

Annual Income and Depression Among Women in Their First Year of College: Does Income Impact Depression?

EDLD 651 Final Project Paper

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Abstract

Introduction

Method

Participants

Participants in this study were 219 18-year-old first-time college freshmen attending the University of Nevada, Reno (UNR). The participants' data were collected as part of a larger randomized study, the ACT Suicide Prevention Study, that evaluated the effectiveness of an intervention aimed at preventing suicidality among college students (citation). Between 2008 and 2010, all incoming freshmen at UNR between the ages of 18-20 were invited to participate in the ACT Suicide Prevention Study via mass email. Those who expressed interest in participating were screened with the Acceptance and Action Questionnaire-II (Bond et al. (2011)). Students with AAQ-II scores in the upper 50th percentile were selected for inclusion in the study. The dataset we worked from contained pre-intervention baseline data, including participants' demographic information (e.g., age, race/ethnicity, gender, living situation, working situation, family income, personal income, financial aid) and responses from a wide variety of assessment instruments measuring suicidality, mental health, experiential avoidance, and other theoretically relevant behaviors and views (e.g., values, emotional regulation). There were a total of 972 participants in the pre-intervention baseline dataset from which we sampled, including those who reported their gender as female, male, and transgender.

For the purpose of the present research study, a subsample was created that included participants who were 18 years old, reported their gender as female, and were currently working. Self-reported race and ethnicity demographics for the resulting 219 participants is summarized in Tables 1 and 2. Of participants in the present study, 2% reported themselves as American Indian or Alaska Native, 5% as Asian, 2% as Black or African American, 9% as multiracial, 1% as Native Hawaiian or Pacific Islander, and 74% as White or Caucasian. Approximately 7% of participants chose not to respond. Fourteen percent of respondents were Hispanic or Latino, 85% were not Hispanic or Latino, and 1% opted not to respond.

Table 1: Racial Demographics Self-Reported by Participants

Race	n	Percent
American Indian/Alaska Native	5	2
Asian	10	5
Black or African American	5	2
Multiracial	20	9
Native Hawaiian or other Pacific Islander	2	1

Race	n	Percent
White or Caucasian	161	74
I choose not to answer	16	7

Table 2: Ethnic Demographics Self-Reported by Participants

Ethnicity	n	Percent
Hispanic or Latino	30	14
Not Hispanic or Latino	186	85
I choose not to answer	3	1

Measures and Variables of Interest

Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI, Beck, Steer, and Brown (1996)) is an assessment of severity of depression. The BDI is composed of 21 questions about symptoms and views that are rated on a scale of 0 to 3. The total score is the sum of responses from the 21 items. It is a continuous variable. Higher total scores are associated with more severe depression.

Annual Income

Among other demographic and socioeconomic variables, participants in the ACT Suicide Prevention Study (citation) were asked to provide information regarding their individual personal income. The item was “For yourself, please estimate the gross annual income (before taxes) for the last year. If unknown, choose unknown.” Participants could select their response from the following options: (a) less than \$5,000, (b) \$5,000 - \$9,999, (c) \$10,000 - \$14,999, (d) \$15,000 - \$19,999, (e) \$20,000 - \$24,999, (f) \$25,000 - \$29,999, (g) \$30,000 - \$49,999, (h) \$50,000 or more, (i) unknown, and (j) I choose not to answer. This variable is categorical with 10 levels.

Analyses

To evaluate whether severity of depression, as measured with scores from the BDI, varied by level of income, we generated two exploratory data visualizations and calculated a table of descriptive statistics. We first generated a bar graph of the number of participants in each income level. Our second exploratory data visualization was a series of side-by-side boxplots of BDI scores by income level. We also calculated descriptive statistics (n , M , SD , minimum, maximum) for BDI scores by level of reported income.

To accomplish this project and our analyses, we used R (R Core Team (2021)) and the `here()` (Müller (2020)), `rio()` (Chan et al. (2021)), `janitor()` (Firke (2021)), `tidyverse()` (Wickham et al. (2019)), and `knitr()` (Xie (2021)) packages.

