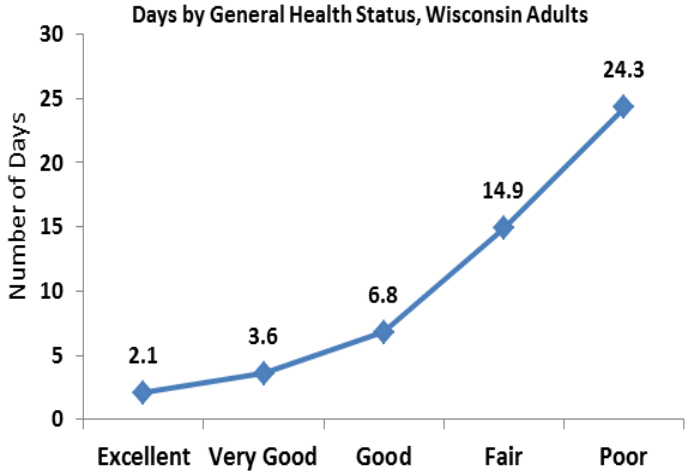
Health-Related Quality of Life:
Wisconsin Behavioral Risk Factor Surveillance, 2012-2013

Health-related quality of life (HRQOL) refers to self-perceptions of health and functioning. Research indicates that people's perceptions of their overall health are generally accurate, and that those whose health is good, poor or in-between from a medical standpoint usually experience their health – and report about it – in terms that are consistent with objective data [1]. Self-perceptions about health are therefore a legitimate source of information about health-related quality of life on a day-to-day basis. The Behavioral Risk Factor Surveillance System (BRFSS), coordinated by the U.S. Centers for Disease Control and Prevention (CDC), includes in its core survey a short series of questions on HRQOL and provides suggestions on their use (*Measuring Healthy Days*, U.S. Centers for Disease Control and Prevention, 2000). One measure derived from the question series is Unhealthy Days, a summary indicator of health-related quality of life.

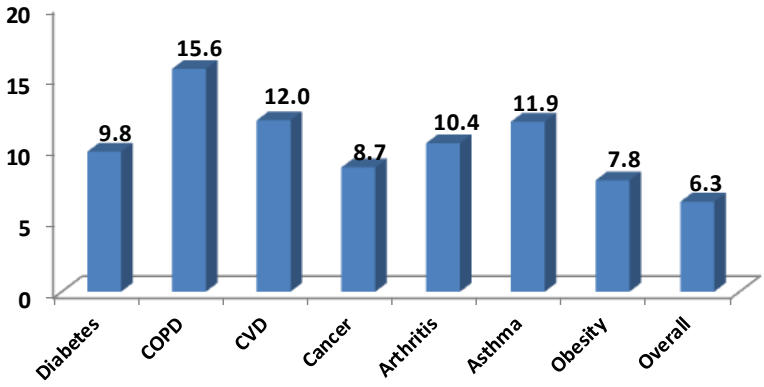
Unhealthy Days

BRFSS asks separately about the number of bad mental and physical health days in the past 30 days. Bad mental and physical health days are summed to create total days when mental health or physical health, or both, was not good, referred to as Unhealthy Days. In 2012-2013, the proportion of Wisconsin adults with any bad health days in the past 30 days was 54%. Of those with any bad health days, 63% had one type or the other, while for 36%, bad health days were of both types. Figure 1, at right, shows consistency between Unhealthy Days and self-rated general health status. For each decrement in general health, the average number of Unhealthy Days is successively higher.

Figure 1. Average Number of Unhealthy Days in the Past 30 Days by General Health Status, Wisconsin Adults



Average Number of Unhealthy Days in the Past 30 Days by Chronic Conditions



Note: COPD is chronic obstructive pulmonary disease (emphysema or chronic bronchitis). CVD is cardiovascular disease (diagnosis of heart attack, stroke or coronary heart disease). Arthritis is any type diagnosed.

