Behavioral Risk Factors in Adults

Behavioral risk factors are behaviors that increase the possibility of disease, such as smoking, alcohol use, bad eating habits, and not getting enough exercise. Because they are behaviors, it is possible for individuals to modify these risk factors to help prevent many types of chronic diseases and premature death.

Obesity

The rising prevalence of overweight and obesity among both adults and children are of serious concern nationwide. Nearly two-thirds of U.S. adults are estimated to be either overweight or obese.\(^1\) Nationally, the prevalence of overweight has doubled for children and tripled for adolescents since 1980.\(^2\) In Texas, 27% of adults are estimated to be obese. The prevalence of adult obesity in Texas has doubled since 1990, and is expected to increase to 35% by 2040.\(^2,3\) Texas is one of only 13 states in the U.S. with a percentage of obese adults exceeding 25%.\(^3\) More than one-third of Texas school children are overweight. This is alarming because overweight children have a 25 to 50 percent chance of becoming obese adults.\(^3\)

The amount of body fat in an individual is usually estimated by calculating body mass index (BMI), which accounts for both weight and height. Adults with a BMI of 30 or greater are considered obese.\(^3\) Obesity is associated with increased risk of a host of health problems, including heart disease, stroke, hypertension, hypercholesterolemia, diabetes, osteoarthritis, and several different types of cancer.\(^3,4\) Since overweight and obesity are usually caused by an energy imbalance (consuming more calories than are used) over a long period of time, poor eating habits and not getting enough physical exercise are two major contributing factors for these conditions.\(^5\)

African-American and Hispanic adults in the U.S. have higher obesity prevalences than non-Hispanic white adults. Both overweight and obesity increase with age; adolescents have a higher prevalence of overweight than do children,
and older adults tend to have a higher prevalence of obesity than do younger adults. In 2004, the nationwide prevalence of obesity was slightly higher in women than in men.\textsuperscript{6}

**Obesity in South Texas**

In 2002-2005, almost 30\% of adults who lived in South Texas were obese. The prevalence of obesity in South Texas was higher than the prevalence of obesity in the rest of Texas or nationwide (Figure 8.1).

![Bar chart showing obesity prevalence by location](image)

**Figure 8.1.** Estimated percent of the adult (age 18 or older) population with obesity by location, 2002-2005.

In South Texas, a higher prevalence of obesity was seen in Hispanic adults (34\%) than in non-Hispanic whites (22\%). Hispanics in South Texas had a higher prevalence of obesity (34\%) than did Hispanics in the rest of Texas (27\%). This pattern was not seen among non-Hispanic whites (Figure 8.2).
Age and gender obesity prevalence patterns in South Texas were similar to national trends. The highest age-specific obesity prevalence was observed among adults ages 45-64 (37%). For all races combined, the prevalence of obesity was almost identical in South Texas metropolitan and non-metropolitan counties. However, the percentage of Hispanics who were obese in non-metropolitan counties was higher than the percentage of obese Hispanics in metropolitan counties. The opposite was seen among non-Hispanic whites – the prevalence of obesity was higher in metropolitan counties than in non-metropolitan ones (Figure 8.3).
Figure 8.3. Estimated percent of the adult population with obesity in South Texas by county designation and race/ethnicity, 2002-2005.
Source: Texas Behavioral Risk Factor Surveillance System Combined Year Dataset, Statewide BRFSS Survey, 2002-2005

References


Physical Activity

Engaging in regular physical activity can help prevent conditions such as obesity, heart disease, diabetes, hypertension, colon cancer, and premature mortality. Regular, moderate levels of exercise each day can lead to improved health and well-being. The CDC recommends that adults either engage in moderate-intensity physical activity for at least 30 minutes five or more days per week or engage in vigorous-intensity physical activity for at least 20 minutes three or more days per week.

Even though the benefits of physical activity are well known, more than 50% of all adults in the U.S. get less than the recommended amount of physical activity, and 24% are not active at all during their leisure time. Nationally, fewer women than men get sufficient physical activity. Activity also decreases with age; older individuals are less likely to get adequate physical activity. Inadequate physical activity is more common among adults with lower incomes and less education. Inadequate physical activity is not only a problem for adults. An estimated two-thirds of high-school-aged youth are not engaged in recommended physical activity levels.

