2016

Risk Factors Associated with First-Year College Dropout

Tiffany K. Ho
Virginia Commonwealth University, hotk@vcu.edu

Divya Krishna
Virginia Commonwealth University, krishnad@vcu.edu

Follow this and additional works at: http://scholarscompass.vcu.edu/uresposters

Part of the Education Commons, and the Psychology Commons
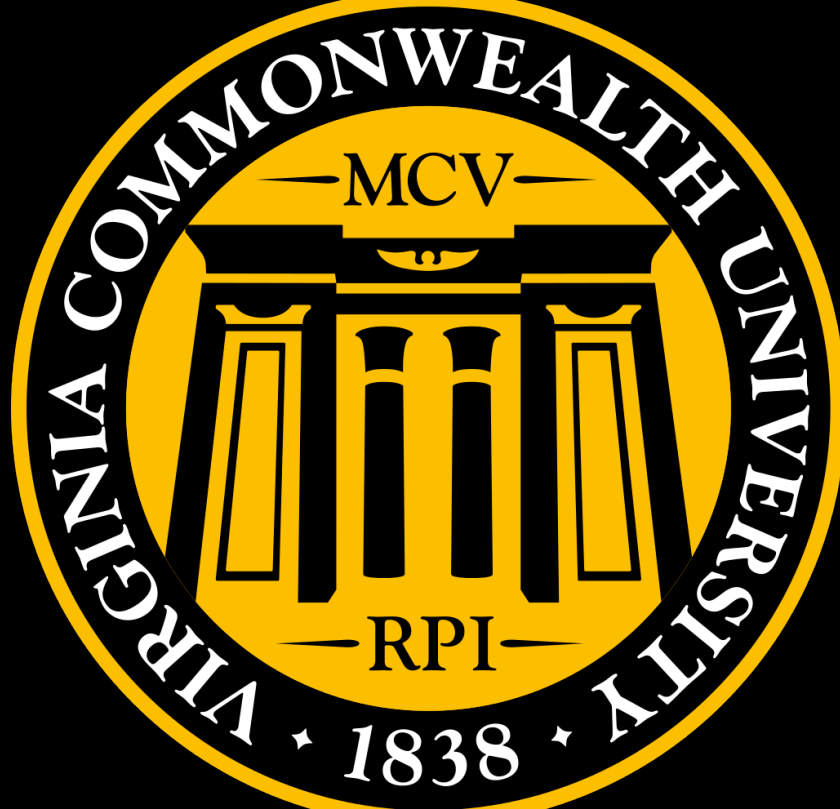
Recommended Citation

Ho, T. K. & Krishna, D. (2016, April 20). Risk Factors Associated with First-Year College Dropout. Poster session presented at Virginia Commonwealth University Poster Symposium for Undergraduate Research and Creativity, Richmond, VA.

Risk Factors Associated with First-Year College Dropout

Tiffany Ho[1,3] & Divya Krishna[2,3], Danielle Dick, PhD[4,5,6], Amy Adkins, PhD[4], & Peter Barr, PhD[4,5]

[1]Department of Biology, College of Humanities and Sciences
[2]Department of Biomedical Engineering, School of Engineering
[3]Honors College
[4]Department of Psychology, College of Humanities and Sciences
[5]Department of African American Studies, College of Humanities and Sciences
[6]Department of Human and Molecular Genetics

Introduction

College attrition in the United States is a pervasive issue among young adults. Among those 25 year or older, 19.5% of those who attempted college failed to obtain a degree (U.S. Census Bureau, 2006). Dropout is problematic for a number of reasons. Students who dropout of college earn less than college graduates, and are still responsible for paying back student loans (Horn, Berger, & Carroll, 2004). Not only is college attrition financially harmful on an individual level, it also has broader social implications by affecting economic growth and national development (Martinez, Sher, & Wood, 2008).

