - Interestingly, the tendency for men to report better physical and mental health than women was not affected when SES factors were included in analysis.
- The presence of chronic and medical conditions including; chronic obstructive pulmonary disease, stroke, diabetes, heart disease, obesity and high blood pressure were associated with significantly lower physical and mental health status for men and women. However, women with chronic illnesses or medical conditions tended to have poorer health outcomes than men with the same conditions.
- Utahns who have a chronic or medical condition, and live in households with incomes less than 100% of the Federal Poverty Level have significantly poorer health than Utahns with chronic and medical conditions who live above 100% of poverty.
- Only about one third of Utahns with below average mental health reported seeking professional counseling. Persons with poor mental health were less likely to seek professional help in older age groups.
- Utahns with below average physical or mental health have significantly more outpatient medical visits and were more likely to have been hospitalized in the last twelve months.



This association is stronger for older Utahns. This information will be valuable for predicting future health care system needs as the population continues to age.

- Characteristics of persons with below average physical or mental health, as a group, mirror those of Utah's overall population fairly closely. They are, however, more likely to be women, age 18-34, with less than a high school education, married, working full time, non-Hispanic, or earning \$20,000 to \$45,000 per year.



Interpreting the SF-12



Interpreting the SF-12



The results for this report are based on the responses of 7,520 respondents in the 2001 Utah Health Status Survey (HSS). The SF-12 is a multipurpose short form survey with 12 questions, all selected from the SF-36 Health Survey (Ware, Kosinski, and Keller, 1996). The questions were combined, scored, and weighted to create two scales that provide glimpses into mental and physical functioning and overall health-related-quality of life.

The SF-12 is a generic measure and does not target a specific age or disease group. It has been developed to provide a shorter, yet valid alternative to the SF-36, which has been seen by many health researchers as too long to administer to studies with large samples. The SF-12 is weighted and summed to provide easily interpretable scales for physical and mental health.

Physical and Mental Health Composite Scores (PCS & MCS) are computed using the scores of twelve questions and range from 0 to 100, where a zero score indicates the lowest level of health measured by the scales and 100 indicates the highest level of health. The data obtained with the SF-12 has been developed, tested and validated by Quality Metric Incorporated. The 2001 HSS uses the second version of the SF-12, rather than the first version, which was used for the 1996 Health Status Survey. There are minor differences in terms of wording and scoring between the two versions; however, they are summed and weighted to be comparable with each other.

The Physical and Mental Health Composite Scale scores (PCS & MCS) derived from the SF-12 have little intuitive meaning. This is because the range of possible scores varies considerably. PCS and MCS scores tend to vary over the life span for different age groups as well [PCS tends to decrease with age, while MCS tends to increase]. It would not make sense to say that a PCS score of 45.3 means the same thing for a person who is 25 years old compared to a person who is 65 years old. It is because of this inherent variation SF-12 scores have over the lifespan that it is useful to introduce the idea of age-specific mean difference scores.

The age-specific mean difference score (difference score) is the amount by which a person's score differs from their age group's mean score. In other words, an individual with a difference score of -5.5 has scored 5.5 points lower than the mean score for their age group, indicating somewhat poorer health. By looking at difference scores, it is clear whether a person is more or less healthy than other persons in his or her comparison group. For individual scores, those that score higher than the mean indicate a person has better health status than most others their age. Conversely, scores that are lower than the mean indicate a person has poorer health than most others their age. A key advantage of age-specific mean difference scores is that a difference score of -5.5 means the same thing in terms of relative health for a person regardless of age. Another advantage of using difference scores is the ability to compare the association that different sociodemographic and disease/lifestyle factors have with physical and mental health. This report will use age-specific difference scores extensively because they are easier to interpret than the PCS and MCS scores.

Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12



The Utah Health Status Survey 2001 used an updated version (Version 2) of the SF-12 to measure health status. Version 2 of the SF-12 differs from Version 1 in several ways. Changes in the administration of the SF-12 are based on more than 10 years of experience with findings reported in thousands of publications based on the SF-36 and SF-12 (Version 1) Health Surveys (Ware et al., 2002). A brief description of similarities and differences between the two versions is included below:

- Both versions use the same basic 12 questions to measure physical and mental health status. However, changes were made to question wording, instructions and formatting for the second version;
- These changes in the layout and response category options for the second version are meant to make it easier to read and complete the questions, thereby reducing missing responses;
- The second version is designed to provide greater comparability with translations and cultural adaptations that are widely-used in the U.S. and other countries;
- Four items in the second version were changed from dichotomous to five-level response categories;
- Six-level response categories were changed to five-level response categories to simplify items in the Mental Health and Vitality scales.

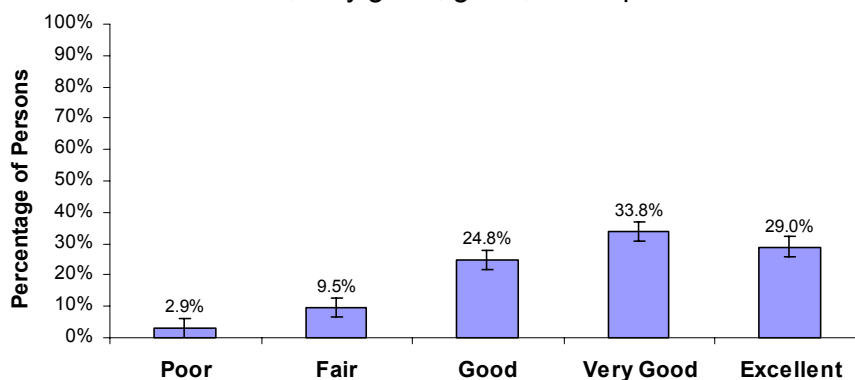
Frequency distribution bar charts from the 2001 HSS for the second version of the SF-12 are provided below. Question wording and response categories for the first version of the SF-12 are also provided for comparison.

General Health Subdomain

Version 1: In general, would you say your health is excellent, very good, good, fair, or poor?

- 1) Excellent
- 2) Very good
- 3) Good
- 4) Fair
- 5) Poor

Version 2: In general, would you say your health is excellent, very good, good, fair or poor?



Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12

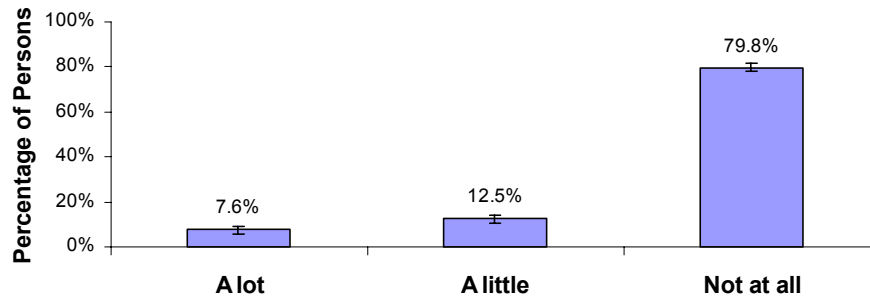


Physical Functioning Subdomain

Version 1: How does your health now limit you in moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf? Would you say you are limited a lot, a little or not at all?

- 1) Yes, limited a lot
- 2) Yes, limited a little,
- 3) No, not limited at all.

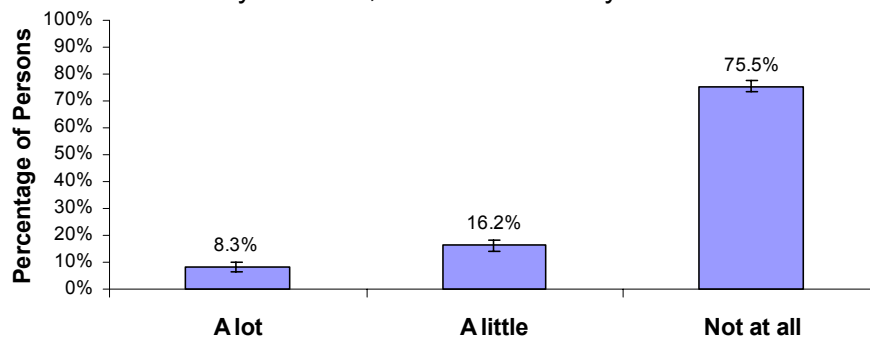
Version 2: Are you now limited in moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf? Does your health now limit you a lot, limit you a little or not limit you at all?



Version 1: How about climbing several flights of stairs? Would you say your health limits you a lot, a little, or not at all?

- 1) Yes, limited a lot
- 2) Yes, limited a little,
- 3) No, not limited at all.

Version 2: How about climbing several flights of stairs? Would you say your health now limits you a lot, limits you a little, or does not limit you at all?



Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12

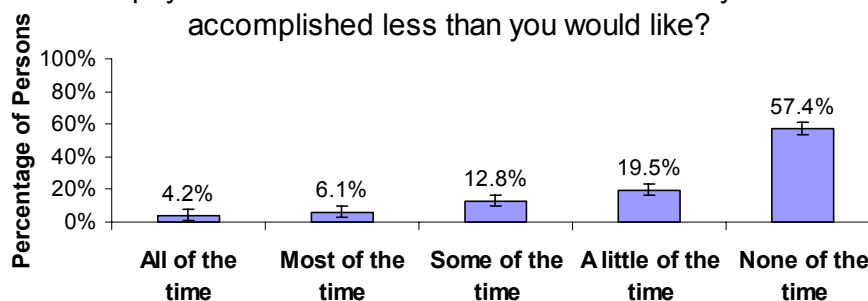


Role Functioning (Physical) Subdomain

Version 1: Thinking about the past four weeks, have you accomplished less than you would like as a result of your physical health?

- 1) Yes
- 2) No

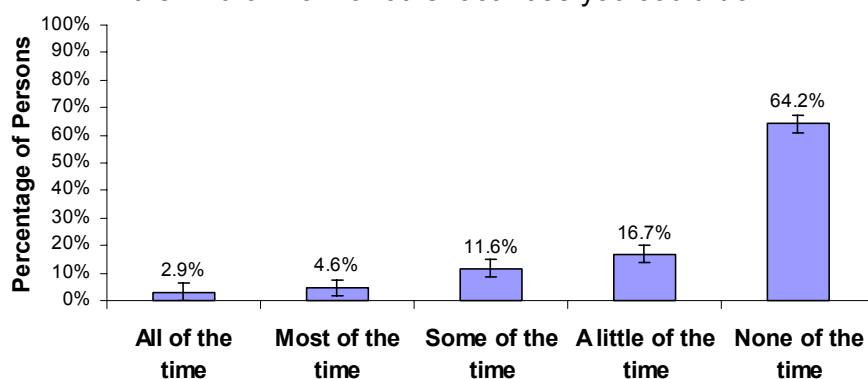
Version 2: During the past 4 weeks, how much of the time have you had any of the following problems with your work or regular daily activities as a result of your physical health? How much of the time have you accomplished less than you would like?



Version 1: During the past four weeks, were you limited in the kind of work or other activities you could do as a result of your physical health?

- 1) Yes
- 2) No

Version 2: How much of the time were you limited in the kind of work or other activities you could do?



Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12

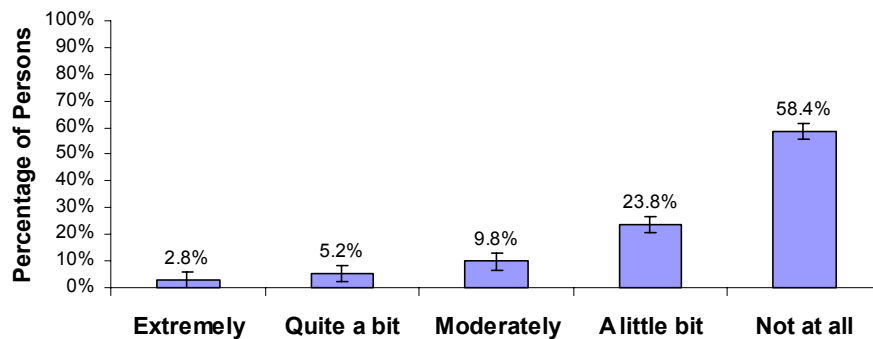


Bodily Pain Subdomain

Version 1: During the past four weeks, how much did pain interfere with your normal work including both work outside the home and housework?

- 1) Extremely
- 2) Quite a bit
- 3) Moderately
- 4) A little bit
- 5) Not at all

Version 2: During the past four weeks, how much did pain interfere with your normal work including both outside the home and housework, would you say...?



Vitality Subdomain

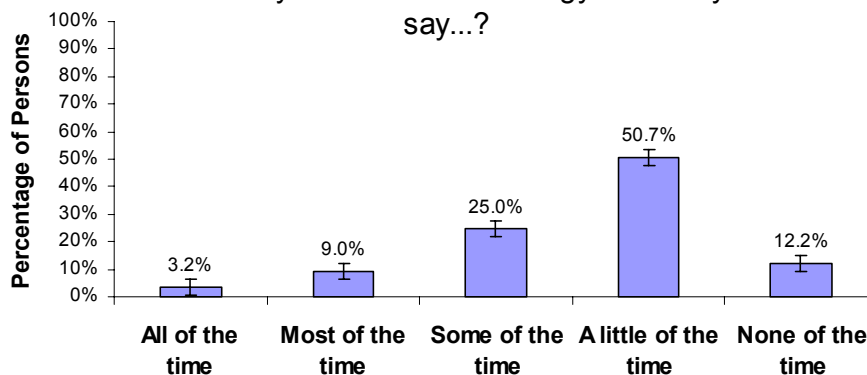
Version 1: How much of the time during the past four weeks did you have a lot of energy? Would you say (read responses)?

- 1) None of the time
- 2) A little of the time
- 3) Some of the time
- 4) Good bit of the time
- 5) Most of the time
- 6) All of the time

Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12



Version 2: How much of the time during the past four weeks did you have a lot of energy? Would you say...?

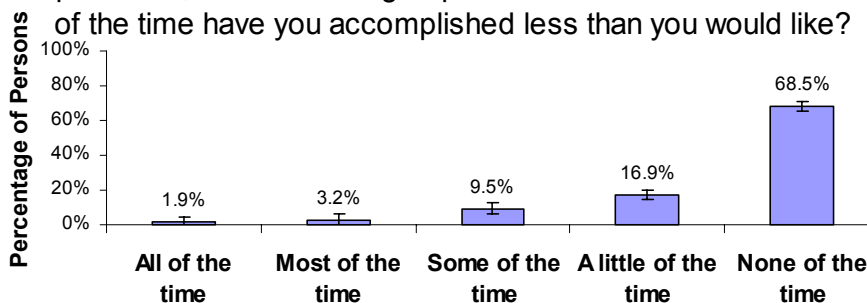


Role Functioning (Emotional) Subdomain

Version 1: In the past four weeks, did you accomplish less than you would like as a result of an emotional problem, such as feeling depressed or anxious?

- 1) Yes
- 2) No

Version 2: During the past four weeks, how much of the time have you had any of the following problems with your work or other daily activities as a result of any emotional problems, such as feeling depressed or anxious. How much of the time have you accomplished less than you would like?



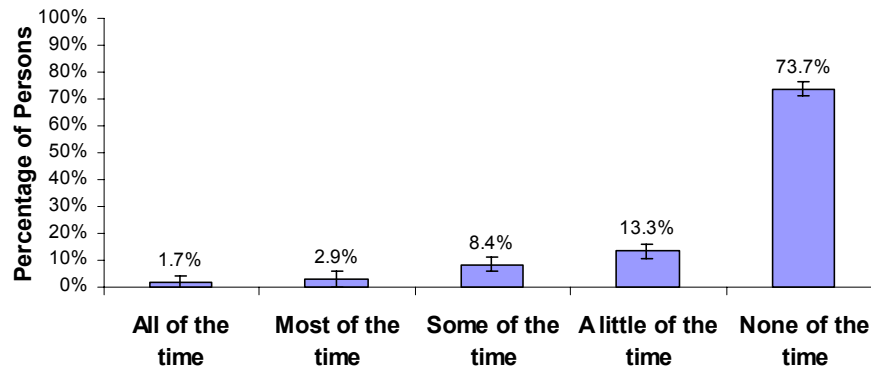
Version 1: During the last four weeks, did you have trouble doing work or other activities as carefully as usual as a result of an emotional problem, such as feeling depressed or anxious?

- 1) Yes
- 2) No

Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12



Version 2: How much of the time did you have trouble doing work or other activities as carefully as usual?

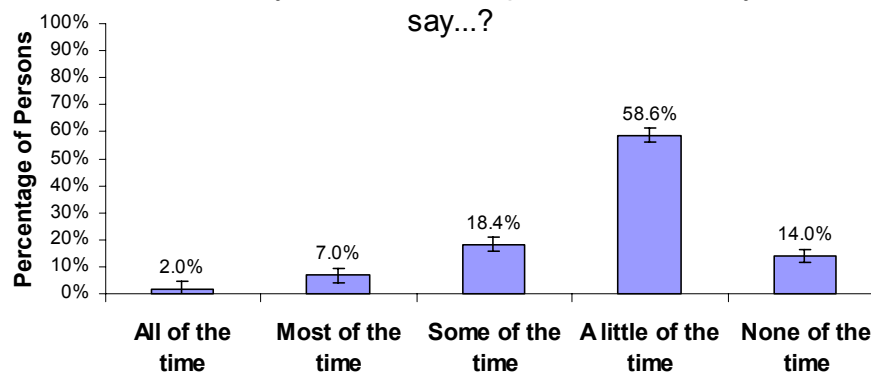


Mental Health Subdomain

Version 1: How much of the time during the past four weeks have you felt calm and peaceful? Would you say (read responses)?

- 1) None of the time
- 2) A little of the time
- 3) Some of the time
- 4) Good bit of the time
- 5) Most of the time
- 6) All of the time

Version 2: How much of the time during the past four weeks have you felt calm and peaceful? Would you say...?



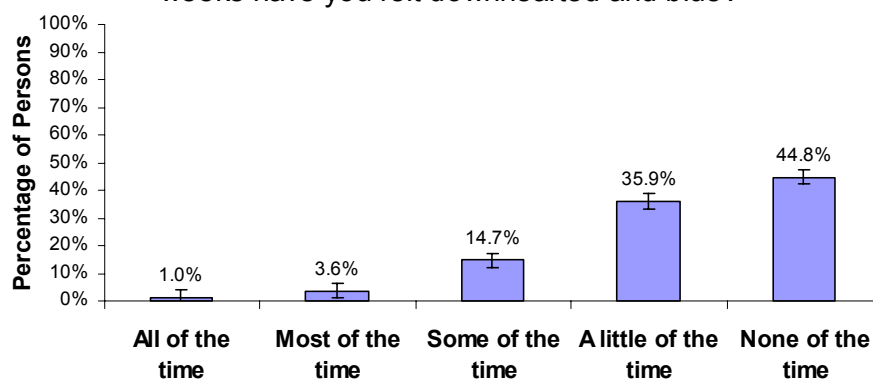
Interpreting the SF-12: Comparing Versions 1 and 2 of the SF-12



Version 1: How much of the time during the past four weeks have you felt downhearted and blue? (If necessary, read responses)

- 1) All of the time
- 2) Most of the time
- 3) Good bit of the time
- 4) Some of the time
- 5) A little of the time
- 6) None of the time

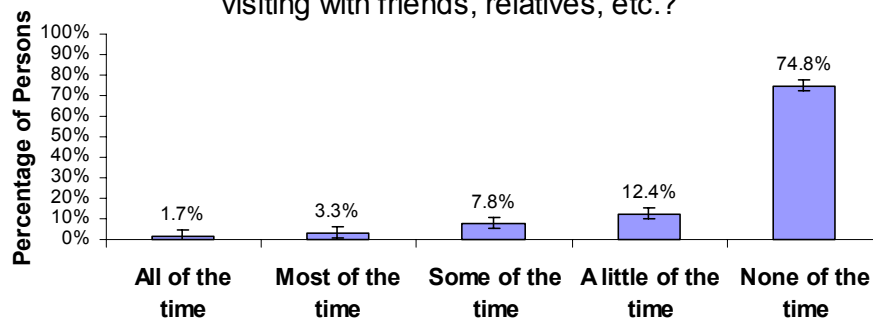
Version 2: How much of the time during the past four weeks have you felt downhearted and blue?



Social Functioning Subdomain

Version 1: During the last four weeks, how much of the time has your physical health or emotional problems interfered with your social activities, like visiting with friends, relatives etc.?
(If necessary, read responses)

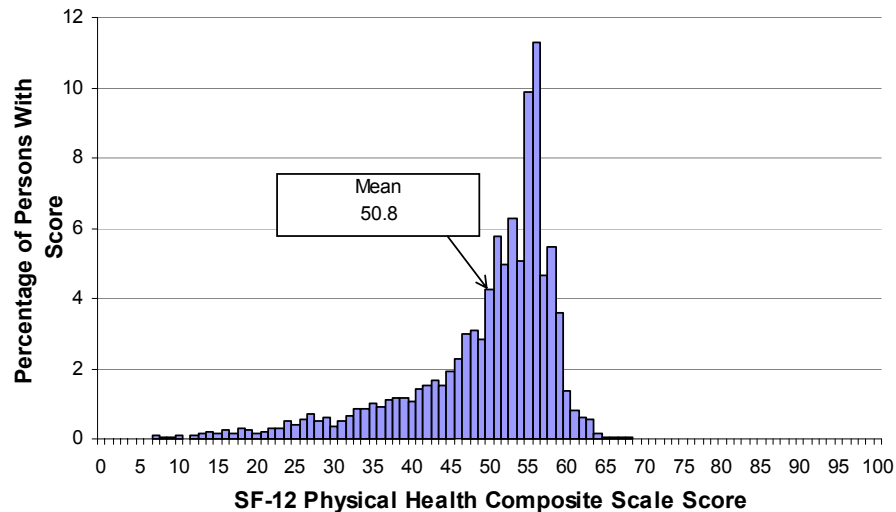
Version 2: During the last four weeks, how much of the time has your physical health or emotional problems interfered with your social activities, like visiting with friends, relatives, etc.?



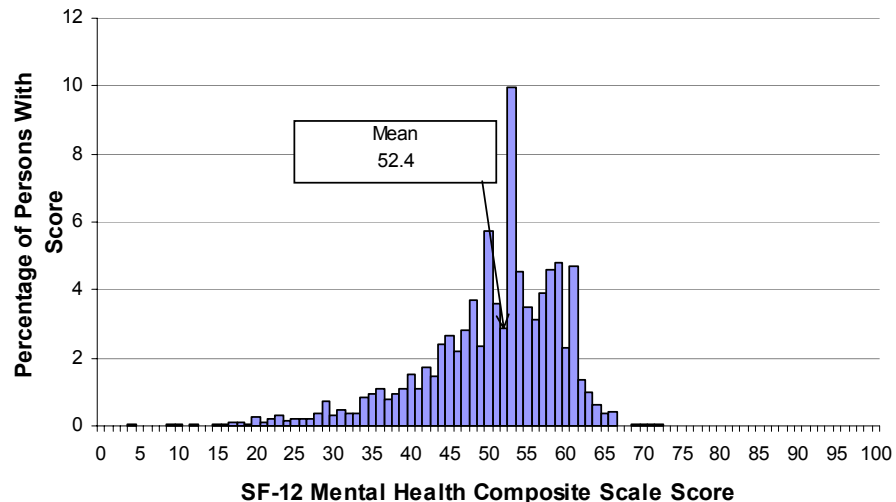
Interpreting the SF-12: Composite Scales



Medical Outcomes Study SF-12 Physical Health
Composite Scale Scores: Utahns Age 18 or Over, 2001



Medical Outcomes Study SF-12 Mental Health
Composite Scale Scores: Utahns Age 18 or Over, 2001

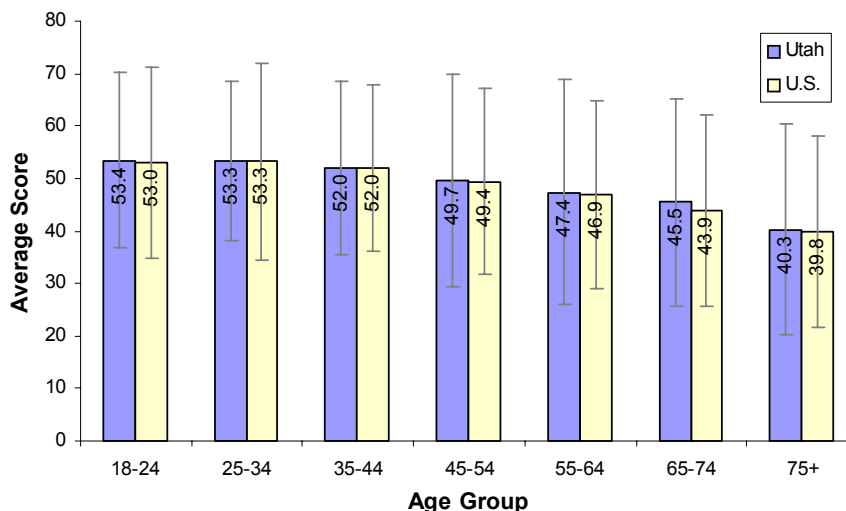


- Physical and Mental Health Composite Scores (PCS & MCS) are computed using the scores of twelve questions and range from 0 to 100, where a zero score indicates the lowest level of health measured by the scales and 100 indicates the highest level of health. The histograms above illustrate the distribution of composite scale scores.
- Both Physical and Mental Health Composite Scales combine the 12 items in such a way that they compare to a national norm with a mean score of 50.0 and a standard deviation of 10.0.
- In Utah, the mean (average) scores are 50.8 for the PCS, and 52.4 for the MCS.