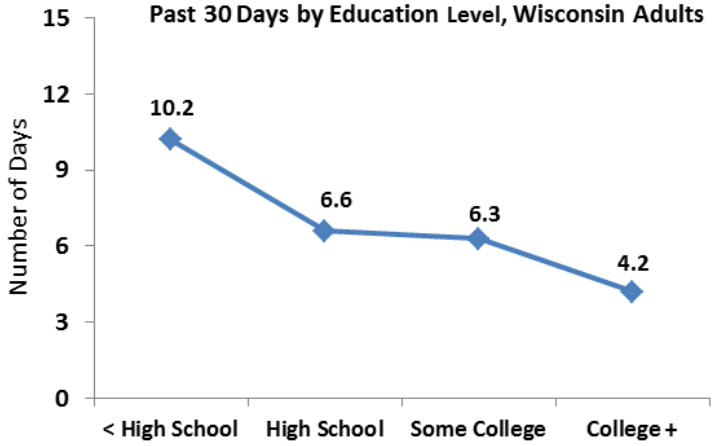
Unhealthy Days: Chronic Health Conditions

Figure 2, at left, indicates that most of the conditions shown are associated with roughly 10-15 days of bad health in the past month, reflecting their adverse effects on HRQOL. The proportion of Wisconsin adults with at least one of these conditions was 40%, not counting obesity, and 55% when obesity is included (2012-2013 Wisconsin BRFSS). Obesity, defined as a Body Mass Index of 30.0 or higher, is now considered a chronic disease by itself in addition to being a risk factor for a number of other serious health conditions.

Unhealthy Days: Disparities by Education and Race/Ethnicity

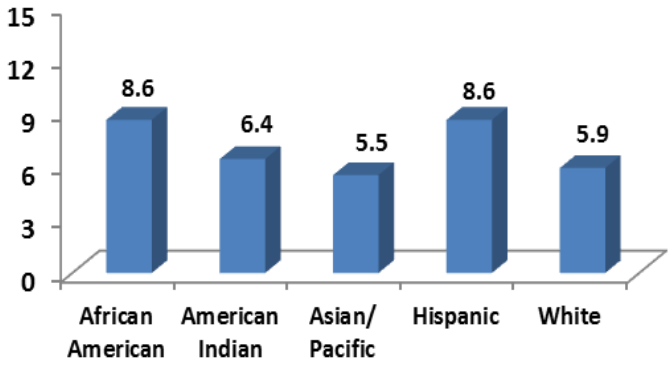
Education level is strongly related to health, and is sometimes used as a proxy for socioeconomic status in health disparities studies [2]. Figure 3, at right, shows the inverse relationship between education and Unhealthy Days: As education level increases, the number of bad health days in the past 30 days decreases. A possible contributing factor is the persistent difference in smoking by education level, with smoking prevalence highest among adults with the lowest levels of education [3].

Figure 3. Average Number of Unhealthy Days in the Past 30 Days by Education Level, Wisconsin Adults



Race and ethnicity-based health disparities in Wisconsin, and the nation as a whole, are also well-documented and are a major focus of public health research and interventions [2].

Figure 4. Average Number of Unhealthy Days in the Past 30 Days by Race/Ethnicity, Wisconsin Adults



Disparities in Unhealthy Days by race/ethnicity among Wisconsin adults are evident in Figure 4, with white and Asian adults generally having fewer such days than adults in other groups.

The differences between white and African American and white and Hispanic adults, and between Asian and African American adults are statistically significant ($p<.01$, $p<.05$). The difference between Asians and Hispanics is borderline in significance ($p=.06$).

Notes: BRFSS Question Wording: a) Would you say that in general your health is excellent, very good, good, fair or poor?; b) Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? ; c) Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

BRFSS interviews are both landline and cell phone. Annual BRFSS data are weighted by CDC to represent state adult populations. P-values in Figure 4 were produced by SAS procedure SURVEYREG.

References:

1. Beatty, P., S. Schechter and K. Whitaker. 1996. "Evaluating Subjective Health Questions: Cognitive and Methodological Investigations." Proceedings of the Section on Survey Research Methods; 51st Annual Conference of the American Statistical Association: 956-961.
2. Olshansky, S., et al. 2012. Differences in life expectancy due to race and educational difference are widening, and many may not catch up. Health Affairs 31:1803-13.
3. Meara, E., S. Richards and D. Cutler. 2008. The gap gets bigger: changes in mortality and life expectancy, by education, 1981-2000. Health Affairs 27: 350-60.