

Utah Health Status Update: Medical Outcomes Study SF-12

November 2003

Utah Department of Health

This Update summarizes an analysis of 2001 Utah Health Status Survey (HSS) data pertaining to the *Medical Outcomes Study SF-12* (SF-12). The SF-12 consists of 12 questions that provide a picture of Utahns' perceived general physical and mental health. The SF-12 questions were administered to all 7,520 randomly-selected adult survey respondents. 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 physical (PCS) and mental (MCS) composite scales each provide a score ranging from 0 to 100 (with 0 indicating the lowest level of health and 100 indicating the highest). The average score for the physical and mental composite scales within the sample were respectively 50.8 and 52.4.

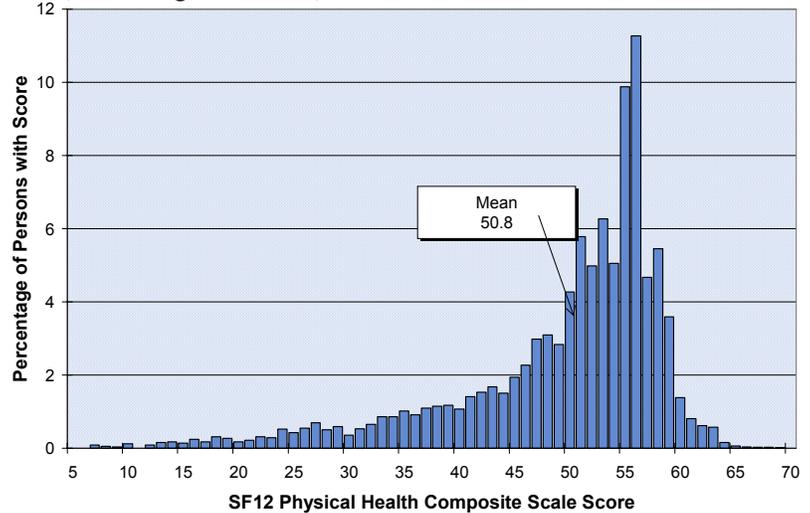
Difference scores were calculated to help interpret the meaning of the composite scores. A difference score is equal to a person's score minus the average score for his or her age group. Positive scores indicate better-than-average health, negative scores, worse than average. Difference scores can be used to compare various population groups, and to examine the associations that socioeconomic and disease factors have with the health of Utah adults.

Physical Health Status Difference Scores by Presence of Various Chronic Diseases by Sex
The presence of chronic diseases has negative effects on the physical and mental health of people. However, the SF-12 data indicate that men and women experienced different levels of physical and mental impairment from various chronic diseases.

- The physical effects of chronic disease were more severe for women than men for all chronic conditions listed, with the exception of stroke.
- Women with heart disease scored, on average, 10 points lower on the PCS than women without heart disease, indicating the extent to which heart disease interferes with physical functioning and quality of life among women in Utah.

Physical Health Composite Scale Scores

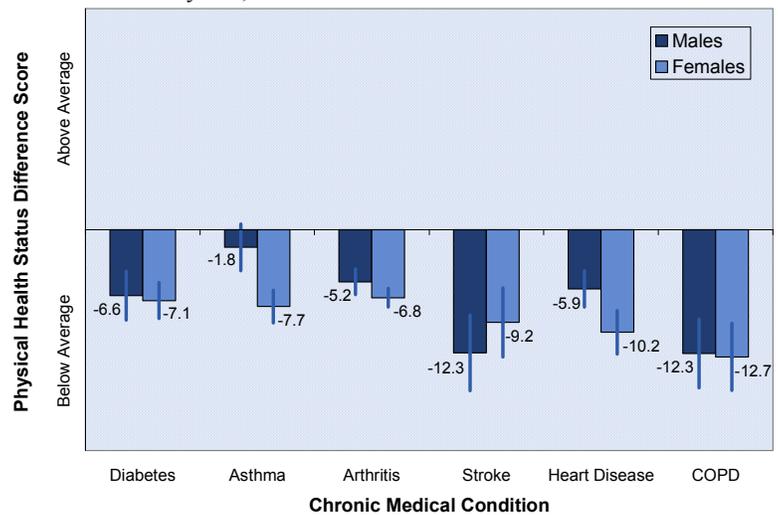
Figure 1. Medical outcomes study SF12 physical health composite scale scores, Utahns age 18 or over, 2001.



Source: 2001 Utah Health Status Survey

Physical Health Scores by Selected Chronic Diseases

Figure 2. Physical health status difference scores by the presence of various chronic diseases by sex, Utah 2001.



Source: 2001 Utah Health Status Survey

- Compared with women, men who had been diagnosed with a stroke reported worse physical health, and scored 12.3 points lower on the PCS than average, compared with 9.2 points below average for women.
- Women with asthma scored nearly eight points lower than other women on the PCS. In comparison, men with asthma scored less than two points lower than men without asthma.
- Chronic Obstructive Pulmonary Disease (COPD) has a greater negative association with the health of men and women than any of the other chronic conditions listed. Men and women with COPD scored

(respectively) on average 12.3 and 12.7 points lower than those without COPD on the PCS.