Inadequate Physical Activity in South Texas

An estimated 54% of adults in South Texas got inadequate physical activity (did not meet weekly recommendations for moderate or vigorous physical activity) during 2003-2005. This percentage was similar to the estimated prevalence of inadequate physical activity in the rest of Texas (Figure 8.4). Adults in South Texas also had a prevalence of inadequate physical activity similar to the nationwide 2002-2005 BRFSS estimate (53%).

Hispanics in South Texas had a lower prevalence of inadequate physical activity (56%) than Hispanics in the rest of Texas (61%). In South Texas, the percentage of Hispanics who did not engage in sufficient physical activity was slightly higher, but not statistically significantly higher, than the percentage for non-Hispanic whites (Figure 8.4).
Inadequate physical activity gender and age patterns among South Texas adults were the same as those reported nationwide. In South Texas, inadequate physical activity increased with age among both Hispanic and non-Hispanic white adults. However, Hispanics ages 45 and older had a higher prevalence of inadequate physical activity than did non-Hispanic whites of the same age group (Figure 8.5).
Figure 8.5. Estimated prevalence of inadequate physical activity among South Texas adults by age group and race/ethnicity, 2003-2005. Source: Texas Behavioral Risk Factor Surveillance System Combined Year Dataset, Statewide BRFSS Survey, 2003-2005

References


Nutrition

Good nutrition can help lower the risk of chronic diseases such as stroke, heart disease, osteoporosis, and diabetes.\(^1\) Adequate fruit and vegetable consumption is a key component of good nutrition. Fruits and vegetables contain vitamins, minerals, and fiber that are critical to good health. It is likely that people who consume more generous amounts of fruits and vegetables have a reduced risk of cardiovascular disease and certain cancers than people who eat only small amounts of fruits and vegetables.\(^2\) The U.S. Department of Health and Human Services and the U.S. Department of Agriculture recommend that adults with a 2,000-calorie intake eat 2 cups of fruit and 2 ½ cups of vegetables every day.\(^3\)

Less than one-fourth of U.S. adults had adequate fruit and vegetable consumption (five or more servings of fruits and vegetables each day) in 2005. Nationally, a higher percentage of women had adequate fruit and vegetable consumption than men. Inadequate fruit and vegetable consumption was higher for Hispanic adults than for any other racial/ethnic group. Younger adult age groups (ages 18-44) were more likely to consume inadequate amounts of fruits and vegetables than older adults (ages 45 or older).\(^4\)

Inadequate Fruit and Vegetable Consumption in South Texas

An estimated 77% of adults in South Texas had inadequate fruit and vegetable consumption (less than five servings of fruits and vegetables per day) during 2002, 2003, and 2005. This percentage was very similar to the percent of adults with inadequate fruit and vegetable consumption in the rest of Texas and nationwide.

Sex, age, and race/ethnicity patterns of inadequate fruit and vegetable consumption in South Texas were the same as seen nationwide. Hispanic adults had a slightly higher, but not statistically significantly higher, prevalence of inadequate fruit and vegetable consumption (78%) than non-Hispanic whites (75%); adults in older age groups had a lower prevalence of inadequate fruit and vegetable consumption; and men had a higher percentage of inadequate fruit and vegetable consumption (83%) than women (71%).

---

**Key Point:** About 77% of adults in South Texas don’t eat enough fruits and vegetables, a rate similar to the rest of Texas and nation.

---

The U.S. CDC offers nutritional information on its Web site, [www.fruitsandveggiesmorematters.org](http://www.fruitsandveggiesmorematters.org)
References


Cigarette Smoking Behaviors

Smoking cigarettes harms nearly every organ in the body and can cause many adverse health effects, including cancer, cardiovascular disease, and respiratory diseases. Cigarette smoking is currently the leading cause of preventable death in the U.S. During 1997-2001, cigarette smoking and exposure to tobacco smoke resulted in one of every five deaths (438,000) annually. In 2005, approximately 21% of U.S. adults were smokers. Nationally, a higher percentage of men are smokers than women. Hispanics had a lower prevalence of cigarette smoking than did non-Hispanic whites and African-Americans in the U.S. in 2005. Among adults, the prevalence of cigarette smoking decreases with age.

