

# Factors Affecting Adolescent Happiness in the United States

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## Background:

- Happiness has been shown to be vital to health and subjective well-being.<sup>1,2</sup>
- Teenage happiness is not as well understood<sup>3</sup> and not very widely studied.
- Literature has shown that happiness is related to biological sex, physical activity, sedentary behavior, sleeping habits, parental relationships, perceived quality of friendship, peer acceptance, and religiosity.<sup>4,7,10,12,15</sup>
- Hypothesis: The effect of parental relationship and religiosity on happiness is achieved through substance use control and prohibition of deviant behaviors.

## Methods:

- This study is a secondary analysis of the 1994 National Longitudinal Study of Adolescent to Adult Health (ADD Health).
- The survey had >6000 respondents and an overall response rate of 79%.<sup>22</sup>
- Dependent variable: Happiness – a scale was created to measure level of happiness quantitatively. Three variables looked at were suicidal tendency, depression, and life satisfaction. Each of the variables were scaled, and responses were given corresponding point values, and then were z score standardized. The suicide and depression scales were then inverted, to create a happiness index.
- This index was dichotomized about the average for bivariate Chi<sup>2</sup> analysis with nominal variables.
- Similar scales were made for Religiosity, and Mother/Father Relationships
- Bivariate analyses between each independent variable with either the happiness index or the dichotomized happiness index were performed.
- Two multivariate analyses (linear regressions) were performed, one with substance use and deviance, and one without. This was done to explore the mediating effect parental relationships had on these variables.

## Results:

There were slightly more women than men in the survey (51.61% vs. 48.39%) and the survey overrepresented minorities (compared to 1994 US Census Data)<sup>29</sup> as was the intention of the purposive selection process. Bivariate analysis of each independent variable with the happiness scale showed very significant associations (p-values <0.001). For example, men scored higher on the happiness index than expected. Also, those who reported “Excellent” or “Very Good” health were more likely to score above average on the happiness index while those who reported “Good” to “Poor” health were more likely to score below average. In the first multivariate analysis, religiosity, mother relationship quality, and father relationship quality were significantly positively associated (p-values <0.001) with increased happiness (Coef. 0.038, 0.028, and 0.018 respectively) with an R<sup>2</sup> of 0.3060. When substance use and deviance were added to the analysis, religiosity, mother relationship quality, and father relationship quality were still significantly positively associated; however, their coefficients fell (Coef. 0.0149, 0.0173, and 0.011 respectively) while the R<sup>2</sup> value increased to 0.3938.



Table 1. Multivariate Without Substance Use or Deviance

Dependent Variable	Coefficient	P-value	Confidence Interval	
Male (vs. Female)	0.42376	<0.001	0.3300	0.5175
Age	-0.0156073	0.263	-0.0429	0.0117
Race (vs. White)				
African American	0.1340752	0.028	0.0144	0.2537
Native American	-0.0184831	0.937	-0.4742	0.4373
Asian/Pacific Islander	-0.29998	0.026	-0.5634	-0.0365
Multiple	-0.0881465	0.418	-0.3016	0.1253
Other	-0.2425595	0.018	-0.4431	-0.0420
General Health (vs. Excellent)				
Very Good	-0.4409093	<0.001	-0.5547	-0.3272
Good	-0.9920799	<0.001	-1.1223	-0.8618
Fair	-1.663112	<0.001	-1.8702	-1.4560
Poor	-2.063284	<0.001	-2.7780	-1.3485
Exercise per week (vs None)				
1-2 Times	0.0331554	0.646	-0.1083	0.1747
3-4 Times	0.0045015	0.953	-0.1441	0.1531
5+ Times	-0.0625429	0.403	-0.2092	0.0842
Sleep per Night	0.1339458	<0.001	0.1006	0.1673
Friendship Quality	0.4458491	<0.001	0.4176	0.4741
Religiosity	0.0378877	<0.001	0.0277	0.0481
Mother Relationship	0.0284041	<0.001	0.0232	0.0336
Father Relationship	0.018288	<0.001	0.0141	0.0224