Physical Health Scores for Age by Income

Sociodemographic factors such as age, education and income have been shown to be associated with physical and mental health outcomes¹. Generally, people with higher socioeconomic status have better physical and mental health. Age is also associated with health outcomes. Typically, as age increases, physical health worsens; however, mental health improves. Income may also help offset some of the increased risk for poor physical health associated with age. As figure 3 illustrates:

- Regardless of age, those with lower incomes had lower PCS scores than peers with higher incomes.
- Differences in physical health status are most stark for those who were between the ages of 50 and 64 years, with annual household incomes under \$20,000. These individuals scored, on average, 12 points lower than age peers with greater household incomes.

Mental Health Status for Age by Income

Age and income are also associated with mental health outcomes. Generally speaking, older respondents tend to have higher scores on the MCS than those younger. Income also has a positive association with mental health. As figure 4 illustrates:

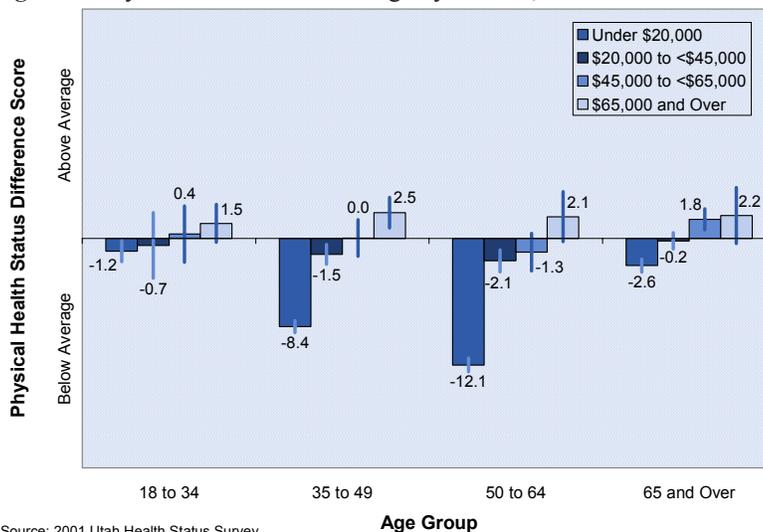
- For each age group, lower household income was associated with poorer mental health.
- Those 65 years and older with household incomes of \$65,000 and over had higher MCS scores than any other age or income group. These individuals had an average mental composite score of 57.4 and scored, on average, nearly three points higher than age peers with lower household incomes.

Conclusion

The SF-12 has been used for many years and been proven robust as a measurement of health status². Scores on the SF-12 (both physical and mental composite scores) have also been shown to be strongly associated with factors such as age, income, poverty status, education, and chronic illness. For a copy of the full report on *Medical Outcomes Study SF-12*, contact the Office of Public Health Assessment, or go to <http://health.utah.gov/ibisph/reports.html>.

Physical Health Scores for Age by Income

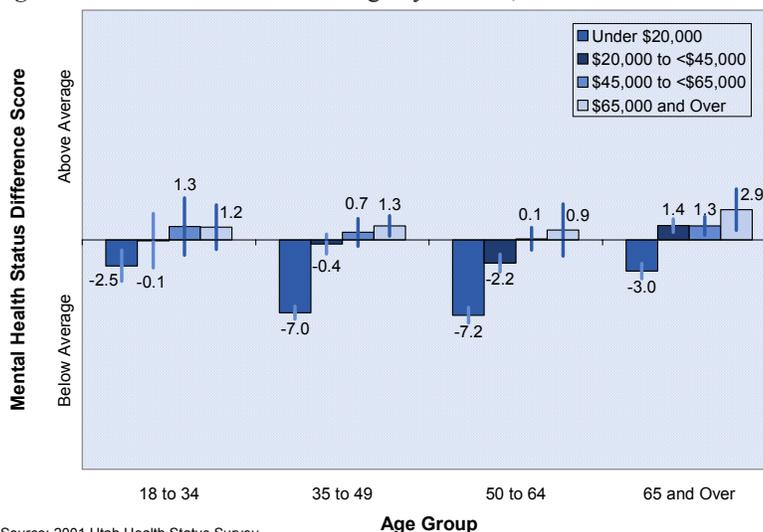
Figure 3. Physical health scores for age by income, Utah 2001.



Source: 2001 Utah Health Status Survey

Mental Health Status for Age by Income

Figure 4. Mental health status for age by income, Utah 2001.



Source: 2001 Utah Health Status Survey

References

1. Shi, L., and B. Starfield (2000). Primary care, income inequality, and self-rated health in the United States: a mixed-level analysis. *International Journal of Health Services* 30(3):541-55.
2. Ware, J.E., Jr., Kosinski, M., Keller, S.D. (1996) A 12-item short-form health survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care*, 34(3):220-33.

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For more information about this topic, please contact the Office of Public Health Assessment, Utah Department of Health, P.O. Box 142101, Salt Lake City, Utah 84114-2101, (801) 538-6108, FAX (801) 538-9346, email: phdata@utah.gov.