In both the U.S. and Texas, approximately 23% of all high-school students currently smoke cigarettes. An estimated 8% of middle-school students nationwide and 11% of middle-school students in Texas currently smoke cigarettes. In 2006, an estimated 35% of all secondary students reported having used a tobacco product in their lifetime. Even though public health activities have lowered the rate of underage cigarette smoking and tobacco use in Texas considerably since 1990, much still remains to be done. Some factors related to youth tobacco use include low socioeconomic status, parents, guardians, siblings, or peers smoking or approving of tobacco use, accessibility, lack of parental support/involvement, and lower self-image or self-esteem.

Key Point: South Texas adults had a lower percentage of smokers than the rest of Texas or nation.
Cigarette Smoking in South Texas

Approximately 19% of adults in South Texas during 2002-2005 were smokers. The prevalence of adults who were current smokers in South Texas was lower than in the rest of Texas or nationwide (Figure 8.6).

**Figure 8.6.** Estimated prevalence of current smoking among adults (age 18 or older) by location, 2002-2005.

Sex, age, and race/ethnicity patterns for smoking prevalence in South Texas during 2002-2005 were the same as reported nationwide. A slightly higher, but not statistically significantly higher, prevalence of current smokers was seen for non-Hispanic white adults (21%) than for Hispanics (18%). Overall, males in South Texas were nearly two times more likely to be a current smoker than females, and among Hispanics, males were more than two times more likely than females to be current smokers (Figure 8.7).
The Institute for Health Promotion Research

Figure 8.7. Estimated prevalence of current smoking among South Texas adults by sex and race/ethnicity, 2002-2005. 
Source: Texas Behavioral Risk Factor Surveillance System Combined Year Dataset, Statewide BRFSS Survey, 2002-2005

The Lower Rio Grande Valley region had a lower percentage of adults who were current smokers (14%) than South Texas as a whole (19%).

References


Alcohol Use

Alcohol is a nervous-system depressant that is rapidly absorbed into the bloodstream after consumption. It affects all organs in the body. Excessive alcohol use has both immediate and long-term associated health risks. Possible immediate effects of excessive alcohol use (usually the result of binge drinking) include unintentional injuries, violence, damage to a fetus if pregnant, and alcohol poisoning. Long-term health risks include neurological problems, cardiovascular disease, depression, liver disease, and some cancers. Excessive alcohol use is the third-leading lifestyle-related cause of death in the U.S, with approximately 75,000 deaths per year. In 2003, more than two million hospitalizations and more than four million emergency room visits were alcohol-related.

When consumed in moderation, alcohol has been shown to have beneficial effects. The lowest coronary heart disease mortality and all-cause mortality rates occur among adults who consume one to two drinks per day. However, the highest morbidity and mortality rates are seen among those who drink large amounts of alcohol.

Alcohol use and abuse is more common among males than females, and among younger adults than older ones. Underage drinking is a major public health problem in the U.S. Even though alcohol use is illegal for persons under age 21, youth ages 12-20 drink almost 20% of all alcohol consumed in the U.S. It is estimated that one of every two high-school students in the U.S. drink some amount of alcohol. In 2004, more than 142,000 emergency room visits by people ages 12-20 could be attributed to injuries and other conditions related to alcohol.

Heavy Alcohol Consumption

The U.S. Department of Health and Human Services and the U.S. Department of Agriculture’s Dietary Guidelines for Americans (2005) define moderate drinking as the consumption of up to one drink a day for women and the consumption of up to two drinks a day for men. Consuming, on average, more than one drink per day for women or more than two drinks per day for men is considered heavy alcohol consumption.
Heavy Alcohol Consumption in South Texas

The prevalence of heavy alcohol consumption among adults in South Texas was an estimated 6% in 2002-2005. This prevalence was similar to the percent of heavy alcohol consumption among adults in the rest of Texas (6%) and nationwide (7%). In South Texas, the prevalence of heavy alcohol consumption was slightly higher, but not statistically significantly higher, for non-Hispanic whites (almost 8%) than for Hispanics (6%).

Sex and age patterns for heavy alcohol consumption prevalence in South Texas were the same as observed nationally. The highest rate of adult heavy alcohol consumption was seen in adults 18-29 years of age (Figure 8.8), and the prevalence of heavy alcohol consumption was almost twice as high in South Texas males as in females (9% versus 5%). The prevalence of heavy alcohol consumption was higher, although not statistically significantly higher, in South Texas’s metropolitan counties (7%) than in the non-metropolitan counties (4%).

