

Work

What We Know

Many Americans spend the majority of their day at work. Work is a means to survival. Increased job strain, however, can result in negative health outcomes. Job strain can be measured by job demand (how much work a job requires), and decision latitude (the amount of freedom and autonomy a job has). Some level of job strain is present in any job, but research shows that large amounts of job strain can lead to poor health.

Workplace Stress and Coronary Heart Disease

High work strain is often associated with heart disease, one of the leading causes of death in America. Job type increases chances for developing heart disease in both men and women². Men working as operators/laborers and women working in service or construction have the highest rates of heart disease. Although women tend to react differently to job strain, traditional women's jobs are associated with high job strain and risk for heart disease⁴. Nurses who reported active, passive, and high job strain, for example, have the highest prevalence of heart disease; however, job strain alone is not predictive. Men are more likely to develop heart disease due to high job strain. Although employment and job strain can contribute to heart disease, being unemployed or out of the labor force may increase the chances of developing heart disease. People who were out of work experienced heart disease or stroke at a higher rate compared to the national rate⁵. These findings suggest that work strain may not be the biggest contributor to heart disease or stroke in America. Many factors contribute to the development of heart disease in American adults, but job strain and workplace stress contributes to the prevalence of heart disease in working men.

Workplace Stress and Chronic Illness

Job strain not only contributes to mortality from heart disease, it also plays a part in the development of chronic illnesses. High blood pressure has been linked with high job strain in white men⁶. Rates of high blood pressure also increased after going from low job strain to high job strain. Stress and high blood pressure often go hand in hand. Blood pressure can be reduced with diet, exercise, and reducing stress levels. It can be very difficult to reduce work-related stress, however, as work is needed to survive.

Similarly, high job strain contributes to rates of diabetes³. Diabetes often occurs in people who have a high Body Mass Index (BMI). Nurses who reported having high job strain were less likely to exercise and more likely to smoke. These factors influence BMI, which also influences the rate of diabetes. Even if job strain and workplace stress do not directly cause chronic illnesses such as diabetes, they contribute to the lifestyle that makes these illnesses likely.

Workplace Stress and Injury

Job with high job demand and low decision latitude increase the chances of illness and workplace injury¹. Injury and illness occurs frequently in people who work overtime. The likelihood of injury and illness increases with increasing time in the workplace.

Implications for Harrisonburg/Rockingham

High work strain is associated with cardiovascular disease and chronic illness.

According to the Virginia Center for Health Statistics, cardiovascular disease was the leading cause of death in Virginia, accounting for 13,593 deaths or 21.7% of total deaths in the Commonwealth.⁷ Metabolic disease and diabetes are also significant in the state. Approximately 8.7% of adults in Virginia were diagnosed with diabetes, while an estimated 312,568 have undiagnosed diabetes. The rate of diabetes has doubled in less than 10 years while cardiovascular disease and diabetes are two leading causes of death in Virginia.⁸

Virginians are more likely to face high rates of disease, disability and death if they are poor, a member of a racial and ethnic minority, or live in rural areas, urban inner cities, or medically underserved areas. Health risk factors including overweight and obesity; physical inactivity; and tobacco use are predictors of chronic disease and poor health outcomes. Healthy People 2020 objectives address these risk factors establishing targets that help reduce their contribution to disease and death.⁹ In 2012, the obesity rate in Virginia was 27.4% (aligned with the national rate of 27.6%), and in 2010 the prevalence of diabetes in Virginia was 8.7%, which has steadily climbed from 6% in 2001.¹⁰ In the Central Shenandoah Health District, more people were hospitalized due to heart disease, (age-adjusted per 10,000 residents), chronic obstructive pulmonary disease and diabetes as compared to Virginia as a whole.¹¹ In the Central Shenandoah Health District, more adults are overweight (64.9%) and report no physical activity (25%) compared to Virginia as a whole (64% and 25.5% respectively).¹² Approximately 21.3% of adults in the health district currently smoke which is higher than the Healthy People 2020 target of reducing cigarette smoking in adults to 12% of the population.^{13,14} Age-adjusted death rates for the area served by Sentara Rockingham Memorial Hospital were at least five percent higher than Virginia rates for Alzheimer's Disease, unintentional injury, nephritis/nephrosis, Parkinson's Disease, chronic liver disease, and suicide.¹⁵ This is complicated by information from a 2014 report from the Virginia Atlas of Community Health that shows 29% of the total population in this area is uninsured.

