

Vice President's Conversation on the Future

Trend Research: Health and Wellness

Descriptor Definition

The descriptor focuses on trends in weight changes and also on obesity related health issues among persons living in Ohio. Additionally it will also focus on health risk behaviors, particularly behaviors that relate to obesity and its related chronic diseases. This will include trends in dietary habits (fruits and vegetable intake), physical activity, alcohol use and tobacco smoking.

Authors' Insights¹: Descriptor Relevance

Obesity significantly drives preventable chronic diseases such as coronary heart disease, type-2 diabetes, stroke, certain cancers, sleep apnea, osteoarthritis, etc. (CDC 2011). It does not only affect the health of a community but also has implications for its economy. Currently, the cost associated with medical treatment of obesity-related diseases in the United States is estimated to range from \$147 billion to \$210 billion per year (Robert Wood Johnson Foundation 2014). This rate is predicted to increase by between \$48 million and \$66 million by 2030 (Robert Wood Johnson Foundation 2014). The number one cause of death in Ohio is heart disease, which is associated with obesity. Obesity is also associated with mortality from diabetes and certain cancers (Batty, Kivimaki, Smith, Marmot and Shipley, 2007). In 2006, the management of heart disease among Ohioans cost 4.8 billion (Ohio Department of Health, 2009), an indication that the state is not immune to the economic consequences of obesity. In general, obesity has a strong association with morbidity and mortality regardless of gender and ethnicity (Flegal, Graubard, Williamson, and Gail, 2007). Obesity therefore poses significant challenges to the future health and economy of Ohio.

Trend Information and Interpretation

Obesity

Trend Information: The rate of adult overweight and obesity in Ohio has been increasing steadily for the past 2 decades (<http://stateofobesity.org/>). In 1990 Ohio was reported to have had an obesity rate of 11.3%. According to recent data from the "State of Obesity: Better Policies for America, the adult (>18 years) obesity (BMI ≥ 30) and combined overweight and obesity (BMI ≥ 25) rate for Ohio are 30.4% and 65.1% respectively. Ohio is therefore the 16th state in the nation with the highest adult obesity rate. Though negligible, the state experienced 0.3% increase in obesity rates between 2012 and 2013. The rates remain high in blacks (36%) and Latinos (30.9%) compared to whites (29.4%). The age group with the highest obesity rate among adults are 45-54 year olds at a rate of 35.1%. Obesity rates among adolescents in Ohio also mirrors that observed among adults. Currently, 17.4% of children ages 10-17 and 13% of high school students are obese. The rate observed among high school students is lower than that reported in several southern states, where the rates ranged between 14-18%. It is also a 2% decrease from that observed in 2011, however, historically these rates have not fallen below 12% since 2003 (<http://stateofobesity.org/>).



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Ohio also ranks high in the nation with regards to the prevalence of diabetes, and hypertension. In 2013, 10.4 % (19th in the nation) and 33.5% (17th in the nation) of Ohioans had diabetes and hypertension respectively. Though it had been increasing considerably since the early 1990s, the prevalence of diabetes in Ohio decreased significantly between 2012 (11.7%; ranked 6th in the nation) and 2013. This progress will be considered fragile unless the trend continues into the coming years. In 2010, ~61% of Ohioans who were living with diabetes were also obese: This rate was ~45% in 1990 (CDC National Diabetes Surveillance, 2014). Hypertension rates on the other hand has not seen any decreases since 1990 when it was reported at 20%.

Interpretation: The high rates of obesity in Ohio poses a public health burden as this translates into high rates of chronic diseases. Because the average weight of Ohioans has been steadily increasing, it is expected that the incidence and prevalence rates of type 2 diabetes, hypertension, heart disease, stroke, dyslipidemia and osteoarthritis will also increase overtime. The presence of these diseases poses significant financial and economic challenges not only to the individual with the disease but also to the state. Having chronic disease can worsen conditions like food insecurity due to competing demands of limited financial resources for food and medical care. Ohio already has a high food insecurity rate (16% in 2013) and this situation can be worsened with increasing obesity and related chronic diseases. Children who are obese are likely to be obese as adults. (Freedman, Khan, Dietz, Srinivasan, and Berenson, 2001) Additionally, they are also more likely to have risk factors for cardiovascular diseases (Surgeon General Report, 2010). In a population based study, 70% of obese youth had at least one risk factors for cardiovascular disease (Freedman et al, 2007). Similarly several studies have found obese youth to be more likely to be pre-diabetic (Li, Ford, Zhao and Mokdad 2009). Overtime, these add to the percentage of Ohioans living with diabetes and cardiovascular diseases. Unless much is done to reverse the current trend, it is projected that by 2030, there will be nearly 1.6 million (~1 million in 2010) cases of diabetes and over 3 million (~2.3 million in 2010) cases of hypertension in Ohio. Heart disease, which reported over 730,000 cases in 2010 is projected to increase to nearly 3.4 million in the next 2 decades (<http://stateofobesity.org/>).