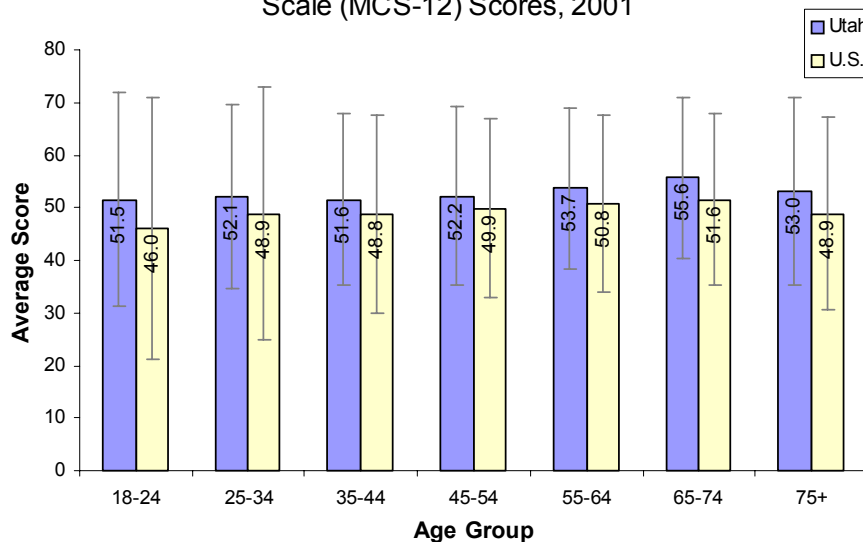
Interpreting the SF-12: Composite Scales



Comparison of Utah and U.S. Physical Health Composite Scale (PCS-12) Scores, 2001



Comparison of Utah and U.S. Mental Health Composite Scale (MCS-12) Scores, 2001

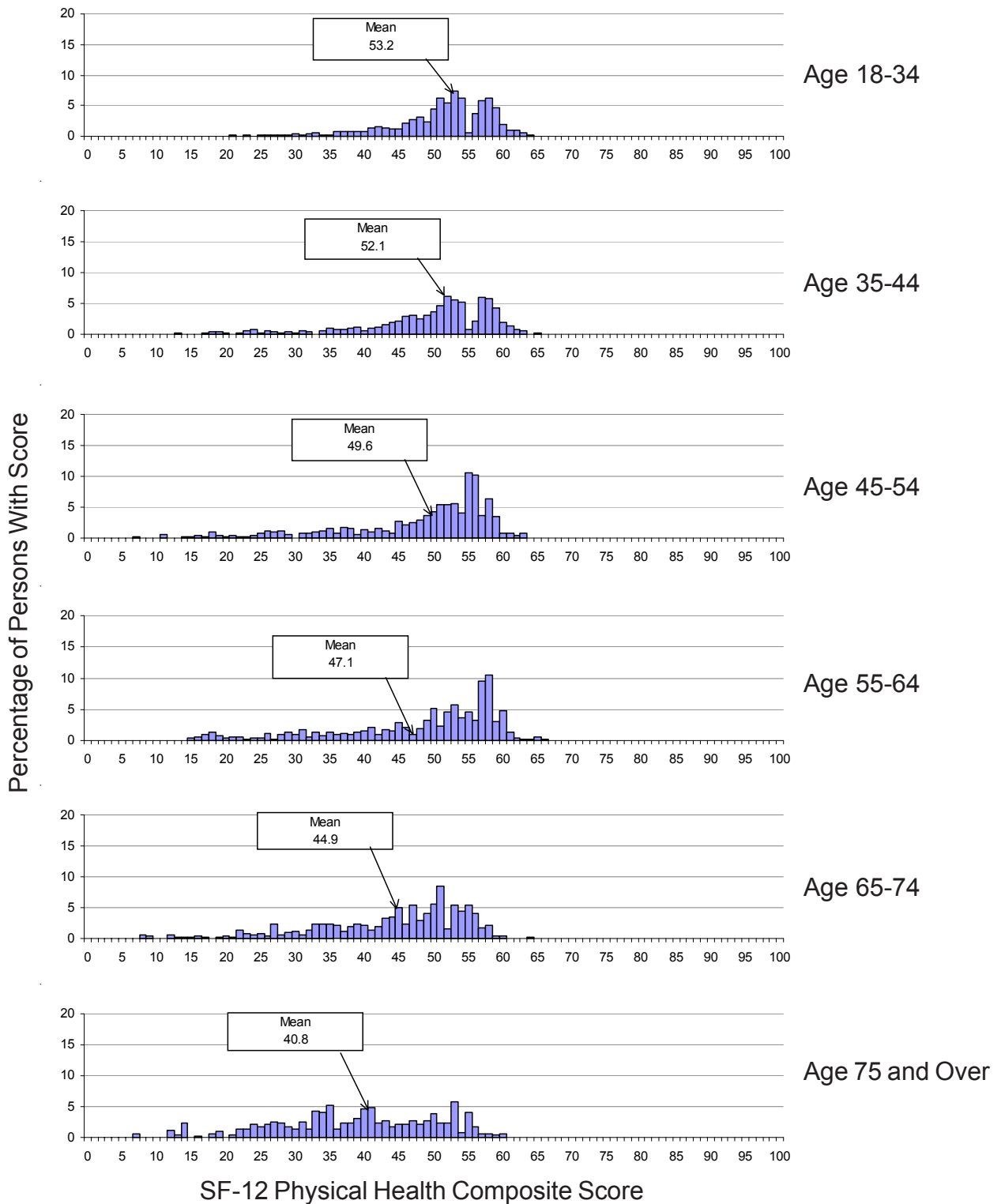


- With age, persons tend to score lower on the physical health scale (PCS) but higher on the mental health scale (MCS). Because there are systematic age differences, it is important to interpret a person's score in the context of other persons near their age.
- Utahns of all age groups scored higher than the U.S. norm on the mental health scale (MCS).

Interpreting the SF-12: Composite Scales



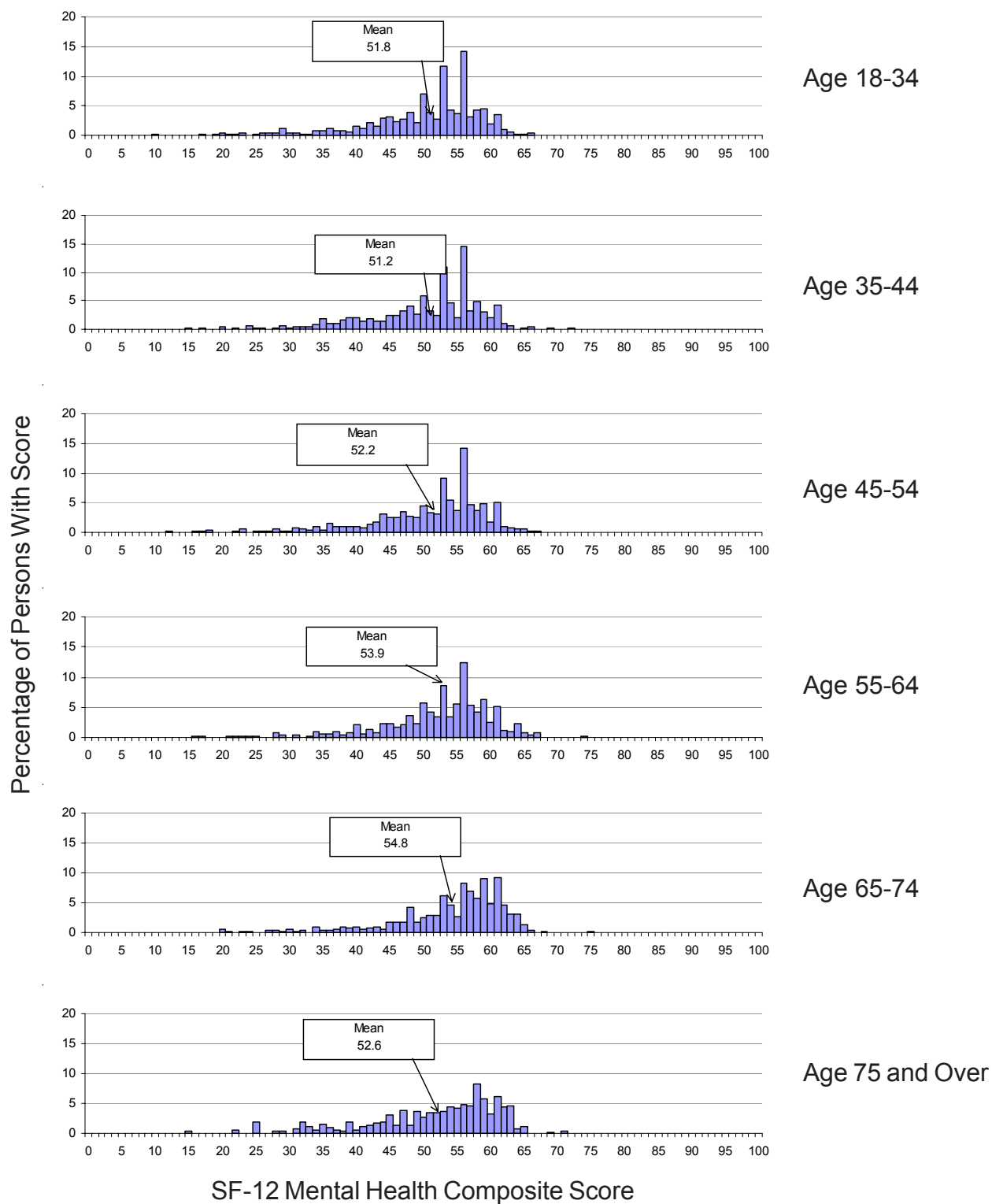
Medical Outcomes Study SF-12 Physical Health Composite Scale Scores by Age Group, Utahns Age 18 or Over, 2001



Interpreting the SF-12: Composite Scales



Medical Outcomes Study SF-12 Mental Health Composite Scale Scores by Age Group, Utahns Age 18 or Over, 2001

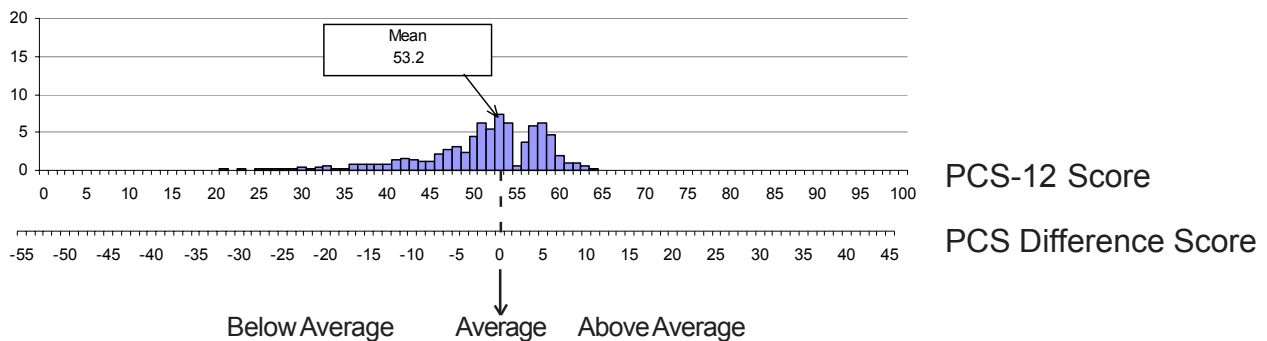




Computing Difference Scores

- Difference scores can be used to help interpret the meaning of scale values. The difference score is the difference between a person's score and the mean or average score for his or her age group.
- A positive score means the person is healthier than average. A negative score means a person is less healthy than average.

Age 18-34



Establishing Cut-off Points for Exceptionally Good and Poor Health

In addition to knowing whether a person's score is above or below average, it is also helpful to know whether a person's score is significantly above or below average. If a person's physical health difference score is negative but close to zero, he or she should probably be considered in 'average' health. However, if a person's physical health difference score is hovering around negative 20, he or she should probably be considered 'below average,' or in poor health. This section will discuss the methods used to derive cut-off points for defining where average health ends and below or above average health begins.

Statistical Methods for Establishing Cut-off Points

This report used simple statistical methods to establish cut-off points for average and below average health. These methods rely on measures of variability (such as standard deviation and standard error) and use confidence intervals to define the average level of health. If the confidence interval for a person or group's score includes the zero point (average score), then the score does not differ from the average. However, if the confidence interval does not include the zero point, then the score is different from the average (either above or below average).

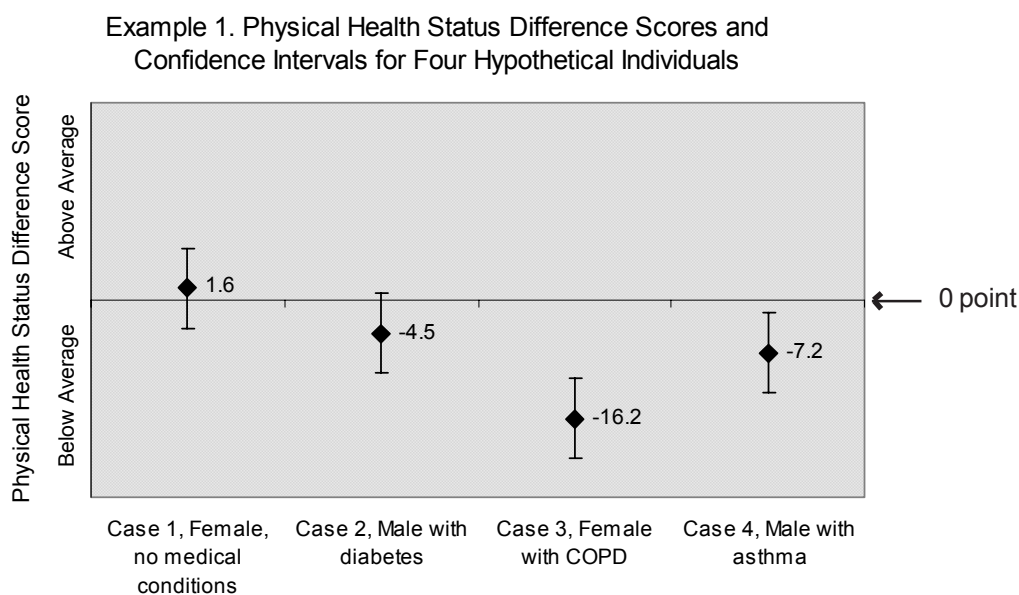
Cut-off Points for Individual Scores. The cut-off for an individual's score is based on a property of the SF-12 scale called the standard error of measurement. Over multiple administrations of the survey, some degree of variation in a person's PCS or MCS would be expected and would not necessarily reflect a change in the individual's health status. The 95% confidence interval is calculated as 1.96 times the standard error of measurement. The calculated 95% confidence interval for the Physical Composite Scale (and PCS Difference Score) is ± 6.97 ; and for the Mental Composite Scale (and MCS Difference Score) is ± 6.24 . In other words, an

Interpreting the SF-12: Assigning Meaning to the PCS and MCS Summary Scores



individual's PCS score plus or minus 6.97 gives the range in which the person's score is likely to fall 95% of the time, providing no major changes in health status occur. If this range of values (for the PCS) includes the zero point, then that person's health is considered to be average for his or her age group.

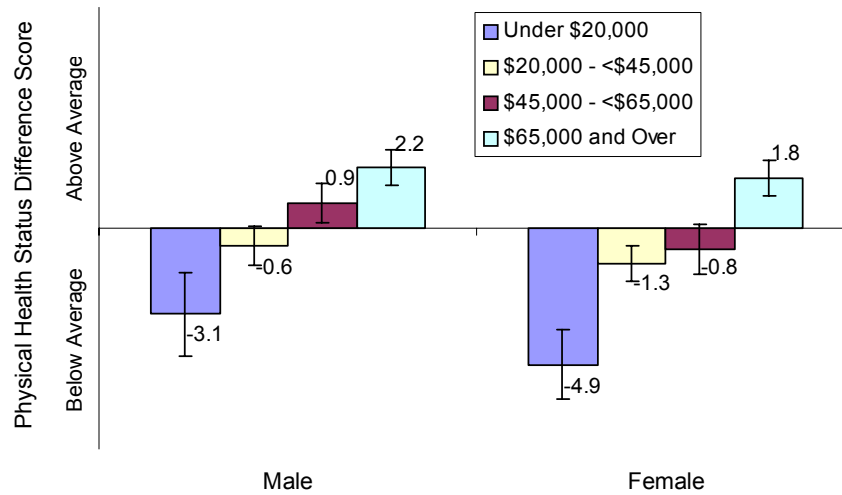
To demonstrate further, if we apply this approach to an individual's PCS difference score, then the 95% confidence interval for a score that is below -6.97 will not include zero and will be considered 'below average' by this criterion. In order to further illustrate, it is useful to consider several hypothetical cases (see Example 1). Case 1 is a female with no chronic medical problems and a PCS difference score of $+1.6$, Case 2 is a male has been diagnosed with diabetes and has a PCS difference score of -4.51 , Case 3 is a female with chronic obstructive pulmonary disease and a PCS difference score of -16.2 , and Case 4 is a male with asthma and a PCS difference score of -7.23 . Cases 1 and 2 are not significantly different from the average score (the confidence intervals around their scores include the zero point). Cases 3 and 4, however, are significantly below the average (they do not include the zero point).



Cut-off Points for Group Means. The mean or average score has a measure of deviation, the standard error that is based on the amount of dispersion or spread the group's scores around the mean score and the number of persons in that group. Example 2 (below) shows group means and standard errors that have been plotted for males and females by income category. Both males and females living in household with less than \$20,000 annual income scored significantly below the average (the confidence interval does not include zero), while those in the middle two income ranges scored in the average range, and males and females with \$65,000 or more annual income had PCS difference scores that were significantly above the average.



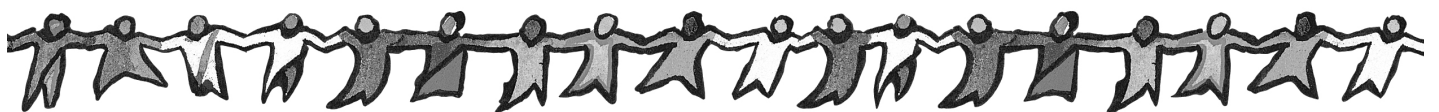
Example 2. Physical Health Status Difference Scores and Confidence Intervals for Income by Sex Means





The Health Status of Populations in Utah

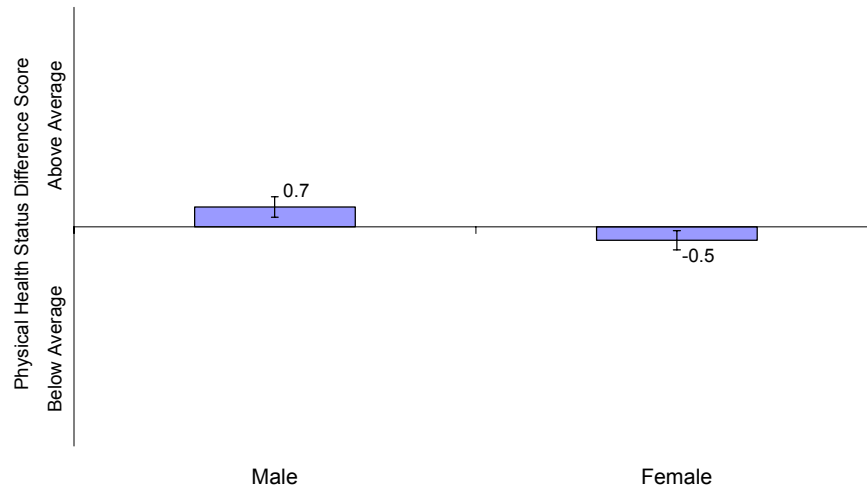
This section uses age-specific difference scores for the Physical and Mental Health Composite Scales (PCS and MCS), and averages them across groups of persons with various demographic characteristics. For each group mean, a confidence interval is computed and presented in the figures. If the confidence interval for a group's mean difference score does not include zero (the age specific score) that group can be considered statistically significantly above or below average.



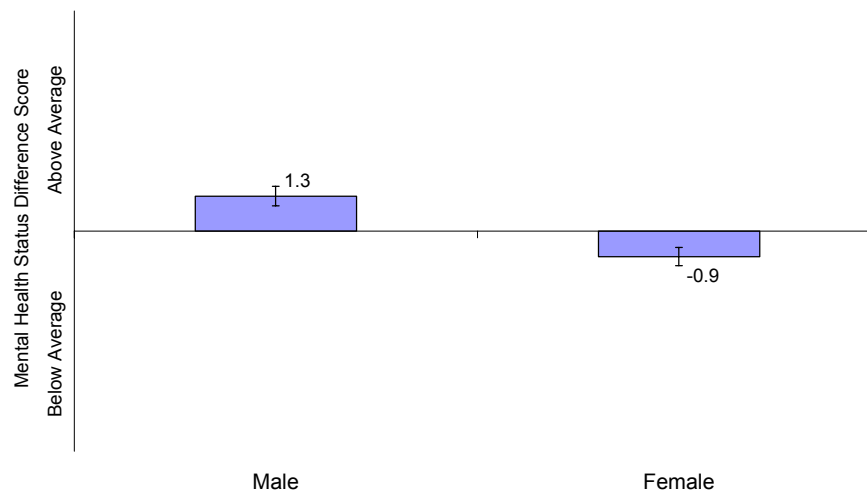
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Sex, Adults
Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Sex, Adults Age
18 or Over, Utah, 2001

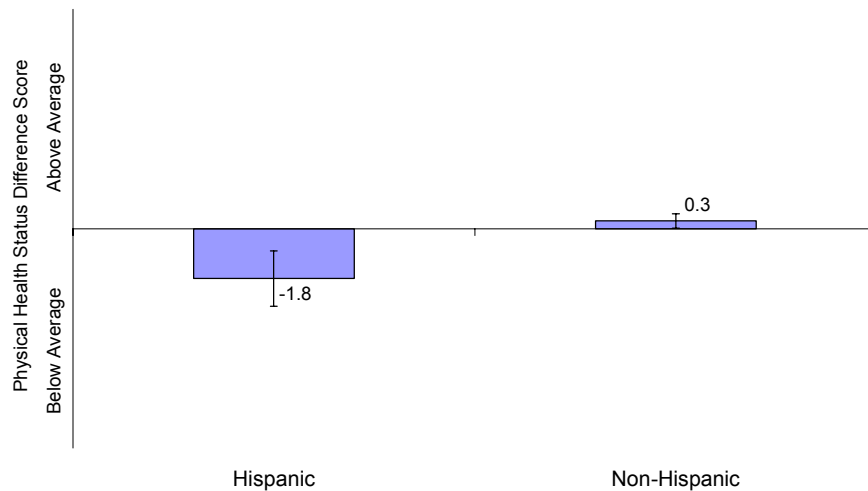


- Males scored significantly higher on both the PCS and MCS. This finding is consistent with other studies (BRFSS, 1996 HSS) and suggests that women's experience of physical health is poorer than men's. It could also be due to the fact that men are less likely to report or acknowledge poor physical and mental health status.

