



Original Contribution

**SCHOOL DROPOUT AND SUBSTANCE USE:
CONSEQUENCE OR PREDICTOR?**

P. Valkov*

Faculty of Education, Trakia University, Stara Zagora, Bulgaria

ABSTRACT

Several national studies report that students decide to drop out of school because of various reasons. Furthermore, there are ethnic variations in the causes of early school leaving. In the present study, the relationship between reasons for school dropout and substance use was investigated. A review of different articles was undertaken to determine whether existing research could provide evidence and a better understanding of the relationship between dropping out of high school and the use of substances such as tobacco, alcohol, cannabis/marijuana and other illicit drugs. School dropout often co-occurs with substance use. The aim of this article is to examine the type of the relationship between school dropout and substance use disorders. A few research results show that school dropout is a predictor of substance use. According to other authors, however, relationship of these two phenomena is the opposite: substance use causes school dropout. A third possible explanation supposes that the relationship between school dropout and substance use is not causal, but rather both are caused by a third variable. In conclusion, author suggests expanding the research on the relationship between substance use and school dropout in order to improve prevention of these two problems. Recommendations are given for ways in which the reasons for dropout and substance use can help to inform families, educators and mental health providers.

Key words: School failure; alcohol, marijuana use; family, risk factors, adolescents.

INTRODUCTION

School dropouts comprise a large percentage of adolescents. For example, one third of the United States school-age population and more than half of the young people in urban population centers are school dropouts (1, 2).

In Bulgaria, the rate of school dropout for 2015 is 13.4 % where the highest is Spain (20.0%), lowest is Croatia (2.8%) and the average percentage for ESL in EU - 11.00 (3). In comparison with the other EU countries, Bulgaria seems to have the earliest average age of dropouts with a low level of education (lower secondary school at most): 14.3 years - nearly 2 years before achieving the end of obligatory school age (4).

Dropping out of school is a serious academic issue and has important implications for a wide variety of socio-economic and health outcomes. Compared to high school graduates, school dropouts may have greater job instability (5) and economic difficulties (6).

Epidemiological research has revealed the relationship between high school dropout, mental health problems and chronic health conditions such as asthma, diabetes and cardiovascular disease (7, 8). Evidence also points to a relationship between school dropout and criminality including violence, assault, and crimes related to drugs (9-11, 8). Of significance to this study, numerous authors suggest that students who drop out of high school may experience higher risk for problems related to the use of nicotine, alcohol, cannabis, and other illegal drugs (12, 9, 13).

Substance use/abuse tends to develop during the adolescent years and is often preceded by biological, psychological, social and environmental factors (14). Substance use by adolescents is related to health problems, unsafe sexual behavior, accidents, homicides, suicides, violence and self-injury (15, 16). In addition to the problems mentioned above, substance use disorders have significantly correlated with school dropout (17-19). It is well established that greater educational attainment is positively associated with health

*Correspondence to: *Petar Valkov, PhD, Faculty of Education, Trakia University, Stara Zagora*
e-mail: petervilkov@gmail.com

and wellbeing during adulthood (20). Numerous studies emphasize a strong link between weak school attachment and substance use (21). Henry and Huizinga state that truancy, understood as intentional and unjustified absence from compulsory education, was associated with the higher risk of initiating alcohol, marijuana, and nicotine use among adolescents living in the cities and considered to be at-risk (22).

Several questions are relevant to these findings: Is adolescent use of alcohol and other substances a factor in promoting school drop out? Are teenagers who don't use or stop using substances less likely to drop out of school? Once dropout has occurred, does stopping substance use lead to school re-entry? What does the research show about the link between school dropout and substance use? The answers to these questions can help to ascertain the best practices to reduce among teenagers substance use in general and school dropout specifically.

This article provides an analysis of the relationship between two problematic behaviors among adolescents around the world: school dropout and substance use. A better understanding of the link between school dropout and substance use would have significant implications for prevention of both risky behaviors and early school leaving.

Thus, the aims of the current review are to provide an analysis of findings that examined the connection between dropout and substance use research and to propose an overview of prevailing explanatory models regarding the relationship between school dropout and substance use/abuse.