Previous research has shown that a variety of factors can impact college student's academic performance, including healthy nutrition, physical activity, substance use, smoking, early sexual activity, bullying, excessive television watching, internet use, and playing video games (Busch, Loyen, Lodder, & Schrijers, 2014). Heavy alcohol use is the most notable risk factor for attrition and poor academic performance because it is prevalent among college-aged individuals. Heavy alcohol use is also linked to increased likelihood of injury, assault, property, damage,and mortality (Johnston, O'Malley, Bachman, and Schulenberg, 2005) and may be indirectly linked to academic performance (Conway & Diplacido, 2015). **The purpose of the current study was to explore possible predictors of dropout in students after their first year of college.**

Methods

- Spit for Science 2011 – 2013 cohorts
- Students who participated in fall of freshman year (N=6,105)
- Logistic regression models for factors associated with dropout after freshman year using the *logit* command in Stata14.
- Linear regression models for different risk factors associated with GPA.
- Measures used included:
  - Binary indicator for dropout after freshmen at VCU
  - Students' GPAs at the end of the semester
  - The Big Five Inventory of personality traits
- Risk factors included:
  - Stressful/traumatic events before coming to VCU
  - Familial, mental/behavioral risk factors
- Demographic: age, sex, race, cohort, & parental education level

Results

- Negatively Associated with Dropout Rates
  - Greater parental education (OR = 0.908, p < 0.01)
- Positively Associated with Dropout Rates
  - Greater levels of depression (OR = 1.068, p < 0.01)
  - High school peer deviance (OR = 1.024, p < 0.05)
  - Heavy drinking (OR = 3.8, p < 0.05)
  - Stressful life events (OR = 1.078, p < 0.05)
- Personality & familial risk factors not significantly associated with dropouts
- After GPA (OR = 0.395, p < 0.001) was included as covariate
  - Depression (OR = 1.04, p < 0.05) = only risk factor significantly associated with dropout
  - Parental education, depression, high school peer deviance, heavy drinking, stressful situations p-values > 0.05
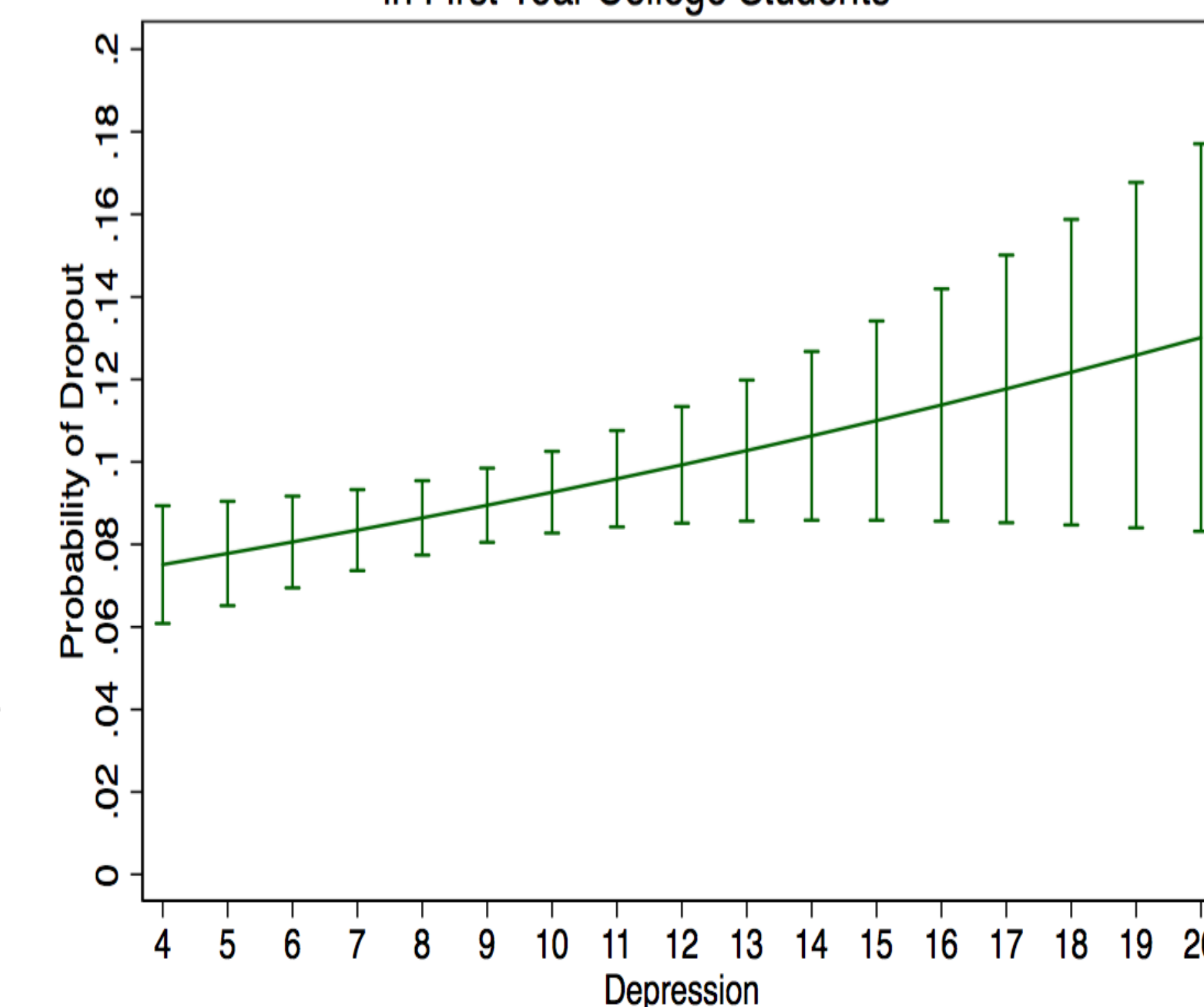
Discussion