Figure 8.8. Estimated prevalence of heavy alcohol consumption among South Texas adults by age group, 2002-2005. Source: Texas Behavioral Risk Factor Surveillance System Combined Year Dataset, Statewide BRFSS Survey, 2002-2005
Binge Drinking

A common pattern of excessive alcohol use in the U.S. is binge drinking. Binge drinking is defined by the National Institute of Alcohol Abuse and Alcoholism as a pattern of alcohol consumption that brings an individual’s blood alcohol concentration (BAC) to 0.08 grams percent or above. For adults, this BAC typically corresponds to drinking five or more drinks in two hours for males and drinking four or more drinks in two hours for females (NIAAA Newsletter, 2004).[^4]

Nationwide, binge drinking is about three times more common among men than women. Binge drinking among underage persons is a problem in the U.S. The prevalence of binge drinking in the U.S. is highest among young adults ages 18-20 (52%).[^2] An estimated one of every four high-school students in the U.S. binge drink, and more than 90% of the alcohol consumed by people ages 12-20 is in the form of binge drinks.[^2]

Binge Drinking in South Texas

In 2002-2005, the prevalence of binge drinking among adults in South Texas was approximately 18%, which was similar to the prevalence for the rest of Texas (16%) and the nation (17%). In South Texas, the prevalence of binge drinking was similar for Hispanics and non-Hispanics. The prevalence of binge drinking was much higher for adults ages 18-44 than for adults ages 45 and older. In 2002-2005, more than one-fourth of all adults ages 18-29 in South Texas binge drank (Figure 8.9).

![Figure 8.9. Estimated prevalence of binge drinking among South Texas adults by age group, 2002-2005.](image-url)

The prevalence of binge drinking among South Texas males (30%) was more than four times higher than the prevalence among females (7%). As with heavy alcohol consumption, the prevalence of binge drinking was slightly higher, but not statistically significantly higher, for South Texas metropolitan county residents (18%) than for residents of non-metropolitan counties (14%).

References


Cancer Screening Activities

Cancer screening is a means of detecting early signs of cancer in people who do not yet have any symptoms. The goal of screening is not to prevent cancer, but rather to find it as early as possible. Positive results obtained from screening tests are not usually diagnostic, but can help to identify individuals in whom cancer might be present and thus should be examined further. For some cancers, screening has the potential to reduce deaths and morbidity, because treatment of early-stage cancers often has a better prognosis and can be less aggressive than treatment of advanced-stage cancers.\(^1\) In order for cancer screening to be effective, the test must have the ability to detect cancers earlier than they could be detected as a result of symptoms, and there must be evidence that earlier detection through screening decreases the risk of dying from the disease.\(^1\)
Currently, screening tests exist for a number of cancers, including breast cancer, cervical cancer, prostate cancer, and colorectal cancer.

**Breast Cancer Screening (Mammogram)**

Although the breast self-exam and clinical breast exam are also screening methods, the mammogram is currently thought to be the best way to screen for breast cancer. A mammogram is an X-ray of the breast that can detect tumors that are too small to feel. The capability of a mammogram to detect breast cancer depends on tumor size, breast tissue density, and the skill of the radiologist. Since the incidence of breast cancer increases with age, the CDC recommends that women ages 40 or older have a mammogram every one or two years.

In 2002 and 2004, an estimated 32% of South Texas women ages 40 or older had not had a mammogram in the past two years. This estimate was very similar to the percentage among women in the rest of Texas (31%) during the same time period. However, both South Texas and the rest of Texas had higher percentages of women who had no mammogram in the past two years than was seen nationwide (25%). A higher, but not a significantly higher, percentage of Hispanic women in South Texas (36%) had not had a mammogram in the past two years than non-Hispanic whites (29%).

