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Tobacco Use and Attachment Style

College of Nursing, Honors-in-Discipline Program

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### Abstract

Tobacco has been recognized as the number one cause of preventable death in America and results in almost 5.2 million years of potential life lost each year. The use of tobacco products is highly correlated with pulmonary disease, cardiovascular disease, and other forms of chronic illness in America. Within the last ten years new tobacco products have been trending in the tobacco market such as the water pipe/hookah and e-cigarettes. With e-cigarettes and other newer forms of tobacco on the rise, it is important to look at the underlying factors for using all kinds of tobacco products as a means of prevention. Certain adult attachment styles (secure, preoccupied, dismissing-avoidant, and fearful-avoidant) in emotionally meaningful relationships could be indicators for physical illness, mental illness, and even addiction. The researcher implemented a study that investigated whether or not there is a relationship between tobacco use and attachment style. Based on a university-wide survey that was sent out at East Tennessee State University with 522 participants, demographic data revealed 68.5% (n=358) did not currently use tobacco products. However, of those who did currently use tobacco products 54.5% (n=90) were male, 84.8% (n=140) were undergraduate students, and 66.7% (n=110) were between the ages of 18-25. For individuals who used tobacco 23.5% (n=38) were in the secure attachment group, 27.8% (n=45) were in the dismissing-avoidant attachment group, 30.2% (n=49) were in the fearful-avoidant attachment group, and 18.5% (n=30) were in the preoccupied attachment group. Chi Square analysis demonstrated that attachment style was significantly ( $p < 0.01$ ) different between tobacco users and non-users. For anxiety,  $r=0.00209$ , which was weak. For avoidance,  $r=0.18875$ , which was slightly higher than the effect size for anxiety, but it was still weak. Considering that there was significance but the effect size was weak, the recommendation is that the study be repeated with a broader sample.

### Tobacco Use and Attachment Style

Tobacco has been recognized as the number one cause of preventable death in America and results in almost 5.2 million years of potential life lost each year (Richardson, Williams, Rath, Villanti, & Vallone, 2014). The Centers for Disease Control and Prevention (CDC) (2014) state that in 2011 tobacco industries spent \$8.8 billion on marketing while smoking alone (not including other forms of tobacco) cost the United States more than \$289 billion from 2009-2012 for direct medical care and loss in productivity. However, smoking cigarettes is not the only problem. Data from the CDC (2012) explains that from the years 2000-2011, consumption of cigarettes in the United States decreased by 32.8% while within the same years, consumption of loose tobacco and cigars increased by 123.1%. The implication of the data is that smokers have traded cigarettes for other combustible tobacco products. The CDC (2012) goes on to explain that the morbidity and mortality rates of other forms of combustible tobacco are similar to those of cigarettes as they contain the same toxic chemicals as cigarettes. Moreover, other combustible tobacco products are not considered to be cigarettes and therefore, are not regulated by the FDA in manufacturing.

It seems that prevention is the key in aiding the decline in tobacco use, especially among young adults. One of the effective methods for reducing smoking and preventing initiation of smoking is increasing the prices by taxation. However, the CDC (2012) states that people are switching from cigarettes to lower-taxed products such as electronic cigarettes (e-cigarettes), hookahs, or smokeless tobacco. Since there is a strong relationship to tobacco use and poorer health outcomes, it is imperative to begin looking into other forms of prevention by exploring what encourages a young person to initiate tobacco use and what may keep a young person addicted to tobacco.

For decades researchers have studied how infants attach to their caregivers. This attachment has been shown to be incredibly important in how the infant develops into an adult and the emotional and mental functioning of the adult person (Pietromonaco, Uchino, & Schetter, 2013). Infant attachment has only been recently studied enough to show that there is a correlation between infant attachment and attachment in adulthood. Recently, it has been shown that adults have forms of attachment to another person—often a spouse, significant other, or a parent. A person's particular form of attachment can remain consistent from infancy to adulthood, or it can change depending on life experiences and trauma. This attachment in infancy and adulthood is broken down into three major categories: secure, anxious, and avoidant (Gillath, Selcuk, & Shaver, 2008). Securely-attached infants show lower anxiety in response to fear and stress and also lower avoidance to closeness, allowing the infant to have closeness with the caregiver while also not needing constant reassurance of that closeness. Securely-attached infants look to their caregiver in times of fear and stress, and the caregiver responds with comfort and reassurance, which helps the infant regulate stress and regain a sense of security. Anxiously-attached infants show hyperactivity when it comes to response to stress with persistent proximity-seeking behavior and a constant need for reassurance. Anxious attachment is thought to develop because of a caregiver that is unreliable, anxious, self-focused, and who seems to require a dramatic display of negative emotion in order to help the child. Attachment avoidance exhibits deactivation in response to stress, with the infant showing self-reliance and over-confidence, avoiding attention to the stressor. Attachment avoidance is thought to develop because of a caregiver who did not approve of showing vulnerability and insisted on premature self-reliance (Brassard, Shaver, & Lussier, 2007).

