

Article 12: Human Development and High School Dropout rates

Human development and **high school dropout rates** are intricately associated; particularly, research in the U.S. has shown that a person's developmental trajectory across **cognitive** (Vaughn et al., 2010; Walsemann & Ailshire, 2020), **behavioral** (Lansford et al., 2016; Maynard et al., 2014), and **physiological** domains (Freudenberg & Ruglis, 2007; Maynard et al., 2014) can be significantly hindered when they do not complete high school. Furthermore, the decision to drop out of high school is often not an isolated event, but rather the outcome of a developmental process shaped by many factors.

High School Dropout rates and Cognitive Development

A robust body of research conducted in the U.S. has revealed inverse relationships between high school dropout rates and cognitive development. Essentially, students who drop out tend to exhibit lower academic performance and intellectual abilities compared to their peers who graduate, both before and after leaving school (Vaughn et al., 2010; Walsemann & Ailshire, 2020).

For instance, a study examined how early educational experiences—including school context, academic content, and individual ability—relate to cognitive functioning in midlife and later adulthood. For this purpose, researchers analyzed data from over 9,500 U.S. adults in the Health and Retirement Study. Furthermore, they combined repeated cognitive assessments collected between 1998 and 2014 with retrospective reports of early schooling from the Life History Mail Survey. The findings showed that completing high school and engaging fully in early educational experiences were strongly linked to higher cognitive functioning later in life. In contrast, dropping out of high school or missing key educational opportunities hindered cognitive development, with effects persisting even after accounting for later educational attainment. While formal educational attainment explained about 9 to 55% of these associations, the independent impact of early educational experiences—including whether individuals completed high school—remained significant. The researchers concluded that experiences in childhood and adolescence, particularly high school completion, have a lasting influence on cognitive outcomes, highlighting the long-term consequences of dropping out (Walsemann & Ailshire, 2020).

On that same note, another study examined the impact of high school dropout rates on verbal ability in adulthood. The project used data from 7,317 participants in the U.S. National Longitudinal Study of Adolescent Health—a nationally representative cohort of adolescents enrolled in grades 7 through 12. Following that lead, the researchers tracked participants over time and compared verbal ability outcomes between those who dropped out and those who completed high school. They also accounted for demographic and academic factors measured before dropout, including socioeconomic status, parental education, school engagement, early academic performance, and other related indicators. The results showed that individuals who left school before graduation had significantly lower verbal abilities in adulthood than their peers who completed high school. These differences were evident even after weighing preexisting academic and social factors, suggesting that missing high school has a unique, lasting effect on cognitive development. The researchers concluded that failing to complete high school can have long-term negative effects on verbal skills and cognitive functioning more broadly. Thus, they argued that early educational attainment is a critical predictor of cognitive

outcomes later in life, and highlighted the importance of interventions aimed at keeping students engaged and on track to graduate (Vaughn et al., 2010).

High School Dropout rates and Behavioral Development

Studies show a significant and complex relationship between high school dropout rates and various aspects of behavioral development. More specifically, dropping out has been associated with increased engagement in risky or problematic behaviors later in life (Lansford et al., 2016; Maynard et al., 2014).

On that note, a study explored long-term outcomes of high school dropout. The sample included 585 individuals who were first enrolled at age 5 and tracked through age 27. Thus, researchers examined participants across multiple life domains, including employment, criminal involvement, and reliance on government assistance. They found that individuals who dropped out of high school were up to four times more likely than graduates to experience negative outcomes, such as unemployment, job instability, arrests, or dependence on social services. Dropouts were also more likely to have lower educational attainment in adulthood, which increased their risk for these adverse outcomes. Findings also revealed that such risks were gradually magnified over time, affecting multiple areas of life simultaneously. Hence, the researchers concluded that completing high school is a critical factor for long-term well-being and behavioral development. Moreover, they argued that high school completion not only provides immediate educational benefits but also serves as a foundational step in promoting positive behavioral outcomes across adulthood (Lansford et al., 2016).