1. School dropout as a predictor of substance use

Distinguishing between youth who leave school for different reasons can potentially inform us about the nature of the relation between school dropout and adolescent risk behavior. For example, strain theory postulates that academic failure causes frustration which in turn might demotivate students, thus indirectly affecting their alienation from school (23). As R. Agnew (1985) states, "The students (then) look for alternative self-defining behaviors which are often deviant in nature". The author suggests that "students who drop out because they are performing poorly should show higher levels of substance use than do students who drop out for other reasons" (Ibid).

A number of long-range NIDA-funded studies have traced at-risk children into adulthood and trying to determine why some children are able to resist persistent influences to use psychoactive substances. According their results, external risk factors for substance use include substance use among peers, drug use by parents, and law-related problems. Protective factors include achievement in school or after-school activities and close family ties (24).

High school dropouts, have much higher rates of substance use compared to non-dropouts. According to DuPont et. al. (2013), "Individuals who have dropped out of high school are at high risk for exhibiting a constellation of behavioral problems that are amenable to early intervention" (25). However, the authors have pointed out the fact that dropout associated with later substance use problems does not deny the substantial contributory role that substance use plays in the pathway to school dropout. As will be explained further in the article, the research evidence shows that the relationship between substance use and dropout is rather bidirectional.

2. Substance use as a cause for school dropout

While it is generally known that school failure can precede the substance use, the contributory role of substance use in the pathway to dropout remains less acknowledged than other risk factors. Fortunately, more recent studies and reviews of research have begun to include drug and alcohol use to the list of contributory factors for school dropout (26-28) and thus recognize the role of substance use prevention as part of the solution to the dropout problem. Despite evidences brought by some authors that school failure leads to substance use, Lynskey & Hall (29) have linked prior substance use to increased risk for school dropout. Furthermore, the evidence from clinical work with substance-using teenagers confirms the belief that drug use leads to declines in academic motivation, study skills, and goal-setting. As DuPont et. al. claim, "adolescents in recovery report that, as their drug use problem escalated, they became completely disinterested in school and found it much easier to affiliate with drug-using peers than academically-achieving students" (25). According to Aloise-Young & Chavez (30), substance use is an important part of the school dropout picture. In their findings, nearly one-third of dropouts report that "their substance use was an important contributor to their decision to leave school early".

In France, Legleye (31) considered daily cannabis use to be linked with early school leaving. In their literature review, Townsend et al. (13) analyzed 46 studies on the correlation between substance use and school dropout, and concludes: “alcohol, tobacco and cannabis use are predictors for high school dropout”.

In their research, Orpinas, et. al. (32) concluded that cigarette smoking was associated with behavioral and academic problems, where over one-third of Late Starters (35.8%) and almost half of Continuous Users (44.4%) dropped out of high school.

A longitudinal research in Australia indicates upon controlling a range of potential confounding variables found that adolescents' substance use predicts following school non-completion (33). Adolescents who predominantly consume alcohol are also at higher risk to fail in school completion.

The findings related to the association between substance use and academic performance using an array of adolescent populations and different methodologies can be summarized in the following:

- When compared to the non-users, students who use substances are at increased risk for academic failure, including dropout, especially when their substance use is frequent and severe. Longitudinal studies have shown that even after statistical adjustment for problem behaviors and other related factors, substance use plays a role in elevating the risk for dropping out of school.
- Marijuana users have a stronger chance of developing problems in school affecting the (GPA) and dropout than alcohol users. Possible explanation for this phenomenon is that the heavier drinking adolescents dropped out of school and thus were not available to participate in follow-up research interviews.
- It follows from this explanatory model that interventions to reduce substance use should be seen as a viable strategy to reduce dropout.

3. Shared risk factors

Third explanatory model insists that there's no causal relationship between substance use and school dropout and that they may share common etiologic factor/s. This “third” risk factor alone or in combination influences or is associated with these two problem behaviors. This concept is most frequently illustrated by the role of puberty onset, common micro- and macro environment that may underlie both the

substance use and school dropout. Other examples of shared etiologic factors include common exposure to poverty, living in marginalized urban neighborhoods, lack of commitment to school and poor parent-child relationships.