Local programs that are in place to help adults to manage chronic illness are Valley Program for Aging Services, SRMH Occupational Health, and SRMH Continuum Nurse Case Management services. H/R offers quality chiropractic, physical therapy, and massage services for work-related pain related to ergonomics/ musculoskeletal injuries. Chronic disease self-management classes, in English and Spanish, are offered at the H/R Free Clinic, and respite care for family caregivers at Caregivers Community Network. Promotoras de Salud offers peer-taught classes on diabetes and hypertension, two of the diseases associated with workplace stress, in Spanish and English. The H/R Free Clinic offers primary care for the working,

References

- ¹ Dembe. (2005). The impact of overtime and long work hours on occupational injuries and illnesses: New evidence from the united states. *Occupational and Environmental Medicine*, 62(9), 588-597. Retrieved from <http://oem.bmj.com/cgi/doi/10.1136/oem.2004.016667>

- ² Eaker. (2004). Does job strain increase the risk for coronary heart disease or death in men and women?: The framingham offspring study. *American Journal of Epidemiology*, 159(10), 950-958. Retrieved from <http://aje.oupjournals.org/cgi/doi/10.1093/aje/kwh127>
- ³ Kroenke, Spiegelman, Manson, Schernhammer, Colditz, & Kawachi. (2006). Work characteristics and incidence of type 2 diabetes in women. *American Journal of Epidemiology*, 165(2), 175-183. Retrieved from <http://aje.oxfordjournals.org/cgi/doi/10.1093/aje/kwj355>
- ⁴ Lee. (2002). A prospective study of job strain and coronary heart disease in US women. *International Journal of Epidemiology*, 31(6), 1147-1153. Retrieved from <http://www.ije.oupjournals.org/cgi/doi/10.1093/ije/31.6.1147>
- ⁵ Luckhaupt, S. E., & Calvert, G. M. (2014). Prevalence of coronary heart disease or stroke among workers aged 55 years - united states, 2008-2012. *MMWR: Morbidity & Mortality Weekly Report*, 63(30), 649 5p.
- ⁶ Markovitz, Matthews, Whooley, Lewis, & Greenlund. (2004). Increases in job strain are associated with incident hypertension in the CARDIA study. *Annals of Behavioral Medicine*, 28(1), 4-9. Retrieved from http://link.springer.com/10.1207/s15324796abm2801_2http://www.springerlink.com/index/pdf/10.1207/s15324796abm2801_2
- ⁷ Virginia Department of Health (2013) <http://www.vdh.virginia.gov/HealthStats/documents/2010/pdfs/VDHS13.pdf>
- ⁸ Virginia Department of Health www.vdh.virginia.gov/ofhs/prevention/diabetes/documents/2011/pdf/factsheets/diabetes%20prevalence/prevalence%20of%20diabetes%20in%20va.pdf
- ⁹ Healthy People 2020, www.healthypeople.gov
- ¹⁰ Virginia Department of Health, Office of Family Health Services, Diabetes Prevention and Control Project (2011). *Executive Summary: Diabetes in VA*. Retrieved from <http://www.vdh.virginia.gov/ofhs/prevention/diabetes/documents/2012/pdf/Diabetes%20Executive%20Summary.pdf>
- ¹¹ Virginia Department of Health, Division of Chronic Disease Prevention and Control; Chronic Disease in Central Shenandoah Health District 2010, www.vdh.virginia.gov; (Virginia Health Information, 2008)
- ¹² Virginia Department of Health, Division of Chronic Disease Prevention and Control; Chronic Disease in Central Shenandoah Health District 2010. www.vdh.virginia.gov
- ¹³ Virginia Behavior Risk Factor Surveillance Survey, 2013
- ¹⁴ Centers for Disease Control. (2008). VA: Burden of Chronic Diseases. www.CDC.gov/chronicdisease/VA

¹⁵ Community Health Solutions. (2015). A community health needs assessment prepared for Sentara Rockingham Memorial Hospital. Retrieved from <http://www.sentara.com/Assets/Pdf/About-Us/Community-Health-Needs-Assessments/SRMH-2015-Community-Health-Needs-Assessment.pdf>