Our research question focused on the risk factors that may influence college dropout after student's first year, including health ouctomes, family, stress/trauma, and personality. Multiple risk factors, including depression, high school deviance, heavy drinking, and stressful life events, were positively and significantly associated with dropout. Only parental education was negatively correlated with dropout. However, almost all these previously significant associations disappeared when GPA was included in the statistical analysis. GPA was the strongest predictor of dropout. Supplementary analyses revealed that many of the factors that were found to be significantly associated with dropout rates were significantly related to GPA, suggesting that these risk factors may influence dropout through their effect on GPA.

Despite our significant findings, there were several limitations. The study was constricted to individuals in the first three cohorts who answered the survey during fall of their freshmen year. Our measures were limited to self-reported items via online surveys, and are subject to reporting bias. Additionally, the dropout variable was unclear because transfer students were also included in the dropout group. The study only focused on factors that might promote dropout. Because not every risk factor was included, further studies could include protective factors that affect GPA. Future directions include formally testing the mediation model between risk factors and dropout.
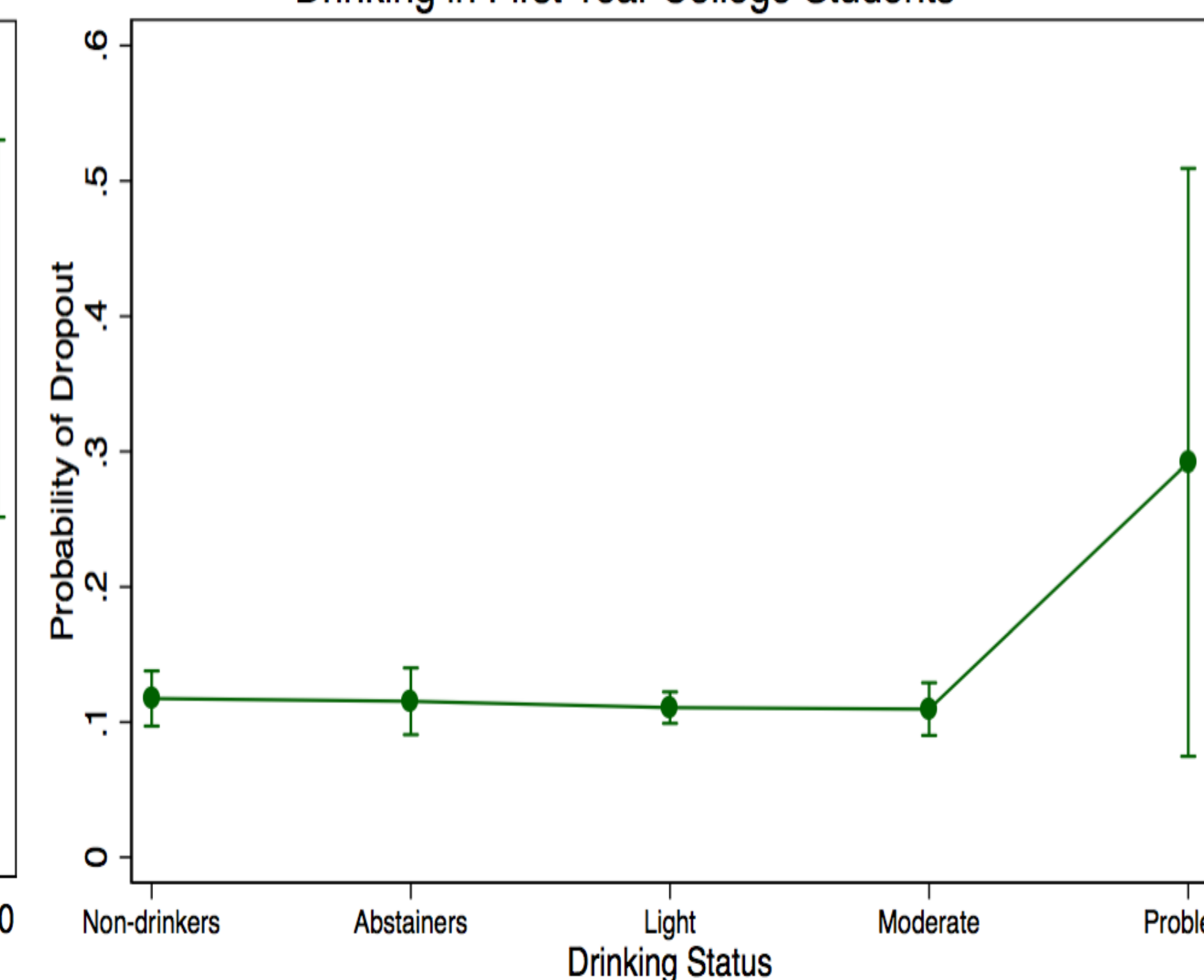
Data and Graphs