Reproductive maturation

Timing of puberty onset and rate of maturation have been shown in longitudinal investigation to be associated with a variety of negative outcomes, including substance use, criminality, and school dropout (34). For instance, secondary sex characteristics such as facial hair, deepening voice, and augmenting musculature may attract precocious adolescents into an older peer group that is the source of initial drug offers. Early maturing girls are at higher risk for assimilation into an older peer group, where boys introduce them to a wide range of risky behavior, including drug use and sex (Ibid). In other research among a sample of 179 boys in late childhood Reynolds et al. (35) have evaluated the role of testosterone level and sexual maturation in early adolescence (age 12-14) on attitudes toward antisocial behavior, affiliation with deviant peers, and social potency in middle adolescence (age 16), illicit substance use by late adolescence (age 19), and SUD in young adulthood (age 22). The results have indicated that testosterone level plays a predictive role for social potency and approval of aggressive/antisocial behavior. Sexual maturation mediated the relation between testosterone level in early adolescence and later association with deviant peers. Social potency, approval of aggressive/antisocial behavior, and deviant peer affiliations predicted illegal drug use by late adolescence.

Family and school bonding

Another alternative explanation for the link between school dropout and problem behavior, e.g. substance use, is social control theory. Social control theory (36) suggests that a lack of commitment to school and poor parent-child relationships are reflective of a poor bond to conventional society. When individuals are not strongly bonded to conventional society, they are at higher risk to deviate from societal norms for proper behavior. Hawkins' social developmental model (37) extends social control theory by suggesting that the formation of strong attachment to family and school will decrease the likelihood of association with peers who use psychoactive substances. Similarly, primary socialization theory (38) posits that “there are three primary sources of socialization for children and adolescents: the family, the school, and peers”. According to

primary socialization theory, when ties to the family or school are weak and ties to peers are strong, the adolescents are at greatest risk. Each of these theories suggests that some reasons for leaving school may be associated with higher levels of deviant behavior, whereas others would not. All of these theories imply that higher levels of substance use should be evidenced by adolescents who leave school as a result of poor school bonding (30).

Community and macro environment

The role of the community and macro environment has also been mentioned in the literature as a risk factor of both substance use and school dropout (39). Marginalized urban neighborhoods generate conditions that can lead to both school dropout and substance use. Poverty, living in poor and polluted suburbs, the role of social class, income, and locale have been identified as impacting factors for substance use, especially for “heavy” drugs like heroin and cocaine as it is mentioned by Goode (40). Such environment is characterized as risky in socio-cultural terms, which is plagued by confinement and social isolation, close ties with the criminal world, widespread substance abuse (alcohol, drugs) and in many cases, a brutal lifestyle (41). It is no accident that the data obtained from different studies show that almost half, and in some cases two thirds of the children living in ghettos and other low-status residential areas, leave the school system early. Evidence of the same is provided by a number of other studies demonstrating that “the following identifiable groups are at risk to not continue their formal education beyond the established statutory school leaving age: children from ethnic minorities – Roma, migrants, etc., children from socially deprived families, children from isolated rural areas and children from marginalized city quarters” (42).

However, living in high-poverty neighborhood doesn't guarantee that a student will fail to graduate if other supports in the school and family are in place that can monitor the child's progress allowing him/her to achieve their potential.

DISCUSSION

Some studies provide evidence that substance use needs to be considered as a factor that precedes school dropout while other studies suggest that early school leaving precedes substance use. The most sensible interpretation of these apparently conflicting findings is that the two explanatory models are not mutually exclusive. Clinical experience clearly supports a multitude of pathways leading to different

types of adverse behavioral outcomes among adolescents. To summarize, the more severe the substance use is, the greater impact on academic performance it will have in adolescent's life and will lead to the higher risk for school dropout.

