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Econ 390 – Economics of Growing up Paper

Parental Education and Teenage Risky Behavior

**Introduction**:

Teenagers have a long history in engaging in risky behavior. Activities such as smoking, drinking, substance abuse, and sexual intercourse are all known to have serious health consequences, but teens and others alike continue to indulge. It has been shown that many have been introduced to several forms of risky behavior before the age of 19. Risky behaviors such as teen smoking have increased by over 30%, and teen marijuana use almost doubled (Gruber 2000). Likewise, roughly 10% of females between the age 15-19 become pregnant (Levine 2001). In 2013, 2.8 million people used illicit drugs for the first time, and 54% of them were teenagers (drugabuse.gov). Even though current United States policy makes many drugs illegal and delays alcohol use until 21 years old, 11% of alcohol in the US is consumed by underage teens in the 12-20 age range, and 90% of the consumption methods are in the form of binge drinking (cdc.gov). These statistics show how prevalent the behavior has been throughout the years. Especially as teens, these actions can cause serious health and mental consequences for life. So why do teens participate in this behavior, and what factors can have influences on these risky decisions? Learning about factors connected to the issue of teenage risky behavior would be vital in finding a way to reduce the behavior, and therefore resulting in healthier and happier future adults. From looking at several past studies, we believe that parents have a huge impact in determining the behavior and decision making when it comes to their teenagers, and there could potentially be telling signs of how their teenagers will react to risky behavior based on their life experiences. Parental education is a factor we find to be interesting, as we believe that higher levels of parental education can have a significant impact on children engaging in less risky behavior. Using economic theory and econometric models, we will try to answer the question, how does parental education affect teen risky behavior?

**Previous Research on the Issue**:

There are countless journals that have looked in to risky teenage behavior and the factors that have been potentially affecting their behavior. For the sake of this paper, we will look at results from just a few that have specific metrics regarding parental education, such as level of education or number of years of schooling, and how it is used as a variable for regression analysis of the matter.

Authors Haghdoost, Abazari, Abbaszadeh, and Rabori, conducted a cross-sectional study on over 1000 randomly sampled Iranian students aged 15-19. The aim of the study was to investigate family behaviors and how it affects teens risky behavior. They used a survey that would gather information on recent risky behavior over the last few months of their lives, and family background characteristics to provide results. This study used mother and father education as family background characteristic, among others such as number of siblings and family management and found fathers level of education to be a statistically significant factor in the teen recently engaging in risky behavior (Haghdoost et al. 2014).

In another study conducted by Bronte-Tinkew, Moore, and Carrano, the authors look at data from the National Longitudinal Study of Youth (NLSY) for connections between adolescents and fathers parenting styles. This specifically tries to find how different parental techniques and factors among fathers relate to their teens first engagement in risky behavior. Again, fathers level of education is one of the several variables in making up the father’s background characteristics. This study finds that fathers with less than a college education was a statistically significant factor in determining the age of their teens first substance abuse. This means if a parent was lesser educated, their teen was more likely to abuse substances at an earlier than age compared to parents with a higher level of education and their children. (Bronte-Tinkew et al. 2006).

Another paper written by Levine aims to look at the factors behind some of the most prominent problems among teenagers according to Gallup polls: teenage pregnancy and risky sexual behavior. Levine provides analysis of empirical data about many subsets of data also stemming from the NLSY. The data pertaining to mother’s education and the teens use of contraceptive during sex proved to be statistically significant for female teens. Specifically, mothers who had less education, such as just a high school education, had teens who were less likely to use contraceptive the last time they engaged in sexual intercourse (Levine 2001).

There are certainly many factors other than just parental education that will show to have an impact on teen behavior. One more paper written by Jones, Ehrlich, Lejuez, and Cassidy examines the effect of a different variable, parental knowledge, on teen substance abuse. Parental knowledge is defined as parents being aware of their child’s whereabouts and doings, including drug use, alcohol consumption, etc. This is a common factor used to estimate teens risk behavior and has parental education as a significant variable in accounting for parental knowledge. This study looks at 203 teenagers and their parents in a lab experiment in which parents and teens filled out questionnaires to determine background characteristics. The study found that fathers with higher parental knowledge were less likely to have kids abusing substances. As part of parental knowledge, fathers with a higher level of education was statistically significant in determining a high parental knowledge level (Jones et al. 2015). All these studies look to learn more about the parental characteristics, behaviors, and commonalities, and how they exactly effect teenage risky behavior. They involved many different methods and techniques, but the one thing we find in common in all of them is that parental education is a significant variable in describing teenage behavioral patterns.