Probability of Dropout across Levels of Depression in First Year College Students
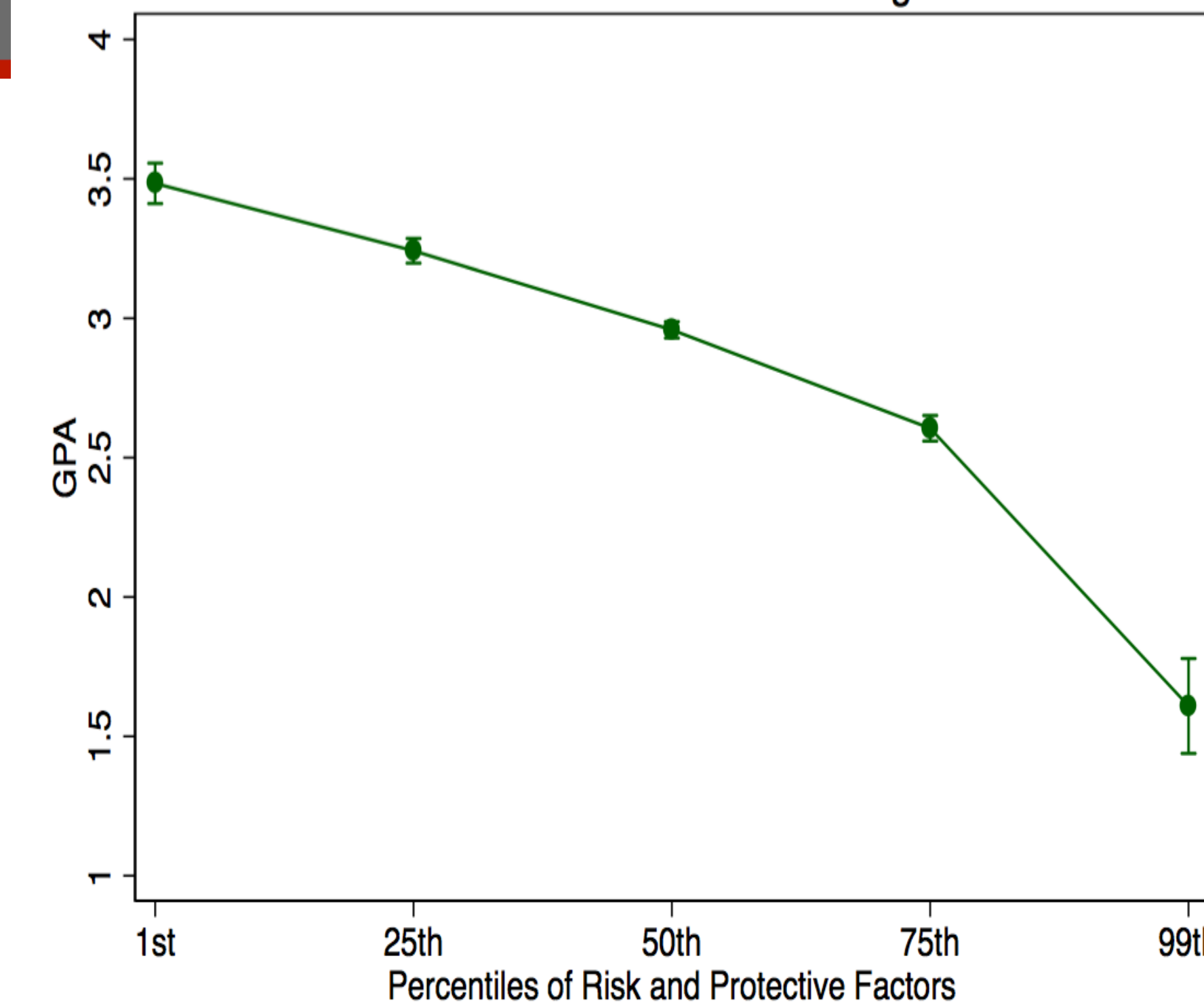
Predicted probability of dropout across range of values in depression scale (SCL-90) based on the full model. Bars represent 95% confidence intervals. All other covariataes fixed to zero.