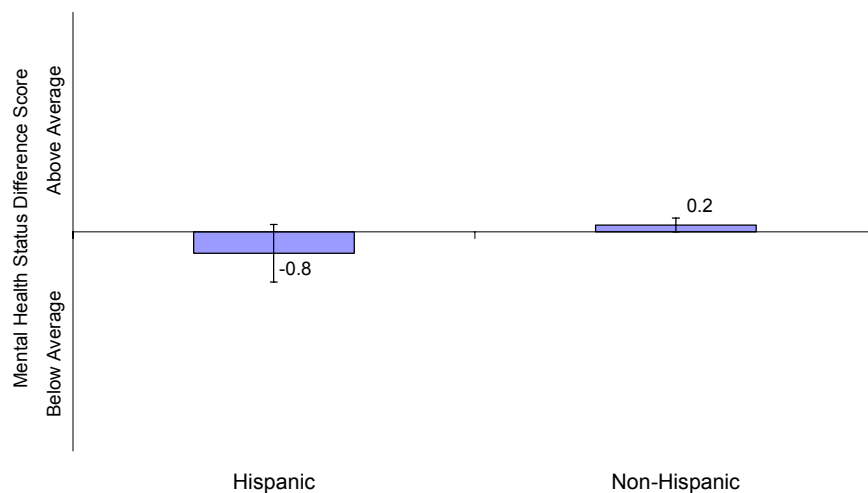
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Hispanic Status, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Hispanic Status, Adults Age 18 or Over, Utah, 2001

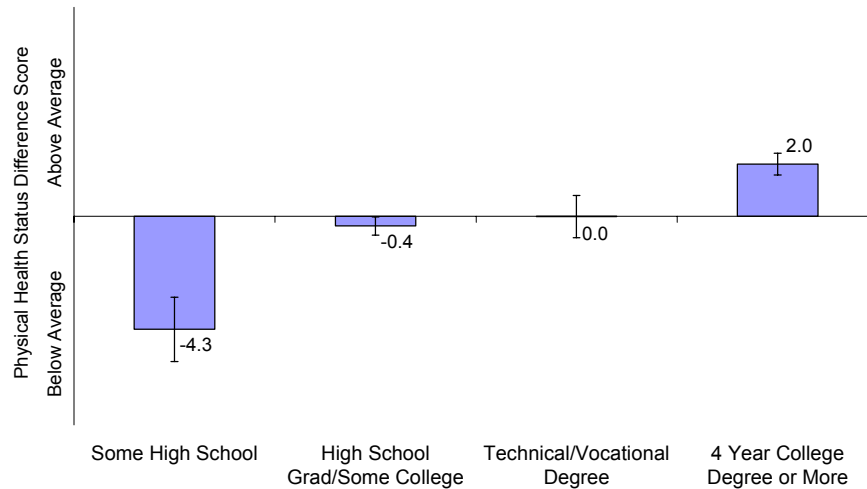


- Hispanic persons scored lower on the physical and mental health scales than non-Hispanic persons. This difference in health status was statistically significant for the physical health measure.

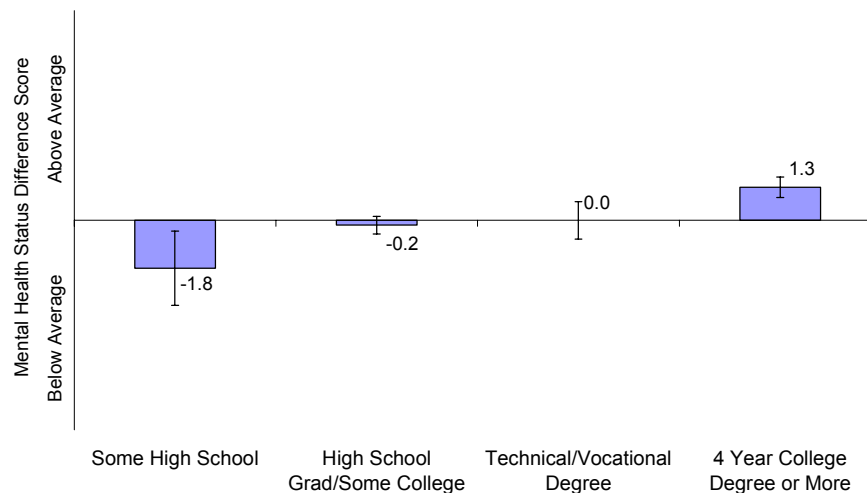
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Education,
Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Education,
Adults Age 18 or Over, Utah, 2001

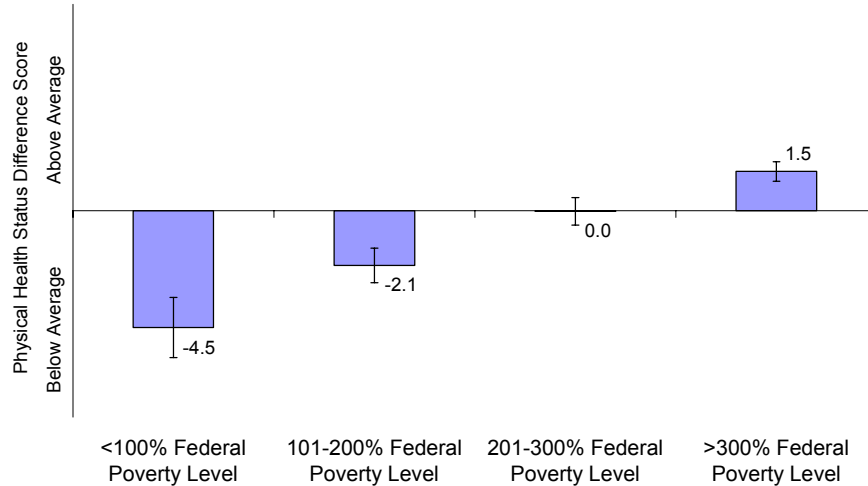


- Education level had a positive association with physical and mental health. Persons with four years of college or more had better physical and mental health. Conversely, persons who did not finish high school had significantly worse health than others.
- This association could have something to do with the increased earning potential that comes with education, however, it could also be because less healthy persons and persons with mental health issues are less likely to pursue higher levels of education.

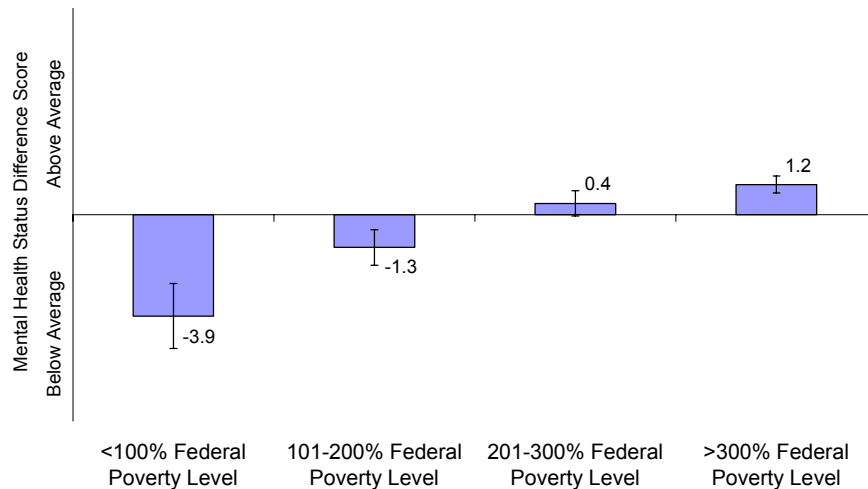
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Poverty Level,
Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Poverty Level,
Adults Age 18 or Over, Utah, 2001

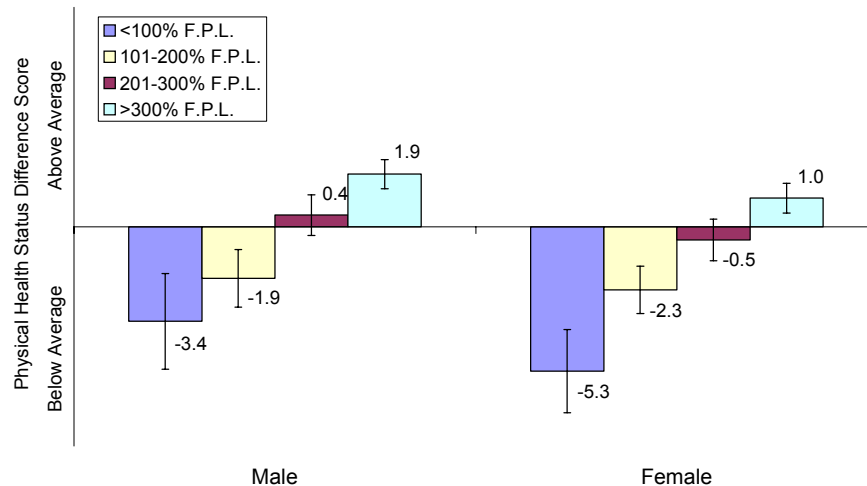


- Poverty level had a strong positive association with health status. Persons in households with incomes less than 100% of the Federal Poverty Level scored lower than others on both the physical and mental health scales. These differences were statistically significant.
- Those who lived over 300% of poverty scored higher on the physical and mental health scales. This was also statistically significant.

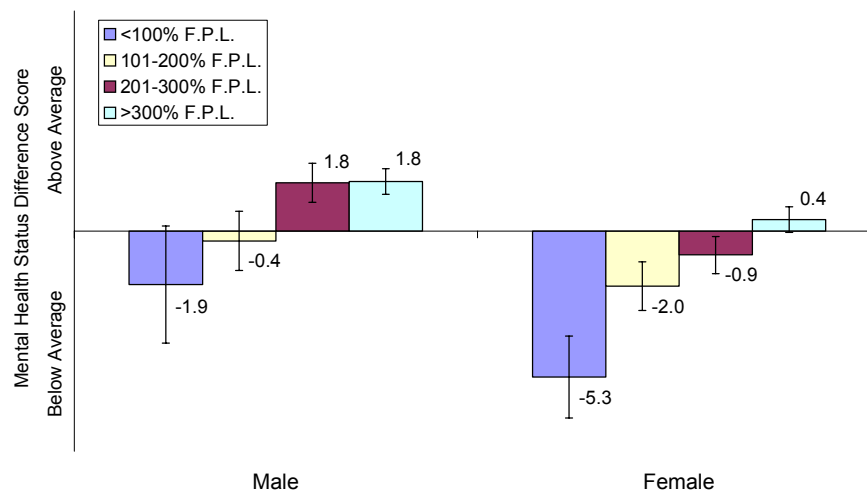
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Sex and Poverty Level, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Sex and Poverty Level, Adults Age 18 or Over, Utah, 2001

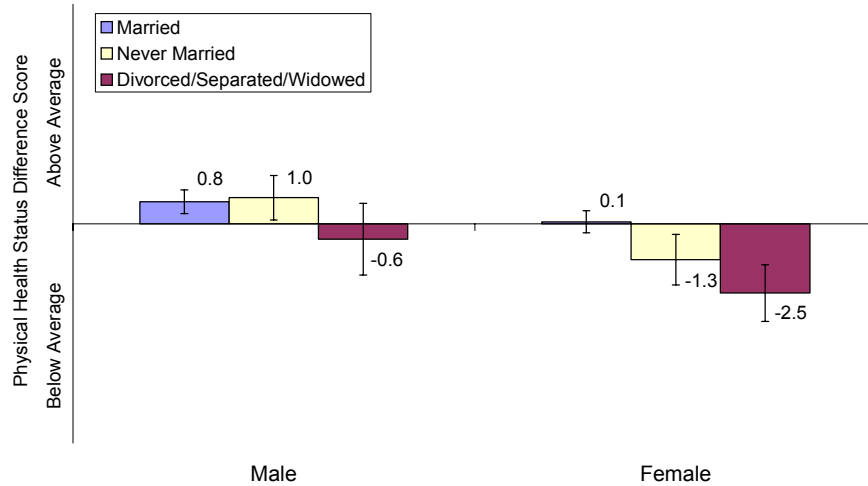


- There were large differences in the PCS and MCS scores for men and women across different poverty thresholds.
- Women scored lower than men regardless of poverty level for the mental and physical health scales.
- Females living below 100% of poverty scored the lowest on both the physical and mental health scales.

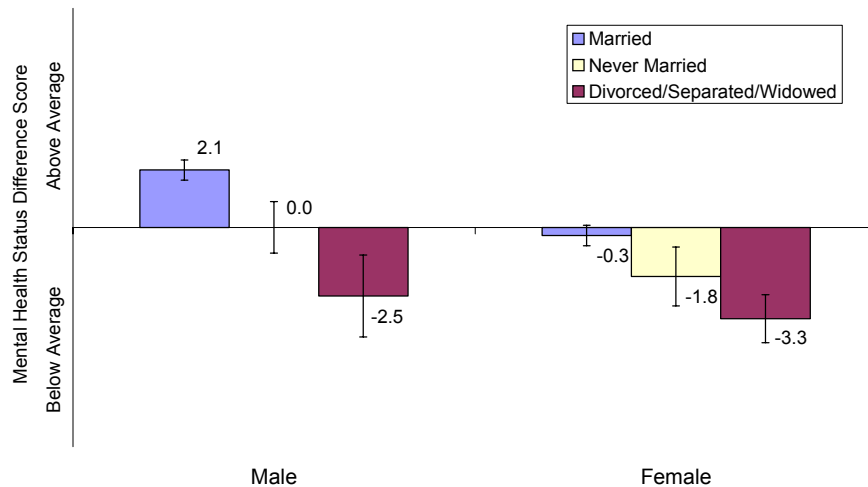
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Sex and Marital Status, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Sex and Marital Status, Adults Age 18 or Over, Utah, 2001

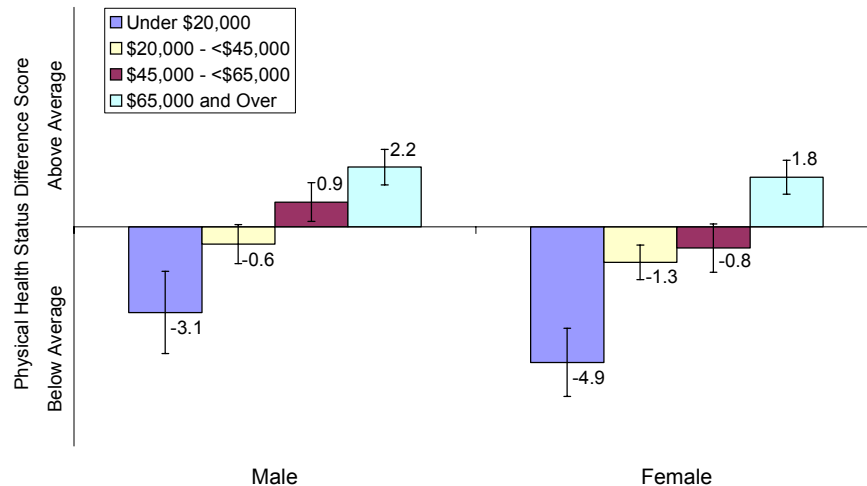


- Marital status was associated with physical and mental health outcomes for both men and women.
- Regardless of sex, those who were divorced/separated/widowed scored lower than those who were either married or never married on both the PCS and MCS.
- Women who were divorced/separated/widowed had the poorest mental health.

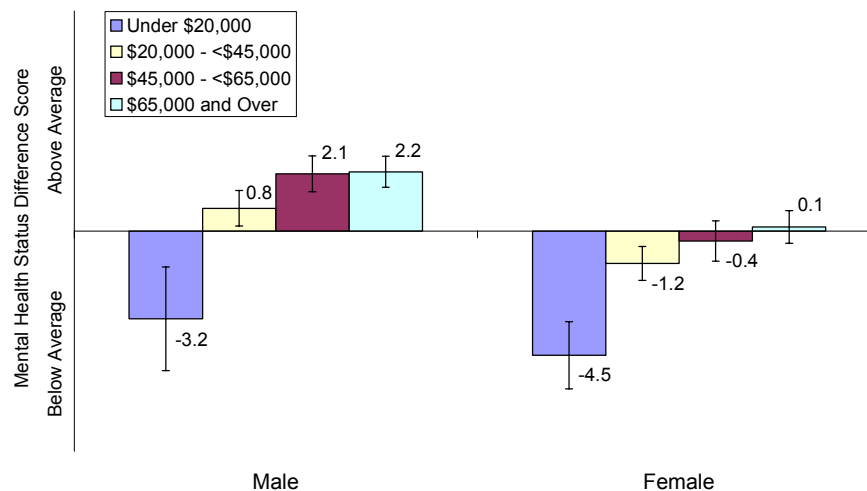
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Sex and Income, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Sex and Income, Adults Age 18 or Over, Utah, 2001

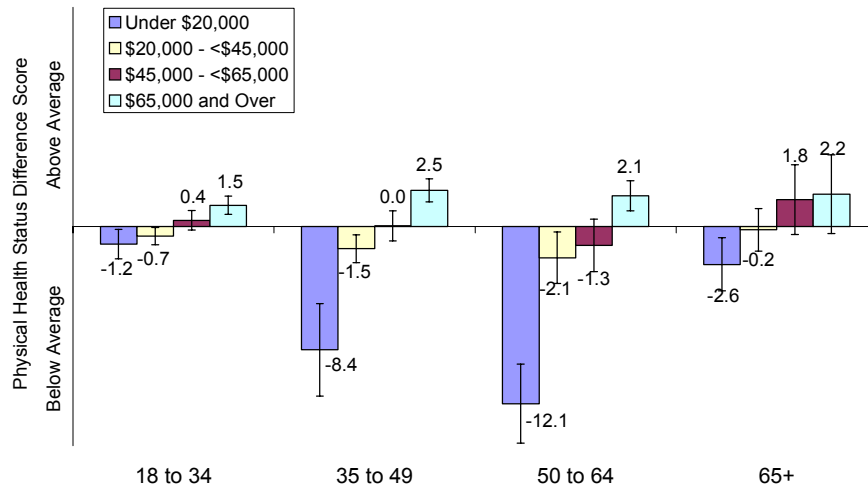


- The association between health status and income level was similar to the association between health status and poverty level. As income level increased, physical and mental health status also increased regardless of sex.
- However, males at higher income levels scored higher on the physical and mental health scales than females at the same income level.
- It is likely that income influences health and health also influences income level. Researchers also hypothesize that other factors, such as sense of control over one's destiny, exert a strong influence on both health and educational attainment.

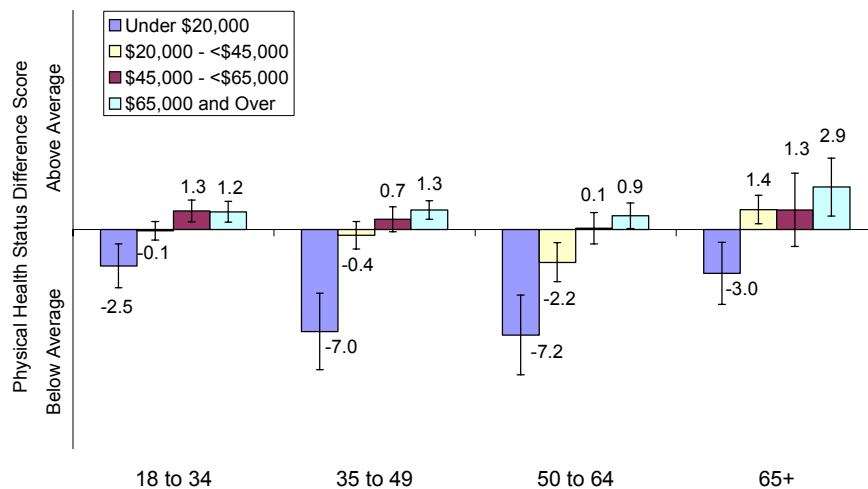
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Age and Income, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Age and Income, Adults Age 18 or Over, Utah, 2001

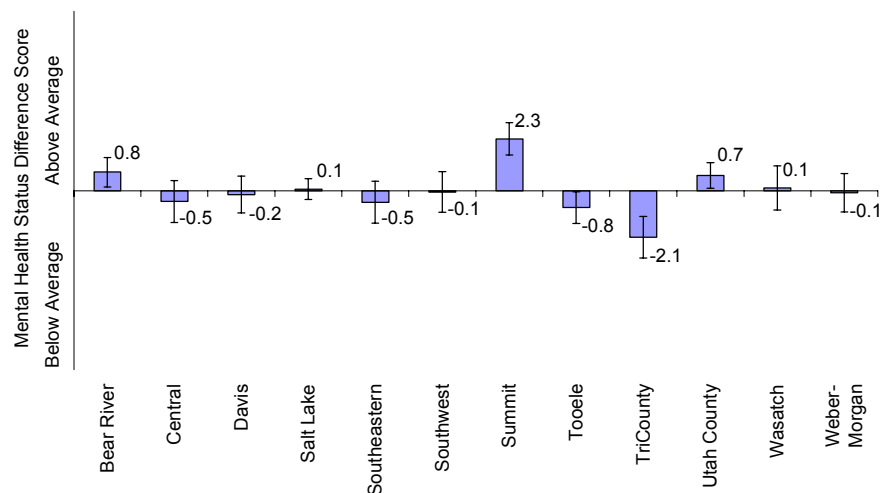


- A similar pattern for health outcomes by income category was found for persons in all age groups.
- Persons 65 years and over in the highest income category scored higher on the mental health scale than any other age/income category.
- The greatest differences for physical health were found among those aged 50 to 64 with annual household incomes less than \$20,000. This is a time when chronic diseases may begin to manifest themselves, but those with lower incomes are not yet eligible for Medicare.

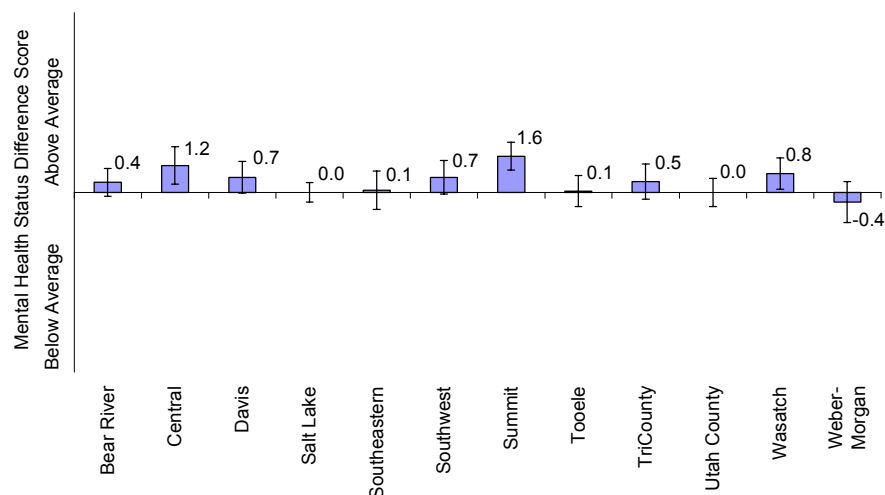
The Health Status of Populations in Utah



Physical Health Status Difference Scores by Local Health District, Adults Age 18 or Over, Utah, 2001



Mental Health Status Difference Scores by Local Health District, Adults Age 18 or Over, Utah, 2001



- There were small differences in health outcomes across the 12 local health districts in Utah.
- Bear River, Summit, and Utah County scored above average on the physical health scale, compared to Tooele and TriCounty which scored below average on the PCS.
- Central, Davis, Summit, and Wasatch health districts scored above average on the mental health scale.
- Summit County scored the highest on both the MCS and PCS for all local health districts.