Later in life, adults continue to have attachment figures that move from the parent (in childhood) to a spouse, family member, or significant other. According to Fraley (2012), attachment is seen on a continuum between anxiety and avoidance. A person's attachment style can be placed in a quadrant with four different attachment styles existing: secure (low anxiety, low avoidance), dismissing-avoidant (low anxiety, high avoidance), preoccupied (high anxiety, low avoidance), and fearful-avoidant (high anxiety, high avoidance).

### **Literature Review**

Gillath et al. (2008) explain that people that have a reliable attachment figure (an emotionally significant person) that reliably supports and provides comfort during times of need experience a reduction of stress. People with a reliable attachment figure that is consistently supportive develop a long-term memory of the emotional support to the degree that eventually, just calling that supportive attachment figure to mind provides an internal source of strength and comfort. These people with a reliable attachment figure tend to view others as likely to provide comfort and assistance, and they see themselves as deserving of love and support (viewing the self as having inherent value). They are said to have a secure attachment style. Having a secure attachment style has been shown to correlate with a tendency to use internal methods of regulating stress such as reliance on a partner, social support, and internal factors (Tops, Koole, Ijerman, & Buisman-Pijlman, 2014). Secure attachment is correlated with greater emotional and mental health, ability for closeness, social and marital satisfaction, while decreasing the likelihood of developing psychological disorders (Gillath et al., 2008). People with attachment anxiety become insecure about a partner's availability and their own inherent value, leading them to be more anxious in relationships. People with attachment avoidance are uncomfortable with closeness and another's reliance on them, leading them to be less emotionally available in

relationships. Insecure attachment styles (anxious and avoidant) have been shown to correlate with a tendency to use external methods of regulating stress such as substance use, risky sexual behavior (Pietromonaco et al., 2013), and food consumption (McWilliams and Bailey, 2010).

Previous works show a correlation between insecure attachment and multiple health conditions such as: hypertension (Baker, Szalai, Miney, & Sheldon, 2003), chronic pain, cardiovascular disease, headaches (McWilliams & Bailey, 2010), and perceived pain characterized by greater frequency and intensity (Kratz, Davis, & Zautra, 2012). This research by Kratz et al. (2012) also found that with insecure attachment, pain is more likely to be catastrophized in the person's mind, leaving them more vulnerable to physical and mental ailments. With the knowledge that social isolation has a relationship to poorer health outcomes, this study found that attachment avoidance is linked to a reluctance to seek out emotional support during times of stress and pain, when a person would normally need increased support.

Studies using Functional Magnetic Resonance Imaging (fMRI) provide insight into relationships of attachment style with the emotion-centers of the brain. One particular study by Gillath et al. (2008) found that anxious attachment was positively correlated with emotion-centers of the brain being more aroused during times of thinking of relationship distress (conflict, breakup, and loss). Avoidant attachment was positively correlated with having more difficulty disengaging from the heightened arousal of the emotion-centers of the brain.

Further research by Feeney and Thrush (2010) developed a better understanding of how attachment styles determined how a person engaged in exploration activity that Attachment Theory calls the basic component of human nature (to adventure, learn, challenge, discover, and strive to achieve goals). This research looked at availability, interference, and encouragement of a spouse and how that related with attachment style to determine how the other spouse (the

“explorer”) perceived this exploratory activity. The results found that anxious attachment in the spouse created less encouragement to explore and more interference, leading the “explorer” spouse to be less enthusiastic with poorer performance in exploration activity. The results found attachment-avoidant spouses to be less available to the “explorer” spouse, thus leading the “explorer” spouse to be less persistent and less receptive to the exploration activity. Considering that exploration is so vital to human nature, it could be questioned whether or not this decrease in interest in exploration due to insecure attachment of the spouse could place that individual and the spouse at higher risk for depression and anxiety.

Addiction research by Tops et al. (2014) explains that social attachment greatly influences susceptibility to drug abuse and to negative stress effects. Particularly in early development, negative social environments increase the vulnerability to drug abuse and negative stress effects while strong social attachments (parent-offspring and adult pair bonds) may protect against substance abuse and negative stress effects. In developing close and supportive relationships people shift from novelty and reward-seeking behavior to a desire for familiarity, which promotes resilience and protects against addiction and negative health consequences of stress. A predictable environment where a person feels that he or she can depend on others for support is one of the biggest ways that a person shifts from novelty-seeking behavior to a preference for familiarity. Early dependability in social environments functions as a secure base for the individual to explore and move forward in life believing that others are dependable. However, when social environments are seen as unpredictable, people are less likely to develop feelings of closeness and security in their committed relationships. The effects of stable social attachments (feelings of closeness and security in relationship) on the brain appear to be the opposite to those of stress and drug abuse. Stable emotional attachment to another person

increases resilience and forms secure habits that decrease emotional reactivity and provide resources to fall back on for better coping in times of stress.