Results

Figure 1

Participants' Annual Income

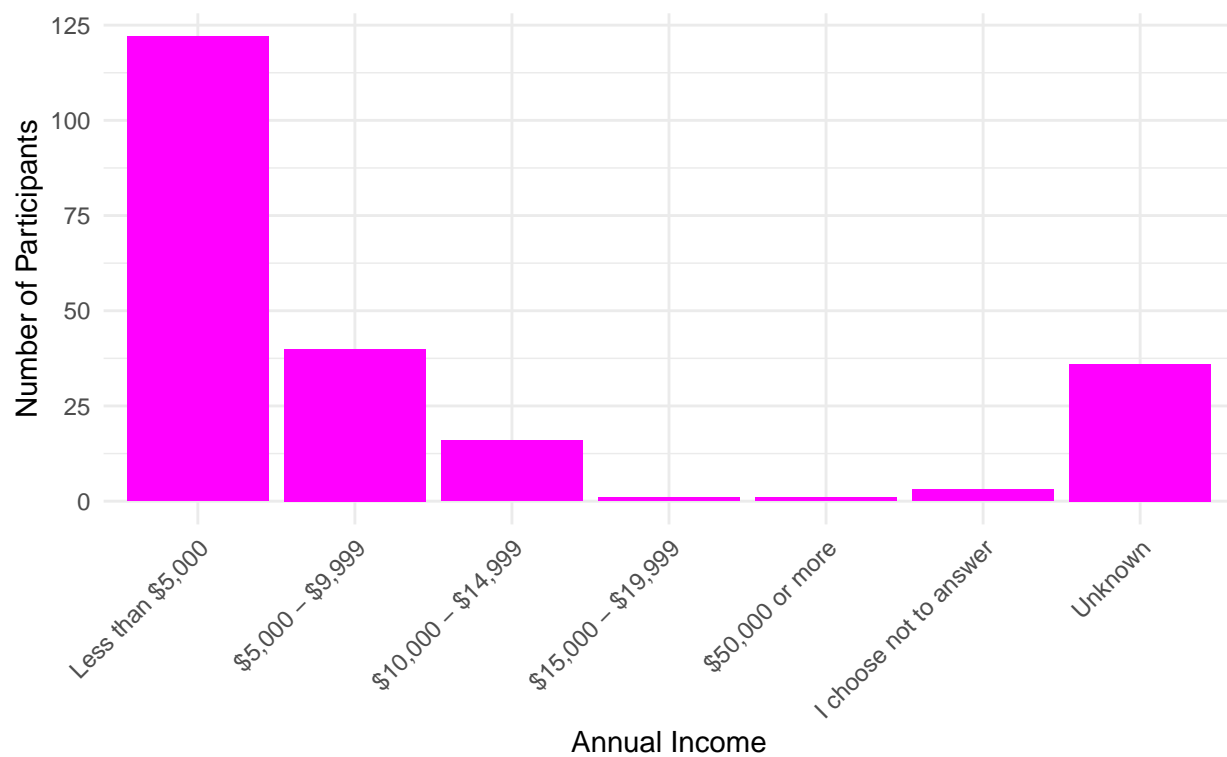


Figure 2

Beck Depression Inventory (BDI) Scores by Annual Income

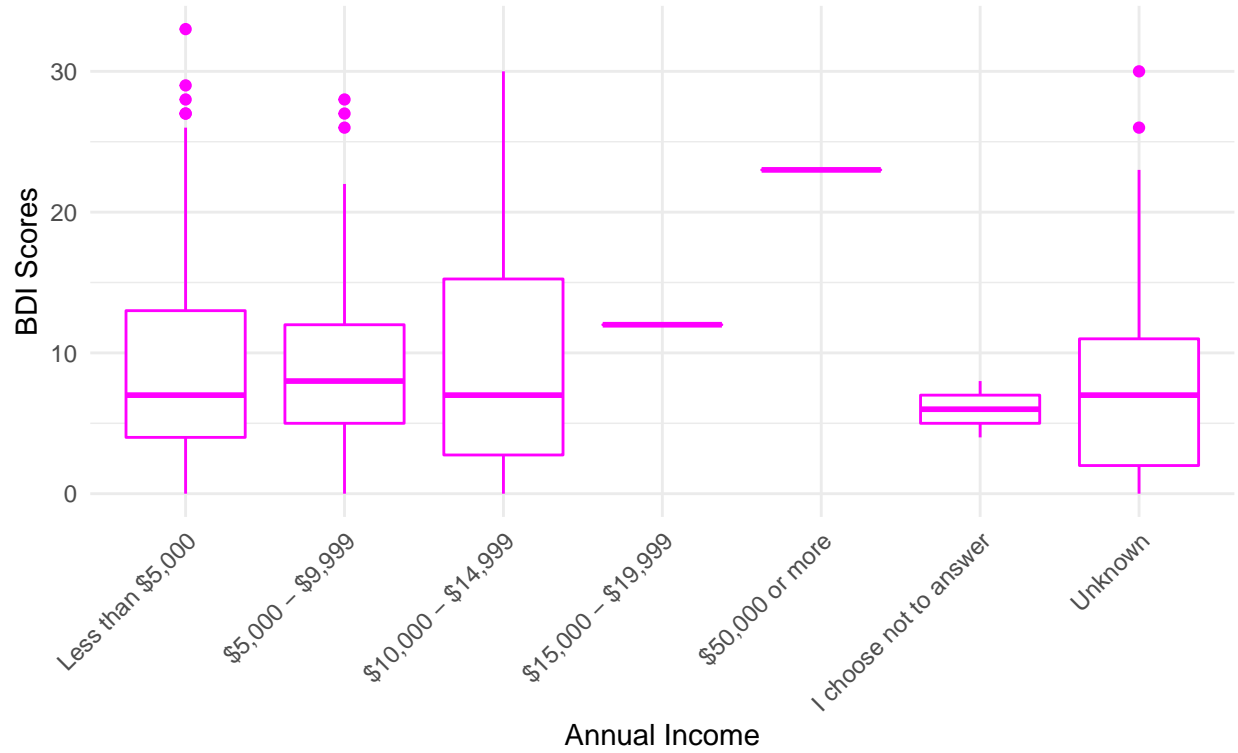


Table 3: Descriptive Statistics of Participants' Beck Depression Inventory (BDI) Scores by Income Level

Annual Income	n	M	SD	Min	Max
Less than \$5,000	122	9.17	7.74	0	33
\$5,000 - \$9,999	40	9.70	7.25	0	28
\$10,000 - \$14,999	16	9.44	8.59	0	30
\$15,000 - \$19,999	1	12.00	NA	12	12
\$50,000 or more	1	23.00	NA	23	23
I choose not to answer	3	6.00	2.00	4	8
Unknown	36	8.54	7.98	0	30

Discussion

References

- Beck, A. T., R. A. Steer, and G. Brown. 1996. *Beck Depression Inventory-II*. <https://doi.org/10.1037/t00742-000>.
- Bond, F. W., S. C. Hayes, R. A. Baer, K. M. Carpenter, N. Guenole, H. K. Orcutt, T. Waltz, and R. D. Zettle. 2011. *Preliminary Psychometric Properties of the Acceptance and Action Questionnaire-II: A Revised Measure of Psychological Flexibility and Acceptance*.
- Chan, Chung-hong, Geoffrey CH Chan, Thomas J. Leeper, and Jason Becker. 2021. *Rio: A Swiss-Army Knife for Data File i/o*.
- Firke, Sam. 2021. *Janitor: Simple Tools for Examining and Cleaning Dirty Data*. <https://CRAN.R-project.org/package=janitor>.
- Müller, Kirill. 2020. *Here: A Simpler Way to Find Your Files*. <https://CRAN.R-project.org/package=here>.
- R Core Team. 2021. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.
- Xie, Yihui. 2021. *Knitr: A General-Purpose Package for Dynamic Report Generation in r*. <https://yihui.org/knitr/>.