Table 1. The Physical and Mental Health Status of Populations in Utah, Physical and Mental Health Status Summary Means and Difference Scores

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)			Mental Composite Scale (MCS)		
	Mean Scale Score	Difference Score		Mean Scale Score	Difference Score	
Overall	50.8	*** ₁	± *** ¹	52.4	*** ₁	± *** ¹
Sex						
Male	51.5	+0.72	± 0.37	53.5	+1.27	± 0.36
Female	50.1	-0.49	± 0.35	51.3	-0.93	± 0.33
Age Group						
18 to 34	53.4	*** ₁	± *** ¹	51.8	*** ₁	± *** ¹
35 to 49	51.7	*** ₁	± *** ¹	51.9	*** ₁	± *** ¹
50 to 64	47.9	*** ₁	± *** ¹	52.8	*** ₁	± *** ¹
65+	43.6	*** ₁	± *** ¹	54.7	*** ₁	± *** ¹
Sex and Age						
Males, 18 to 34	54.1	*** ₁	± *** ¹	53.2	*** ₁	± *** ¹
Males, 35 to 49	52.0	*** ₁	± *** ¹	52.7	*** ₁	± *** ¹
Males, 50 to 64	49.0	*** ₁	± *** ¹	53.6	*** ₁	± *** ¹
Males, 65+	44.2	*** ₁	± *** ¹	55.8	*** ₁	± *** ¹
Females, 18 to 34	52.7	*** ₁	± *** ¹	50.4	*** ₁	± *** ¹
Females, 35 to 49	51.4	*** ₁	± *** ¹	51.2	*** ₁	± *** ¹
Females, 50 to 64	46.8	*** ₁	± *** ¹	52.0	*** ₁	± *** ¹
Females, 65+	43.1	*** ₁	± *** ¹	53.7	*** ₁	± *** ¹
Education						
Some High School	46.8	-4.34	± 1.23	50.3	-1.83	± 1.42
High School Grad/Some College	50.3	-0.38	± 0.35	52.0	-0.18	± 0.34
Technical/Vocational Degree	51.1	-0.02	± 0.81	52.1	+0.04	± 0.72
4 Year College Degree or More	52.4	+1.99	± 0.42	53.5	+1.26	± 0.39
Annual Household Income						
Under \$20,000	46.0	-4.20	± 0.96	48.4	-3.97	± 1.05
\$20,000 to <\$45,000	49.9	-0.98	± 0.47	52.0	-0.22	± 0.45
\$45,000 to <\$65,000	51.4	+0.08	± 0.56	52.9	+0.88	± 0.50
\$65,000 and Over	52.9	+2.01	± 0.45	53.4	+1.26	± 0.41
Marital Status						
Married	50.9	+0.43	± 0.30	53.1	+0.88	± 0.27
Never Married	52.9	+0.06	± 0.62	51.1	-0.73	± 0.72
Divorced/Separated/Widowed	46.9	-1.82	± 0.82	49.5	-3.03	± 0.78
Employment Status						
Full Time	52.3	+0.88	± 0.31	52.8	+0.82	± 0.31
Part Time	52.3	+0.60	± 0.61	51.7	-0.35	± 0.66
Retired	43.5	-0.70	± 0.91	54.1	+0.33	± 0.71
Keeping House	51.7	+0.34	± 0.73	51.7	-0.38	± 0.70
Student	55.0	+2.02	± 1.13	52.9	+1.15	± 1.55
Unemployed/Other	40.0	-10.70	± 1.80	45.7	-6.64	± 1.78

The Health Status of Populations in Utah



Table 1 (continued). The Physical and Mental Health Status of Populations in Utah, Physical and Mental Health Status Summary Means and Difference Scores by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Local Health District				
Bear River	51.6	+0.83 ± 0.66	52.6	+0.45 ± 0.62
Central	49.5	-0.48 ± 0.94	53.6	+1.20 ± 0.83
Davis	50.6	-0.18 ± 0.81	52.9	+0.67 ± 0.71
Salt Lake	50.8	+0.06 ± 0.46	52.1	-0.04 ± 0.44
Southeastern	49.5	-0.52 ± 0.94	52.5	+0.10 ± 0.85
Southwest	49.8	-0.06 ± 0.90	53.1	+0.68 ± 0.75
Summit	53.2	+2.31 ± 0.72	53.7	+1.61 ± 0.63
Tooele	50.2	-0.76 ± 0.71	52.3	+0.06 ± 0.69
TriCounty	48.2	-2.08 ± 0.92	52.8	+0.48 ± 0.78
Utah County	52.0	+0.68 ± 0.57	52.2	+0.04 ± 0.62
Wasatch	50.6	+0.12 ± 0.99	53.1	+0.84 ± 0.70
Weber-Morgan	50.3	-0.10 ± 0.86	51.8	-0.43 ± 0.92
Poverty Level				
<100% Federal Poverty Level	46.8	-4.52 ± 1.16	48.1	-3.92 ± 1.26
101-200% Federal Poverty Level	49.3	-2.11 ± 0.67	50.8	-1.27 ± 0.69
201-300% Federal Poverty Level	51.1	-0.02 ± 0.53	52.5	+0.44 ± 0.50
>300% Federal Poverty Level	52.1	+1.52 ± 0.38	53.4	+1.18 ± 0.33
Hispanic Status				
Hispanic	50.2	-1.81 ± 1.01	51.1	-0.78 ± 1.05
Non-Hispanic	50.9	+0.29 ± 0.26	52.5	+0.25 ± 0.25
Insurance Coverage				
Insured	50.6	+0.18 ± 0.27	52.8	+0.51 ± 0.25
Uninsured	51.8	-0.37 ± 0.75	49.5	-2.42 ± 1.05
Sex and Income				
Males, Under \$20,000	47.3	-3.13 ± 1.50	49.1	-3.19 ± 1.88
Males, \$20,000 - <\$45,000	50.4	-0.63 ± 0.71	52.9	+0.82 ± 0.64
Males, \$45,000 - <\$65,000	52.2	+0.90 ± 0.71	54.1	+2.08 ± 0.65
Males, \$65,000 and Over	53.0	+2.18 ± 0.65	54.4	+2.15 ± 0.56
Females, Under \$20,000	45.0	-4.95 ± 1.24	47.9	-4.51 ± 1.22
Females, \$20,000 - <\$45,000	49.4	-1.29 ± 0.63	51.1	-1.17 ± 0.61
Females, \$45,000 - <\$65,000	50.4	-0.77 ± 0.88	51.7	-0.36 ± 0.74
Females, \$65,000 and Over	52.9	+1.81 ± 0.62	52.2	+0.15 ± 0.59
Age and Income				
18 to 34 Years, Under \$20,000	52.0	-1.21 ± 1.00	49.3	-2.50 ± 1.50
\$20,000 to <\$45,000	52.6	-0.66 ± 0.59	51.7	-0.09 ± 0.64
\$45,000 to <\$65,000	53.7	+0.42 ± 0.66	53.0	+1.27 ± 0.75
\$65,000 and Over	54.7	+1.45 ± 0.63	53.0	+1.21 ± 0.72
35 to 49 Years, Under \$20,000	42.8	-8.45 ± 3.15	44.6	-6.98 ± 2.62
\$20,000 to <\$45,000	50.0	-1.53 ± 0.94	51.1	-0.40 ± 0.94
\$45,000 to <\$65,000	51.4	+0.05 ± 1.03	52.2	+0.70 ± 0.86
\$65,000 and Over	53.7	+2.47 ± 0.78	52.9	+1.33 ± 0.64



Table 1 (continued). The Physical and Mental Health Status of Populations in Utah, Physical and Mental Health Status Summary Means and Difference Scores by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Age and Income (continued)				
50 to 64 Years, Under \$20,000	36.0	-12.13 ± 2.70	46.0	-7.23 ± 2.73
\$20,000 to <\$45,000	46.0	-2.15 ± 1.76	51.0	-2.25 ± 1.34
\$45,000 to <\$65,000	47.0	-1.31 ± 1.79	53.2	+0.09 ± 1.07
\$65,000 and Over	50.5	+2.10 ± 1.02	53.9	+0.93 ± 0.88
65+ Years, Under \$20,000	40.2	-2.60 ± 1.82	50.6	-3.00 ± 2.12
\$20,000 to <\$45,000	43.3	-0.23 ± 1.46	55.4	+1.36 ± 0.97
\$45,000 to <\$65,000	45.6	+1.84 ± 2.38	55.5	+1.33 ± 2.50
\$65,000 and Over	46.6	+2.21 ± 2.69	57.4	+2.90 ± 1.98
Sex and Education				
Males, Some High School	48.0	-3.61 ± 1.84	52.2	+0.21 ± 1.91
High School Grad/Some College	51.4	+0.33 ± 0.51	53.1	+0.93 ± 0.52
Technical/Vocational Degree	51.6	+0.30 ± 1.16	53.5	+1.52 ± 0.90
4 Year College Degree or More	52.5	+2.32 ± 0.59	54.3	+1.92 ± 0.55
Females, Some High School	45.3	-5.27 ± 1.50	47.9	-4.46 ± 2.03
High School Grad/Some College	49.4	-0.97 ± 0.47	51.2	-1.10 ± 0.44
Technical/Vocational Degree	50.7	-0.30 ± 1.12	50.9	-1.29 ± 1.05
4 Year College Degree or More	52.4	+1.56 ± 0.58	52.6	+0.38 ± 0.53
Sex and Employment Status				
Males, Full Time	52.7	+1.25 ± 0.40	53.7	+1.74 ± 0.38
Part Time	53.3	+1.54 ± 1.12	52.3	+0.13 ± 1.41
Retired	43.7	-0.53 ± 1.47	54.6	+0.86 ± 1.15
Keeping House	***	*** ± ***	***	*** ± ***
Student	***	*** ± ***	***	*** ± ***
Unemployed/Other	43.4	-7.87 ± 2.48	47.3	-4.97 ± 2.61
Females, Full Time	51.7	+0.24 ± 0.49	51.2	-0.78 ± 0.50
Part Time	51.8	+0.17 ± 0.72	51.4	-0.56 ± 0.71
Retired	43.4	-0.83 ± 1.14	53.7	-0.09 ± 0.89
Keeping House	51.7	+0.34 ± 0.74	51.7	-0.37 ± 0.71
Student	53.6	+0.81 ± 1.91	51.2	-0.61 ± 2.15
Unemployed/Other	36.8	-13.47 ± 2.34	44.1	-8.27 ± 2.44
Sex and Marital Status				
Males, Married	51.1	+0.80 ± 0.44	54.4	+2.10 ± 0.37
Never Married	53.9	+0.95 ± 0.81	51.7	-0.04 ± 0.94
Divorced/Separated/Widowed	49.1	-0.56 ± 1.31	49.7	-2.51 ± 1.49
Females, Married	50.8	+0.07 ± 0.40	51.9	-0.29 ± 0.37
Never Married	51.3	-1.31 ± 0.92	50.0	-1.79 ± 1.07
Divorced/Separated/Widowed	45.6	-2.53 ± 1.04	49.4	-3.33 ± 0.88
Sex and Hispanic Status				
Males, Hispanic	50.2	-1.86 ± 1.41	52.4	+0.50 ± 1.55
Non-Hispanic	51.7	+0.99 ± 0.38	53.6	+1.34 ± 0.36
Females, Hispanic	50.1	-1.76 ± 1.43	49.5	-2.38 ± 1.34
Non-Hispanic	50.1	-0.38 ± 0.36	51.5	-0.80 ± 0.34

The Health Status of Populations in Utah



Table 1 (continued). The Physical and Mental Health Status of Populations in Utah, Physical and Mental Health Status Summary Means and Difference Scores by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Sex and Federal Poverty Status				
Males, <100% F.P.L.	48.2	-3.45 ± 1.75	49.9	-1.94 ± 2.13
101-200% F.P.L.	49.6	-1.88 ± 1.05	51.6	-0.36 ± 1.07
201-300% F.P.L.	51.8	+0.43 ± 0.74	53.7	+1.75 ± 0.71
>300% F.P.L.	52.5	+1.92 ± 0.53	54.1	+1.80 ± 0.46
Females, <100% F.P.L.	45.8	-5.27 ± 1.52	46.7	-5.31 ± 1.49
101-200% F.P.L.	49.0	-2.30 ± 0.87	50.1	-2.00 ± 0.88
201-300% F.P.L.	50.4	-0.48 ± 0.76	51.3	-0.87 ± 0.68
>300% F.P.L.	51.5	+1.04 ± 0.54	52.7	+0.42 ± 0.46
Age and Federal Poverty Level				
18 to 34 Years, <100% F.P.L.	51.0	-2.27 ± 1.10	49.3	-2.44 ± 1.75
101-200% F.P.L.	52.1	-1.19 ± 0.79	51.1	-0.71 ± 0.93
201-300% F.P.L.	53.8	+0.57 ± 0.63	52.0	+0.27 ± 0.76
>300% F.P.L.	54.2	+0.97 ± 0.53	53.1	+1.35 ± 0.55
35 to 49 Years, <100% F.P.L.	46.0	-5.26 ± 2.59	46.1	-5.43 ± 2.36
101-200% F.P.L.	48.8	-2.73 ± 1.45	50.2	-1.20 ± 1.28
201-300% F.P.L.	52.6	+1.14 ± 0.88	52.6	+1.10 ± 0.79
>300% F.P.L.	52.8	+1.66 ± 0.75	52.8	+1.21 ± 0.58
50 to 64 Years, <100% F.P.L.	36.0	-12.55 ± 4.72	45.0	-7.95 ± 2.90
101-200% F.P.L.	40.2	-8.04 ± 2.94	48.3	-4.85 ± 2.82
201-300% F.P.L.	44.3	-3.97 ± 2.10	51.6	-1.54 ± 1.58
>300% F.P.L.	50.3	+2.04 ± 0.82	53.8	+0.71 ± 0.67
65+ Years, <100% F.P.L.	***	*** ± ***	***	*** ± ***
101-200% F.P.L.	42.5	-1.12 ± 2.09	52.3	-1.76 ± 1.87
201-300% F.P.L.	42.2	-1.41 ± 2.01	55.9	+1.85 ± 1.31
>300% F.P.L.	45.7	+1.97 ± 1.48	55.7	+1.61 ± 1.17

1 Difference scores not presented because age specific means were used in the calculation of these estimates.

Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

*** Insufficient sample size for calculation of population estimates.

2001 Utah Health Status Survey, Utah Department of Health



The Influence of Disease and Lifestyle on Quality of Life

This section uses the age-specific difference scores for the PCS and MCS, and averages them across groups of persons with various health conditions. For each group mean, a confidence interval has been computed and presented in the figures. If the confidence interval for a group's mean difference score does not include zero (the age-specific average score) that group can be considered to be statistically different from the average.

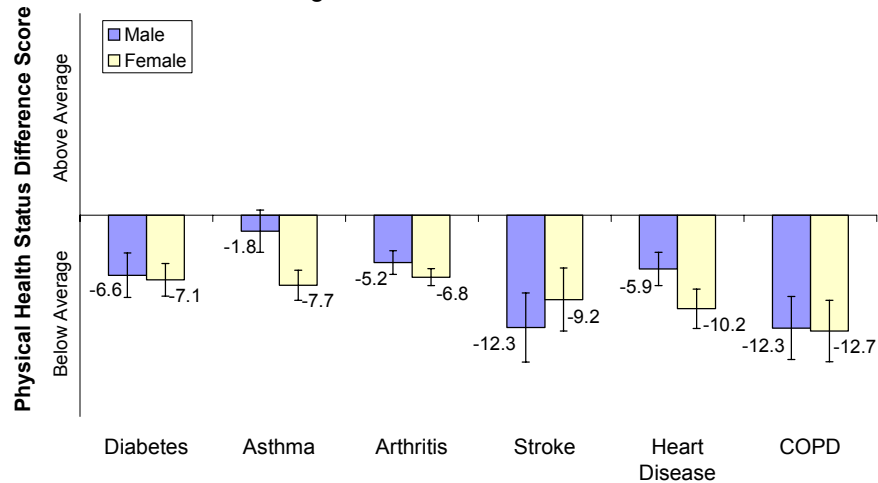
Some large differences in health outcomes emerge for persons with health problems. Something that must be considered when examining all the data in this report is that the results are based on cross-sectional, or one-point-in-time data. Using these data, we cannot say, for example, that a lifestyle characteristic, such as regular moderate exercise, caused better health outcomes. An alternative explanation is that persons who are ill or have some physical limitation find it difficult to exercise regularly. Either explanation is plausible, but the data can only tell us if there is an association, and cannot tell us the direction of the association.



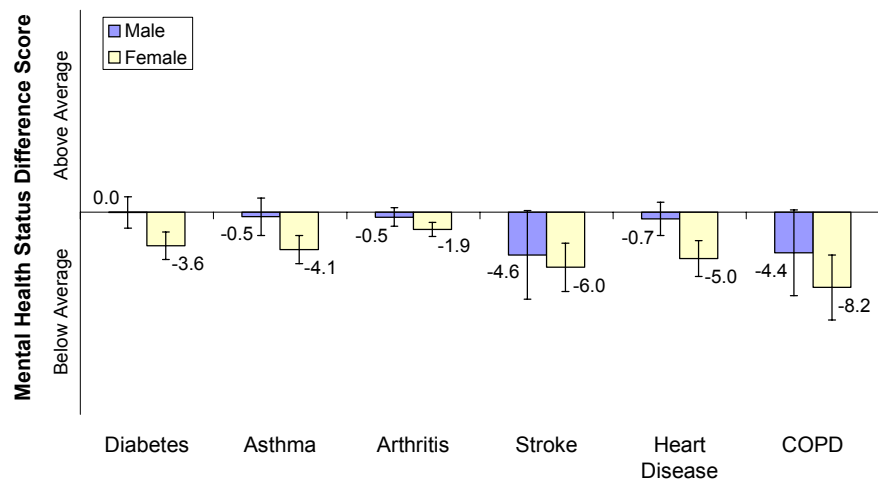
The Influence of Disease and Lifestyle on Quality of Life



PCS Difference Scores for Persons With Diabetes, Asthma, Arthritis, Stroke, Heart Disease, or COPD by Sex, Adults Age 18 or Over, Utah, 2001



MCS Difference Scores for Persons With Diabetes, Asthma, Arthritis, Stroke, Heart Disease, or COPD by Sex, Adults Age 18 or Over, Utah, 2001



- The presence of a chronic health condition was associated with below average physical and mental health, regardless of sex.
- However, women with a given chronic illness tended to have poorer physical and mental health than men with the same health condition. An exception to this was incidence of stroke. Men with a stroke had poorer physical health but better mental health than women with a stroke.
- The presence of chronic obstructive pulmonary disease (COPD) had the strongest association with poor physical health for both men and women. It also had the strongest association with poor mental health for women.



Table 2. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Six Chronic Diseases by Sex, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Diabetes Diagnosed by a Doctor				
Male	41.1	-6.56 ± 2.43	53.1	-0.02 ± 1.72
Female	40.6	-7.06 ± 1.79	49.2	-3.65 ± 1.51
Currently Under Medical Care for Asthma				
Male	48.3	-1.76 ± 2.33	51.7	-0.49 ± 2.04
Female	42.6	-7.65 ± 1.64	48.3	-4.06 ± 1.52
Currently Under Medical Care for Arthritis				
Male	42.9	-5.19 ± 1.29	52.4	-0.52 ± 1.01
Female	41.2	-6.78 ± 0.93	51.0	-1.87 ± 0.76
Stroke Diagnosed by a Doctor				
Male	33.2	-12.28 ± 3.77	48.8	-4.64 ± 4.81
Female	36.6	-9.23 ± 3.44	47.2	-5.99 ± 2.63
Heart Disease Diagnosed by a Doctor				
Male	40.2	-5.89 ± 1.81	52.6	-0.72 ± 1.82
Female	35.8	-10.22 ± 2.16	48.3	-5.03 ± 1.95
Currently Under Medical Care for Chronic Obstructive Pulmonary Disease				
Male	35.8	-12.33 ± 3.43	48.4	-4.41 ± 4.67
Female	35.2	-12.66 ± 3.36	44.5	-8.18 ± 3.54

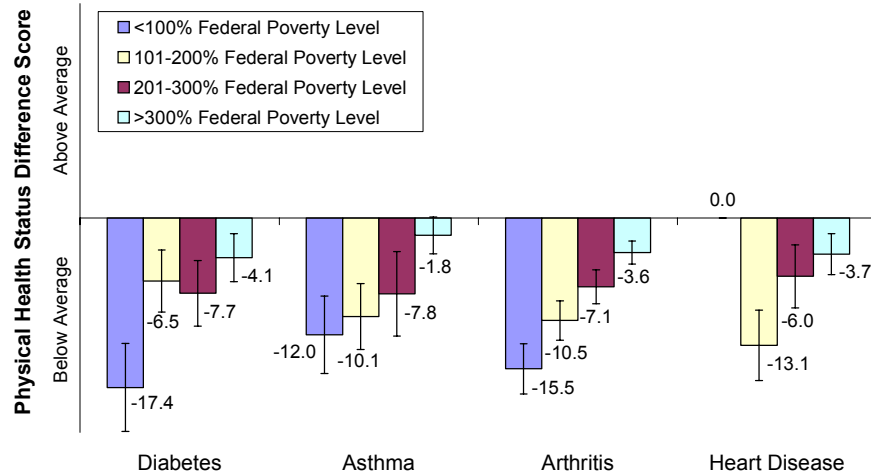
Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

2001 Utah Health Status Survey, Utah Department of Health

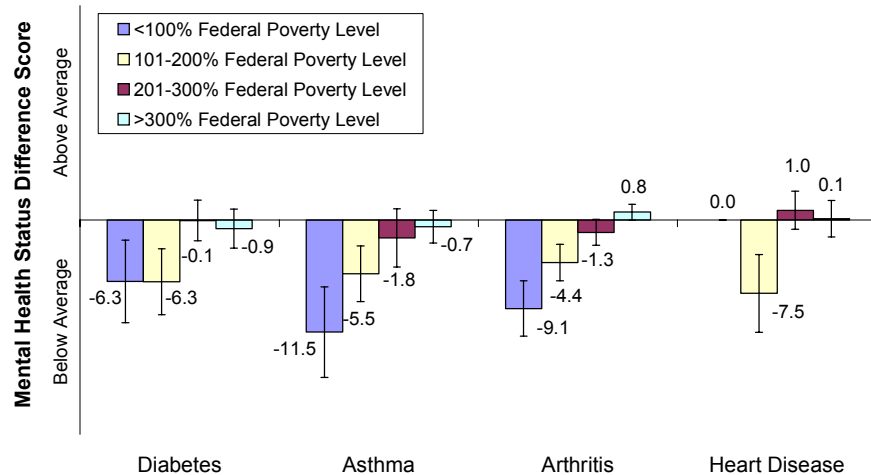
The Influence of Disease and Lifestyle on Quality of Life



PCS Difference Scores for Persons With Diabetes, Asthma, Arthritis, or Heart Disease by Poverty Level, Adults Age 18 or Over, Utah, 2001



MCS Difference Scores for Persons With Diabetes, Asthma, Arthritis, or Heart Disease by Poverty Level, Adults Age 18 or Over, Utah, 2001



- Poverty adds an extra dimension of difficulty for persons with chronic health conditions. Regardless of the condition being considered, those in households with incomes less than 100% of the Federal Poverty Level reported poorer physical and mental health than those living at higher levels of the poverty threshold.
- These differences could be due, in part, to a lack of resources (medical, financial, social) among persons living at lower levels of poverty, exacerbating the effects of chronic conditions.