Further addiction research by Burkett and Young (2012) discusses the role of dopamine and oxytocin in the addiction processes of reward-seeking behavior. However, dopamine is also found to aid in maternal responses after giving birth, pair bonding, and pair bond maintenance. Oxytocin is also found to increase bonding and maternal behaviors after giving birth and while nursing. In a similar way, it is also released during sex, increasing the bond between sexual partners. Although the pathways are similar for social bonding and drug addiction, the actions are different. With social bonding, oxytocin and dopamine are released, increasing social cues and information, allowing for more attention on sights, sounds, odors, unique behaviors, and other identifying characteristics of that specific partner which allows for familiarity between two partners. Accumulations of dependable experiences with that partner develop neural patterns for decreased reward-seeking behaviors (early euphoric feelings) and are gradually replaced by a sense of contentment (Burkett and Young, 2012).

Molnar, Sadava, DeCourville, and Perrier (2010) identify that attachment anxiety and avoidance result in decreased internal affect regulation, with a relationship toward external behavioral strategies that regulate feelings. External behavioral strategies include alcohol, drugs, overeating, and risky sexual activities. The study explains that specifically anxious attachment is correlated with greater alcohol consumption and alcohol-related consequences mediated by coping motivations and that drinking to cope had the greatest relationship with high-risk drinking. As there does appear to be a relationship to attachment and substance abuse and addiction, it is surprising that there is little research on the relationship of attachment to tobacco use.

It is part of the normal human experience to have stress, sadness, and difficulty at one point or another in life. As evidenced by the literature, strong emotional bonds act as a protective barrier from the normal difficulty and sadness experienced in life. Even the neurotransmitters such as dopamine and oxytocin released in the brain during social bonding act as cement that helps people attach emotionally to one another, shielding one another from the full effects of stress. Strong social bonding increases a person's ability to self-regulate feelings rather than turn to negative external regulation strategies. When the development of emotionally close relationships is disrupted due to loss or trauma or the relationships develop poorly, the individual is at risk for developing negative coping strategies such as drug or alcohol dependence. The loss of healthy social bonding can also put an individual at risk for psychological and health implications such as anxiety and depressive disorders, hypertension, and chronic pain. Due to this previous research on attachment, it would be interesting to find out if poor social bonding (insecure attachment) corresponds with tobacco use.

Washam (2011) explains that nicotine from combustible or noncombustible tobacco products can be converted to carcinogens in the body and adversely affect gum and tooth health while inhibiting the death (apoptosis) of oral cancer cells. The author goes on to state that in 2010 the rates of smokeless tobacco were 15% for high school boys and 2% for high school girls and that teenage boys who used smokeless tobacco were three times more likely than non-users to be smoking cigarettes four years later.

A study by Richardson et al. (2014) using young adults describes some characteristics of tobacco users. According to the data, cigarette-only smokers were more likely than non-users to be male, be in the "older" category (25-35 years old), to have a high school education or less, and to live in a state with a higher smoking prevalence. Tobacco users who smoked other forms

of tobacco such as cigars, pipes, and hookahs were more likely than cigarette-only users to be Hispanic, in the younger category (18-24 years old), female, and be able to afford basic expenses. Poly-users (using multiple tobacco products) were more likely than non-users to be younger (18-24 years old), female, and white. This study also found that initiation of non-combustible (smokeless) tobacco products was more likely in people who were younger and had used tobacco products of some kind in the past. There is a willingness among young adults to try a variety of tobacco products, and poly-use is presently at a high rate. Poly-use is especially a concern as it is associated with an increased risk of tobacco-related disease and may inhibit the user from quitting.

Further research indicates that some of the “safer” forms of tobacco, such as hookah and electronic cigarettes (e-cigarettes), are a rising public health concern. Washam (2011) explains that there is wide variation in the amount of nicotine and chemicals found in e-cigarettes. The FDA does not regulate e-cigarettes as long as they are not marketed with a therapeutic claim (Chatham-Stephens et al., 2014) and the presence of diethylene glycol (a toxic chemical found in antifreeze) was even found in one brand of e-cigarettes. Many e-cigarettes can be purchased with sweet flavors that may be alluring to teens (Washam, 2011). In many states there are no restrictions on the sale of e-cigarettes to minors, and e-cigarette use on the rise with adolescents in the United States. E-cigarette exposures now comprise 41.7% of combined monthly e-cigarette and cigarette exposure calls to Poison Control Centers and can cause acute adverse health effects (Chatham-Stephens et al., 2014). Similarly, hookah (an apparatus also known as a waterpipe) is a recent trend especially among younger people. Nuzzo et al. (2013) reveal that while cigarette smoking often decreases during the course of college, hookah use may actually increase in the same time period, including those who would not otherwise use tobacco. There is

very little public knowledge on the toxicant exposures associated with hookah smoking yet studies suggest that it exposes users to about 100 times the smoke volume and substantially more tar, nicotine, carbon monoxide, and heavy metals than a single cigarette (Nuzzo et al., 2013).

