



SCHOOL ACHIEVEMENT &

ADOLESCENT HEALTH MONOGRAPH

Health disparities among adolescents in Washington State public schools

Washington State Department of Health, Office of Maternal and Child Health, May 2007

BACKGROUND:

School Achievement, Adolescent Health, and Health Disparities

The importance of school achievement to lifetime success is well-known, and the dependence of good health as an adult on school achievement cannot be underscored enough. While adult health has been the target of many studies, research is growing that focuses specifically on the association between adolescent health and school achievement.



Purpose: *This paper was prepared by Maternal and Child Health Assessment as a tool to accurately describe the nature of the relationship between health status, adverse health behaviors and academic achievement based on available literature.*

Adolescence marks the time when substantial social, emotional, physical, and intellectual development is occurring. Furthermore, behavioral patterns established in early life such as nutrition, physical activity, substance use, violence, and social networks to name a few, can create habits and consequences that can have long-term effects lasting throughout adulthood.

Evidence has not been able to show that school achievement impacts adolescent health status and health behaviors (risk factors), but studies continue to explore this possibility.¹ However, research *has* demonstrated that health status and health behaviors during childhood and adolescence (such as nutrition, frequent smoking, binge drinking, and marijuana use) can impact student school achievement during this time period.^{2 3} These studies have also shown that school performance is associated with gender and minority status.



Despite these risk factors, students may not necessarily perform poorly in school when exposed to positive influences. These influences include caring relationships, high expectations, and opportunities for meaningful involvement. Studies have shown that these “resilience assets” increase school connectedness and improve student test scores.¹

In addition to self-reported student data and resilience asset research, survey data of secondary school teachers and principals have been shown to be potentially rich sources of information about school programs, health policies, opportunities for interventions, and planning/evaluation.⁴

WASHINGTON STATE DATA:

“You cannot educate a child who is not healthy and you cannot keep a child healthy who is not educated.”

- Dr. J. Elders

“The one social factor that researchers agree is consistently linked to longer lives in every country where it has been studied is education. It is more important than race; it obliterates any effects of income.”

- New York Times

“Culturally appropriate school programs that address risk behaviors among youth, especially when coordinated with community efforts, could improve the health of populations at risk for health disparities, and the health of the nation as a whole.”

Centers for Disease Control & Prevention

A **health disparity** occurs when one group of individuals experiences significantly greater--or worse--health than another group.⁵ § Recent data in Washington State public schools has shown that health disparities are associated with disparities in school achievement or **academic risk**, which has been defined as students reporting they get mostly Cs, Ds, and Fs in the 2006 Healthy Youth Survey.⁶ Notable differences in academic risk and health risks or behaviors have been reported by gender, maternal education and race/ethnicity (specifically Native American, Black, Pacific Islander and Latino youth).⁷ Significant associations were found between **health status and behaviors** and academic risk, even after accounting for differences in demographics. Adolescent behaviors including being overweight, cigarette smoking, soda consumption (2+ per day), not enough exercise, school safety, not enough fruits and vegetables (<5 per day), alcohol use, and marijuana use, are all associated with increases in academic risk. Certain **adolescent health** conditions, such as severe asthma symptoms or depression, have also shown increased academic risk. These conditions and behaviors can occur disproportionately in different population groups (health disparities).

A study that explored the simultaneous effect of multiple health status or behavior indicators on academic risk among Washington youth found that many of these health factors were independently associated with self-reported academic achievement (see Table), suggesting that each of the health factors is important. Associations remained significant and also appeared to be consistent within specific race/ethnic groups.⁶

§ The Healthy People 2010 goal is to “eliminate **health disparities** among segments of the population, including differences that occur by gender, race or ethnicity, education or income, disability, and geographic location or sexual orientation.”

Table: Combined Health Factors & Academic Risk: Results from a multiple regression model

Factors Impacting Academic Risk	Significance (all other factors adjusted for)
Gender	Girls are as likely to have academic risk as boys
Exercise	Exercisers 40% decreased probability for academic risk
Severe Asthma	Severe asthma 20% increased probability for academic risk
Overweight	Overweight youth 50% increased probability for academic risk
Cigarette smoking	Smokers more than double probability for academic risk
Soda pop	30% increased probability in academic risk for each soda pop
Depression	Depressed youth 80% increased probability for academic risk
School safety	Feeling unsafe 70% increased probability for academic risk
Maternal Education/SES (<HS, HS/tech, College)	30% decreased probability for academic risk with increasing maternal education

§ 2006 Healthy Youth Survey dataset. Grades 8-10-12. Significant means $p < 0.05$
 Ψ School grade-level and 5+ Fruits/Vegs/day were found to be non-significant

In addition to 2006 Healthy Youth Survey data on academic risk, Washington State data also shows associations between demographics and health behaviors and other school performance measures. Results on **race and ethnicity** show Washington State dropout rates are the highest among Native American, Black, and Hispanic groups (data not shown).⁸ Studies at the University of Washington assessed the association between levels of risk and protective factors and test scores, specifically Washington Assessment of Student Learning (WASL) scores. Results show that schools with higher rates of tobacco use, alcohol use, and marijuana use had lower percentages of youth meeting the WASL standards on the mathematics, reading and writing sections.⁹

ACTIVITIES:

2007 Summit & Web Resources

State Board of Health Each

Student Successful

www.sboh.wa.gov/ESS/index.htm

Health Schools, Successful Students

www.depts.washington.edu/waschool

Washington State Health Youth Survey

<http://www3.doh.wa.gov/HYS/>

In May 2007, the State Board of Health and partners convened a one day summit called “Each Student Successful: Exploring Policies to Address Health Disparities and the Academic Achievement Gap”. The summit gathered advocates, educators, public health professionals, parents, students, policy makers, and academic experts to guide future planning. Other statewide efforts to improve school achievement and adolescent health include the University of Washington Social Development Research Group.