The Influence of Disease and Lifestyle on Quality of Life



Table 3. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Four Chronic Diseases

by Poverty Status, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Diabetes Diagnosed by a Doctor				
<100% Federal Poverty Level	30.0	-17.39 ± 4.51	46.3	-6.32 ± 4.23
101-200% Federal Poverty Level	42.0	-6.45 ± 3.18	46.7	-6.32 ± 3.38
201-300% Federal Poverty Level	40.5	-7.71 ± 3.37	52.9	-0.05 ± 2.10
>300% Federal Poverty Level	44.1	-4.08 ± 2.45	52.1	-0.87 ± 2.01
Currently Under Medical Care for Asthma				
<100% Federal Poverty Level	38.7	-11.99 ± 3.96	40.5	-11.50 ± 4.64
101-200% Federal Poverty Level	39.6	-10.12 ± 3.37	46.7	-5.52 ± 2.86
201-300% Federal Poverty Level	43.2	-7.78 ± 4.33	50.2	-1.83 ± 3.00
>300% Federal Poverty Level	48.5	-1.79 ± 1.89	51.5	-0.69 ± 1.69
Currently Under Medical Care for Arthritis				
<100% Federal Poverty Level	33.6	-15.47 ± 2.57	43.3	-9.08 ± 2.85
101-200% Federal Poverty Level	38.1	-10.52 ± 2.02	48.3	-4.37 ± 1.86
201-300% Federal Poverty Level	41.5	-7.07 ± 1.74	51.5	-1.27 ± 1.33
>300% Federal Poverty Level	44.9	-3.55 ± 1.19	53.6	+0.82 ± 0.81
Heart Disease Diagnosed by a Doctor				
<100% Federal Poverty Level	***	*** ± ***	***	*** ± ***
101-200% Federal Poverty Level	32.6	-13.06 ± 3.60	45.8	-7.52 ± 3.99
201-300% Federal Poverty Level	39.9	-5.99 ± 3.22	54.3	+1.00 ± 1.95
>300% Federal Poverty Level	42.9	-3.71 ± 2.10	53.5	+0.13 ± 1.88

Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

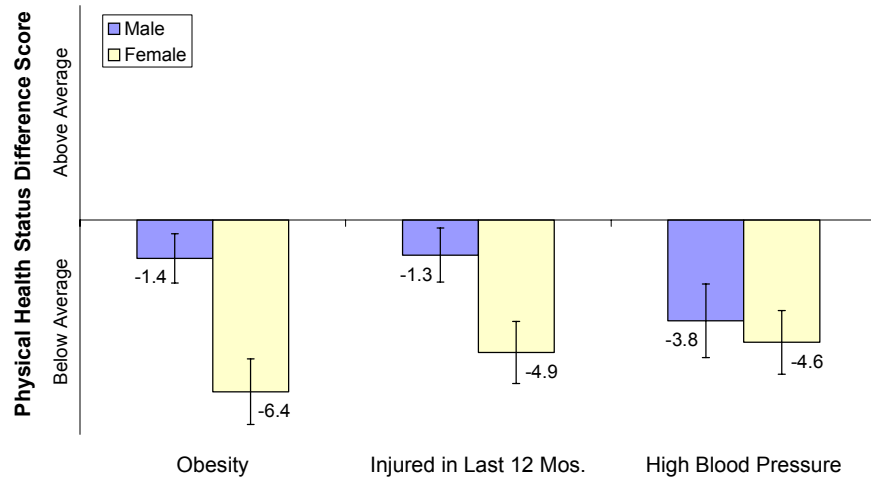
*** Insufficient sample size for calculation of population estimates

2001 Utah Health Status Survey, Utah Department of Health

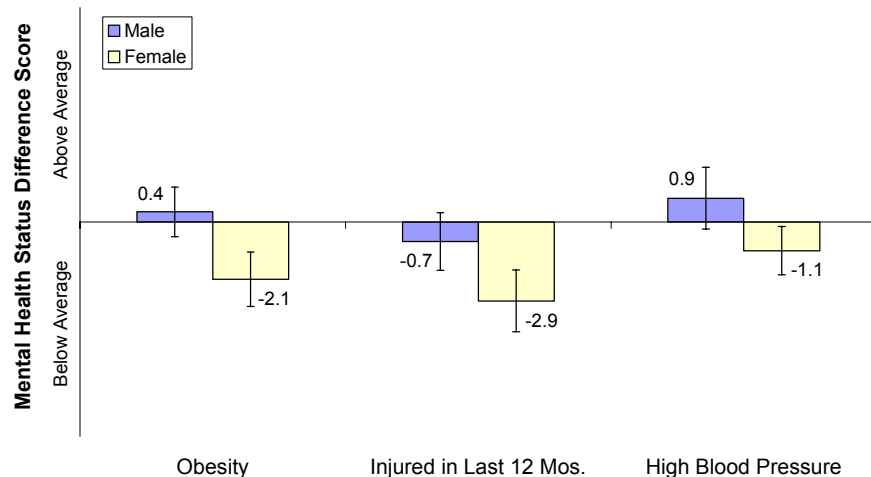
The Influence of Disease and Lifestyle on Quality of Life



PCS Difference Scores for Persons With Three Health Problems by Sex, Adults Age 18 or Over, Utah, 2001



MCS Difference Scores for Persons With Three Health Problems by Sex, Adults Age 18 or Over, Utah, 2001



- The presence of a medical condition was also associated with poor physical health for both men and women. However, women experienced greater physical and mental problems than men, due to obesity, injury, or high blood pressure.

The Influence of Disease and Lifestyle on Quality of Life



Table 4. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Three Health Problems by Sex, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Obesity (Body Mass Index ≥ 27.8 for Males and 27.3 for Females)				
Male	48.9	-1.43 $\pm$ 0.92	52.7	+0.38 $\pm$ 0.93
Female	43.3	-6.41 $\pm$ 1.22	50.2	-2.14 $\pm$ 1.02
Injured During the Last 12 Months				
Male	50.5	-1.31 $\pm$ 1.01	51.2	-0.73 $\pm$ 1.08
Female	45.5	-4.94 $\pm$ 1.16	49.2	-2.95 $\pm$ 1.15
High Blood Pressure Diagnosed by a Doctor				
Male	43.2	-3.76 $\pm$ 1.37	54.1	+0.89 $\pm$ 1.15
Female	41.8	-4.57 $\pm$ 1.19	52.2	-1.07 $\pm$ 0.90

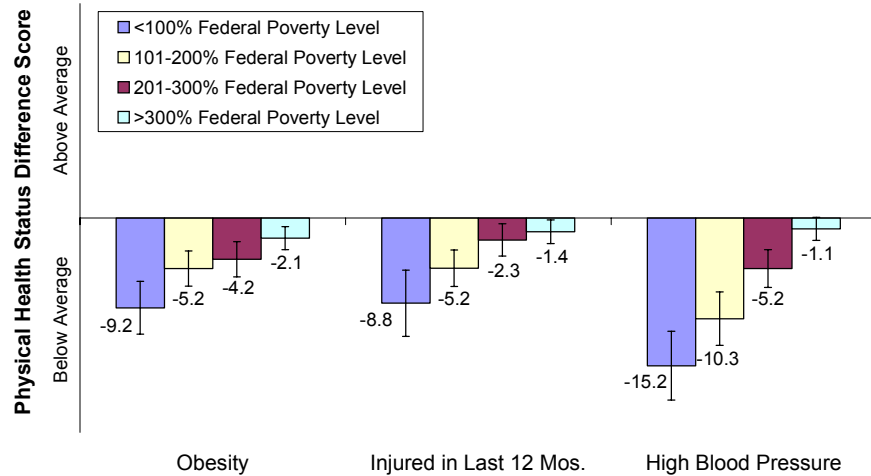
Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

2001 Utah Health Status Survey, Utah Department of Health

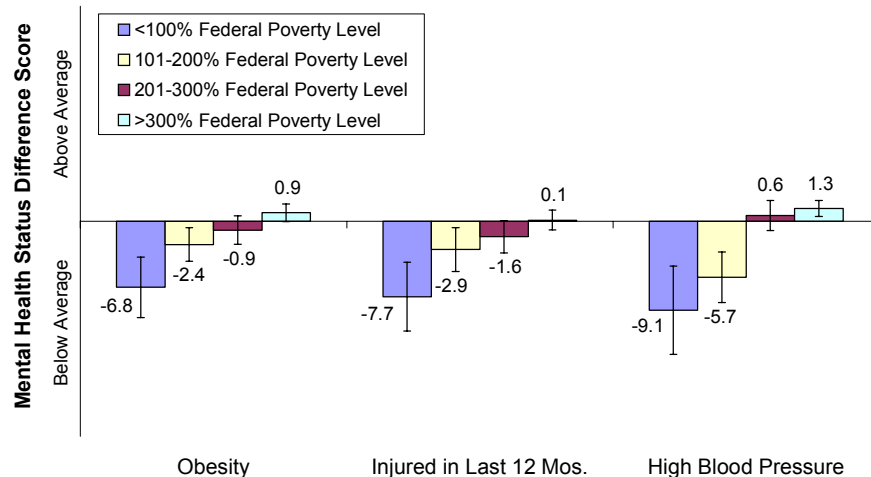
The Influence of Disease and Lifestyle on Quality of Life



PCS Difference Scores for Persons With Three Health Problems by Poverty Level, Adults Age 18 or Over, Utah, 2001



MCS Difference Scores for Persons With Three Health Problems by Poverty Level, Adults Age 18 or Over, Utah, 2001



- Persons living in households with incomes less than 100% of the Federal Poverty Level who also had any of the three medical problems above had significantly poorer physical and mental health outcomes than persons with the same health problems living above 100% of poverty.

The Influence of Disease and Lifestyle on Quality of Life



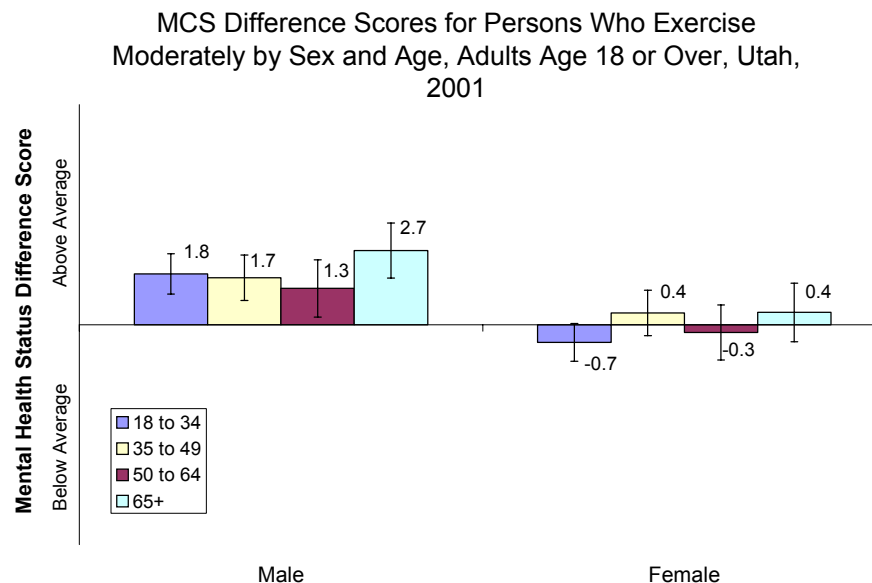
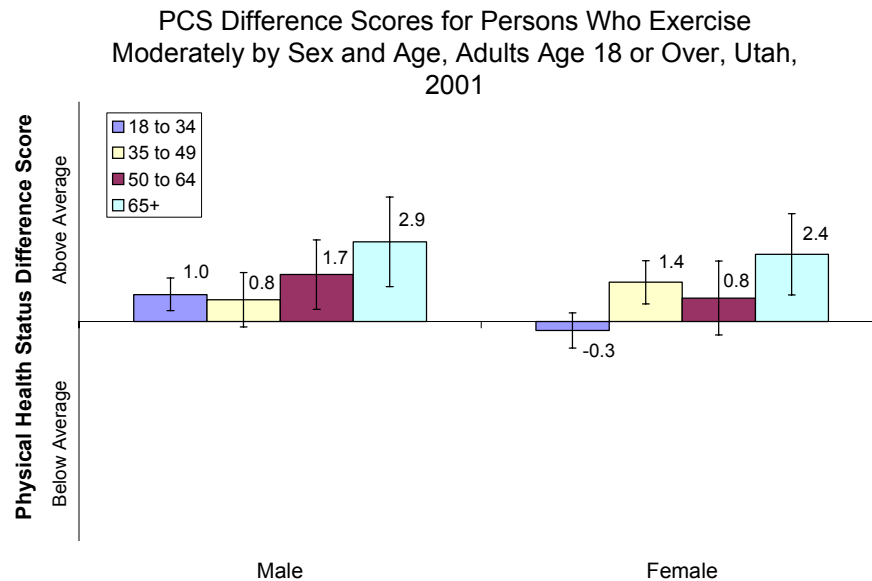
Table 5. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Three Health Problems by Poverty Status, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Obesity (Body Mass Index ≥ 27.8 for Males and 27.3 for Females)				
<100% Federal Poverty Level	40.8	-9.20 $\pm$ 2.71	45.3	-6.76 $\pm$ 3.08
101-200% Federal Poverty Level	45.7	-5.19 $\pm$ 1.81	49.8	-2.38 $\pm$ 1.73
201-300% Federal Poverty Level	46.2	-4.23 $\pm$ 1.80	51.4	-0.91 $\pm$ 1.46
>300% Federal Poverty Level	47.8	-2.06 $\pm$ 1.18	53.3	+0.88 $\pm$ 0.90
Injured During the Last 12 Months				
<100% Federal Poverty Level	42.6	-8.75 $\pm$ 3.40	44.3	-7.72 $\pm$ 3.51
101-200% Federal Poverty Level	46.6	-5.16 $\pm$ 1.89	49.0	-2.89 $\pm$ 2.25
201-300% Federal Poverty Level	49.4	-2.26 $\pm$ 1.65	50.4	-1.59 $\pm$ 1.66
>300% Federal Poverty Level	49.8	-1.42 $\pm$ 1.22	52.2	+0.11 $\pm$ 1.01
High Blood Pressure Diagnosed by a Doctor				
<100% Federal Poverty Level	31.1	-15.16 $\pm$ 3.53	43.9	-9.10 $\pm$ 4.51
101-200% Federal Poverty Level	36.1	-10.33 $\pm$ 2.74	47.4	-5.72 $\pm$ 2.59
201-300% Federal Poverty Level	42.1	-5.18 $\pm$ 1.93	53.7	+0.58 $\pm$ 1.54
>300% Federal Poverty Level	46.1	-1.13 $\pm$ 1.19	54.5	+1.31 $\pm$ 0.81

Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

2001 Utah Health Status Survey, Utah Department of Health

The Influence of Disease and Lifestyle on Quality of Life



- Regular moderate exercise is associated with better physical and mental health for men across different age groups, with the strongest association for men who are aged 65 and over.
- Regular moderate exercise is also associated with good physical and mental health for women.
- Higher scores on the physical and mental health scales across age groups could come from the health benefits of regular exercise, however, it is also possible that as people age, those in good health are simply able to maintain regular exercise in their lifestyles.



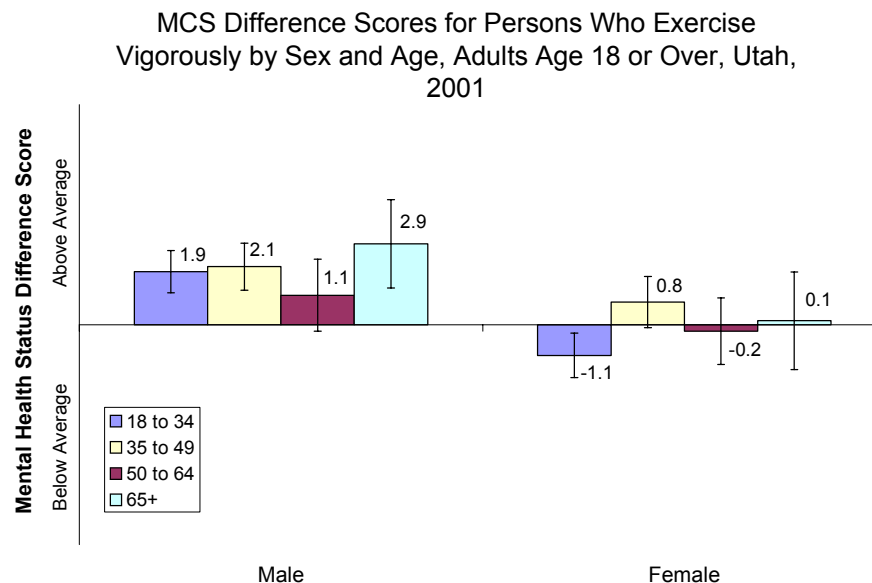
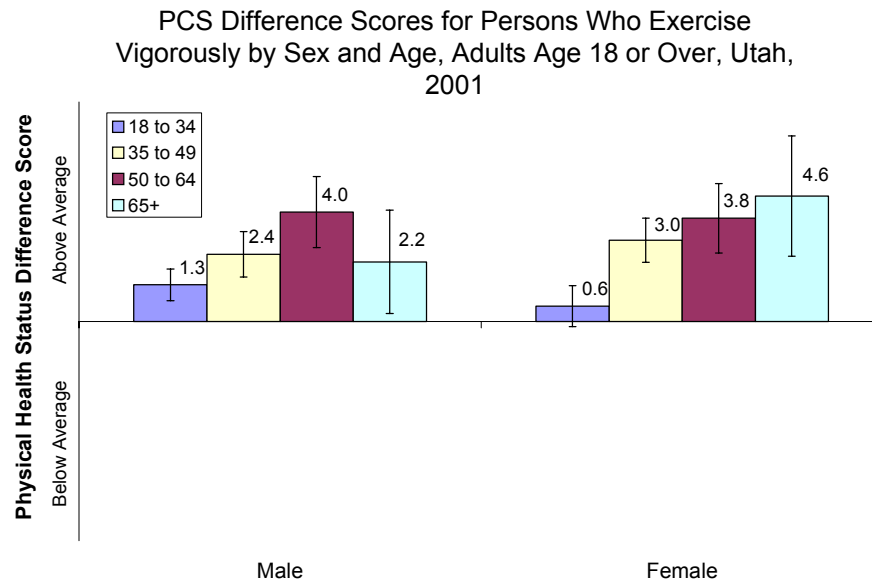
Table 6. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Persons Who Exercise Moderately by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Sex				
Male	52.2	+1.27 $\pm$ 0.47	54.0	+1.83 $\pm$ 0.45
Female	51.5	+0.63 $\pm$ 0.46	52.0	-0.19 $\pm$ 0.44
Age Group				
18 to 34	53.6	+0.36 $\pm$ 0.44	52.4	+0.66 $\pm$ 0.51
35 to 49	52.4	+1.11 $\pm$ 0.63	52.6	+1.05 $\pm$ 0.59
50 to 64	49.5	+1.27 $\pm$ 0.93	53.7	+0.49 $\pm$ 0.73
65+	46.4	+2.70 $\pm$ 1.12	55.8	+1.67 $\pm$ 0.75
Sex and Age				
Males, 18 to 34	54.2	+0.98 $\pm$ 0.59	53.6	+1.84 $\pm$ 0.73
Males, 35 to 49	52.1	+0.79 $\pm$ 0.99	53.2	+1.70 $\pm$ 0.83
Males, 50 to 64	50.0	+1.70 $\pm$ 1.27	54.4	+1.31 $\pm$ 1.04
Males, 65+	46.7	+2.90 $\pm$ 1.63	56.9	+2.69 $\pm$ 1.00
Females, 18 to 34	52.9	-0.33 $\pm$ 0.64	51.1	-0.65 $\pm$ 0.69
Females, 35 to 49	52.7	+1.43 $\pm$ 0.79	52.0	+0.42 $\pm$ 0.83
Females, 50 to 64	49.0	+0.85 $\pm$ 1.35	52.9	-0.29 $\pm$ 1.00
Females, 65+	46.1	+2.45 $\pm$ 1.48	54.6	+0.44 $\pm$ 1.07

Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

2001 Utah Health Status Survey, Utah Department of Health

The Influence of Disease and Lifestyle on Quality of Life



- Regular vigorous exercise was strongly associated with above average physical health for both men and women across age groups.
- Regular vigorous exercise was also associated with above average mental health for men, across age groups. However, this association was not true for women.
- There does not seem to be a strong association between regular vigorous exercise and above average mental health for women. In fact women 18-34 years who get regular vigorous exercise, had mental health below the average compared to their peers who did not exercise vigorously. This finding was statistically significant.



Table 7. The Influence of Diseases and Lifestyle Factors on Quality of Life, Physical and Mental Health Status Summary Means and Difference Scores for Persons Who Exercise Vigorously by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Physical Composite Scale (PCS)		Mental Composite Scale (MCS)	
	Mean Scale Score	Difference Score	Mean Scale Score	Difference Score
Sex				
Male	53.5	+1.98 $\pm$ 0.44	54.0	+1.96 $\pm$ 0.52
Female	53.3	+1.90 $\pm$ 0.52	51.7	-0.41 $\pm$ 0.54
Age Group				
18 to 34	54.3	+1.01 $\pm$ 0.46	52.4	+0.66 $\pm$ 0.57
35 to 49	54.1	+2.66 $\pm$ 0.59	53.1	+1.57 $\pm$ 0.64
50 to 64	52.2	+3.88 $\pm$ 0.91	53.5	+0.42 $\pm$ 0.90
65+	46.8	+3.06 $\pm$ 1.46	56.1	+1.90 $\pm$ 1.24
Sex and Age				
Males, 18 to 34	54.6	+1.33 $\pm$ 0.57	53.7	+1.92 $\pm$ 0.77
Males, 35 to 49	53.9	+2.45 $\pm$ 0.83	53.6	+2.10 $\pm$ 0.86
Males, 50 to 64	52.3	+3.99 $\pm$ 1.30	54.1	+1.07 $\pm$ 1.31
Males, 65+	46.0	+2.17 $\pm$ 1.88	57.2	+2.94 $\pm$ 1.61
Females, 18 to 34	53.8	+0.55 $\pm$ 0.74	50.6	-1.12 $\pm$ 0.81
Females, 35 to 49	54.3	+2.96 $\pm$ 0.80	52.3	+0.82 $\pm$ 0.93
Females, 50 to 64	52.0	+3.76 $\pm$ 1.27	52.9	-0.24 $\pm$ 1.21
Females, 65+	48.1	+4.57 $\pm$ 2.20	54.2	+0.14 $\pm$ 1.78

Note: If the confidence interval is greater than the point estimate, results should be interpreted cautiously.