As a strong relationship exists between tobacco use and poorer health outcomes, the researcher would like to explore the nursing concept of health through prevention. Health is not just freedom from disease but rather an emphasis on wholeness and quality of life. By promoting health, it is important to look at prevention on a number of different levels of the whole person: mental and emotional wellbeing, social interaction, physical environment, personal behavior, and the laws and policies that promote or restrict certain behaviors. Tobacco use is linked to a number of different physical ailments, but it also affects the whole person and that person's quality of life. Tobacco, like any other addiction, can be used as a way to self-medicate negative feelings rather than facing and overcoming them in a healthy way. In order to emphasize maximum health potential for every individual, it is imperative to explore deeper motivations for tobacco use. Additional analysis will compare differences in tobacco users and non-users and their attachment style.

The long-term purpose of this study is to develop tobacco prevention tools based on attachment styles. The research question was whether or not there is a relationship between tobacco use and attachment style and if the attachment style was different with non-tobacco users. The specific aims of the study were: 1) to describe tobacco users and the type/length of time/amount used, 2) to describe attachment styles of tobacco users, 3) to describe the relationship between tobacco users and attachment styles, and 4) to compare the attachment style of tobacco users to non-tobacco users.

### **Method**

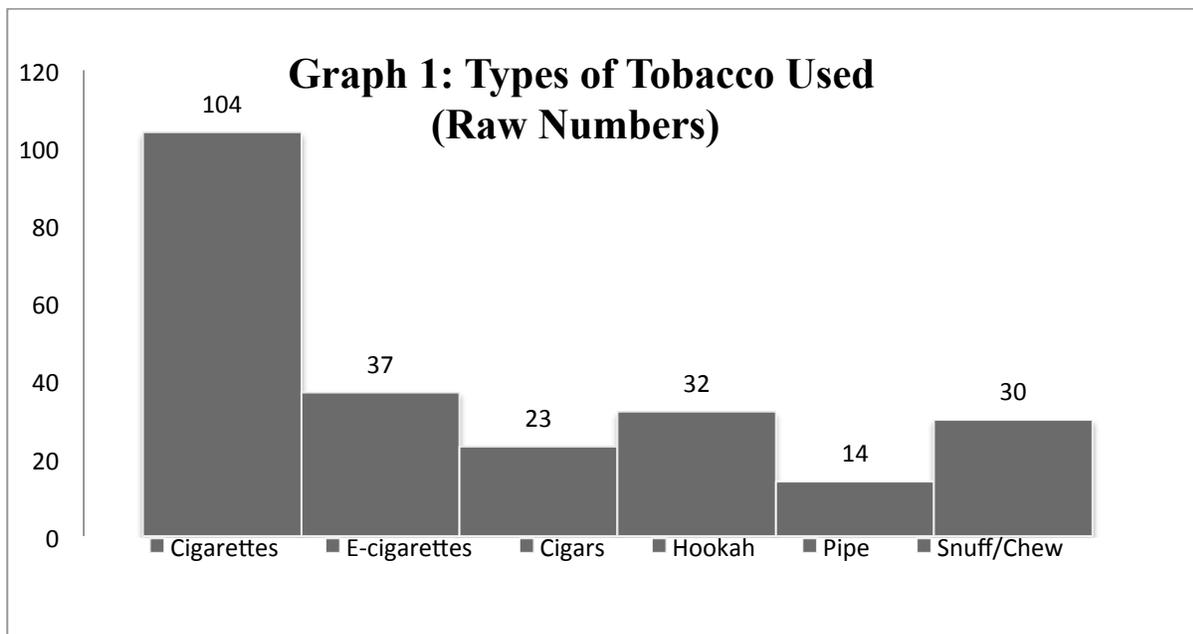
This research project studied how attachment styles affect addiction patterns through a quantitative, cross-sectional, non-experimental study looking at the relationship of attachment (independent variable) on tobacco use (dependent variable). The population was undergraduate and graduate students of East Tennessee State University who were at least 18 years of age. After obtaining Institutional Review Board (IRB campus) approval, the researcher initiated a university-wide survey that asks initial demographic questions that included tobacco information. The data was collected via email using the East Tennessee State University College of Nursing data collection capabilities. The survey was sent to 16,522 undergraduate and graduate students with a 3% participation rate. The overall non-probability sample of the convenience type was comprised of 522 participants (n=522). All of the participants (n=522) completed the demographic and tobacco questions, see (Appendix A). Of the 522 participants, 505 participants completed the Experiences in Close Relationships Scale-Short Form (ECR-short form, see Appendix B) by Wei, Russell, Mallinckrodt, & Vogel (2007) in order to determine the individual's attachment style. This instrument for attachment was comprised of 12 questions concerning the way the person feels in emotionally intimate relationships, and it measured attachment style by scoring the participant's admitted anxiety and avoidance in close relationships. The survey took less than ten minutes to complete. The demographic survey was analyzed descriptively for tobacco use by categorizing tobacco users versus nonusers, the type, amount, and length of time of tobacco use, and East Tennessee State University participant groups. The answers to the ECR-short form were scored, the mean of anxiety and avoidance were found, and the participants were placed in categories of secure, preoccupied, dismissing-