As follow up to the Each Student Successful Summit, the summit advisory group will disseminate a summary of the summit conversations and presentations. In addition, involved partners will be working to finalize a comprehensive review of the research on programs and policies that have been proven effective in positively impacting both health disparities and closing the achievement gap. School achievement and health disparities is an area of interest to many. Data sources such as the Healthy Youth Survey provide information to explore the associations in more depth.

RESOURCES:

Adolescent Health, School Achievement, & Health Disparities

Adolescent Health and Academic Achievement Study <http://www.prc.utexas.edu/ahaa/>

“Alcohol & Drug Abuse: The Best of Practices, the Worst of Practices: The Making of Science-Based Primary Prevention Programs”. (August 2003) *Psychiatr Serv* 54:1087-1089,

Brindis, C. “Moving upstream: the role of schools in improving population health”. *Journal of Adolescent Health*, Volume 37, Issue 4, Pages 263-265

Claire D. “Improving Adolescent Health: An Analysis and Synthesis of Policy Recommendations” (1997) http://nahic.ucsf.edu/index.php/recommendations/article/improving_adolescent_health/

Hawkins et al. “Preventing Adolescent Health-Risk Behaviors by Strengthening Protection During Childhood”, (1999) *Arch Pediatr Adolesc Med.* 153: 226-234.

“Improving the Health of Adolescents & Young Adults: A Guide for States and Communities”, Centers for Disease Control and Prevention. <http://www.cdc.gov/HealthyYouth/AdolescentHealth/Guide/order.htm>

MCHB, HRSA, and DHHS. “Towards Meeting the Needs of Adolescents: An Assessment of Federally Funded Adolescent Health Programs and Initiatives within the Department of Health and Human Services”. February 9, 2005. http://www.childtrends.org/Files//Child_Trends-2005_02_09_RB_MeetingtheNeeds.pdf

Moore K and Zaff J. “Building a Better Teenager: A Summary of What Works in Adolescent Development”. (August 2002). http://www.childtrends.org/Files//Child_Trends-2002_11_02_RB_BuildBetterTeens.pdf

“National Network of State Adolescent Health Coordinators Assessment” (2007). http://nahic.ucsf.edu/index.php/tools/article/state_adolescent_health_coordinator_assessment/

Redd Z, et al. “Educating America’s Youth: What Makes a Difference”. (August 2002). http://www.childtrends.org/Files//Child_Trends-2002_08_01_RB_K4.pdf

“School Readiness: Helping Communities Get Children Ready for School and School ready for Children”. (October 2001). http://www.childtrends.org/Files//Child_Trends-2001_10_01_RB_SchoolReadiness.pdf

Third International Mathematics and Science Study <http://ustimss.msu.edu/>

Wilson M, et. al “Developments in the Epidemiology of Drug Use and Drug Use Disorders”. (August 2005) *Am J Psychiatry* 162:1494-1502

Weisberg R and O’Brien M. “What Works in School-Based Social and Emotional Learning Programs for Positive Youth Development”, (2004) *The ANNALS of the American Academy of Political and Social Science*, Vol. 591, No. 1, 86-97

Other Helpful Websites

Academy for Educational Development (AED) Center for Youth Development and Policy Research.
<http://www.aed.org/CentersandExperts/acentyouth.cfm>

Center for Adolescent Health, Johns Hopkins School of Public Health
<http://www.jhsph.edu/adolescenthealth/research/>

Child Trends: Social Science Research <http://www.childtrends.org/>

Health M Powers http://www.healthmpowers.org/about_school_health/lessons_linking.htm

National Adolescent Health Information Center <http://nahic.ucsf.edu/index.php/niah/C9>

Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health. All links were correct at time of publication.

¹ Hanson T.L, Austin, G.A, & Lee-Bayha, J. “Ensuring That No Child Is Left Behind: How are Student Health Risks & Resilience Related to the Academic Progress of Schools?” 2004. WestEd. Supported by a grant from the Stuart Foundation to the California Department of Education.

² Cox R, Zhang L, et al. “Academic Performance and Substance Use: Findings From a State Survey of Public High School Students”. Journal of School Health. American School Health Association, Vol. 77, No. 3. March 2007.

³ Glewwe P, Jacoby H, and King E. “Early Childhood Nutrition and Academic Achievement: A Longitudinal Analysis” (May 1999). International Food Policy Research Institute, Washington D.C.

⁴ MMWR Weekly, “Secondary School Health Education Related to Nutrition and Physical Activity – Selected Sites, United States, 2004”. August 4, 2006/ 55(30); 821-824

⁵ Carter-Pokras O, Baquet C. “What is a “Health Disparity?” (Sep-Oct 2002) *Public Health Reports*. Volume 117.

⁶ Dille, Julia. “Linking Health and Learning Data from Washington State”. Funded Partners Meeting, 2007.

⁷ 2006 Washington State Healthy Youth Survey. Washington State Office of Superintendent of Public Instruction, Department of Health, Department of Social and Health Services, and Department of Community, Trade, and Economic Development and RMC Research Corporation. Online website: <http://www3.doh.wa.gov/HYS/>

⁸ Washington State Office of Superintendent of Public Instruction. “Graduation and Dropout Statistics”. 2004-2005 Report. Website: <http://www.k12.wa.us/DataAdmin/default.aspx#dropoutgrad>

⁹ Arthur M, Brown E. “Levels of Risk, Protection and Drug Use in Schools Predict Students’ WASL Scores. Social Development Research Group, University of Washington. Full report: <http://www1.dshs.wa.gov/dasa/services/research/reports.shtml>