

1-24-2024

School Experiences and Cannabis Blunt Use Among African American Youth

Kenneth Dale Woodson, Jr
Walden University

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Health Sciences and Public Policy

This is to certify that the doctoral study by

Kenneth Dale Woodson, Jr

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee

Dr. Claire Robb, Committee Chairperson, Public Health Faculty
Dr. Patrick Dunn, Committee Member, Public Health Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2024

Abstract

School Experiences and Cannabis Blunt Use Among African American Youth

by

Kenneth Dale Woodson, Jr

MPH, National University, 2012

BA, University of California, Irvine, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

February 2024

Abstract

The use of cannabis blunts, which are tobacco cigars with the tobacco removed and replaced with cannabis, is increasing among African American adolescents more so than other racial groups. Although many theories persist, it remains unclear what is leading this increase, particularly among this specific population of students. No studies have been conducted to examine school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) in relation to cannabis blunt use among African American youth ages 12 to 17. The purpose of this quantitative study was to examine whether school experiences are associated with blunt use among African American youth (12–17). The theory of planned behavior (TPB) has been used to explain and predict behaviors across a multitude of different behavior types and guided this study. A secondary analysis of a national sample of African American students, Grades 7 to 12 ($n = 1,781$) in the United States who completed the 2019 National Survey on Drug Use and Health was conducted. Data were analyzed and there was no significant relationship found between school experiences and cannabis blunt use. However, there was an association found between school experiences and cannabis blunt use based on the use of other drugs. The findings of this study could have implications for positive social change by leading to a better understanding of school experiences in relation to blunt use among African American adolescents. Greater knowledge regarding blunt use among this population of students could lead to the development of interventions that target cannabis blunt use among adolescents.

School Experiences and Cannabis Blunt Use Among African American Youth

by

Kenneth Dale Woodson, Jr

MPH, National University, 2012

BA, University of California, Irvine, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Public Health

Walden University

February 2024

Dedication

This dissertation is dedicated to my mother, Erlinda Marcos Woodson and to my father, Kenneth Dale Woodson. This work would not have been doable without your steadfast support, cheer, and inspiration. I am truly grateful to have my parents in my corner and I am honored that both are here to have walked alongside me on this journey. This was an enormous sacrifice, and I am immensely hopeful that I can pay it forward.

Acknowledgements

My sincere gratitude and appreciation go to my chair, Dr. Claire Robb, who has been profoundly helpful, caring, and truly supportive throughout the entire process. I am grateful for the support of my committee member, Dr. Patrick Dunn. This journey has been demanding, but educational. Lastly, I want to acknowledge my University Research Reviewer, Dr. Zin Htway, for your encouragement and assistance throughout the dissertation process.

Table of Contents

List of Tables	iv
Section 1: Foundation of the Study and Literature Review	1
Introduction.....	1
Problem Statement	2
Purpose of the Study.....	4
Research Questions and Hypotheses	4
Theoretical Framework.....	5
Nature of the Study.....	7
Literature Search Strategy.....	7
Literature Review.....	7
Age of Cannabis Blunt Use in the United States.....	7
Cannabis Blunts and African American Adolescents.....	9
African American Adolescents and School Experience	10
Cannabis Blunt Smoking and Use of Other Drugs	12
Definitions.....	16
Assumptions.....	19
Scope and Delimitations	19
Limitations	19
Significance.....	20
Summary	21
Conclusion	22

Section 2: Research Design and Data Collection	24
Introduction.....	24
Research Design and Rationale.....	24
Methodology.....	26
Data Source.....	26
Study Population.....	26
Sampling Strategy	26
Operationalization	27
Power Analysis	30
Data Analysis Plan	33
Threats to Validity	35
Ethical Procedures.....	36
Summary	36
Section 3: Presentation of the Results and Findings.....	38
Introduction.....	38
Data Collection of Secondary Data Set.....	39
Descriptive Statistics for Covariates	40
Independent Variables.....	40
Dependent Variable.....	42
Covariates.....	43
Inferential Statistics for Primary Variables.....	44
Summary	49