avoidant, and fearful-avoidant. The research analysis used descriptive and correlational methods, which determined whether a relationship existed between attachment and tobacco use.

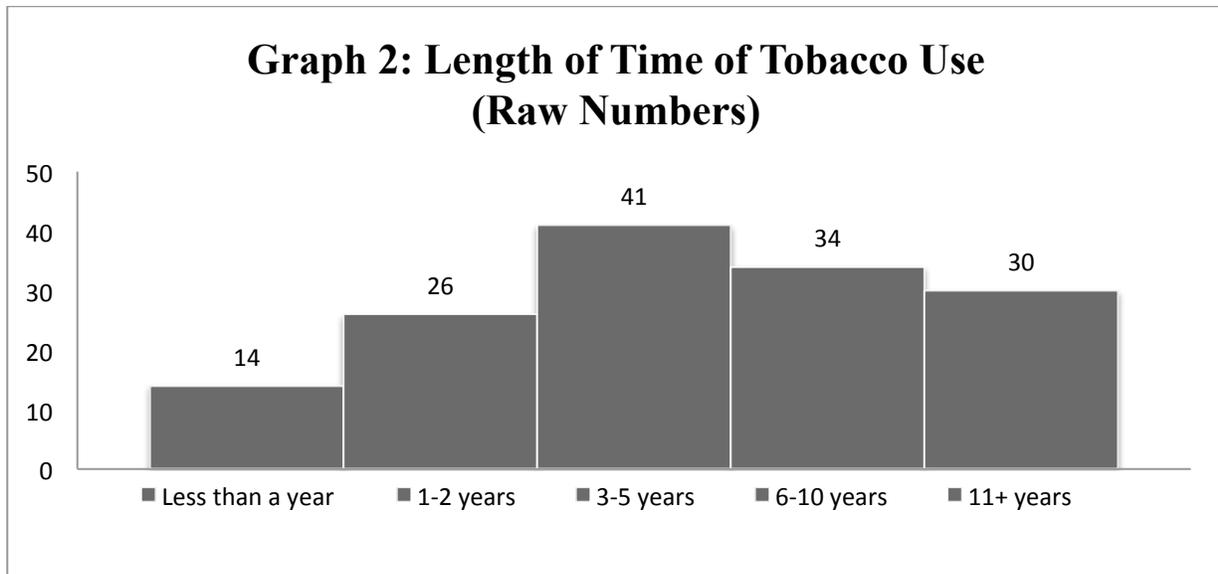
### Findings

Demographic data revealed 68.5% (n=358) did not currently use tobacco products. However, of those who did currently use tobacco products 54.5% (n=90) were male, 84.8% (n=140) were undergraduate students, and 66.7% (n=110) were between the ages of 18-25.

Data from the tobacco-focused portion of the survey revealed that 63% used cigarettes, 22.4% used e-cigarettes, 13.9% used cigars, 19.4% used hookah, 8.5% used a pipe, and 18.2% used snuff/chew.



For tobacco users, the length of time using consisted of: 8.5% having used less than 1 year, 27.9% having used 1-2 years, 24.8% having used 3-5 years, 20.6% having used 6-10 years, 18.2% having used 11 or more years.