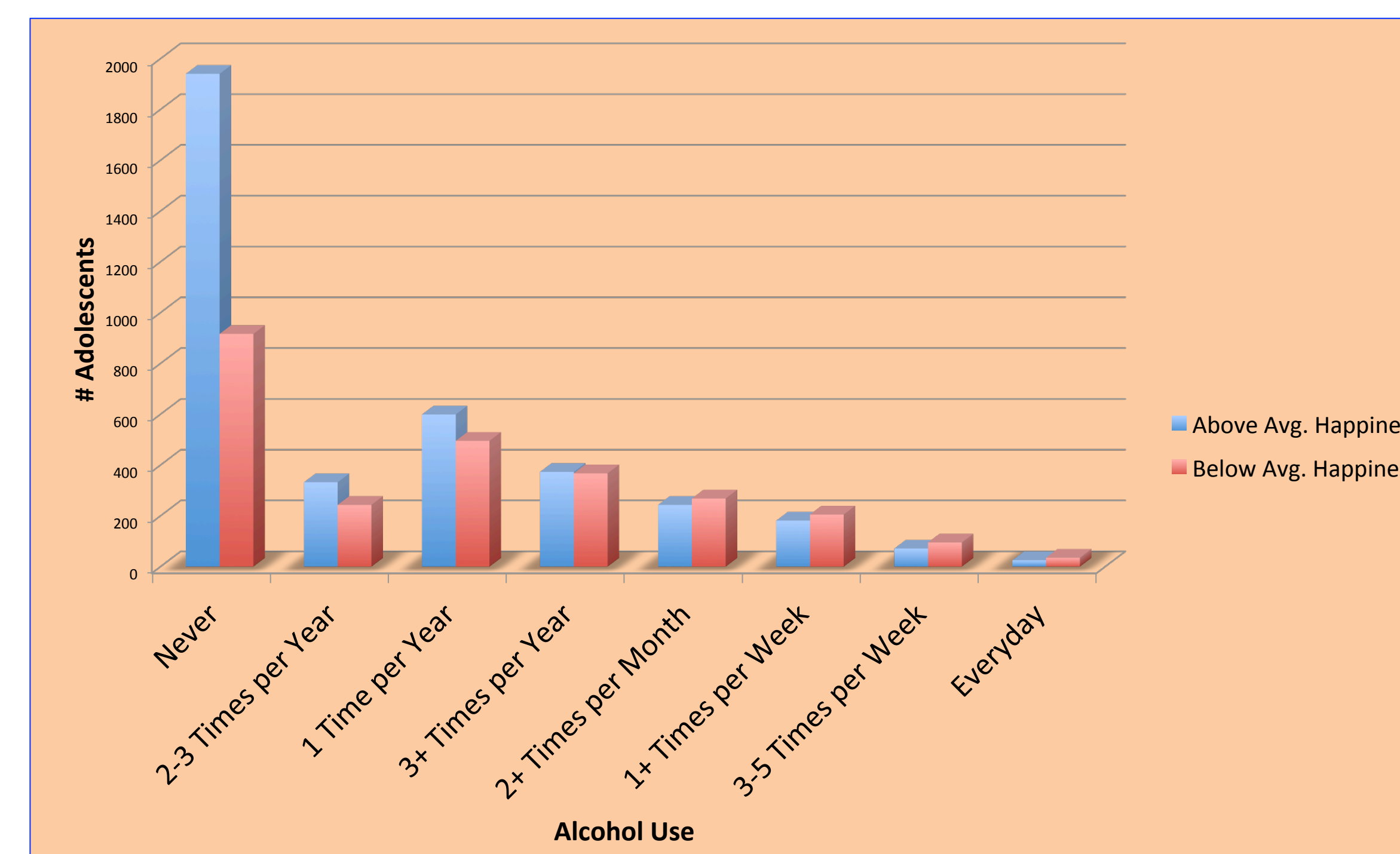


Figure 1. Alcohol Use with the Dichotomized Happiness Index

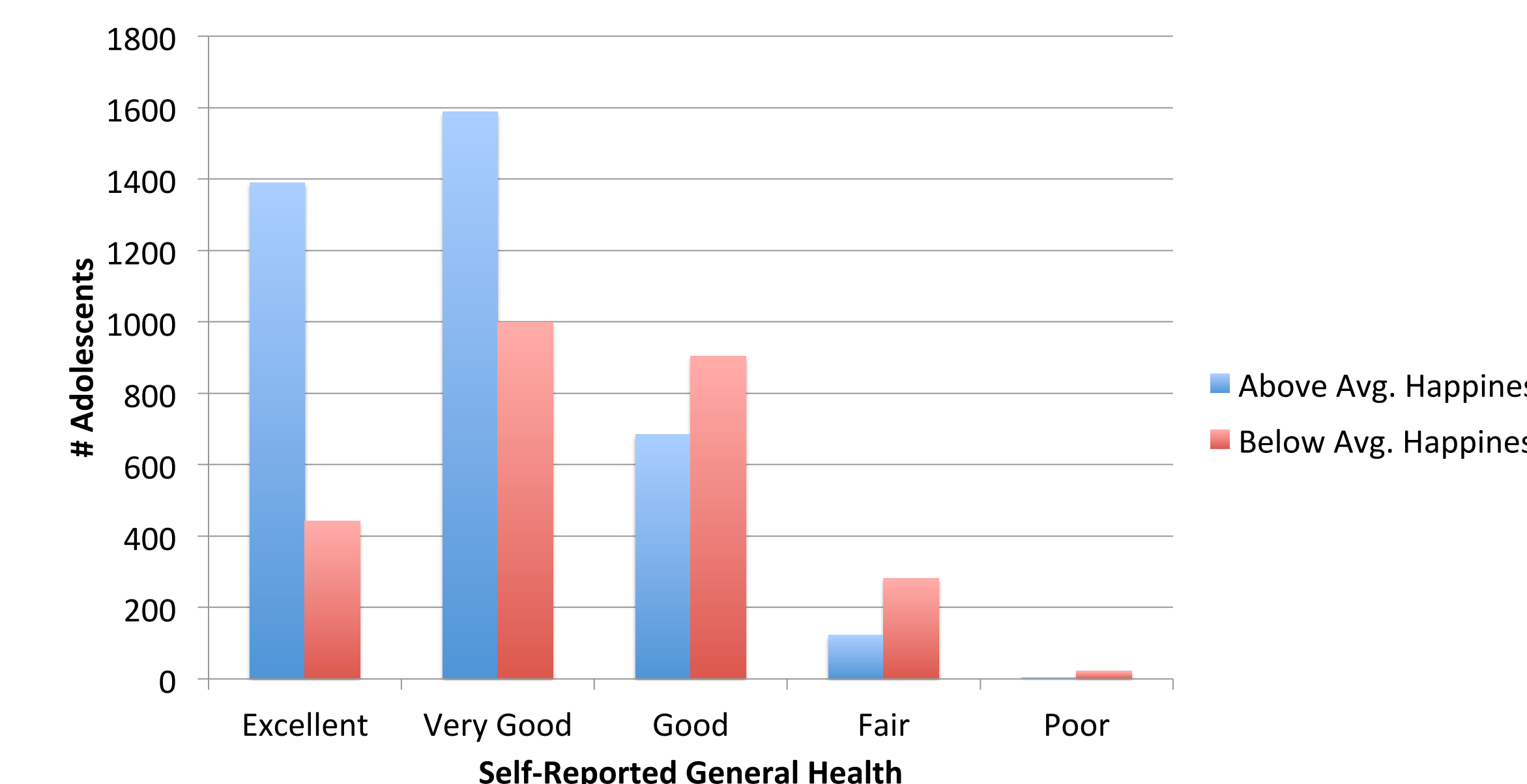


Figure 2. Self-Reported Health with the Dichotomized Happiness Index

Table 2. Multivariate With Substance Use and Deviance

Dependent Variable	Coefficient	P-value	Confidence Interval	
Male (vs. Female)	0.5944161	<0.001	0.5044	0.6844
Age	0.0154046	0.266	-0.0117	0.0426
Race (vs. White)				
African American	-0.0278648	0.64	-0.1447	0.0890
Native American	0.0515707	0.818	-0.3889	0.4921
Asian	-0.3684237	0.004	-0.6182	-0.1186
Multiple	-0.073968	0.472	-0.2754	0.1275
Other	-0.214289	0.028	-0.4058	-0.0228
General Health (vs. Excellent)				
Very Good	-0.3327496	<0.001	-0.4406	-0.2249
Good	-0.7887768	<0.001	-0.9132	-0.6644
Fair	-1.328252	<0.001	-1.5269	-1.1296
Poor	-1.784481	<0.001	-2.4666	-1.1024
Exercise per Week (vs. None)				
1-2 Times	0.0442914	0.517	-0.0898	0.1784
3-4 Times	0.0180897	0.801	-0.1228	0.1501
5+ Times	0.0172141	0.809	-0.1221	0.1565
Sleep per Night	0.0885299	<0.001	0.0567	0.1204
Friendship Quality	0.4781771	<0.001	0.4511	0.5053
Religiosity	0.0149154	0.003	0.0051	0.0247
Mother Relationship	0.0173063	<0.001	0.0123	0.0223
Father Relationship	0.0114788	<0.001	0.0075	0.0154
Deviance	-0.0902246	<0.001	-0.1004	-0.0801
Cigarette Use (vs. Never)				
1+ Times	-0.1541325	0.005	-0.2622	-0.0461
Regularly	-0.5912849	<0.001	-0.7395	-0.4431
Alcohol Use (vs. Never)				
2-3 Times per Year	-0.2515759	0.002	-0.4132	-0.0899