2001 Utah Health Status Survey, Utah Department of Health



A Profile of Utahns With Poor Health Status

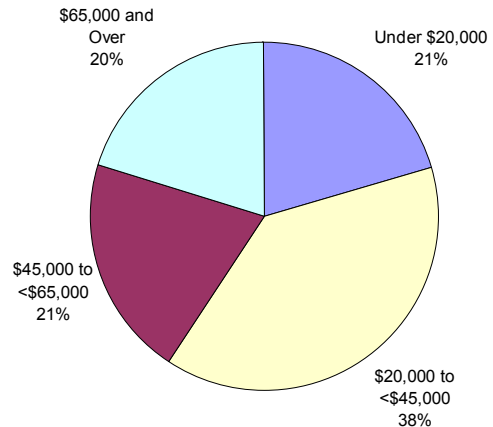
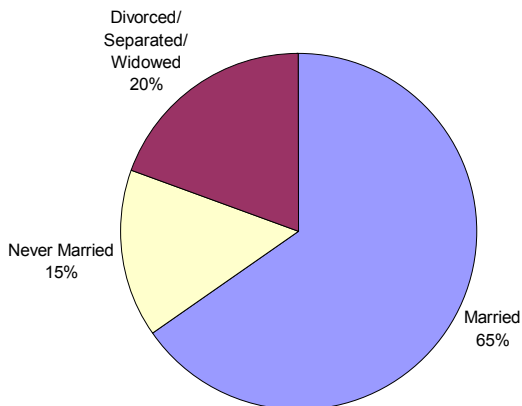
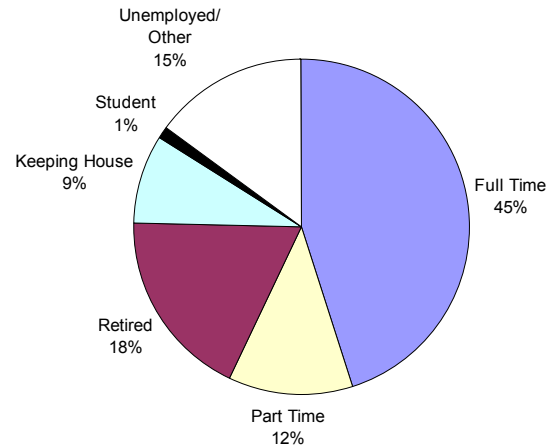
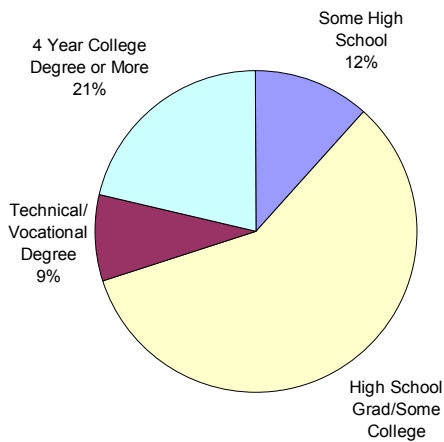
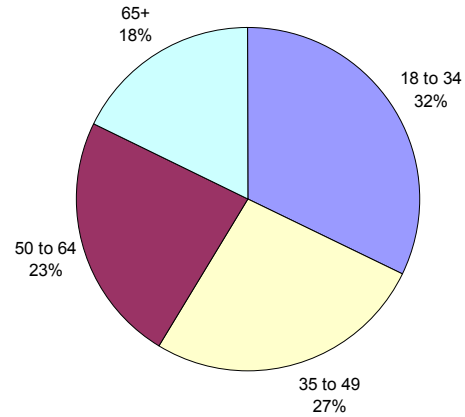
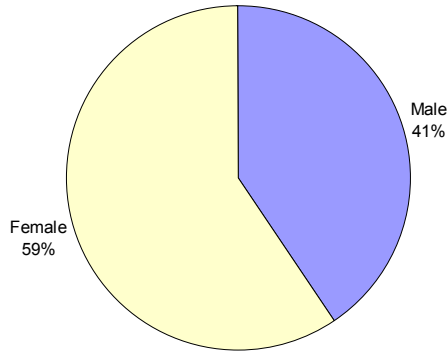
This section uses the age specific difference scores for the PCS and MCS scores, and statistically categorizes them into three types of poor health. These groups include: those with poor physical health, those with poor mental health and those with poor physical and mental health. It provides a demographic and social picture of the populations in Utah with poor health. This section also provides tables to illustrate how individuals with poor health seek health care services disproportionately. Several indicators such as average number of doctor's visits, and whether or not a person has had an overnight hospital stay are presented for different health groups.



A Profile of Utahns With Poor Health Status



The Distribution of Persons With Poor Physical Health by Sex, Age, Education, Employment, Marital Status, and Income Category: Adults Age 18 or Over, 2001.



- 17.3% of adult Utahns reported poor physical health.
- Women made up nearly 3/5 of all adult Utahns with poor physical health.
- Full time workers made up the greatest proportion of adult Utahns with poor physical health.
- Married persons made up the highest proportion of adults with poor physical health, but divorced/separated/widowed persons were the most likely to have poor health out of all three categories.

A Profile of Utahns With Poor Health Status



Table 8. A Profile of Utahns With Poor Physical Health, Percentage of Utahns 18 and Over With Poor Physical Health

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%
Sex					
Male	49.5%	775,120	14.2% $\pm$ 1.7%	110,200	40.6%
Female	50.5%	790,430	20.4% $\pm$ 1.6%	160,900	59.4%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%
Age Group					
18 to 34	42.7%	669,170	13.0% $\pm$ 1.7%	87,000	32.1%
35 to 49	28.1%	439,986	16.4% $\pm$ 2.2%	72,000	26.6%
50 to 64	16.7%	262,021	24.3% $\pm$ 3.0%	63,600	23.5%
65+	12.4%	194,373	24.8% $\pm$ 3.6%	48,200	17.8%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%
Sex and Age					
Males, 18 to 34	21.6%	338,358	9.6% $\pm$ 2.4%	32,600	12.0%
Males, 35 to 49	14.2%	222,338	14.0% $\pm$ 3.1%	31,100	11.5%
Males, 50 to 64	8.3%	129,263	20.7% $\pm$ 4.2%	26,800	9.9%
Males, 65+	5.4%	85,161	22.7% $\pm$ 5.9%	19,300	7.1%
Females, 18 to 34	21.1%	330,812	16.4% $\pm$ 2.4%	54,300	20.1%
Females, 35 to 49	13.9%	217,648	18.8% $\pm$ 2.9%	40,800	15.1%
Females, 50 to 64	8.5%	132,758	27.5% $\pm$ 4.2%	36,600	13.5%
Females, 65+	7.0%	109,212	26.8% $\pm$ 4.4%	29,200	10.8%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%
Education					
Some High School	6.7%	105,543	29.9% $\pm$ 6.2%	31,500	11.6%
High School Grad/Some College	54.6%	854,487	18.6% $\pm$ 1.6%	159,300	58.5%
Technical/Vocational Degree	9.5%	148,993	15.7% $\pm$ 3.6%	23,400	8.6%
4 Year College Degree or More	29.2%	456,525	12.8% $\pm$ 1.8%	58,300	21.4%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%
Annual Household Income					
Under \$20,000	11.3%	176,750	32.6% $\pm$ 4.4%	57,600	20.6%
\$20,000 to <\$45,000	35.7%	559,527	19.3% $\pm$ 2.2%	107,800	38.6%
\$45,000 to <\$65,000	22.7%	355,693	16.1% $\pm$ 2.6%	57,400	20.5%
\$65,000 and Over	30.2%	473,578	12.0% $\pm$ 2.1%	56,600	20.3%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% $\pm$ 1.2%	271,000	100.0%

A Profile of Utahns With Poor Health Status



Table 8 (continued). A Profile of Utahns With Poor Physical Health, Percentage of Utahns 18 and Over With Poor Physical Health

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Marital Status					
Married	68.9%	1,078,794	16.5% ± 1.4%	177,900	65.3%
Never Married	18.6%	291,692	14.1% ± 3.0%	41,200	15.1%
Divorced/Separated/Widowed	12.5%	195,064	27.3% ± 3.4%	53,200	19.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%
Employment Status					
Full Time	57.0%	892,245	13.8% ± 1.5%	123,600	45.1%
Part Time	13.8%	216,631	15.0% ± 3.0%	32,400	11.8%
Retired	12.1%	189,178	26.7% ± 3.7%	50,600	18.5%
Keeping House	9.5%	148,259	15.8% ± 3.2%	23,400	8.5%
Student	2.8%	43,181	7.4% ± 4.6%	3,200	1.2%
Unemployed/Other	4.9%	76,056	53.8% ± 7.9%	40,900	14.9%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%
Local Health District*					
Bear River	6.0%	93,555	13.5% ± 2.9%	12,600	4.7%
Central	2.8%	44,411	19.5% ± 4.3%	8,600	3.2%
Davis	10.3%	160,801	16.7% ± 3.6%	26,800	9.9%
Salt Lake	40.9%	640,654	18.0% ± 2.1%	115,000	42.5%
Southeastern	2.3%	35,968	21.9% ± 4.4%	7,900	2.9%
Southwest	6.5%	101,940	20.2% ± 4.1%	20,600	7.6%
Summit	1.4%	22,186	10.4% ± 2.9%	2,300	0.8%
Tooele	1.9%	29,436	20.2% ± 3.5%	6,000	2.2%
TriCounty	1.8%	27,434	23.9% ± 4.0%	6,600	2.4%
Utah County	16.3%	254,723	15.5% ± 2.8%	39,400	14.5%
Wasatch	0.7%	10,662	17.4% ± 3.9%	1,900	0.7%
Weber-Morgan	9.2%	143,780	16.1% ± 3.8%	23,200	8.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%
Poverty Level					
<100% Federal Poverty Level	6.9%	108,256	33.0% ± 5.9%	35,800	13.2%
101-200% Federal Poverty Level	19.6%	307,257	23.3% ± 3.1%	71,600	26.4%
201-300% Federal Poverty Level	27.3%	427,857	14.8% ± 2.3%	63,200	23.3%
>300% Federal Poverty Level	46.1%	722,180	13.9% ± 1.7%	100,200	37.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%
Hispanic Status					
Hispanic	7.8%	122,449	23.2% ± 5.2%	28,400	10.5%
Non-Hispanic	92.2%	1,443,099	16.8% ± 1.2%	242,100	89.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%

A Profile of Utahns With Poor Health Status



Table 8 (continued). A Profile of Utahns With Poor Physical Health, Percentage of Utahns 18 and Over With Poor Physical Health

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Insurance Coverage					
Insured	90.3%	1,413,071	17.5% ± 1.2%	246,800	90.5%
Uninsured	9.7%	152,479	16.9% ± 3.9%	25,800	9.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%
Religion					
Protestant	10.2%	160,282	17.8% ± 3.5%	28,500	10.5%
Catholic	9.1%	142,774	19.3% ± 4.5%	27,600	10.2%
LDS	65.0%	1,018,202	17.0% ± 1.4%	172,700	63.8%
Jehovah Witness	0.3%	4,773	*** ± ***	***	***
Other	3.1%	48,160	18.7% ± 6.9%	9,000	3.3%
No Religion	12.2%	191,359	16.8% ± 3.5%	32,100	11.8%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	17.3% ± 1.2%	271,000	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

4 Figures in these columns do not sum to the total because of missing values on the grouping variables.

5 These rates have not been age adjusted.

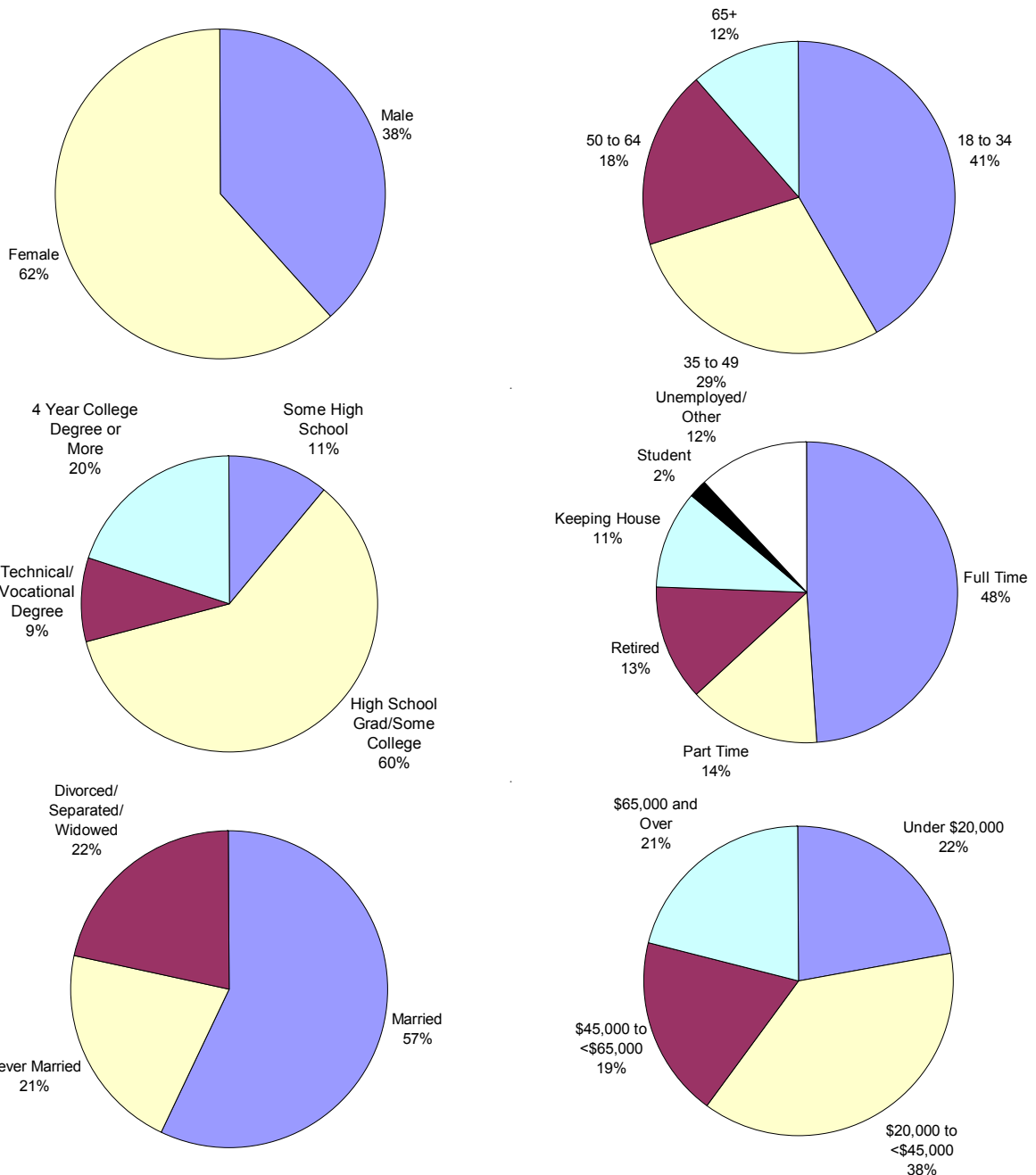
*** Insufficient sample size for calculation of population estimates.

2001 Utah Health Status Survey, Utah Department of Health

A Profile of Utahns With Poor Health Status



The Distribution of Persons With Poor Mental Health by Sex, Age, Education, Employment, Marital Status, and Income Category: Adults Age 18 or Over, 2001.



- Full time workers made up nearly half of adult Utahns with poor mental health. However, the unemployed were most likely to suffer poor mental health (20.5%).
- Those with incomes between \$20,000 and \$45,000 made up the largest proportion of adult Utahns with poor mental health.
- Women made up two thirds of adult Utahns with poor mental health. However, those with incomes under \$20,000 were most likely to report poor mental health.

A Profile of Utahns With Poor Health Status



Table 9. A Profile of Utahns With Poor Mental Health, Percentage of Utahns 18 and Over With Poor Mental Health by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Sex					
Male	49.5%	775,120	14.2% $\pm$ 1.7%	109,700	38.4%
Female	50.5%	790,430	22.3% $\pm$ 1.7%	175,900	61.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Age Group					
18 to 34	42.7%	669,170	17.7% $\pm$ 2.0%	118,500	41.6%
35 to 49	28.1%	439,986	18.5% $\pm$ 2.2%	81,300	28.5%
50 to 64	16.7%	262,021	20.0% $\pm$ 2.9%	52,400	18.4%
65+	12.4%	194,373	16.9% $\pm$ 3.0%	32,800	11.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Sex and Age					
Males, 18 to 34	21.6%	338,358	12.7% $\pm$ 2.8%	43,100	15.1%
Males, 35 to 49	14.2%	222,338	15.7% $\pm$ 3.3%	34,900	12.2%
Males, 50 to 64	8.3%	129,263	15.8% $\pm$ 3.9%	20,500	7.2%
Males, 65+	5.4%	85,161	13.3% $\pm$ 4.5%	11,300	4.0%
Females, 18 to 34	21.1%	330,812	22.8% $\pm$ 2.7%	75,300	26.4%
Females, 35 to 49	13.9%	217,648	21.3% $\pm$ 3.0%	46,400	16.3%
Females, 50 to 64	8.5%	132,758	23.9% $\pm$ 4.1%	31,700	11.1%
Females, 65+	7.0%	109,212	20.1% $\pm$ 3.9%	21,900	7.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Education					
Some High School	6.7%	105,543	30.3% $\pm$ 6.5%	31,900	11.1%
High School Grad/Some College	54.6%	854,487	20.1% $\pm$ 1.7%	171,600	59.8%
Technical/Vocational Degree	9.5%	148,993	17.5% $\pm$ 3.8%	26,100	9.1%
4 Year College Degree or More	29.2%	456,525	12.6% $\pm$ 1.8%	57,400	20.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Annual Household Income					
Under \$20,000	11.3%	176,750	36.3% $\pm$ 4.7%	64,200	22.2%
\$20,000 to <\$45,000	35.7%	559,527	19.5% $\pm$ 2.3%	109,000	37.7%
\$45,000 to <\$65,000	22.7%	355,693	15.5% $\pm$ 2.6%	55,200	19.1%
\$65,000 and Over	30.2%	473,578	12.8% $\pm$ 2.0%	60,800	21.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%

A Profile of Utahns With Poor Health Status



Table 9 (continued). A Profile of Utahns With Poor Mental Health, Percentage of Utahns 18 and Over With Poor Mental Health
by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Marital Status					
Married	68.9%	1,078,794	15.3% $\pm$ 1.3%	164,900	57.0%
Never Married	18.6%	291,692	21.1% $\pm$ 3.7%	61,600	21.3%
Divorced/Separated/Widowed	12.5%	195,064	32.2% $\pm$ 3.6%	62,900	21.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Employment Status					
Full Time	57.0%	892,245	15.8% $\pm$ 1.6%	140,700	48.9%
Part Time	13.8%	216,631	18.7% $\pm$ 3.3%	40,500	14.1%
Retired	12.1%	189,178	19.1% $\pm$ 3.3%	36,100	12.6%
Keeping House	9.5%	148,259	20.5% $\pm$ 3.7%	30,400	10.6%
Student	2.8%	43,181	13.3% $\pm$ 7.2%	5,800	2.0%
Unemployed/Other	4.9%	76,056	44.8% $\pm$ 7.7%	34,100	11.9%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Local Health District*					
Bear River	6.0%	93,555	14.4% $\pm$ 3.1%	13,500	4.7%
Central	2.8%	44,411	15.1% $\pm$ 3.4%	6,700	2.3%
Davis	10.3%	160,801	15.7% $\pm$ 3.5%	25,200	8.8%
Salt Lake	40.9%	640,654	19.5% $\pm$ 2.1%	125,000	43.8%
Southeastern	2.3%	35,968	19.3% $\pm$ 3.9%	7,000	2.5%
Southwest	6.5%	101,940	14.8% $\pm$ 3.4%	15,100	5.3%
Summit	1.4%	22,186	11.2% $\pm$ 2.9%	2,500	0.9%
Tooele	1.9%	29,436	18.4% $\pm$ 3.3%	5,400	1.9%
TriCounty	1.8%	27,434	19.0% $\pm$ 3.6%	5,200	1.8%
Utah County	16.3%	254,723	18.3% $\pm$ 3.3%	46,700	16.4%
Wasatch	0.7%	10,662	15.0% $\pm$ 3.5%	1,600	0.6%
Weber-Morgan	9.2%	143,780	21.8% $\pm$ 4.6%	31,400	11.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Poverty Level					
<100% Federal Poverty Level	6.9%	108,256	39.5% $\pm$ 6.4%	42,700	15.0%
101-200% Federal Poverty Level	19.6%	307,257	22.0% $\pm$ 3.2%	67,700	23.8%
201-300% Federal Poverty Level	27.3%	427,857	17.7% $\pm$ 2.6%	75,600	26.6%
>300% Federal Poverty Level	46.1%	722,180	13.6% $\pm$ 1.6%	98,200	34.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Hispanic Status					
Hispanic	7.8%	122,449	24.2% $\pm$ 5.2%	29,700	10.4%
Non-Hispanic	92.2%	1,443,099	17.7% $\pm$ 1.2%	255,300	89.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%

A Profile of Utahns With Poor Health Status



Table 9 (continued). A Profile of Utahns With Poor Mental Health, Percentage of Utahns 18 and Over With Poor Mental Health
by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Insurance Coverage					
Insured	90.3%	1,413,071	16.8% $\pm$ 1.2%	237,200	84.4%
Uninsured	9.7%	152,479	28.8% $\pm$ 4.8%	43,900	15.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%
Religion					
Protestant	10.2%	160,282	17.8% $\pm$ 3.5%	28,500	10.0%
Catholic	9.1%	142,774	22.3% $\pm$ 4.8%	31,800	11.1%
LDS	65.0%	1,018,202	16.5% $\pm$ 1.4%	167,700	58.7%
Jehovah Witness	0.3%	4,773	*** $\pm$ ***	***	***
Other	3.1%	48,160	26.6% $\pm$ 8.1%	12,800	4.5%
No Religion	12.2%	191,359	22.0% $\pm$ 4.0%	42,100	14.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	18.2% $\pm$ 1.2%	285,500	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

4 Figures in these columns do not sum to the total because of missing values on the grouping variables.

5 These rates have not been age adjusted.

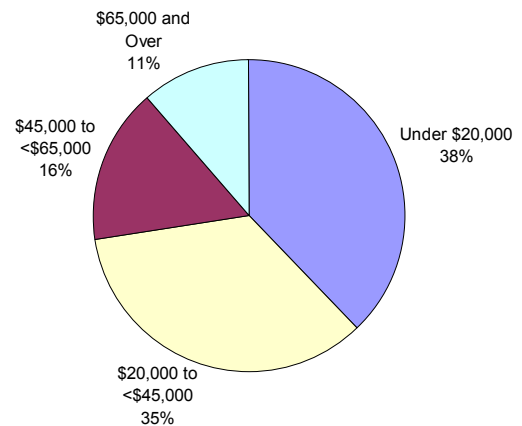
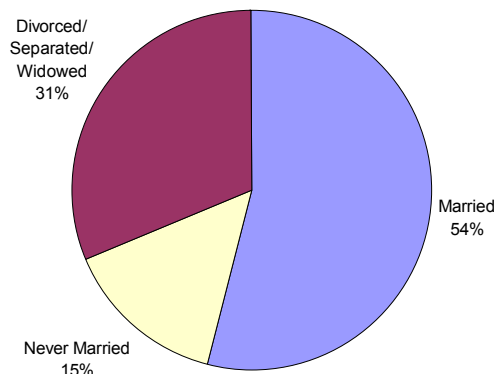
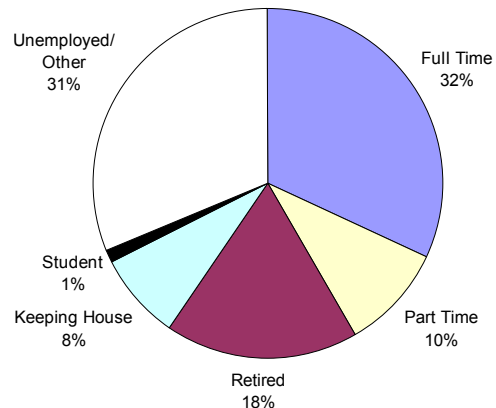
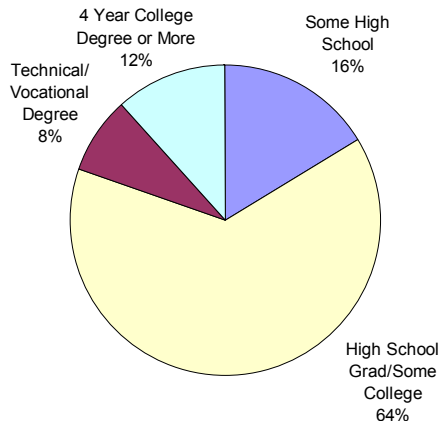
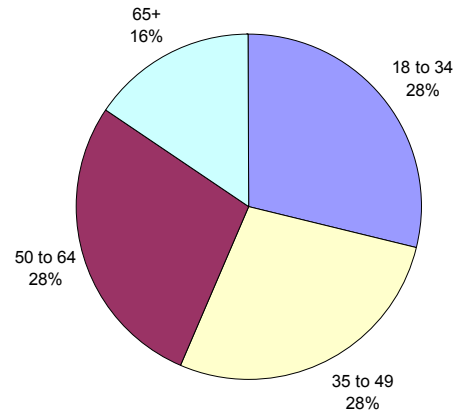
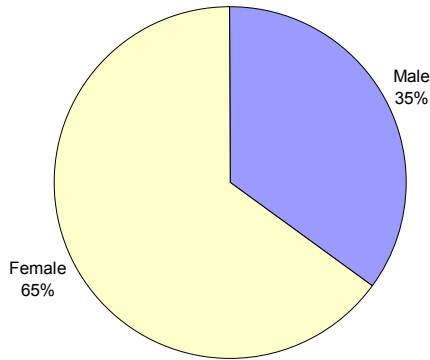
*** Insufficient sample size for calculation of population estimates.