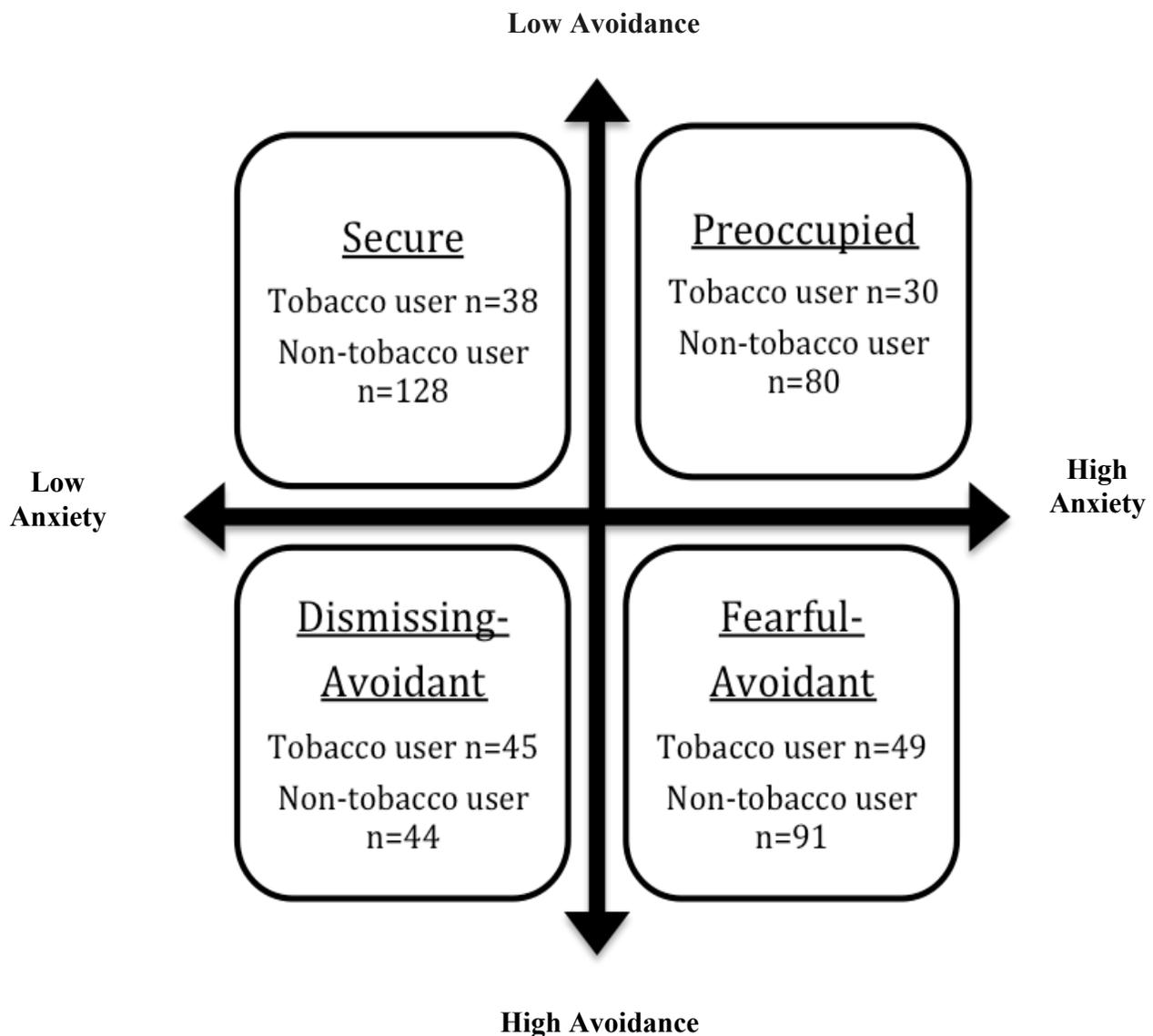
Furthermore, 5.5% used tobacco less than once a month, 7.3% used tobacco 1-2 times a month, 6.1% used tobacco once a week, 10.9% used tobacco 2-5 times a week, 6.7% used once a day, 13.9% used tobacco 2-3 times a day, 13.3% used tobacco 4-5 times a day, and 36.4% used tobacco more than 6 times a day.

**Graph 3: Amount of Tobacco Used**

Frequency of Use	Amount Used N=165 (%)
Less than once a month	9 (5.4%)
1-2 times per month	12 (7.2%)
Once a week	10 (6 %)
2-5 times a week	18 (11 %)
Once a day	11 (6.6%)
2-3 times a day	23 (13.9 %)
4-5 times a day	22 (13.3 %)
6+ times a day	60 (36.3%)

For individuals who used tobacco 23.5% were in the secure attachment group, 27.8% were in the dismissing-avoidant attachment group, 30.2% were in the fearful-avoidant attachment group, and 18.5% were in the preoccupied attachment group. Chi Square analysis demonstrated that attachment style was significantly ( $p < 0.01$ ) different between tobacco users and non-users. For anxiety,  $r=0.00209$ , which was weak. For avoidance,  $r=0.18875$ , which was slightly higher than the effect size for anxiety, but it was still weak.