Section 4: Application to Professional Practice and Implications for Social

Change	52
Introduction.....	52
Interpretation of the Findings.....	53
Interpretation of the Alignment of the Theory of Planned Behavior	56
Study Limitations.....	58
Study Recommendations	59
Implications to Professional Practice	59
Conclusion	62
References.....	65

List of Tables

Table 1. Power Analysis Output Research Question 1	32
Table 2. Power Analysis Output Research Question 2	32
Table 3. School Experiences and African American Students	41
Table 4. Use of Other Drugs and African American Students	42
Table 5. Descriptive Statistics – Cannabis Blunts	43
Table 6. Descriptive Statistics for Covariates – Age and Gender.....	44
Table 7. Final Model Multiple Binary Logistic Regression School Experiences and Blunt Use Controlling for Age and Gender.....	46
Table 8. Final Model Multiple Binary Logistic Regression School Experiences and Blunt Use Based on Use of Other drugs.....	48

Section 1: Foundation of the Study and Literature Review

Introduction

Cannabis blunts are little cigars or cigarillos in which all, or some, tobacco is removed and refilled with cannabis (National Institute on Drug Abuse [NIDA], 2019). Blunts are different from joints, which are created using rolling papers that are lighter, partly transparent and do not have tobacco (Montgomery et al., 2019; NIDA, 2019). Blunts are rolled with a tobacco-leaf wrap, typically from a low-cost cigar, and studies have indicated a rising development in blunt smoking among adolescents (Fairman, 2015; Golub et al., 2005; Schauer et al., 2017). Blunt use is increasing particularly among African American adolescents compared to other racial groups (Antognolio et al., 2018; Montgomery & Oluwoye, 2016). Data from the National Survey on Drug Use and Health (NSDUH), collected from over 12,000 respondents, revealed that 5.3% of African American adolescents, 4.3% of Hispanic/Latino adolescents, and 3.8% of White adolescents reported blunt use in the past 30 days (Center for Behavioral Health Statistics & Quality, 2015). Persons of non-Hispanic African American race/ethnicity are more prone to using blunts. In contrast, age and substance use other than cannabis was found to have a mutual relationship with current and lifetime blunt use across all racial/ethnic groups (Center for Behavioral Health Statistics & Quality, 2015).

Blunt use in the United States is extensive among adolescents and is a growing public health concern. Cigars used for blunts and *blunt wraps* (e.g., cigar rolling papers) are readily available in tobacco shops, convenience stores, and liquor stores (Lipperman-Kreda et al., 2014; Sifaneck et al., 2005). Adolescents may favor blunts to joints because

blunts can last longer, burn slower, hold a greater quantity of cannabis, and are effortless to hide and carry (Marianai et al., 2011; Sifaneck et al., 2005). The prevalence of cannabis use has risen tremendously, and blunt use has progressed primarily among African Americans (Soller & Lee, 2010; Timberlake, 2013). Cannabis use, however, has gained mainstream attention as more jurisdictions are legalizing its use (Bahji & Stephenson, 2019). The legalization of a substance may send a message to society that use of the substance is without consequences. Adolescents need to be educated about the severe and unknown consequences that can occur from blunt use. Additional adverse health and intellectual costs have been found with blunt use in adolescents, such as anxiety, depression, and decreased academic achievement (Centers for Disease Control and Prevention [CDC], 2020), thus making blunt use a significant concern.

Problem Statement

Cannabis is the most broadly used illicit substance in the United States, and tobacco use is the leading cause of preventable death and disease (Center for Behavior Health Statistics & Quality, 2015). Although few studies have been conducted to compare blunt use to other forms of cannabis use, initial studies indicate that blunt users are in jeopardy of developing unfavorable health outcomes such as respiratory disease, coronary heart disease, and brain development issues (Kroon et al., 2020; Meier & Hatsukami, 2016; Salmanzadeh et al., 2020; Sweeney et al., 2018). Adolescent substance use may occur in association with peers who engage in substance use (Antognoli et al., 2018). Adolescents are exposed to tobacco marketing for products such as cigarillos and cigars, which help construct cannabis blunts (Kong et al., 2018). African American

students who have friends who use blunts are more likely to use blunts themselves (Vidourek et al., 2017). However, students can miscalculate the quantity of cannabis used in blunts among their peers (Roditis et al., 2016).