**Cervical Cancer Screening (Pap Test)**

The Papanicolaou (Pap) test, also called a Pap smear, is the most common screening procedure for cervical cancer. Cells are lightly scraped from the cervix and vagina using a small wooden stick, a brush, or a piece of cotton. The collected cells are then viewed under a microscope to determine if they are normal or abnormal. A Pap test can find the earliest signs of cervical cancer. Because the chance of curing cervical cancer is very high if the cancer is detected early, studies estimate that regular Pap test screening can decrease incidence and mortality of cervical cancer by 80% or more. Doctors recommend Pap tests for women ages 21 or older, or for women under age 21 who have been sexually active for three years or more. National guidelines suggest that a woman should get a Pap test annually for three years. If results have been normal for three-straight years, the woman can get tested every 2-3 years.

An estimated 19% of South Texas women ages 18 or older had not had a Pap test in the past three years during 2002 and 2004. This percentage was slightly higher, but not significantly higher, than the percentage of no Pap test in the past three years among women in the rest of Texas (17%), and was significantly higher than the percentage among women nationwide.
(14%). In South Texas, the percentages of Hispanic women and non-Hispanic white women who did not have a Pap test in the past three years were similar.

Prostate Cancer Screening

Two screening tests for prostate cancer exist: the digital rectal examination (DRE) and the prostate-specific antigen (PSA) test. However, no standard or routine screening is currently recommended for prostate cancer. This is because, although these screening tests are able to find prostate cancer at an early stage, there currently is not enough evidence to determine whether early detection and treatment makes any difference in the outcome of the disease. Studies to determine the efficacy of prostate cancer screening are currently underway.

Prostate-Specific Antigen (PSA) Test

A prostate-specific antigen (PSA) test measures the amount of PSA in the blood. PSA is a protein made by the prostate gland. Although it is common for men to have low levels of PSA in their blood, prostate cancer or other conditions can increase PSA levels. Doctors cannot distinguish between prostate cancer and benign prostate conditions, such as inflammation or enlargement of the prostate, based on PSA levels alone. However, the PSA test result is taken into account when a doctor makes a decision about whether to do additional tests for prostate cancer. Some doctors encourage PSA tests yearly to screen for prostate cancer, starting anywhere from 40 to 50 years of age.

In 2002 and 2004, an estimated 56% of men ages 40 or older in South Texas had not had a PSA test in the past two years. This was higher than the prevalence of men ages 40 or older who did not have a PSA test in the past two years in the rest of Texas (49%) and nationwide (47%) (Figure 8.10).
Figure 8.10. Estimated prevalence of men ages 40 or older who have not had a prostate-specific antigen (PSA) test in the past two years by location.

In South Texas, Hispanic men were nearly two times more likely to not have had a PSA test in the past two years (72%) than were non-Hispanic white men (43%).

Digital Rectal Exam (DRE)

A digital rectal exam (DRE) is frequently part of a standard physical examination in males. However, it is also another way to screen for prostate cancer, and is often performed together with the PSA test to improve the odds of detecting prostate cancer. A doctor performs a digital rectal exam by inserting a lubricated, gloved finger into the rectum to feel the prostate gland through the rectal wall for bumps or anything else abnormal.\textsuperscript{10,11}

An estimated 42\% of men in South Texas have not had a DRE within the last five years. This prevalence was slightly higher, but not statistically significantly higher, than the prevalence of no DRE within the last five years among men in the rest of Texas (38\%), and was significantly higher than the prevalence nationwide (33\%). As with PSA testing, Hispanic males in South Texas were more likely to have not had a DRE exam in the past five years (52\%) than were non-Hispanic white males (30\%).

Colorectal Cancer Screening

Several tests are regularly used to screen for colorectal cancer, including the fetal occult blood test (FOBT), sigmoidoscopy, colonoscopy, the double-contrast barium enema
(DCBE), and newer techniques such as virtual colonoscopy.\textsuperscript{12} Based on several studies, the U.S. Preventive Services Task Force (USPSTF) found evidence that the FOBT and sigmoidoscopy screening methods are effective in reducing colorectal cancer mortality.\textsuperscript{13}

**Fecal Occult Blood Testing**

The fetal occult blood test (FOBT) is a frequently used non-invasive colorectal cancer screening option that checks for hidden blood in the stool. Stool samples are collected at home and placed on special cards that are then given back to a doctor or lab for testing. Blood in the stool can be indicative of polyps or cancer. Studies have found that, for persons ages 50-80, having an annual or biennial FOBT may reduce colorectal cancer mortality by as much as 30 percent.\textsuperscript{14} One of the recommended American Cancer Society colorectal cancer testing options is an annual FOBT for persons ages 50 or older.\textsuperscript{15}

An estimated 79\% of individuals ages 50 or older in South Texas have not had a FOBT in the last two years. This South Texas prevalence was slightly higher, but not statistically significantly higher, than the prevalence of no FOBT in the rest of Texas (76\%), and was significantly higher than the prevalence seen nationwide (71\%). In South Texas, Hispanics had a higher prevalence of not having a FOBT within the past two years (90\%) than non-Hispanic whites (69\%).