### Graph 4: Attachment Styles



### **Discussion**

Since there is a relationship between attachment style and tobacco use, it could be possible to address tobacco use through the individual's attachment style in order to provide material for tobacco cessation or tobacco prevention. As of now, the majority of tobacco education is focused on tobacco cessation after long-term use or prevention strategies geared toward teenagers. However, since this research study demonstrates that attachment style is related to tobacco use, effective tobacco prevention strategies actually could start much younger. It is possible that the greatest impact on the probability of tobacco initiation begins in infancy and early childhood when a person's attachment style first develops. This education could start with demonstrating to parents how to care for their children in a way that builds secure attachment and explaining the negative implications of insecure attachment.

When looking at the types, length of time using, and the amount of tobacco use, the majority of tobacco users preferred cigarettes, had been using for 3-5 years, and used 6 or more times a day. Tobacco users may choose cigarettes over other forms of tobacco because they are the more prominent form of tobacco use in this culture. The fact that the majority of tobacco users had been using for 3-5 years is to be expected since the sample majority consisted of younger university students who most likely began using tobacco as adolescents. Since the majority of tobacco users were using tobacco 6 or more times a day, this most likely represents a dependence on tobacco. In addition, the majority of tobacco users were in the dismissing-avoidant and fearful-avoidant groups, in which both groups are characterized by higher avoidance. Since the majority of tobacco users were in the higher avoidance attachment groups, this leads one to wonder if this is partially due to the fact that attachment avoidance and attachment anxiety have been shown to correlate with decreased internal affect regulation,

leaving them with a higher propensity toward external regulation strategies. It is possible that people that have insecure attachment (high avoidance and/or high anxiety) have decreased ability to self-regulate during times of stress and find external means of stress relief, such as tobacco use; therefore, tobacco use could be seen as a coping mechanism for stress in an individual without the ability to effectively self-regulate. However, since there were not as many tobacco users in the preoccupied group with high anxiety and low avoidance, it leads one to wonder if the people in the preoccupied group are finding alternative means for stress relief other than tobacco. It would be interesting to see if there are certain negative coping strategies other than tobacco use that are correlated with individuals with anxious attachment.

Since many people use tobacco to relieve stress, the findings of this research study were surprising in that anxious attachment did not correspond with tobacco use. Since research has shown that more cigarette and smokeless tobacco users are male (Richardson et al., 2014), it would be interesting to see if females with insecure attachment use other forms of stress reduction other than tobacco. Previous research shows that anxious attachment is correlated with alcohol use and negative consequences of alcohol use (Molnar, Sadava, DeCourville, and Perrier, 2010), and it could be that individuals with anxious attachment are more likely to choose alcohol over tobacco use for stress relief.

In many ways, this culture is more accepting of attachment avoidance than it is anxious attachment. In a country that was founded on a sense of rogue independence and self-survival, individuals with anxious attachment are often seen as weak or needy. Possibly because of this cultural undercurrent, men with insecure attachment tend to have more attachment avoidance while women with insecure attachment tend to have more anxious attachment (Levine and Heller, 2010). Since this research study found that the majority of tobacco users were male, the

findings of this research study correspond with previous research on attachment avoidance in that most of the tobacco users fell into the higher avoidant attachment styles. Considering the weak effect size for anxious attachment of this research study and the negative cultural implications of anxious attachment, it is possible that individuals were less likely to self-report anxiety in regards to emotionally close relationships on the attachment tool used. This possible hesitancy in self-reporting anxiety could have skewed the results, thus decreasing the effect size for attachment styles and tobacco use for anxious attachment.

Previous research by Gillett et al. (2008) found that individuals with attachment avoidance are more likely to have more difficulty disengaging from heightened arousal in the emotional centers of the brain. Since many people use tobacco as a means for stress reduction, the data from this research study corresponds that individuals with attachment avoidance could be using tobacco as a means to disengage from heightened emotional arousal. For years, cigarettes have advertised this sort of brooding independence, an aura of a strong cowboy that symbolizes a relationship between smoking and freedom. In essence, these advertisements exemplify a loner who is too tough to need anyone but himself. It is possible that this form of tobacco advertising actually appeals to people with tendencies toward attachment avoidance, which could partially explain the reason that more tobacco users had higher avoidance than did tobacco users with higher anxiety.

### **Limitations**

One limitation of the study is that the study was performed on a college campus of a regional school with limited variation with age group and ethnicity. Another limitation is that the study was a non-probability sample and the participation rate was low with 522 students participating out of 16,522 total students. The findings in this sample cannot be assumed to

apply to all students at the college or to other students at other colleges. Additionally, the university has a tobacco-free campus policy, which could have rendered participants less forthcoming about tobacco use. This tobacco free policy may have reduced the measurement validity of the tobacco use measures. Lastly, this was a non-experimental design, and it has a low internal validity. It cannot be determine on the basis of these findings alone whether insecure attachment led to smoking or whether smoking produces insecure attachment responses on the survey. As unlikely as that possibility may appear, it must be kept in mind when reviewing the findings.