The review of different studies also substantiates the conclusion that school dropout must be considered separately connected to specific classes of substance use. In this regard, there are solid evidences at present to draw firm conclusions only with respect to tobacco/nicotine and marijuana/cannabis. Both risky behaviors influence the severity of the other and appear to causally interact. Indeed, cigarette smoking and marijuana use may be causally linked to academic failure, including dropout. However, the reverse causal relationship has emerged from the present review as a possible explanation in that school dropout may serve as a source of life stress that might lead to substance use as an adolescent's attempt to reduce the negative symptoms of anxiety and depression caused by that stress. Clearly, the association between substance use and school dropout is bidirectional and there are multitude pathways to these adverse outcomes.

Termination of substance use upon treatment completion is linked with improvements in academic performance. Although only a few studies could be located that assessed adolescent academic achievement after treatment, this type of evidence suggests that substance use undoubtedly plays a contributory role for school failure.

CONCLUSION

Dropping out of school is not the root of the problem but rather the end result of another process that also starts earlier, that of school disengagement. In terms of prevention, assessing early school disengagement may be essential for preventing school dropout and substance use among young people.

Findings indicate that the promotion of family involvement and positive school and social behaviors can reduce the risk of substance abuse. It might be beneficial to assist and instruct the parents that learning problems, substance use, and/or mental health problems are among the major warning signs of decline in academic performance. This subtle process can be overlooked by parents who might expect that a previously achieving pupil will recover quickly from a momentary “dip” in academic performance. Thus it is important to help parents prudently to consider

the possibility that substance use might be the reason for the decrease in academic motivation or performance of their child. In such cases comprehensive assessment should be conducted - including an assessment not only of possible learning disabilities or mental health problems, but also of possible drinking and drug involvement.

Addressing school dropout as a social and health problem has the potential to improve the lives of dropouts and reduce societal costs of substance abuse. School and family policies that emphasize the role of parental monitoring and prevent alcohol and substance abuse can reduce the school dropout and its negative consequences. It is our hope that this knowledge will help school psychologists, counselors, educators and others in their efforts to help these adolescents.

Positive relationships with parents, involvement with religion and good climate at school and in the student's class are other strategic protective factors that prevent many problems and risk behaviors, including substance use and school dropout. The closer young people's identification with the value system of the religion in which they are being brought up, the fewer risk behaviors they engage in and the lesser their exposition to school and mental health problems as well as to conflicts with the law (43).

In conclusion, to borrow a phrase from DuPont, et. al. (25) about the role of substance use in coping with hardships, "There is no problem so bad, that alcohol and drugs will not make it worse!" That wisdom applies also to the problems of academic failure and school dropout.

REFERENCES

1. Educational Testing Service. One-third of a nation: Rising dropout rates and declining opportunities, 2005. Retrieved from http://www.ets.org/Media/Research/pdf/PI_CONETHIRD.pdf
2. White House. President Obama announces steps to reduce dropout rate and prepare students for college and careers, 2010. Retrieved from <http://www.whitehouse.gov/the-press-office/president-obamaannounces-steps-reduce-dropout-rate-and-prepare-students-college-an>.
3. European Commission, Eurostat. Early leavers from education and training, 2015. http://ec.europa.eu/eurostat/tgm/table.do;jsessionid=3vw17ypm42fhJhswnu2p3hW_qNEoUaHZAQbTRw8JJcNOQfMA0bQG!1007687445?tab=table&plugin=0&language=en&pcode=t2020_40 (15 November 2017)
4. Zachariev, B., Yordanov, I., Delcheva, Y. "Lost Future? A research of the phenomenon of children left outside of the school system", Sofia, United Nations Children's Fund (UNICEF), 2013. Retrieved from <http://www.unicef.bg/en/article/Lost-Future-Non-enrollment-and-non-attendance-of-school-a-study-on-the-phenomena/639>
5. Day, J., Newburger, E. The big payoff: educational attainment and synthetic estimates of work-life estimates: a meta-analysis review. *Am. J. Commun. Psychol.* 25, 115–152, 2002.
6. Chapman, C., Laird, J., Kewal, Ramani, A. Trends in High School Dropout and Completion Rates in The United States: 1971-2008 (NCES 2011-012). National Center for Education Statistics, Institution of Education Sciences, U.S. Department of Education, Washington, D.C., 2010.
7. Muennig, P., Fiscella, K., Tancredi, D., Franks, P. The relative health burden of selected social and behavioral risk factors in the United States: implications for policy. *Am. J. Public Health* 100, 1758–1764, 2010.
8. Vaughn, M.G., Salas-Wright, C.P., Maynard, B.R. Dropping out of school and chronic disease in the United States. *J. Public Health* 22, 265–270. 2014.
9. Maynard, B.R., Salas-Wright, C.P., Vaughn, M.G. High school dropouts in emerging adulthood: substance use, mental health problems, and crime. *Community Ment. Health J.* 51, 289–299, 2015.
10. Olate, R., Salas-Wright, C., Vaughn, M.G. Predictors of violence and delinquency among high risk youth and youth gang members in San Salvador, El Salvador. *Int. Soc. Work* 55, 383–401, 2012.
11. Vaughn, M.G., Salas-Wright, C.P., DeLisi, M., Maynard, B.R., Boutwell, B. Prevalence and correlates of psychiatric disorders among former juvenile detainees in the United States. *Compr. Psychiatry* 59, 107–116, 2015.
12. Bachman, J.G., O'Malley, P.M., Scheulenberg, J.E., Johnston, L.D., Fredoman-Doan, P., Messersmith, E.E. The Education-Drug Use Connection: How Success And Failures In School Relate To Adolescent Smoking, Drinking, Drug Use, And Delinquency. Taylor & Francis, New York, NY, 2008.