Another study looked at substance use and criminal behavior rates among high school dropouts in emerging adulthood. In this context, data were obtained from the 2010 National Survey on Drug Use and Health (NSDUH). The sample included 19,312 U.S. adults aged 18–25. Following that lead, researchers examined patterns of substance use and criminal justice involvement among the participants, comparing outcomes between high school dropouts and graduates. They found that dropouts were more likely than graduates to engage in illicit drug use and have encounters with the criminal justice system. Dropouts also showed higher rates of repeated offenses and more persistent substance use over time, indicating challenges in maintaining stability in daily life. The results further indicated that these risks tended to compound over time, impacting areas of life such as employment and social relationships. Hence, the researchers concluded that completing high school is a crucial protective factor for long-term well-being, behavioral development, and public safety. Additionally, ongoing support for at-risk youth was highlighted as essential to help mitigate the negative outcomes discussed (Maynard et al., 2014).

High School Dropout rates and Physiological Development

Research has revealed a strong association between high school dropout rates and various aspects of physiological development, primarily in the form of adverse health outcomes that manifest throughout adulthood. The physiological impacts are strongly linked to the social and economic disadvantages associated with lower educational attainment (Freudenberg & Ruglis, 2007; Maynard et al., 2014).

For instance, a study examined the relationship between high school dropout rates and the prevalence of chronic diseases in the United States. Following that lead, researchers analyzed data from the 2006–

2010 United States National Survey on Drug Use and Health (NSDUH) to assess the correlation between educational attainment and the incidence of chronic health conditions. The sample included 189,896 U.S. adults aged 18 years or older, providing a nationally representative picture of health outcomes related to educational level. Their findings revealed that individuals who did not complete high school were more likely to suffer from chronic diseases such as heart disease, diabetes, and hypertension. These health disparities were attributed to factors including limited access to healthcare, lower health literacy, and socioeconomic challenges associated with lower educational attainment. Additionally, the researchers noted that these risks tended to build up over time, increasing vulnerability across multiple domains of physical health. Ultimately, the researchers concluded that increasing high school graduation rates could serve as a crucial strategy in preventing and reducing chronic health conditions, thereby improving overall physiological development and long-term health outcomes among individuals (Maynard et al., 2014).

Another study explored the links between high school dropout rates and public health outcomes. Thus, researchers analyzed existing epidemiological research and public health data to assess how educational attainment influences health disparities across populations. Particularly, they reviewed a wide range of studies and datasets to identify patterns linking lower educational attainment with increased rates of chronic diseases, including heart disease, diabetes, hypertension, and other long-term health conditions. Findings revealed that individuals who did not complete high school were at higher risk for these chronic diseases due to healthcare barriers, lower awareness of health-related information, and the economic disadvantages associated with less formal education. The researchers also noted that these health conditions can worsen over time, contributing to persistent disparities in physical health outcomes throughout adulthood. Hence, the study concluded that increasing high school graduation rates could play a key role in preventing chronic health conditions across the life course. Furthermore, researchers highlighted the importance of addressing educational disparities as a critical factor for promoting long-term population health and adequate physiological development throughout the life course (Freudenberg & Ruglis, 2007).

References

- Freudenberg, N., & Ruglis, J. (2007). Reframing school dropout as a public health issue. *Preventing Chronic Disease*, 4(4), A107. <https://pmc.ncbi.nlm.nih.gov/articles/PMC2099272/>
- Lansford, J. E., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2016). A public health perspective on school dropout and adult outcomes: A prospective study of risk and protective factors from age 5 to 27 years. *Journal of Adolescent Health*, 58(6), 652–658. <https://doi.org/10.1016/j.jadohealth.2016.01.014>
- Maynard, B. R., Salas-Wright, C. P., & Vaughn, M. G. (2014). High school dropouts in emerging adulthood: Substance use, mental health problems, and crime. *Community Mental Health Journal*, 51(3), 289–299. <https://doi.org/10.1007/s10597-014-9760-5>
- Vaughn, M. G., Beaver, K. M., Wexler, J., DeLisi, M., & Roberts, G. J. (2010). The effect of school dropout on verbal ability in adulthood: A propensity score matching approach. *Journal of Youth and Adolescence*, 40(2), 197–206. <https://doi.org/10.1007/s10964-009-9501-1>
- Vaughn, M. G., Salas-Wright, C. P., & Maynard, B. R. (2014). Dropping out of school and chronic disease in the United States. *Journal of Public Health*, 22(3), 265–270. <https://doi.org/10.1007/s10389-014-0615-x>
- Walsemann, K. M., & Ailshire, J. A. (2020). Early educational experiences and trajectories of cognitive functioning among mid-life and older U.S. adults. *American Journal of Epidemiology*, 189(5), 403–411. <https://doi.org/10.1093/aje/kwz276>