**Economic Theory and Model**:

Before we can perform empirical analysis to find answers on the issue, it is important to understand the behavioral psychology and economic theory behind teenagers engaging in risky behavior. Understanding the psychology will help us develop models to test if a teenage engages in risky behavior or not, and further regression models can help us understand which variables are having significant impacts as well.

The first thing to understand about the psychology of behavior decisions is utility maximization. This means that individuals are always looking to be better off from the decisions they make and will indulge in the activities that they will get the most out of. Essentially, when the benefit of participating in an action is greater than the expected cost, the individual will engage in it. When it comes to risky behaviors, we like to use the phrase rational addiction to help us understand this better. Everyone knows that certain risky behaviors have potential harms, so why do people abuse substances and engage in other risky behaviors? Rational addiction will tell us that the individual is more than aware of the potential implications, and even when looking forward to future consequences, will participate in risky behavior if the current benefits outweigh their perceived current and future costs (Gruber 2000)

When we are looking at teenagers there are other factors to consider that may be affecting them more so than other individuals in a different stage of life. For one, teens generally do not have as much income as adults, so therefore teens are going to be more sensitive to economic and price factors than others. This just means that some teens may not choose to do risky things because of financial situations. On the other hand, if they do have a lot of money this opens the door for potential increased participation in risky behavior such as substance abuse. Second, teenagers are simply very vulnerable to peer pressure at this stage in their lives. So, if one teen’s friends are engaging in lots of risky behavior, they could feel more pressured to do risky behaviors (Gruber 2000).

When looking at teens we also like to consider projection bias. Projection bias is the idea that people are making certain decisions right now, and that these decisions are likely to project the same in the future. In terms of our study, teens who engage in risky behavior now, are more likely to keep making these risky decisions in the future. This is important in understanding how teens risky behavior decisions are time sensitive. Likewise, once a teen has already indulged in a risky behavior, we like to think since they have already have done it once, it won’t be as big of a deal to them the second time and are more likely to do it again. Essentially the perceived cost dramatically decreases after the first time behaving this way, and the likelihood of participating in the behavior again is increased (Gruber 2000).

Other things to consider about teenagers is that they can potentially be myopic in their decisions. This means that teenagers are susceptible to seeing their current situations in a shortsighted manner. In other words, teens can generally be more focused about their current state of well-being and will be insensitive when thinking about their future. This can show that if some teens have a certain level of myopia, they can be less likely to engage in risky behavior. This is important because it can easily be incorporated into a utility model, which we will see later. As we know, these risky behaviors do have future implications, and this brings us to the topic of time consistency. Time consistency is the idea that when looking at a utility function, some people will be more likely to look at their short run discount than their long run discount, and vice versa. So, a time consistent person will be more invested in their long run discount and will consider each period of their life as equally important when investing in a decision. A time consistent agent will engage in a behavior if the reward is greater than the cost: , where b1 is current benefits, b2 is future benefits, indicates the short run discount. On the other hand, a time inconsistent agent will change their decisions in discount rates over time, and therefore we need a different equation to account for this. Time consistent agents will engage in a behavior if the reward is greater than the perceived cost: where indicates the long run discount. This idea shows us that predicting a teen’s behavior decisions are not a static process, and often are dependent on time. Putting this all together, we can come up with a utility function as follows: (Gruber 2000).

Now that we understand more about the behavior psychology and economic theory behind how teens personally choose to indulge in risky behavior, it’s clear that this model can not fully describe all the factors behind the teen’s decision. Using the utility function makes sense and clearly describes the teen’s thought process but lacks ability in describing in how other variables can potentially describe the behavior. It is hard to incorporate this utility function into a regression model to test how other variables affect a teen, so moving forward we will focus on a regression model using dummy variables and other factors to discover more about teen’s behavior.