Dietary Habits (Fruits and Vegetable Intake)

Trends: The indicators used by the Behavioral Risk Factor Surveillance System (BRFSS) in estimating fruit and vegetable intake of the population were updated in 2011. As a result, estimates from prior years cannot be compared to those after 2011. According to data reported in 2009 only 29.3% of adult Ohioans consumed fruits 2 or more times per day and 24.6% consumed vegetable 3 or more times per day. These numbers had not changed significantly within nearly a decade (2000- 2009) of tracking. Nearly 31% of adults Ohioans consumed fruit two or more times a day in 2000 compared to 29.3% in 2009. With regards to vegetable intake, 24.6 % consumed 3 or more times per day in 2000, which is the exact proportion reported in 2009 (CDC MMWR, 2010). The new BRFSS indicators introduced to report fruits and vegetables consumption in each state, provides estimates on the percentage of persons (adults or adolescents) who report consuming fruits less than one time per day and vegetables less than one time per day. Additionally, it also estimates respective median daily intakes (times per day) for fruits and vegetables. Based on these indicators, 40.5% and 26.3 % of adult Ohioans reported consuming fruits and vegetables less than 1 time a day respectively in 2013. These proportions are slightly higher than national average of 37.7% and 22.6% respectively. Among adolescents, 42.4% and 42.2% are respectively reported to have consumed fruits and vegetables less than one time daily (CDC BRFSS, 2014). Overall, the consumption of fruits and vegetables in Ohio is

substantially lower than consumption in many states. The median daily intake of fruit is 1 time per day and 1.5 times per day for vegetables (CDC DNPAO, 2013).

Interpretation: The consumption of diets high in fruits and vegetables, in place of calorie dense foods, can help with weight management. Fruits and vegetables also contain important but under-consumed nutrients and may reduce the risk of developing several chronic diseases. Increasing Ohioans' consumption of fruits and vegetable will help address the challenges of an overweight and/or obese population as well as that of the increasing rates of chronic diseases and the cost associated with their management. Currently, the Dietary Guidelines for Americans 2010 recommends an intake of 1.5-2 cups of fruits and 2.5-3 cups of vegetables daily. While the indicators currently used to estimate fruit and vegetable consumption do not specify the amounts of fruit and vegetables consumed at each time per day, it provides a pattern for consumption over time and can be used to monitor progression with the increased consumption of these foods. Several potential strategies have been proposed by the Center for Disease Prevention (CDC, 2011) to improve food environments and consequently, individuals' fruits and vegetable intake. These include identifying communities in need of food retailers selling healthier foods and developing initiatives to promote these retailers as well as initiatives to increase the number of farmers markets/ farmers accepting nutrition assistance benefits. These strategies requires stakeholders, communities, coalitions and public health practitioners working together.

Physical Activity

Trends: Similar to fruit and vegetables consumption, the indicators used by BRFSS in estimating physical activity and physical activity behaviors for both adults and children/adolescents were updated in 2011. As such data gathered since 2011 cannot be compared to those from prior years. The current indicators are consistent with the 2008 Physical Activity recommendation for Americans and includes for adults, participating in at least 150 minutes of moderate-intensity physical activity per week in addition to muscle strengthening exercises 2 or more times a week. Youth recommendations include participating in 60 minutes or more of physical activity daily. Based on the recently released *State Indicator Report for Physical Activity*, in 2011, 27% of adults in Ohio did not participate in any leisure time physical activity, 51.6% met the 150 minutes aerobic activity guidelines, 30.4% met the muscle training guideline and 21.4% met both guidelines. In 2013, the number meeting aerobic, muscle, as well as both guidelines decreased to 49.5%, 28.3% and 19% respectively. The proportions of individuals meeting the guidelines were lower among Hispanics compared to Caucasians and Blacks in both time periods. Among the youth (9-12th grade), 13.2% did not participate in any physical activity, with only 25.9% meeting aerobic activity guidelines in 2013. The percentage of high school students who were physically active for at least 60 minutes in 2011 was 25.4%. (CDC, 2014)

Interpretation: While the rates reported for Ohio are similar to national rates, more can be done to improve physical activity in the state. The CDC has proposed several strategies to improve physical activity within all states, with the following 3 overarching strategies:

1. Creating and enhancing access to safe places for physical activity;
2. Enhancing physical education and physical activity in schools and child care settings; and
3. Supporting street-scale and community-scale design policy. These are policies that change the physical environment through urban design and land use to promote physical activity.

