

The Relationship Between Adolescent Substance Use and Perception of Parental Relationships



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Overview

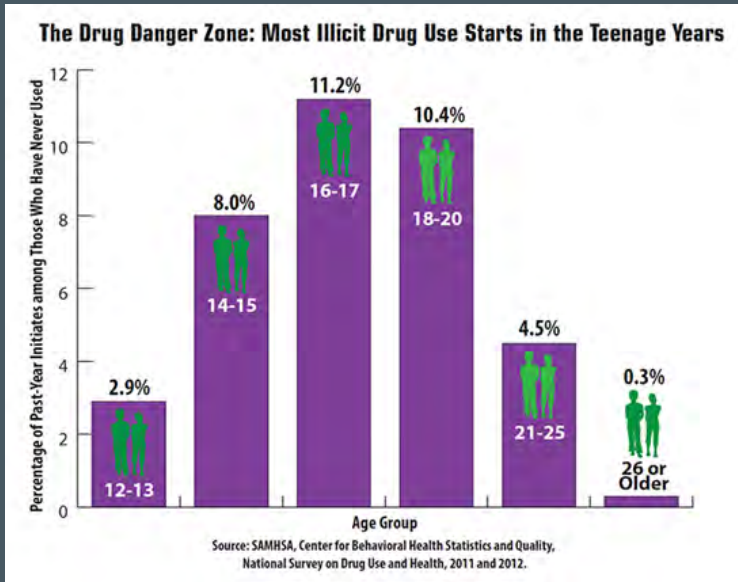
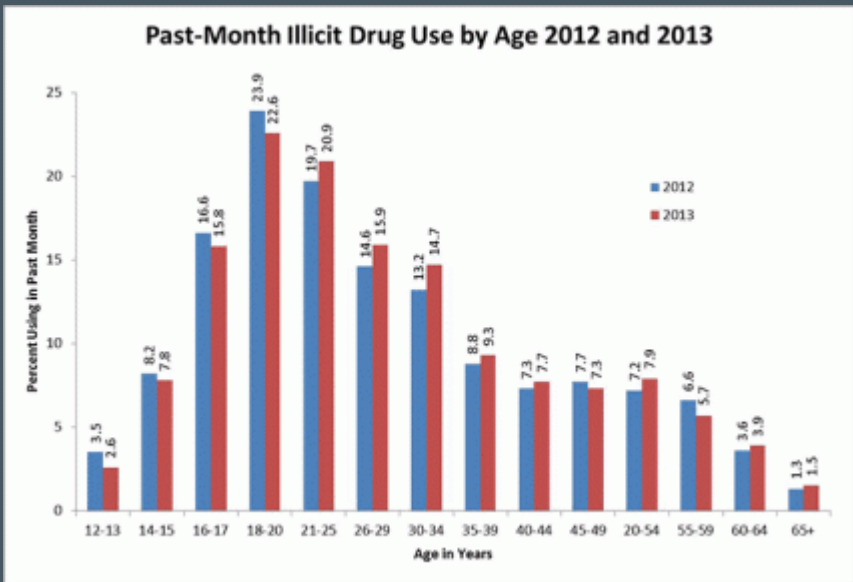
- Background
 - Substance use and risk factors
 - Adolescent parental relationships
 - Parental relationships and substance use
 - Twin design
- Hypothesis & current study
- Materials and methods

Background

Substance Use

- Adolescence is a critical period of development
- Pathological substance use and dependence often emerges during teenage years
- 80%+ of individuals who have been admitted to treatment and rehabilitation programs for alcohol abuse alone experienced intoxication for the first time between the ages of 12 and 18

(Substance Abuse and Mental Health Services Administration, 2003)



drugabuse.gov

Background

Substance Use & Risk Factors

- Many potential risk factors, including both genetic and environmental
- Though there are risk factors, there are also protective factors
- Peers, family, school, neighborhoods, etc.