2001 Utah Health Status Survey, Utah Department of Health

A Profile of Utahns With Poor Health Status



The Distribution of Persons With Poor Physical and Mental Health by Sex, Age, Education, Employment, Marital Status, and Income Category: Adults Age 18 or Over, 2001.



- Women made up 65% of all adult Utahns with both poor physical and mental health. Nearly twice as many women as men suffer both poor physical and mental health.
- While divorced/separated/widowed individuals made up one third of all adults with poor physical and mental health, they were three times more likely than either married or never married individuals to report both poor physical and mental health.

A Profile of Utahns With Poor Health Status



Table 10. A Profile of Utahns With Poor Physical and Mental Health, Percentage of Utahns 18 and Over With Poor Physical and Mental Health by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical and Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Sex					
Male	49.5%	775,120	5.0% $\pm$ 1.1%	38,600	35.1%
Female	50.5%	790,430	9.0% $\pm$ 1.4%	71,300	64.9%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Age Group					
18 to 34	42.7%	669,170	4.7% $\pm$ 1.2%	31,200	28.8%
35 to 49	28.1%	439,986	6.8% $\pm$ 1.6%	30,000	27.7%
50 to 64	16.7%	262,021	11.6% $\pm$ 2.7%	30,300	28.0%
65+	12.4%	194,373	8.6% $\pm$ 2.6%	16,800	15.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Sex and Age					
Males, 18 to 34	21.6%	338,358	2.4% $\pm$ 1.5%	8,100	7.3%
Males, 35 to 49	14.2%	222,338	5.7% $\pm$ 2.2%	12,700	11.5%
Males, 50 to 64	8.3%	129,263	9.3% $\pm$ 3.4%	12,000	10.9%
Males, 65+	5.4%	85,161	7.2% $\pm$ 4.1%	6,200	5.6%
Females, 18 to 34	21.1%	330,812	7.3% $\pm$ 2.1%	24,100	21.8%
Females, 35 to 49	13.9%	217,648	8.1% $\pm$ 2.3%	17,600	16.0%
Females, 50 to 64	8.5%	132,758	14.0% $\pm$ 4.3%	18,600	16.9%
Females, 65+	7.0%	109,212	10.1% $\pm$ 3.2%	11,000	10.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Education					
Some High School	6.7%	105,543	17.5% $\pm$ 6.2%	18,500	16.5%
High School Grad/Some College	54.6%	854,487	8.4% $\pm$ 1.3%	71,500	63.7%
Technical/Vocational Degree	9.5%	148,993	6.2% $\pm$ 2.7%	9,200	8.2%
4 Year College Degree or More	29.2%	456,525	2.9% $\pm$ 1.0%	13,100	11.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Annual Household Income					
Under \$20,000	11.3%	176,750	26.4% $\pm$ 5.1%	46,600	37.9%
\$20,000 to <\$45,000	35.7%	559,527	7.6% $\pm$ 1.8%	42,700	34.7%
\$45,000 to <\$65,000	22.7%	355,693	5.5% $\pm$ 1.9%	19,600	15.9%
\$65,000 and Over	30.2%	473,578	3.0% $\pm$ 1.2%	14,100	11.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%

A Profile of Utahns With Poor Health Status



Table 10 (continued). A Profile of Utahns With Poor Physical and Mental Health, Percentage of Utahns 18 and Over With Poor Physical and Mental Health by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical and Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Marital Status					
Married	68.9%	1,078,794	5.7% $\pm$ 1.0%	61,100	53.8%
Never Married	18.6%	291,692	5.7% $\pm$ 2.4%	16,800	14.8%
Divorced/Separated/Widowed	12.5%	195,064	18.3% $\pm$ 3.7%	35,600	31.4%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Employment Status					
Full Time	57.0%	892,245	4.2% $\pm$ 1.0%	37,800	31.9%
Part Time	13.8%	216,631	5.3% $\pm$ 2.3%	11,400	9.6%
Retired	12.1%	189,178	11.2% $\pm$ 3.3%	21,100	17.8%
Keeping House	9.5%	148,259	6.5% $\pm$ 2.6%	9,600	8.1%
Student	2.8%	43,181	3.0% $\pm$ 3.2%	1,300	1.1%
Unemployed/Other	4.9%	76,056	48.9% $\pm$ 10.0%	37,200	31.4%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Local Health District*					
Bear River	6.0%	93,555	4.6% $\pm$ 2.1%	4,300	4.0%
Central	2.8%	44,411	7.0% $\pm$ 2.7%	3,100	2.9%
Davis	10.3%	160,801	4.6% $\pm$ 2.3%	7,400	6.8%
Salt Lake	40.9%	640,654	7.4% $\pm$ 1.7%	47,600	44.0%
Southeastern	2.3%	35,968	8.5% $\pm$ 3.2%	3,000	2.8%
Southwest	6.5%	101,940	7.7% $\pm$ 3.0%	7,900	7.3%
Summit	1.4%	22,186	2.5% $\pm$ 1.6%	500	0.5%
Tooele	1.9%	29,436	7.5% $\pm$ 2.6%	2,200	2.0%
TriCounty	1.8%	27,434	11.1% $\pm$ 3.5%	3,100	2.9%
Utah County	16.3%	254,723	6.0% $\pm$ 2.1%	15,200	14.1%
Wasatch	0.7%	10,662	5.2% $\pm$ 2.4%	600	0.6%
Weber-Morgan	9.2%	143,780	9.2% $\pm$ 3.6%	13,200	12.2%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Poverty Level					
<100% Federal Poverty Level	6.9%	108,256	28.5% $\pm$ 7.2%	30,900	26.7%
101-200% Federal Poverty Level	19.6%	307,257	12.2% $\pm$ 2.8%	37,400	32.3%
201-300% Federal Poverty Level	27.3%	427,857	5.6% $\pm$ 1.7%	24,100	20.8%
>300% Federal Poverty Level	46.1%	722,180	3.2% $\pm$ 1.0%	23,300	20.1%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Hispanic Status					
Hispanic	7.8%	122,449	11.3% $\pm$ 4.6%	13,800	12.8%
Non-Hispanic	92.2%	1,443,099	6.5% $\pm$ 0.9%	94,300	87.2%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%

A Profile of Utahns With Poor Health Status



Table 10 (continued). A Profile of Utahns With Poor Physical and Mental Health, Percentage of Utahns 18 and Over With Poor Physical and Mental Health by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Adult Utahns With Poor Physical and Mental Health		
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²	Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
Insurance Coverage					
Insured	90.3%	1,413,071	6.5% $\pm$ 0.9%	91,900	85.4%
Uninsured	9.7%	152,479	10.3% $\pm$ 3.9%	15,700	14.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%
Religion					
Protestant	10.2%	160,282	5.9% $\pm$ 2.4%	9,500	8.7%
Catholic	9.1%	142,774	10.2% $\pm$ 4.1%	14,500	13.4%
LDS	65.0%	1,018,202	6.3% $\pm$ 1.0%	64,400	59.3%
Jehovah Witness	0.3%	4,773	*** $\pm$ ***	***	***
Other	3.1%	48,160	7.7% $\pm$ 5.3%	3,700	3.4%
No Religion	12.2%	191,359	7.8% $\pm$ 2.9%	14,900	13.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	6.9% $\pm$ 0.9%	107,900	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

4 Figures in these columns do not sum to the total because of missing values on the grouping variables.

5 These rates have not been age adjusted.

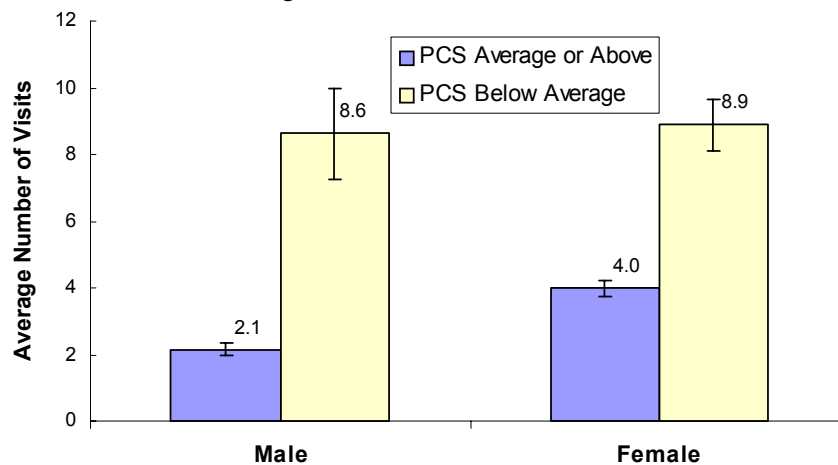
*** Insufficient sample size for calculation of population estimates.

2001 Utah Health Status Survey, Utah Department of Health

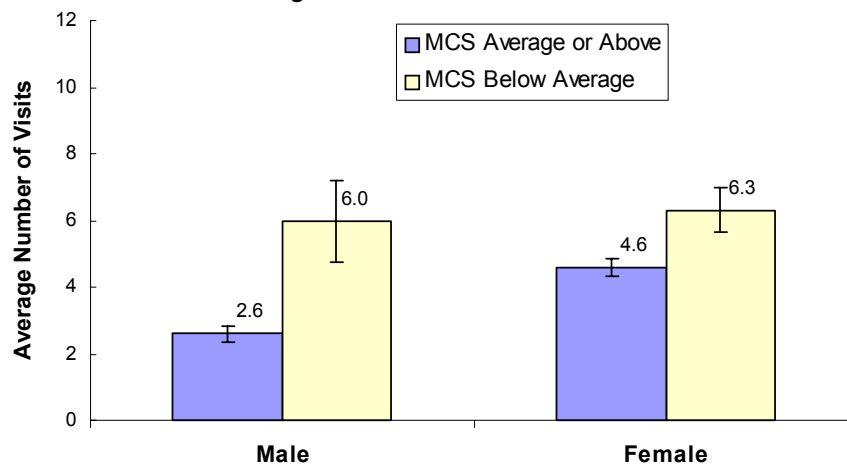
A Profile of Utahns With Poor Health Status



Average Number of Outpatient Medical Visits in Past Twelve Months by Physical Health Status and Sex, Adults Age 18 or Over, Utah, 2001



Average Number of Outpatient Medical Visits in Past Twelve Months by Mental Health Status and Sex, Adults Age 18 or Over, Utah, 2001



- Poor physical and mental health status was associated with greater numbers of outpatient medical visits. Those with poor physical or mental health had significantly more outpatient medical visits than those with above average physical or mental health.
- Among those with above average physical or mental health, women had significantly more outpatient medical visits than men. However, this difference largely disappears for those with poor physical or mental health.

A Profile of Utahns With Poor Health Status



Table 11. Average Number of Outpatient Medical Visits in the Last 12 Months for Utahns 18 and Over by Physical Health Status

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Average Outpatient Medical Visits for Adults by Physical Health Status			
	Percentage Distribution	Number of Persons ¹	Average Number of Medical Visits, Last 12 Months ²		Total Number of Medical Visits ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Physical Health Status						
Average or Above	82.7%	1,294,541	3.0	± 0.15	3,933,000	62.3%
Below Average	17.3%	271,009	8.8	± 0.73	2,379,100	37.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Physical Health Status and Sex						
Average or Above, Males	42.6%	666,411	2.1	± 0.18	1,431,300	22.7%
Females	40.1%	628,130	4.0	± 0.23	2,503,300	39.6%
Below Average, Males	7.1%	110,494	8.6	± 1.36	953,500	15.1%
Females	10.3%	160,514	8.9	± 0.78	1,425,700	22.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Physical Health Status and Age Group						
Average or Above, 18 to 34 Years	37.6%	588,870	3.3	± 0.24	1,920,300	30.4%
35 to 49 Years	22.8%	356,597	2.5	± 0.22	880,000	13.9%
50 to 64	13.6%	213,017	3.0	± 0.41	634,800	10.1%
65+	8.7%	136,057	3.7	± 0.41	498,800	7.9%
Below Average, 18 to 34 Years	5.6%	88,037	7.7	± 1.31	681,700	10.8%
35 to 49 Years	4.5%	69,801	8.9	± 1.40	620,600	9.8%
50 to 64	4.4%	68,249	9.8	± 1.36	665,600	10.5%
65+	2.9%	44,922	9.1	± 1.82	410,800	6.5%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

4 Figures in these columns do not sum to the total because of missing values on the grouping variables.

5 These rates have not been age adjusted.

2001 Utah Health Status Survey, Utah Department of Health

A Profile of Utahns With Poor Health Status



Table 12. Average Number of Outpatient Medical Visits in the Last 12 Months for Utahns 18 and Over by Mental Health Status

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Average Outpatient Medical Visits for Adults by Mental Health Status			
	Percentage Distribution	Number of Persons ¹	Average Number of Medical Visits, Last 12 Months ²		Total Number of Medical Visits ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Mental Health Status						
Average or Above	81.8%	1,280,076	3.5	± 0.18	4,537,300	72.0%
Below Average	18.2%	285,474	6.2	± 0.62	1,767,300	28.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Mental Health Status and Sex						
Average or Above, Males	42.6%	666,962	2.6	± 0.23	1,726,300	27.4%
Females	39.2%	613,115	4.6	± 0.26	2,813,600	44.6%
Below Average, Males	7.0%	109,944	6.0	± 1.22	658,400	10.4%
Females	11.2%	175,530	6.3	± 0.65	1,109,000	17.6%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%
Mental Health Status and Age Group						
Average or Above, 18 to 34 Years	35.6%	557,006	3.4	± 0.26	1,915,900	30.4%
35 to 49 Years	22.2%	347,590	3.0	± 0.31	1,046,500	16.6%
50 to 64	14.4%	225,029	3.9	± 0.46	870,400	13.8%
65+	9.6%	150,452	4.7	± 0.58	704,700	11.2%
Below Average, 18 to 34 Years	7.7%	119,902	5.7	± 0.98	684,700	10.9%
35 to 49 Years	5.0%	78,808	5.7	± 1.00	450,800	7.1%
50 to 64	3.6%	56,237	7.6	± 1.51	426,800	6.8%
65+	1.9%	30,527	6.7	± 1.89	205,200	3.3%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	4.1	± 0.18	6,353,700	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

4 Figures in these columns do not sum to the total because of missing values on the grouping variables.

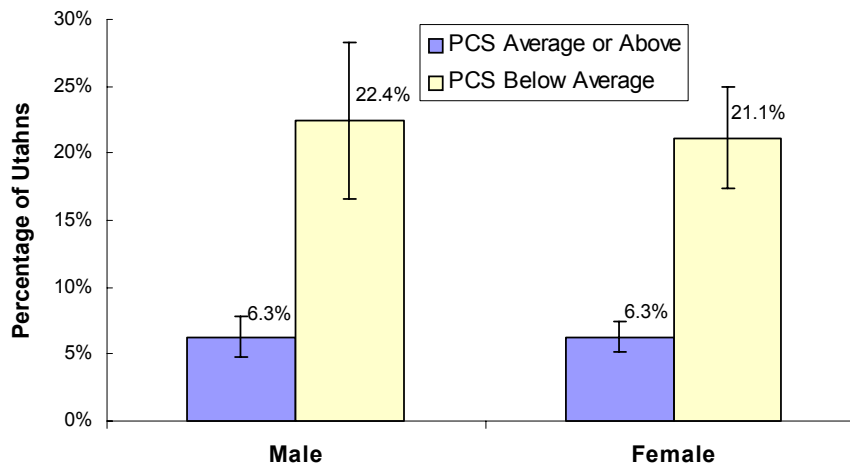
5 These rates have not been age adjusted.

2001 Utah Health Status Survey, Utah Department of Health

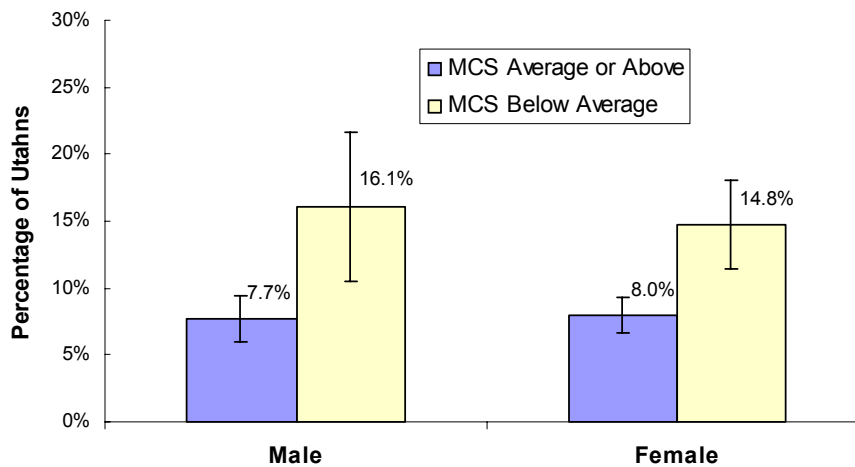
A Profile of Utahns With Poor Health Status



Percentage of Utahns With an Overnight Hospital Stay by Physical Health Status and Sex, Adults Age 18 or Over, Utah, 2001



Percentage of Utahns With an Overnight Hospital Stay by Mental Health Status and Sex, Adults Age 18 or Over, Utah, 2001



- Persons with below average physical and mental health were significantly more likely to have had at least one overnight hospital stay in the last 12 months. This was true for both men and women.

A Profile of Utahns With Poor Health Status



Table 13. Percentage of Utahns 18 and Over With an Overnight Hospital Stay in the Last 12 Months by Physical Health Status

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Number of Adults Who Had an Overnight Hospital Stay by Physical Health Status			
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²		Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	10.0%	± 0.7%	156,800	100.0%
Physical Health Status						
Average or Above	82.7%	1,294,541	6.3%	± 1.0%	81,400	58.1%
Below Average	17.3%	271,009	21.6%	± 3.2%	58,600	41.9%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%
Physical Health Status and Sex						
Average or Above, Males	42.6%	666,411	6.3%	± 1.6%	42,000	30.0%
Females	40.1%	628,130	6.3%	± 1.1%	39,500	28.2%
Below Average, Males	7.1%	110,494	22.4%	± 5.9%	24,700	17.6%
Females	10.3%	160,514	21.1%	± 3.8%	33,900	24.2%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%
Physical Health Status and Age Group						
Average or Above, 18 to 34 Years	37.6%	588,870	4.3%	± 1.2%	25,600	18.6%
35 to 49 Years	22.8%	356,597	4.7%	± 1.6%	16,600	12.0%
50 to 64	13.6%	213,017	8.2%	± 2.6%	17,500	12.7%
65+	8.7%	136,057	14.6%	± 4.0%	19,900	14.4%
Below Average, 18 to 34 Years	5.6%	88,037	17.3%	± 5.6%	15,200	11.0%
35 to 49 Years	4.5%	69,801	16.6%	± 5.9%	11,600	8.4%
50 to 64	4.4%	68,249	32.6%	± 7.2%	22,300	16.2%
65+	2.9%	44,922	20.4%	± 6.6%	9,200	6.7%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

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5 These rates have not been age adjusted.

2001 Utah Health Status Survey, Utah Department of Health

A Profile of Utahns With Poor Health Status



Table 14. Percentage of Utahns 18 and Over With an Overnight Hospital Stay in the Last 12 Months by Mental Health Status

by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Number of Adults Who Had an Overnight Hospital Stay by Mental Health Status			
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²		Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	10.0%	± 0.7%	156,800	100.0%
Mental Health Status						
Average or Above	81.8%	1,280,076	7.8%	± 1.0%	100,200	69.7%
Below Average	18.2%	285,474	15.2%	± 2.9%	43,500	30.3%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%
Mental Health Status and Sex						
Average or Above, Males	42.6%	666,962	7.7%	± 1.7%	51,300	35.7%
Females	39.2%	613,115	8.0%	± 1.3%	48,800	34.0%
Below Average, Males	7.0%	109,944	16.1%	± 5.6%	17,700	12.3%
Females	11.2%	175,530	14.8%	± 3.3%	25,900	18.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%
Mental Health Status and Age Group						
Average or Above, 18 to 34 Years	35.6%	557,006	4.6%	± 1.2%	25,600	18.2%
35 to 49 Years	22.2%	347,590	6.7%	± 1.9%	23,400	16.7%
50 to 64	14.4%	225,029	11.9%	± 2.9%	26,800	19.1%
65+	9.6%	150,452	14.4%	± 3.7%	21,600	15.4%
Below Average, 18 to 34 Years	7.7%	119,902	13.0%	± 4.5%	15,500	11.0%
35 to 49 Years	5.0%	78,808	7.6%	± 3.7%	6,000	4.3%
50 to 64	3.6%	56,237	24.9%	± 8.1%	14,000	10.0%
65+	1.9%	30,527	24.7%	± 8.5%	7,500	5.3%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	9.4%	± 1.0%	147,000	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

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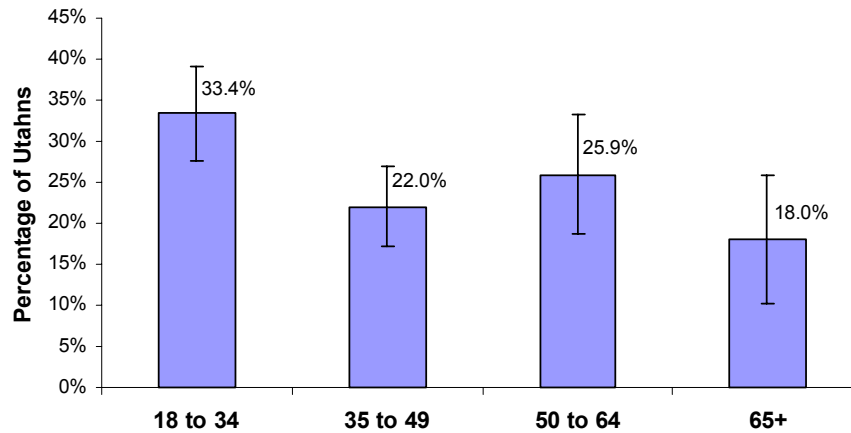
5 These rates have not been age adjusted.

2001 Utah Health Status Survey, Utah Department of Health

A Profile of Utahns With Poor Health Status



Percentage of Utahns With Below Average Mental Health
Who Sought Professional Care in the Past 12 Months by
Age, Adults Age 18 or Over, Utah, 2001



- People with below average mental health were less likely to seek professional care as age increased.



Table 15. Percentage of Utahns 18 and Over With Below Average Mental Health Who Sought Professional Counseling in the Last 12 Months
by Selected Demographic Characteristics, Utah Residents, Age 18 and Over, 2001.