1 Time per Year	-0.2658212	<0.001	-0.3983	-0.1333
3+ Times per Year	-0.0858603	0.293	-0.2458	0.0741
2+ Times per Month	-0.2705899	0.004	-0.4572	-0.0800
1+ Times per Week	-0.3786086	<0.001	-0.5901	-0.1671
3-5 Times per Week	-0.421561	0.006	-0.7207	-0.1224
Everyday	-1.126952	<0.001	-1.6086	-0.6453
Drug Use (vs. Never)	-0.2499257	<0.001	-0.3723	-0.1276

## Conclusions:

- As our hypothesis predicted, parental relationships and religiosity both had significant positive associations with the happiness index.
- When substance use and deviance were added to the multivariate linear regression, the coefficients for parental relationships and religiosity fell, while the total variance explained by the analysis increased (R<sup>2</sup>).
- This suggests that parental relationships and religiosity affect happiness, at least partly, via the prohibition of substance use and deviant behaviors.
- Future research should explore this mediation further to determine if this relationship holds true with today's adolescents and to determine if the causal pathway leads from happiness to less substance use/deviance or vice versa

### Limitations:

- The data is from over 20 years ago and may not be generalizable to current U.S. adolescents.
- The ADD Health survey did not use standardized question sets for variables such as depression, so the validity of these measures may be imperfect.
- This data-set is cross-sectional in nature and cannot show how these factors affect happiness over time.