(Gray & Squeglia, 2017; Lynskey, Agrawal, & Heath, 2010; Su, Supple, & Kuo, 2017)

Important to understand the etiology of substance use in adolescents

Background

Adolescent Parental Relationships

- Parental “proactive control” → positive childhood and adolescent development (Galambos, Barker, & Almeida, 2003; Pettit, Laird, Dodge, Bates, & Criss, 2001)
 - E.g., monitoring, setting rules or boundaries
- Opposite for negative parental behavior
 - Harsh and punitive control → internalizing and externalizing behavioral problems

(Bender et al., 2007; Barnes, Boutwell, Beaver, & Gibson, 2013; Verweij et al., 2016).

Background

Perception of Parental Relationships & Adolescent Substance Use

- Familial bonds are important in the development of adolescent substance use
- Parental warmth, monitoring, and support → protective factors in substance use development (Su, Supple, & Kuo, 2017; Mayberry, Espelage, & Koenig, 2009)
- Parental criticism and antagonism → lower age of onset of alcohol and marijuana use in adolescents (Abar, Fernandez, & Wood, 2011)

Background

Perception of Parental Relationships & Adolescent Substance Use

- Adolescents genetically prone to substance use are more likely to report alcohol use when perceiving parental rejection (Stogner & Gibson, 2016)
 - Less likely when perceiving lower levels of parental rejection
- Majority of these studies tended to focus on one parental relationship and negatively perceived relationships
 - Only addressed a limited amount of substances
- Few studies addressed genetic component

Background

Twin Design

- Examine the variability in behavioral outcomes as a result of both genetics and shared environment
- Monozygotic (MZ) twin pairs share 100% of DNA
- Dizygotic (DZ) twin pairs share 50% of DNA
- Difference in shared DNA allows for analysis of the role of genetics in a non-shared trait
 - E.g., if MZ twins are more alike on a specific trait than are DZ, then the trait is said to be influenced by genetics



(Turkheimer, 2000; Meyers & Dick, 2010)

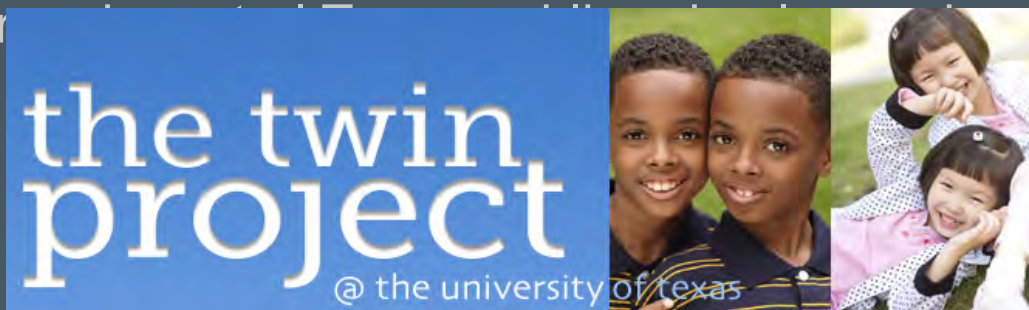
Current Study & Hypothesis

- Further previous research by examining:
 - Perceived relationships with both parental figures
 - Negative perceptions and positive perceptions of relationships
 - A variety of substances
 - Genetic component through twin design
- I hypothesize that:
 1. Positive perceptions of parental relationships will have a protective effect against substance use in adolescents.
 2. Negative perceptions of parental relationships will serve as a risk factor for substance use in adolescents.

Materials and Methods

Participants

- Ongoing study in the Risky Business Lab
- 958 high school participants
 - All twin pairs (MZ or DZ)
 - 14-18 years old
 - Excluded if participants have only one parental figure
- Recruited through...