Demographic Subgroup	Population Size		Survey Estimates of Number of Adults With Below Average Mental Health Who Sought Professional Counseling in the Last 12 Months			
	Percentage Distribution	Number of Persons ¹	Percentage of Persons ²		Number of Persons ^{3,4}	Percentage Distribution by Demographic Subgroup
2001, Utah Population, All Utahns, 18 Years and Over	100.0%	1,565,550	27.1%	± 3.3%	424,800	100.0%
Sex						
Male	49.5%	775,120	26.1%	± 6.0%	202,700	48.0%
Female	50.5%	790,430	27.8%	± 3.8%	219,400	52.0%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	27.1%	± 3.3%	424,800	100.0%
Age Group						
18 to 34	42.7%	669,170	33.4%	± 5.8%	223,300	52.8%
35 to 49	28.1%	439,986	22.0%	± 5.0%	97,000	22.9%
50 to 64	16.7%	262,021	25.9%	± 7.3%	67,900	16.0%
65+	12.4%	194,373	18.0%	± 7.8%	35,000	8.3%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	27.1%	± 3.3%	424,800	100.0%
Sex and Age						
Males, 18 to 34	21.6%	338,358	34.5%	± 11.4%	116,800	27.6%
Males, 35 to 49	14.2%	222,338	13.5%	± 6.9%	30,000	7.1%
Males, 50 to 64	8.3%	129,263	31.4%	± 12.9%	40,600	9.6%
Males, 65+	5.4%	85,161	21.7%	± 15.7%	18,500	4.4%
Females, 18 to 34	21.1%	330,812	32.7%	± 6.5%	108,200	25.6%
Females, 35 to 49	13.9%	217,648	28.4%	± 6.6%	61,900	14.6%
Females, 50 to 64	8.5%	132,758	22.5%	± 8.5%	29,900	7.1%
Females, 65+	7.0%	109,212	15.8%	± 8.1%	17,300	4.1%
Total, All Utahns, Age 18 and Over	100.0%	1,565,550	27.1%	± 3.3%	424,800	100.0%

1 Population Estimates based on the 2001 UHSS.

2 Plus or minus 95% confidence interval.

3 Rounded to the nearest 100 persons.

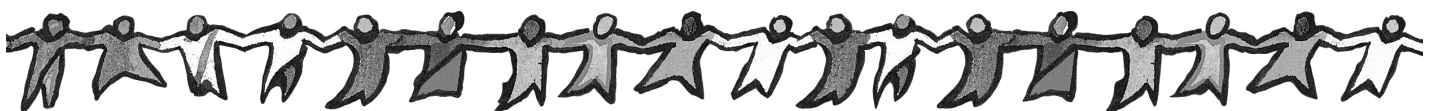
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2001 Utah Health Status Survey, Utah Department of Health



Technical Notes





General Technical Background to the 2001 Health Status Survey

Introduction

The purpose of this section is to provide the reader with a general methodological overview of the project. Persons interested in obtaining additional or more detailed information may contact:

Office of Public Health Assessment
Center for Health Data
Utah Department of Health
P O Box 142101
Salt Lake City, UT 84114-2101
Phone: (801) 538-6108
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Sample Design

The 2001 Utah Health Status Survey represents the fourth such survey: previous surveys were conducted in 1986, 1991, and 2001. The statistical estimates in this report are based on *2001 Utah Health Status Survey* data.

The sample was a **complex survey sample** designed to be representative of all non-institutionalized Utahns in households with telephones. It is best described as a weighted probability sample of 7,520 households disproportionately stratified by twelve local health districts that cover the entire state. The sample was stratified so that the survey estimates could be provided

Health District / Small Area	Unweighted Counts	
	Households	Persons
1 Bear River Health District	619	1,985
2 Central Health District	476	1,537
3 Davis County Health District	470	1,565
4 Salt Lake Valley Health District	1,615	5,110
5 Southeastern Health District	484	1,403
6 Southwest Health District	501	1,576
7 Summit Health District	510	1,513
8 Tooele Health District	611	2,030
9 Tri-County Health District	587	1,862
10 Utah County Health District	763	2,691
11 Wasatch Health District	453	1,518
12 Weber/Morgan Health District	431	1,298
State Total	7,520	24,088

for each local health district.

A **single stage, non-clustered, equal probability of selection telephone calling design**, more specifically referred to as the Casady-Lepkowski (1993) calling design, was used to generate telephone numbers in each local health district. This method begins by building a base sampling frame consisting of all possible telephone numbers from all working prefixes in Utah.



Telephone numbers are arranged sequentially into groups of 100 by selecting all telephone numbers within an area code and prefix, plus the first and second digits of the suffix (e.g., 801-538-10XX represents a group that includes all 100 phone numbers between 801-538-1000 and 801-538-1099). Each group of 100 telephone numbers is classified as either high density (at least one residential listing) or low density (no listed residential phone numbers in the group). All low density groups are removed, and high density groups are retained. Telephone numbers are randomly selected from the high-density list. This sampling design ensures that both listed and unlisted phone numbers are included in the sample.

The Utah Department of Health contracted with PEGUS Research Inc. to collect the survey data. The survey interview was conducted with **one randomly selected adult** (age 18 or older) in each household. To select this person, PEGUS interviewers collected household membership information from the household contact person (the person who answered the phone). The adult household member who had celebrated the most recent birthday was then selected from the list of all household members age 18 or over. Survey questions were then asked about either, 1) all household members, 2) the survey respondent only, 3) a randomly selected adult or child household member (used only in the injuries section), or 4) the household as a whole. Thus, the survey sample varies, depending on the within-household sample that was used for each set of survey questions. Each within-household sample has known probabilities of selection and has been weighted appropriately so it can be generalized to the Utah population.

Questionnaire Construction

The 2001 Utah Health Status Survey was based on the 1996 Utah Health Status Survey questionnaire. For the 2001 questionnaire, some changes were made based on input from the Health Surveys Advisory Committee and the Health Status Survey staff. These changes included enhancing the sections on health insurance coverage and access to health care. These changes were made in order to obtain more detailed information and to allow for comparison with large, federal surveys, such as the Current Population Survey (CPS). The entire survey questionnaire may be found on-line at <http://ibis.health.utah.gov/ophapubs.html>.

Survey Data Collection

PEGUS Research, Inc. incorporated the telephone survey instrument into a **computer-assisted telephone interviewing (CATI)** software program. Interviews were conducted by trained interviewers in a supervised and monitored environment at one location in the Salt Lake Valley. One hundred and eighty-five interviews (2.5%) were conducted in Spanish.

Computer assisted telephone interviewing was chosen as the method of data collection for several reasons. First, it yields high response rates, thus resulting in a more representative sample and reducing the amount of bias inherent in mail survey response rates. Second, it helps reduce non-sampling error by standardizing the data collection process. Data-entry errors are reduced because interviewers are not allowed to enter non-valid codes. It was also efficient because it allowed interviewers to enter responses directly into the database.

Response Rate

The interview process took place over a seven-month period (from May to November, 2001), and resulted in a response rate of 40.8%. If necessary, up to fifteen telephone attempts were



made to contact a selected household.

Weighting Methods

Post-survey weighting adjustments were made so that the Health Status Survey findings could be more accurately generalized to Utah's population. Two types of post-survey weighting adjustments were made: one that adjusted for random sampling variation and one that adjusted for disproportionate sampling (such as the over-sampling of the smaller local health districts across the state). Although the two types of adjustments are distinct conceptually, they are accomplished in a series of steps that does not distinguish between the two types.

The post-survey weighting variables adjusted for the following factors:

1. The number of **phone lines** in the household.
2. The total **number of adults in the household** (for questions that were asked only of the respondent, but were meant to be generalized to all adults in the household).
3. The proportion of **Hispanic persons** in each local health district.
4. The population **age and sex** distribution of each local health district.
5. The probabilities of selection for each **local health district**.

Calculation of Survey Estimates

Population count estimates. Once a percentage was calculated for a variable of interest (e.g., the percentage uninsured) using appropriately weighted survey data, a population count (N) to which the percentage applied was estimated. In some cases analyses referenced certain age or sex groups, Hispanic persons or combinations of Utah counties. The population count estimates for these groups were readily available from the 2000 Census. However, for other groups where population counts were largely unavailable (e.g., analyses that examined the distribution of adult males by marital status), survey data were used to estimate the population counts. This was achieved by multiplying the appropriate 2000 population total for that group (from 2000 GOPB estimates) by a proportion obtained from a frequency distribution or cross tabulation analysis of Utah Health Status Survey data. For instance, to calculate a population count for adult males who were married, the population of adult males from GOPB estimates was multiplied by percentage of married adult males in the 2001 Utah Health Status Survey sample. Thus, any population count estimates not derived directly from existing age, sex, Hispanic status or county population estimates were derived from 2001 Health Status Survey data.

Missing Values. Another consideration that affected the presentation of the population estimates in table format was the inclusion or exclusion of missing values ("don't know" and "refused to answer"). Population percentage estimates were calculated after removing the "don't know" and "refused to answer" responses from the denominator. This, in effect, assumes that persons who gave those answers were distributed identically on the variable of interest to those who gave a valid answer to that variable. For instance, that among those who did not know whether they were insured, we assumed that 91.3% of them were insured and 8.7% were not insured -- percentages identical to those found among the sample members who answered the question with a valid response.

Readers may have noticed that the numbers in the last two columns of the reference tables do not always sum to the total as they should. This was unavoidable for two reasons:



- 1) If there were missing values on the demographic grouping variable, the sum of the parts is derived from a slightly different sample than the estimate for the overall number.
- 2) The post-survey weighting adjustments cause certain irregularities in the tables.

Limitations and Other Special Considerations

Estimates developed from the sample may differ from the results of a complete census of all households in Utah due to two types of error, sampling and non-sampling error. Each type of error is present in estimates based on a survey sample. Good survey design and data collection techniques serve to minimize both sources of error.

Sampling error refers to random variation that occurs because only a subset of the entire population is sampled and used to estimate the finding, or parameter, in the entire population. It is often termed “margin of error” in popular use. Sampling error has been expressed in this report as a confidence interval. The 95% confidence interval (calculated as 1.96 times the standard error of a statistic) indicates the range of values within which the statistic would fall 95% of the time if the researcher were to calculate the statistic (e.g., a percentage) from an infinite number of samples of the same size drawn from the same base population. It is typically expressed as the “plus or minus” term, as in the following example:

“The percentage of those polled who said they would vote for George W. Bush was 47%, plus or minus 2%”.

Because the sample was clustered within households, and because local health districts were disproportionately stratified and then weighted to reflect the Utah population, the sample is considered a complex survey sample design. Estimating the sampling error for a complex survey design requires special statistical techniques. SAS software, using “proc surveymeans,” was used to estimate the standard errors of the survey estimates because it employs a statistical routine (Taylor-series expansion) that accounts for the complex survey design.

Figures in this report include error bars showing the estimated confidence interval around the parameter estimate. In cases where the confidence interval was greater in magnitude than the estimate, the estimate was not given. Estimates were not computed where the sample denominators were less than $n=50$. Readers should note that we have always presented the confidence interval as though it were symmetric, that is, of equal value both above and below (plus and minus) the estimate. It is often the case, however, that a confidence interval will be nonsymmetric. This occurs when the distribution is positively or negatively skewed, such as when a percentage is close to 0% or 100%. However, because the software program we use provides only symmetric confidence intervals, we have not provided the asymmetric estimates.

Non-sampling error also exists in survey estimates. Sources of non-sampling error include idiosyncratic interpretation of survey questions by respondents, variations in interviewer technique, household non-response to questions, coding errors, and so forth. No specific efforts were made to quantify the magnitude of non-sampling error. Non-sampling error was minimized by good questionnaire design, use of standardization in interviewer behavior and frequent, on-site, interviewer monitoring and supervision.

Comparability with other surveys is an issue with all surveys. Differences in survey design, survey questions, estimation procedures, the socio-demographic and economic context, and



changes in the structure and financing of the health care delivery system may all affect comparison between the 2001 Utah Health Status Survey and other surveys, including those conducted by the U.S. Bureau of the Census, the Behavioral Risk Factor Surveillance System surveys, and previous Utah Department of Health, Health Status Surveys.

Telephone surveys exclude certain population segments from the sampling frame, such as persons in group living quarters (e.g., military barracks, nursing homes) and households without telephones. Typically, telephone surveys are biased because telephone households underrepresent lower income and certain minority populations. In addition, studies have shown that non-telephone households tend to have lower rates of health care utilization (especially dental care), poorer health habits and health status, and lower rates of health insurance coverage (Thornberry and Massey, 1988).

Despite these overall disparities between telephone and non-telephone households, the Utah Health Status Survey estimates may be considered adequately representative of all Utah households. The 2000 U.S. Census indicated that only 2% of Utah households were without telephone service in April of 2000. Furthermore, certain research (Keeter, 1995) suggests that a similarity exists between data from non-telephone households and telephone households that experienced an interruption in service over the past 12 months. This similarity exists because many, if not most, households currently without telephones did have service in the recent past, and will have service again in the future. Therefore, certain households with telephones (those that had a recent interruption in service) are representative of “non-phone” households, allowing health status survey estimates to be corrected for telephone non-coverage bias. This correction has typically not been made, and will be clearly indicated when it is used.

Analysis of the SF-12 Scale

The purpose of this section is to provide a more thorough presentation of the methodology that was used to compute the SF-12 physical and mental composite scales and difference scores used in this report. Readers who are interested in using the SF-12 items should contact QualityMetric Incorporated. For further information about QualityMetric Incorporated go to <http://www.qualitymetric.com>.

This section is intended to provide only additional information that pertains specifically to the Utah administration of the SF-12 in the context of the 2001 Utah Health Status Survey. General information on the administration of the 2001 Utah Health Status Survey may be found in the section entitled General Technical Background to the 2001 Health Status Survey.

Brief Background of the SF-12

The SF-12 is a self-reported measure of a person's perceived health on a number of dimensions (e.g. general health status, pain, depression, etc.). It was designed to measure patient outcomes in medical practice and clinical research for a variety of purposes and has been used to measure health outcomes among groups with various physical and mental disorders, as well as compare the health outcomes of different sociodemographic groups (e.g. sex, age, education, poverty status, marital status). The Medical Outcomes Study group developed the SF-12 with the following objectives in mind 1) to serve as a measure of overall health status that took the patient's perspective into account, 2) to meet the need for a standardized health status measure-



ment tool that was comprehensive, psychometrically sound, and brief (Ware & Sherbourne, 1992).

The SF-12 Version 2 is the most recent in a series of health status measures developed by the Medical Outcomes Study Group. Early on there were 18 and 20 item measures. More recently, a 36 item short form health status scale (SF-36) has replaced the earlier versions. The SF-36 can be scored to yield two overall measures: physical health and mental health summary measures. Each measure is composed of eight subscales, representing eight different dimensions of physical and mental health:

- Physical functioning,
- Role functioning (physical),
- Bodily pain,
- General health,
- Vitality,
- Social functioning,
- Role functioning (emotional), and
- Mental health

All eight subscales (36 items) are used to form both the physical and mental health summary measures. The first four dimensions are weighted more heavily in the construction of the physical health summary score (PCS), while the second four dimensions are weighted more heavily in the construction of the mental health summary score (MCS). The SF-36 can discriminate relatively well between persons with minor medical conditions, serious physical conditions, psychiatric conditions, and those with both serious physical and psychiatric conditions (Ware et al., 2000).

The SF-12 is not intended to replace the SF-36. Rather, a subset of 12 questions was selected from the SF-36, because 36 items were too many to include on most questionnaires (the 2001 Utah Health Status Survey being no exception). The 12 item subset explains over 90% of the statistical variance in the original 36 item physical and mental health summary scale measures. It can be scored so that it reproduces the average scores for the summary measures with a high degree of comparability, and it can be printed on one to two pages of a self-administered questionnaire or administered by an interviewer in less than two minutes on average (Ware et al., 2002).

Differences in SF-12 Versions One and Two

Version two of the SF-12, which was used in this study, differs in a few ways from version one. The second version of the SF-12 uses the same basic 12 questions used in the first version, however, changes were made to the layout of questions and response categories to improve readability and completion rates. Version two has greater comparability with translations and cultural adaptations that are widely used in the U.S. and other countries. Five-level response categories replaced previous response options for the Role Emotional and Role Physical subdomains. These changes were made to extend the range measured and increase score precision without increasing respondent burden. More specifically, changes in response options resulted in:

- a four-fold increase in the number of levels defined;



- more than five-fold increase in the range measured;
- substantially smaller standard deviations; and,
- a substantial reduction in the percentages of respondents who score at the ceiling and floor.

Five-level response categories were also used to replace the six level response categories used in the Mental Health and Vitality subdomains. The decision to eliminate one of the six response choices ('a good bit of the time') was based on research using the Thurston Method of Equal-Appearing Intervals (Thurston, 1929). Eliminating one of the response categories simplified the format of the question with little or no loss in information. In spite of changes made to the second version of the SF-12, the two versions are directly comparable to each other because the same methods were used to score and weight the measures to create the Physical and Mental Composite Scales (PCS & MCS) (Ware et al, 2002).

Data Collection

The Utah Health Status Survey interview began with a set of questions about the general characteristics of each household member (e.g. age, height, weight, race). One SF-12 item, (In general, would you say your/[name's] health is poor, fair, good, very good or excellent?) was asked for all household members. The remaining SF-12 questions were asked immediately after the general demographic questions to avoid the context effects that other material in the survey (e.g., questions on chronic conditions and doctor visits) might have upon responses to the SF-12 questions. With the exception of the general health question, the remaining SF-12 questions were asked only of the survey respondents. The respondent was not asked to provide information on other persons in the household because it was believed that he or she could not accurately provide proxy data for other household members for the SF-12 items. As a result, the SF-12 results in this report were derived from the responses of the 7,520 randomly selected adult respondents, and are representative of persons age 18 and over in the State of Utah. They do not, however, represent the health status of those under the age of 18.

Data Analysis

Initial Scoring. The SF-12 items were scored according to the procedure in Ware et al (2002). All items were coded so that high scores represented higher degrees of health. For example, the question about general health (In general, would you say your health is excellent, very good, good, fair or poor?) was scored so that 1 indicated poor health and 5 indicated excellent health. Several items had to be reverse coded from the way they were originally asked to obtain this order for all SF-12 items. (A detailed description of this process may be obtained from the Center for Health Data Office of Public Health Assessment).

The weighting algorithm was designed so that the SF-12 scores were consistent with both the SF-36 and SF-12 Version 1 scores, that is, each had a national mean of 50 and standard deviation of 10. Scores higher than the mean indicated that a person has better health status than average, while scores lower than the mean indicated poorer health status than average.

In Utah, as in national samples of the general population, the distribution was negatively skewed, with a range of approximately 10 to 70. Given this distribution of scores, persons with poor health outcomes tended to score much lower than the mean, as many as 40



points lower, but persons with excellent health outcomes tended to score only as many as 20 points above the mean.

Age-Specific Difference Scores. The physical and mental health summary measures differ by age group, with older persons experiencing worse physical health, but better mental health than those younger. Because of this pattern of responses, it is recommended that a person's score be interpreted in the context of his or her own age group. In order to compare across various population groups while controlling for the effects of age, we created a single score that would take into account age differences in responses (see Table 1).

Age-specific difference scores were calculated as a response to both the need for a single score that controlled for the effects of age, and the need for a scale that is more intuitive. According to psychometric scaling theory, a scale is a much more powerful measurement tool than a single item. Single items are prone to error, such as differences in interpretation by respondents. A scale is also advantageous because it can measure more of the richness of a phenomenon, such as measuring all eight dimensions of health status, ensuring that the full range of experiences is represented in the data. However, scales also have the disadvantage of often being less intuitive than a single item. It is difficult to know what a person's SF-12 score means. For example, just knowing that a given person has a PCS score of 42.5 does not tell a lot to most users of SF-12 data.

The age-specific difference score is perhaps the most intuitive way to understand a person's score. By looking at a difference score, it is immediately clear whether a person is healthier or less healthy than other persons in their comparison group. The age-specific difference score is the difference between a person's score and his or her age-specific reference group mean. Thus, if a person has a difference score of -5.5, it indicates that they scored 5.5 points lower than other persons their age -indicating somewhat poorer health. Additionally, difference scores can be compared across age groups, that is, a score of -5.5 means the same thing, regardless of the person's age. Another advantage of difference scores is the ability that the scores provide in comparing across sociodemographic groups. For example, this report used the difference scores extensively to measure the relative effect that chronic conditions such as diabetes or asthma have for persons across groups based on factors like age, gender, educational level, poverty status, and household income.

Developing Cut-Points for Above and Below Average. After computing the age-specific difference scores, the SF-12 scales were more intuitive than they had originally been. Positive scores indicated good health, while negative scores indicated poor health. However, there was still a question of how low a person's score had to be in order for him or her to be considered in poor health. Difference scores indicate the direction and magnitude of the score, but do not indicate at which point a negative score should cause concern.

The standard error of measurement is used to assign cut-off points for individual scores. The SEM is a psychometric property of the scale that indicates the extent to which an individual's score should be expected to vary over a large number of randomly parallel tests (given that his or her health has not changed) (Kosinsky, 1997; Ware, Bayliss, Robers, Kosinski & Tarlov, 1996; Nunnally, 1978). It is computed as follows:



$SEM = \text{standard deviation} * (\text{sqrt}(1 - \text{reliability coefficient}))$

The unweighted sample data were used to compute the reliability coefficient (also known as Cronbach's alpha). Weighting the survey sample was seen as unnecessary for this step because the reliability coefficient is a property of the scale that is based on the intercorrelation of items—we were not producing an estimate of a population parameter that would be generalized to the state population. In practice, weighting the data made very little difference in the value of the reliability coefficient. The same reliability coefficient was used to compute the SEM for both physical and mental health summary measures because all 12 items are used in the computation of both scales.

Weighted sample data were used to calculate the standard deviation for the two scales. Neither SUDAAN nor SAS Proc Survey Means were used to calculate the standard deviation. Standard deviations for the two scales were 9.82 and 8.79 for the PCS and MCS, respectively.

The standard errors of measurement for the physical and mental health scales were multiplied by 1.96 to derive the 95% confidence interval, the theoretical range of values within which an individual's score would vary over 95% of a large number of repeated observations with parallel forms of the same test. Conceptually, this confidence interval includes the mean scale score. If the confidence interval for a given person includes the average score, then he or she should be considered 'no different from average.' In practice, however, the confidence interval can be applied to the mean scale score to define a range, within which an individual score would be considered average. The 95% confidence intervals for the physical and mental health summary scores were 6.97 and 6.24, respectively.

Bibliography



- Bureau of Surveillance and Analysis. (1997) Health Status in Utah: The Medical Outcomes Study SF-12 (1996 Utah Health Status Survey Report). Salt Lake City, UT: Utah Department of Health
- Casady, R.,J., and J.M., Lepkowski (1993) Stratified telephone survey designs. Survey Methodology, 19 (1) 103-113.
- Idler, E.L., Benyamanini, Y. (1997) Self-rated health and mortality: A review of twenty seven community studies. Journal of Health and Social Behavior 38:21-37.
- Keeter, S. (1995) Estimating telephone noncoverage bias with a telephone survey. Public Opinion Quarterly, 59, 196-217.
- Kosinsky, M. (1997) The Health Institute, New England Medical Center, personal communications.
- Pijls, L.T., Feskens, E.J., Kromhout, D. (1993) Self-rate health, mortality, and chronic diseases in elderly men: The Zutphen study, 1985-1990. American Journal of Epidemiology 138(10): 840-8.
- Thornberry, O.T., and J.R., Massey (1988) Trends in United States telephone coverage across time and subgroups. In Robert M. Groves, P. Biermer, L. Lyberg, J.
- Massey, W. Nichols II, and J. Waksberg (eds.) Telephone Survey Methodology. New York: John Wiley and Sons.
- Ware, J.E., and C. D. Sherbourne (1992) The MOS 36-item short-form health survey (SF-36). Medical Care, 30 (6), 473-481.
- Ware, J.E., Jr., M., Kosinski, S.D., Keller (1996) A 12-item short-form health survey: Construction of scales and preliminary tests of reliability and validity. Medical Care, 34,(3), 220-233.
- Ware, J.E., and J.E. Dewey (2000) Health status and outcomes assessment tools. The International Electronic Journal of Health Education, 3, 138-148.
- Ware, J.E., M., Kosinski, D., Runer_Bowker, B., Gandek (2002) How To Score Version 2 of the SF-12 Health Survey (With a Supplement Documenting Version 1). Lincoln, RI: Quality Metric Incorporated.