13. Townsend L., Flisher AJ, King G. A systematic review of the relationship between high school dropout and substance use. *Clin Child Fam Psychol Rev.* 2007;10(4):295–317, 2007.
14. Isralowitz, R., & Myers, P. *Illicit drugs.* Santa Barbara: Greenwood Publishers, 2011.
15. Cho H, Hallfors DD, Iritani BJ. Early initiation of substance use and subsequent risk factors related to suicide among urban high school students. *Addictive Behaviors,* 32:1628-39. 2007).
16. Seth P, Sales JM, DiClemente RJ, Wingood GM, Rose E, Patel SN. Longitudinal examination of alcohol use: a predictor of risky sexual behavior and *Trichomonas vaginalis* among African-American female adolescents, *Sex Transm Dis,* 38:96-101, 2011.
17. Breslau J, Miller E, Joanie Chung WJ, Schweitzer JB. Childhood and adolescent onset psychiatric disorders, substance use, and failure to graduate high school on time. *J Psychiatr Res.* 45 (3):295–301. doi: 10.1016/j.jpsychires.2010.06.014, 2011.
18. Bryant AL, Schulenberg JE, O'Malley PM, Bachman JG, Johnston LD. How academic achievement, attitudes and behaviors relate to the course of substance use during adolescence: a 6-year, multiwave national longitudinal study. *Journal of Research on Adolescence,* 13 (3):361–397, 2003.
19. Fergusson DM, Horwood LJ, Beautrais AL. Cannabis and educational achievement. *Addiction.* 98 (12):1681–1692, 2003.
20. Lleras-Muney, A. The relationship between education and adult mortality in the United States. *Rev. Econ. Stud.* 72, 189–221, 2005.
21. Henry KL, Thornberry TP, Huizinga DH. A discrete time-survival analysis of the relationship between truancy and the onset of marijuana use. *Journal of Studies on Alcohol and Drugs.* 70(1):5–15, 2009.
22. Henry KL, Huizinga DH. Truancy's effect on the onset of drug use among urban adolescents placed at-risk. *Journal of Adolescent Health.* 40(4):e9–e17, 2007.
23. Agnew, R. A revised strain theory of delinquency. *Social Forces,* 64, 151– 67, 1985.
24. Swan, N. Early Childhood Behavior and Temperament Predict Later Substance Use. NIDA Notes, 1995. Retrieved from: https://archives.drugabuse.gov/NIDA_Notes/NNVol10N1/Earlychild.html (22. Sept 2017).
25. DuPont, R. L., Caldeira, K. M., DuPont, H. S., Vincent, K. B., Shea, C. L., & Arria, A. M. America's dropout crisis: The unrecognized connection to adolescent substance use. Rockville, MD Institute for Behavior and Health, Inc., 2013. Available at www.cls.umd.edu/docs/AmerDropoutCrisis.pdf.
26. Hammond, C., Linton, D., Smink, J., & Drew, S. Dropout risk factors and exemplary programs: A technical report. Clemson, SC: National Dropout Prevention Center/Network and Communities In Schools, Inc., 2007.
27. Kreamer, J., Fields, G. M., Stutman, R. M., Anderson, G. L., & Barthwell, A. G. The overlooked cause of children being left behind: Drug use compromising academic success. Naperville, IL: Education Voices, Inc., 2008.
28. Rumberger, R. W., & Lim, S. Why students drop out of school: A review of 25 years of research. Santa Barbara, CA: University of California Santa Barbara, 2008.
29. Lynskey, M., & Hall, W. The effects of adolescent cannabis use on educational attainment: A review. *Addiction,* 95, 1621–1630, 2000.
30. Aloise-Young, P & Chavez, E. Not all school dropouts are the same: ethnic differences in the relation between reason for leaving school and adolescent substance use, *Psychology in the Schools,* Vol. 39 (5), 2002.
31. Legleye S, Obradovic I, Janssen E, Spilka S, Le Nezet O, Beck F. Influence of cannabis use trajectories, grade repetition and family background on the school-dropout rate at the age of 17 years in France. *Eur J Public Health,* 20 (2): 157-163, 2010.
32. Orpinas, L., Nahapetyan, B., Dube, L., Song, S. Cigarette smoking trajectories from sixth to twelfth grade: Associated Substance Use and High School Dropout, *Nicotine and Tobacco Research* Volume 18, Issue 2, 1 February 2016, p. 156-162, 2016.
33. Kelly, A, Evans-Whipp, T, Smith, R., Chan, G, Toumbourou, J, Patton, G, Hemphill, S, Hall, W, Catalano, R. A longitudinal study of the association of adolescent polydrug use, alcohol use and high school non-completion, *J Addiction* Volume 110, Issue 4, Pages 627-635, 2015.
34. Kaminer, Y., Bukstein, O. G. Adolescent Substance Abuse: Psychiatric Comorbidity and High-risk Behaviors, Taylor & Francis, p. 16, 2008.
35. Reynolds MD, Tarter R, Kirisci L, Kirillova G, Brown S, Clark DB, Gavalier J.