Materials and Methods

Measures

1. Zygosity
2. Substance Use
3. Perception of Parental Relationships
 - All measures given to twins are on one online survey
 - Self-report survey created by the Risky Business Lab

Materials and Methods

Measures: Zygoty

- Whether twin pairs are MZ or DZ
- Research assistant questionnaire filled out during twins' visits
 - How alike/not alike in: facial appearance, hair color and texture
 - Is it difficult to tell the twins apart?
- Twin and parent online questionnaire
 - Do the twins have the same eye color?
 - Are they often mistaken from each other?
 - Is it easy to tell them apart in photos?
- Latent class analysis determines if they are MZ or DZ

Tell us more about how similar you are to your twin. How much do you look alike in your:

Facial appearance

- Not Alike
- Somewhat Alike
- Exactly Alike

Hair color

- Not Alike
- Somewhat Alike
- Exactly Alike

Hair structure (curly, straight, coarse, or fine)

- Not Alike
- Somewhat Alike
- Exactly Alike

Are you as alike as "two peas in a pod?"

- Not Alike
- Somewhat Alike
- Exactly Alike

Do your parents ever mistake one twin for the other?

- No
- Yes

Do other family members ever mistake one twin for the other?

- No
- Yes

Do teachers or strangers have difficulty telling the you apart?

- No
- Yes

Do other people have difficulty correctly identifying you in new photographs?

- No
- Yes

Do you have the same color eyes?

- No
- Yes

Materials and Methods

Measures: Substance Use

- Online, self-report questionnaire
- Asked whether they have tried 11 different substances
 - Alcohol, cigarettes/cigars, tobacco, marijuana, hallucinogens, amphetamines, heroin, cocaine, ecstasy, prescription pills not prescribed to them, or inhalants
 - “yes” or “no”
- A composite score will be created, ranging from 0-11

Materials and Methods

Measures: Perception of Parental Relationships

- Online, self-report questionnaire
- 25 questions about relationships with both mother and father figures
 - 4 point Likert Scale: 1- Very Like → 4- Very Unlike
 - Negative questions are reverse scored and averaged
 - “mombond” and “dadbond”
- Any score below 2.50, positively perceived relationship
 - Score above 2.50, negatively perceived relationship
 - Score = 2.50, neutral perceived relationship

5.A. This questionnaire lists various attitudes and behaviors of parents. Keeping in mind your mother (or, the woman who took care of you the most while you were growing up), choose the most appropriate number next to each question.

My mother:

Speaks to me in a warm and friendly voice

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Does not help me as much as I need

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Lets me do the things I like doing

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Seems emotionally cold to me

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Appears to understand my problems and worries

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Is affectionate to me

- 1-Very Like
- 2-Moderately Like
- 3-Moderately Unlike
- 4-Very Unlike

Materials and Methods

Procedure

- After twins are identified through central Texas public school records, they are contacted to take part in the study
- The twin pair comes into the lab
 - Parental consent and adolescent assent obtained
- Twins individually complete the online, self-report survey with the three questionnaires
 - Zygosity measure
 - Substance use measure
 - Perception of parental relationship measures

Materials and Methods

Data Analysis

1. Correlation between perception of parental relationships and degree of substance use

If there is an association-

2. Linear regression analysis

- do positive perceptions of parental relationships predict lower levels of substance use?

- do negative perceptions of parental relationships predict higher levels of substance use?

3. Univariate twin modeling

- analyze whether perceived parental relationships mediate the association between genes and substance use

Materials and Methods

I expect-

1. A relationship between perceived parental relationships and degree of substance use
2. The linear regression analysis to show negative perceptions of parental relationships to predict higher levels of substance use and positive perceptions of parental relationships to predict lower levels of substance use
-mother versus father figures
3. The univariate twin modeling to show that perceptions of parental relationships mediate the association between genes and substance use
-positive perceptions of parental relationships to serve as a protective factor in adolescents
-negative perceptions of parental relationships to serve as a risk factor in adolescents