Probability of Dropout across Self Reported Drinking in First Year College Students
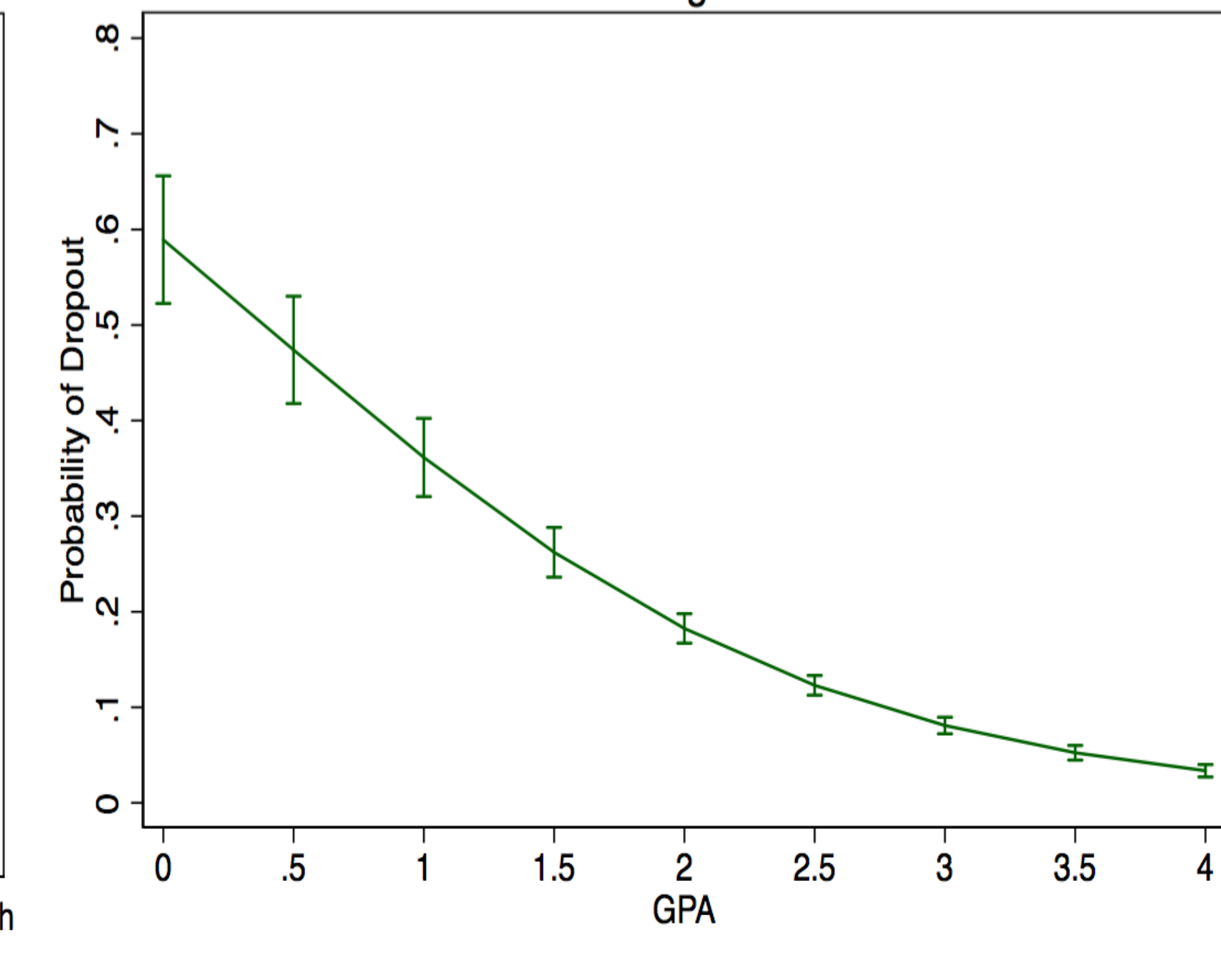
Predicted probability6 of dropout across categories of self-reported drinking from the full model. Bars represent 95% confidence intervals. All other covariates fixed to zero.

GPA across Risk Profiles in First Year College Students

Predicted probability of dropout across GPA from the full model. Bars represent 95% confidence intervals. All other covariates fixed to zero.

Probability of Dropout across GPA in First Year College Students

Predicted value of GPA based on categorizing individuals into risk profiles. Each risk profile represents the predicted value of GPA when individuals are in the corresponding quartile of risk. Risk factors include the presence of problems (such as trauma and depression) and the absence of protective factors (such as parental education). Bars represent 95% confidence intervals.

References

Busch, V., Loyen, A., Lodder, M., & Schrijvers, A. J. P. (2014). The effects of adolescent health-related behavior on academic performance: A systematic review of the longitudinal evidence. *Review of Educational Research, 84*(2), 245-274. doi: 10.3102/0034654313518441
Conway, J. M., & Diplacido, J. (2015). The indirect effect of alcohol use on GPA in first-semester college students: The mediating role of academic effort. *Journal of College Student Retention: Research, Theory & Practice, 17*(3), 303-318. doi.10.1177/1521025115575705
Horn, L.; Berger, R.; Carroll, CD. (2004) College persistence on the rise? Changes in 5-year degree completion and postsecondary persistence rates between 1994 and 2000. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics. NCES 2005–156
Martinez, J. A., Sher, K. J., & Wood, P. K. (2008). Is heavy drinking really associated with attrition from college? The alcohol-attrition paradox. *Psychology of Addictive Behaviors,22*(3), 450-456. doi:10.1307/0893-164X.22.3.450
Johnston, L.D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J.E. (2005) Monitoring the Future national survey results on drug use, 1975–2004: Vol. 2. College students and adults ages 19–45. Bethesda, MD: National Institute on Drug Abuse. NIH Publication No. 05–5728

Acknowledgements