We now aim to create an econometric model, so we can quantify the variables and their results on teenage risky behaviors. We want to know more about the possible variables that affect the likelihood of a teen’s risky behavior, because these are the factors that can show significance and can put emphasis on how to decrease the odds of engaging in risky behavior. In this research we are most interested in finding the effect of parental education on likelihood of engaging in risky behavior, so this will be an independent variable (X) in our regression. Some risky behaviors may be more prevalent than others, so to account for this we can run several regressions, with each dependent variable being a different type of behavior. In this paper we will look at drug use, alcohol abuse, sexual intercourse, and cigarette smoking. This will provide us with 4 different models. Looking at a regression of just likelihood over parental education would provide us with results, but it would be hard to really believe these results. Things such as omitted variable bias and confounding variables will make these results quite far off the true potential mark. For example, there are huge differences in individual characteristics such as age, gender, regionality, etc. To make up for these differences, it is important we add dummy variables and fixed effects in to our regression model as independent variables. We can add dummy variables for individual characteristics such as age, gender, and grade in school, so we are controlling for these and can specifically look how parental education influences risk behavior. If we have sufficient data for teen’s parents, we would also like to add individual characteristics for parents as well. Accounting for all of these variables, we can come up with the following model: . In this model, our dependent variable here is self-explanatory, and just depends on the certain behavior we are looking at. is intercept coefficient, while X is the teen’s individual characteristics, and Z is the parent’s individual characteristics. The coefficient of interest here is ParEdu which is the parents level of education, which can be put in as total number of years of schooling. Our coefficient tells us about how income affects the likelihood of risky behaviors. We include this because we think teens with richer families may be more or less likely to participate in risky behaviors, so we use it as a control for omitted variable bias. U is all the unobservable measures. After running this regression, we like to look at the coefficient, which will tell us the average effect a parent’s level of education will have on the likelihood of a teen engaging in risky behavior. If the sign of the variable is positive, the parent’s education is showing to have an average effect of increasing likelihood of the teen’s risky behavior decisions and decreasing it if it is negative. To see if this is a significant effect, we would have to look at the p-values or perform significance tests to see the magnitude of the effect. This model will give us good insight on how parental education affects risky teen behavior and lets us know how significant of a factor parents education has on the matter.

**Data**:

It is very difficult to obtain perfect data to perform analysis about parental education and teen risky behavior. An example of an ideal set of data to help find good results on this topic would be a collection of all current 12-20-year olds across the country. This data set would have questions regarding self-reported habits and behaviors of their teenagers, accounting for dummy variables such as age, sex, household number of people, and most importantly to our study, parents level of education, and even more. It would be ideal to have this survey given out at a minimum of once per year to see how it trends through the teenage years through youth adulthood. We would need these responses to have no missing data and be completely honest from all participants. Teen’s also have their own personal myopic and time consistent characteristics, so peer evaluation and personal choice behavior would be something hard to calculate, but extremely helpful in obtaining good analysis. Due to difficulty in collecting this data, and the expenses it would take, having a data set like this is very unlikely.

A solution to obtaining a fair set of data in a realistic manner would be to possibly look at a few school districts in random cities across America and get results from randomly selected participants from each grade level across all districts. The randomization would account for a very diverse pool of participants, thus creating little bias. You could then use the same type of questionnaires described above, and this would provide a much cheaper, and realistic way to collect data among a relatively small population compared to the population of all teens in the country. Looking at other studies from papers, the NLSY provides good data from different years about topics such as this, as well as the Youth Risk Behavior Survey (YRBS) from Gruber. While these datasets are not as ideal as our theoretical datasets, they have surveyed thousands of participants and have been conducted on several occasions to show progress over the years. They have a lot of variables regarding personal characteristics of teenagers, parental characteristics, family characteristics, and other important measures of Socioeconomic status, income inequality etc. These diverse characteristics and rather large sample pool make them ideal for indulging in education and risk behavior analysis.

**Conclusion**:

Teenage risky behavior has long been prevalent in the world and has showed no signs of slowing down any time soon. Understanding exactly how teenagers engage in this type of behavior requires in depth psychological economic review and interpretations of external variables. There are some limitations when looking performing this study though. For example, there are likely several parenting characteristics that help explain how teens behave, and although we can include many in our model, it is unlikely you can precisely pick out all of which are important. Along with this, there are many other reasons for teens to partake in risky behaviors besides just how their parents affect them, such as peer pressure. While there is plenty of data on the manner, it’s still not the most clean and ideal data. This is because the current data can either be rather old or is self-reported and may have some results that may not be the most reliable since teens may be uncomfortable about talking about often illegal behaviors. Interpreting the dependent variable can be tricky, because there are varying levels of how much a teen indulges in certain behaviors. For example, one teen may never engage in risky behaviors. Another teen may smoke cigarettes occasionally, but nothing else. A different teen engages in risky behaviors such as smoking marijuana and drinking every day. We still try to examine the study with the limitations we have, specifically with economic and behavioral analysis. When it comes to individual decision making, the teenager is going to attempt to maximize their utility when engaging in risky behavior, and this is a non-static process that also entails a lot of behavioral decisions. More interestingly to us, the external factors that influence teenager’s decisions are also important in addressing the issue of risky behavior. We believe that parental education can show a lot about how the teenager is raised, and directly can show statistically significant impacts on likelihood of engagement in risky behavior decisions. We provide possible methods of conducting our own empirical analysis on the matter and provide ideal data collection options as well. After looking at other research on the issue, and looking at other psychological factors of teenagers, we believe we have the tools to rightly interpret if parental education does have an impact on teenage risky behavior.

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