- Biological Psychiatry* Jun 01; Vol. 61 (11), pp. 1223-7, 2007.
36. Hirschi, T. *Causes of delinquency*. Berkeley, CA: University of California Press, 1969.
37. Hawkins, D.J., Lishner, D.M., Catalano, R.F., Jr., & Howard, M.O. Child Predictors of Adolescent Substance Abuse: Toward an empirically grounded theory. *Journal of Children in a Contemporary Society*. 18, 11–48, 1986.
38. Oetting, E.R. Primary socialization theory. Developmental stages, spirituality, government institutions, sensation seeking and theoretical implications. *V. Substance Use and Misuse*, 34, 947–982, 1999.
39. Jadidi, N., Nakhaee, N. Etiology of Drug Abuse: A Narrative Analysis, *J of Addict*, Volume 2014 Article ID 352835, 2014, <http://dx.doi.org/10.1155/2014/352835>
40. Goode, E. *Theories of drug use*. Drugs in American Society, McGraw Hill, Boston, Mass, USA, 7th edition, 2007.
41. Lavrentsova, E., P. Valkov (2017). Dropping out of School: Risk and Protective Factors, *Labor et Education*, journal of the Institute of Social Work, Pedagogical University of Cracow V.5, 2017 (under press).
42. Success at school (SAS) Project. Country Profile: Bulgaria, 2014. Retrieved from <http://www.successatschool.eu/country-profiles/bulgaria/> (15.11.2017).
43. Grzelak, S. *The Guidebook to Effective Prevention of Youth Problems Guidelines for local authorities and practitioners based on the results of scientific research*, European Institute for Integrated Prevention, 2017.