**Sigmoidoscopy/Colonoscopy**

Sigmoidoscopy and colonoscopy are two other common colon cancer screening procedures. Sigmoidoscopy checks the rectum and lower colon by inserting a thin, flexible, lighted instrument into the rectum. A colonoscopy is an examination of the rectum and whole colon for polyps, cancer, or other abnormalities using a similar thin, lighted instrument.\textsuperscript{14} Both sigmoidoscopy and colonoscopy procedures have higher sensitivity than FOBT, and colonoscopy is the most sensitive and specific colorectal cancer test.\textsuperscript{13} However, unlike FOBT, sigmoidoscopy and colonoscopy are both invasive procedures, and colonoscopy in particular has associated risks such as bleeding or perforation of the colon.\textsuperscript{13,14} Recommended American Cancer Society colorectal cancer testing options include either a sigmoidoscopy every five years, a yearly FOBT plus a sigmoidoscopy every five years, or a colonoscopy every 10 years.\textsuperscript{15}

In South Texas, an estimated 53\% of individuals over age 50 had never had a sigmoidoscopy or colonoscopy in 2002 and 2004. This prevalence was similar to the prevalence seen in the rest of Texas (53\%), but was higher than the prevalence of no sigmoidoscopy or colonoscopy observed nationwide (48\%). As with the prevalence of no FOBT screening, a higher percentage of Hispanics over age 50 in South Texas had never had a sigmoidoscopy or colonoscopy (65\%) than non-Hispanic whites (43\%).

**References**


Summary – Behavioral Risk Factors in Adults

Table 8.1. Summary table of adult behavioral risk factor prevalences in South Texas, the rest of Texas, and nationwide.

<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>Prevalence (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>South Texas</td>
</tr>
<tr>
<td>Obesity</td>
<td>29.5</td>
</tr>
<tr>
<td>Inadequate Physical Activity</td>
<td>54.4</td>
</tr>
<tr>
<td>Inadequate Fruit and Vegetable Consumption</td>
<td>76.7</td>
</tr>
<tr>
<td>Current Cigarette Smoking</td>
<td>19.3</td>
</tr>
<tr>
<td>Heavy Alcohol Consumption</td>
<td>6.4</td>
</tr>
<tr>
<td>Binge Drinking</td>
<td>17.7</td>
</tr>
<tr>
<td>Had no Mammogram in Past 2 Years (Women)</td>
<td>31.9</td>
</tr>
<tr>
<td>Had no Pap Test in Past 2 Years (Women)</td>
<td>19.0</td>
</tr>
<tr>
<td>Had no PSA Test in Past 2 Years (Men)</td>
<td>56.0</td>
</tr>
<tr>
<td>Had no Digital Rectal Exam in Past 2 Years (Men)</td>
<td>41.6</td>
</tr>
<tr>
<td>Had no Blood Stool Test in Past 2 Years</td>
<td>78.5</td>
</tr>
<tr>
<td>Never had a Sigmoidoscopy/ Colonoscopy</td>
<td>53.4</td>
</tr>
</tbody>
</table>

*Texas data was obtained from a Texas Behavioral Risk Factor Surveillance System (BRFSS) Combined Year Dataset of the statewide BRFSS survey. Obesity, current cigarette smoking, heavy alcohol consumption, and binge drinking prevalence estimates were calculated using 2002-2005 survey data, all cancer screening test prevalences were calculated using 2002 and 2004 survey data, inadequate physical activity used 2003-2005 survey data, and inadequate fruit and vegetable consumption used 2002, 2003, and 2005 survey data. All nationwide estimates were calculated using 2002-2005 national BRFSS survey data except for inadequate fruit and vegetable consumption, which used 2002, 2003, and 2005 national survey data.