Data from 2012 (per the 2014 indicator report) indicates that Ohio does not have statewide policies that provide policy guidance for school districts and schools on the following:

- (1) joint use agreements for physical activity facilities. These agreements would allow schools to give their students and community members access to school spaces and facilities for physical activity outside of normal school hours.
- (2) recommendation on the amount of time to be spent in moderate –to-vigorous intensity physical activity in physical education class or in recess.
- (3) programs that promote walking and biking to and from school

Additionally, the state’s child care regulations do not meet the recommended guidelines for the amount of moderate- to vigorous- intensity physical activity for preschoolers in all settings. The state also has not adopted any form of complete streets policy. Providing policy guidance in addition to providing opportunities for increasing physical activity in the form of parks, recreation centers, sidewalks, walking paths/trails and community centers would boost physical activity in Ohio. According to the CDC, only about 40% of Ohioans live within half a mile of a park. (CDC, 2014) Physical activity reduces the risk of several chronic diseases including type 2 diabetes, heart disease and stroke. It also helps with weight management and promotes longevity.

Alcohol Use and Tobacco Smoking

Trend: While not directly associated with overweight and obesity, tobacco smoking and excessive alcohol consumption are associated with many chronic diseases and can worsen obesity-related health issues. In 2013, 23.4% of adult Ohioans were considered current cigarette smokers (defined as “having smoked at least 100 cigarettes in one’s lifetime and reporting smoking every day or some days at the time of survey participation”); decreasing from 25.1% in 2011 and increasing from 22.5% in 2010. There was no significant difference between reported rates from 2012 and 2013 (CDC BRFSS, 2014). Among Ohio Youth (9th -12th grade), 15.1% smoked tobacco in 2013 which is also a decrease from 21.1% in 2011. Between 2009 and 2010, 57.3% of adult smokers in Ohio made an attempt to quit smoking in the previous year and that was ranked 15th in the country.

Binge drinking is defined as having 4 or more drinks on at least one occasion for a woman and having 5 or more drinks on at least one occasion for a man. More than 17% of adult Ohioans reported binge drinking in 2010, 20.1% in 2011, 18.0% in 2012 and 17.1% in 2013. The number of Ohioans who are heavy drinkers has been decreasing steadily since 2011 at 6.7%, 2012 at 6.3% and 2013 at 5.7% (CDC BRFSS, 2014). Among Ohio youth (9th -12th grade), the rate of binge drinking was 23.7% and 38% respectively, for heavy alcohol drinking in 2011.

Interpretation: The trends in tobacco/cigarette smoking as well as excessive alcohol consumption show a downward trend among adults over 18 years. However these rates are higher than national averages. Similar observations are made with trends among the youth in Ohio. According to the Tobacco States Highlight 2012, fewer Ohioans (59.2%) than national average (65.6%) thought of tobacco as dangerous to their health. This indicates that more education might be warranted.

Overall Summary of Trend Information

The rates of overweight, obesity, diabetes and cardiovascular diseases are projected to increase among Ohioans. Healthy behaviors including healthy dietary habits (such as eating more fruits and vegetables), increased physical activity, and limited alcohol and tobacco use are important factors that can reduce these conditions as well as any associated morbidity and mortality. Although Ohioans are showing improvements in these risk behaviors, the state's rates are worse than national averages and require innovative strategies for improvement.

Author Insights - Alternative States for the Future

Three alternative states for the future are possible:

- (1) Maintain the status quo in which case the predicted increases with overweight and obesity as well as prevalence and incidence of associated chronic diseases will also increase. Many Ohioans will be in a poor state of health and wellbeing; a situation which will be accompanied by increasing cost for healthcare;
- (2) Conditions described in alternative state 1 (when status quo is maintained) can be worse than predicted if external factors such as economic conditions in the Ohio and the United States get worse. This can affect food insecurity and subsequent risk behaviors that contribute to obesity and other chronic diseases;
- (3) On the other hand, the presence of a good economic and food environment in addition to concentrated intervention efforts from state and local government, stakeholders, health professionals and communities can reverse the predicted trend of worsening health and wellbeing for Ohioans.

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¹ Along with the research-based data and statistics included in this document, is information provided by the research paper author(s). Although these author insights are not directly cited with research references, they reflect research, observation, logic, intuition, and well-considered expectations compiled by the author(s). The Author Insights sections of this paper are offered for discussion and to help provide a wider perspective for incorporating the descriptor data into the possible future trends. These conclusions are drawn by the author(s) using their knowledge of the scholarly references and their years of professional experience related to the descriptor, and are provided to help the reader more effectively envision the future impact and effects of the descriptor.

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