### **Future Directions**

The findings indicated that the majority of tobacco users were in the fearful-avoidant and dismissing-avoidant groups. This information may assist nurses and health care providers in developing programs particularly for these attachment styles to assist in tobacco cessation or prevention. In addition, research could explore tools for building more secure attachment in children in order to possibly decrease the likelihood of future tobacco initiation.

Future directions could include broadening the research to explore chemical and non-chemical dependence such as alcohol dependence, drug addiction, and sexual addiction. Other impulsive behavioral components could be researched with attachment style such as excessive spending, gambling, or overeating. In the future, it would be beneficial to include participants with varied ages, socioeconomic levels, and ethnicities in order to gain more generalizable data.

### **Conclusions and Further Study**

Tobacco use is widely linked to poorer health outcomes and excessive cost in the United States alone. Presently, there is widespread education and warnings on the topic of tobacco use and its negative impact on health. With massive education available, people still continue to use

tobacco and even initiate use of new forms of tobacco such as e-cigarettes. It is imperative to explore other means for tobacco prevention and cessation, including psychological prevention such as attachment beginning in infancy. This study demonstrates a correlation between tobacco use and attachment, and more specifically attachment avoidance. Tobacco prevention can possibly begin as early as infancy in the ability to educate parents on strategies and long-term implications for assisting children in developing and maintaining secure attachment.

Further study could explore characteristics of attachment avoidance and methods for initiating change in order to develop techniques for tobacco cessation and prevention for the two attachment styles with higher attachment avoidance. Since attachment is not a subject that is widely discussed, further study could explore methods for attachment education for the general public and evidence for the importance of attachment as a predictor for addictive behavior.

Further study could discover ways to initiate changes in attachment style. Since it has been shown that attachment can change from infancy to adulthood based on life experiences and/or trauma, it would be beneficial to look at ways to change insecure attachment to secure attachment. It could be possible to decrease insecure attachment through forms of therapy, trauma prevention, or parenting classes to assist parents in helping their children develop secure attachment at an early age. Additionally, future exploration could ascertain the importance of teaching people with higher attachment avoidance internal strategies for self-regulation such as meditation, deep breathing exercises, and the ability to tune into one's body both physically and emotionally. These positive internal regulation strategies could replace the more negative external regulation strategies related to tobacco use and its stress reduction properties.

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## Appendix A

1. **Gender:** Male Female
2. **Age Group:** 18-25 26-30 31-40 41-50 51-60 61+
3. **Role at ETSU:** Undergraduate Student Graduate Student
4. **Do you currently use tobacco products?** Yes No

**\*\*If no, go to question #5. If yes, go question #7.**

5. **Have you ever used tobacco products?** Yes No

**\*\*If no, go to question #11. If yes, go to question #6.**

6. **How long did you previously use tobacco?**

Less than a year 1-2 years 3-5 years 6-10 years 11+ years

**\*\*If you no longer use tobacco products, please skip to question #11.**

7. **Indicate which type of tobacco product you currently use. If more than one type used, please indicate all types used.**

Cigarettes	E-cigarettes	Cigars	Hookah
Pipe	Snuff	Chew	

8. **How much do you currently use?**

Less than once a month	1-2 times a mont	1 time a week	2-5 times a week
1 time a day	2-3 times a day	4-5 times a day	6+ times a day

9. **How long have you used this/these product(s)?**

Less than a year 1-2 years 3-5 years 6-10 years 11+ years

10. **When do you use this/these products? (Please indicate all times used)**

In the car	After a meal	After sexual encounter
When bored	When stressed or nervous	Socially
When consuming alcohol		

## Appendix B

## Experiences in Close Relationships (ECR-Short Form)

**Instruction: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by indicating how much you agree or disagree with it. Mark your answer using the following rating scale:**

Strongly Disagree	Slightly Disagree	Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

11. It helps to turn to my romantic partner in times of need.
12. I need a lot of reassurance that I am loved by my partner.
13. I want to get close to my partner, but I keep pulling back.
14. I find that my partner(s) don't want to get as close as I would like.
15. I turn to my partner for many things, including comfort and reassurance.
16. My desire to be very close sometimes scares people away.
17. I try to avoid getting too close to my partner.
18. I do not often worry about being abandoned.
19. I usually discuss my problems and concerns with my partner.
20. I get frustrated if romantic partners are not available when I need them.
21. I am nervous when partners get too close to me.
22. I worry that romantic partners won't care about me as much as I care about them.