There is ongoing debate regarding the effect of cigars and cannabis on youth smoking behavior. For example, some say the increase in cigar use can be credited to price differences between cigarettes and cigars and the promotion of cigars as a cigarette substitute (Delnevo et al., 2016). Young people are drawn to cigar and cigarillo flavors (Delnevo et al., 2016; Kong et al., 2018). For cannabis, legalization in some states may reinforce the notion that it is safe to consume. Presently, 11 states and Washington, D.C., have legitimized cannabis for leisure for people over 21 years of age, and 33 states have legitimized cannabis for medical use (National Conference of State Legislatures [NCSL], 2020). The co-use of tobacco and cannabis by creating blunts is troubling given both substances have addictive adverse health effects (Kong et al., 2018; Ramo et al., 2012).

Despite research on the effects of cannabis blunt use and the impact on youth (Montgomery et al., 2019), there is limited information about the predictors of cannabis blunt smoking among African American youth ages 12 to 17. Additional research was needed to determine whether there was a relationship between school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) and cannabis blunt use among African American students ages 12 to 17. The results from this study provided useful information to prevention programs and public health policymakers to appropriately target the risk and protective factors associated with cannabis use for the demographic group.

Purpose of the Study

The purpose of this quantitative study was to examine whether school experiences are associated with cannabis blunt use among African American youth between 12 and 17 years of age. In this study, the independent variable was African American youth, and the dependent variables were school experiences (e.g., feelings about the lessons learned, grades in school, and personal feelings about school) and cannabis blunt use. The control variables were age, gender, and use of other drugs (i.e., alcohol, cigarettes, and marijuana).

Research Questions and Hypotheses

The research questions and null and alternative hypotheses for this study are as follows:

RQ1: Is there a significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender?

H_01 : There is no significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

H_a1 : There is a significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

RQ2: Does the association between school experiences and cannabis blunt use among African American youth (12–17) differ based on the use of other drugs (alcohol and tobacco)?

*H*₀₂: There is no association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

*H*_{a2}: There is an association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

Theoretical Framework

The theory of planned behavior (TPB) explains and predicts behaviors across many different behavior types (Glanz et al., 2015). The TPB extends a similar model called the theory of reasoned action (TRA; Azjen & Fishbein, 1975). The evolution of TRA came about because behavior is not always voluntary and cannot always be controlled (Azjen, 1991). Thus, TPB was added to the model. TPB is an appropriate model for this study because it can be used to examine school experiences and how adolescents might adopt risky behaviors such as cannabis blunt use. TPB is guided by three considerations: behavioral beliefs, normative beliefs, and control beliefs (Glanz et al., 2015).

The normative beliefs in this study are the social norms that adolescents are operating on directly influence the individual's social network of peers who are reinforcing the cannabis blunt use and behavioral intent (Glanz et al., 2015). Additionally, these norms relate to the attitudinal effects of the individual who might lack knowledge and awareness of cannabis blunt use and feel a lower level of perceived power to stop the drug from taking control of their social life. Consequently, there is a

socialization aspect that cannabis blunt use has and is a powerful motivator to engage individuals in their motivation and intention to comply with the practice. Given that the school is an environment for developing risky behaviors (Vidourek et al., 2017), more research is warranted on the relationship between cannabis blunt use and school experiences.

TPB explains that behavioral achievement depends on both the intent and the ability to control behavior. A public health campaign to inform adolescents on the dangers of cannabis use and forgo use might be a detested social change among adolescents (Resnick & Siegel, 2013). Resistance to change can come from a myriad of sources. Challenges to change efforts include peers, family, or the school environment, and thus, individuals may seek solace from blunt use as a managing agent for stressors they are facing within their communal setting (Child Mind Institute, 2021; Partnership for Drug-Free Schools, 2021).

The alternative assumption is that smoking cannabis blunts can cause issues such as anxiety and discontinuing use would mean being alienated from a social group that uses cannabis blunts (Child Mind Institute, 2021). Therefore, it is crucial to consider adolescents' perspectives on interpreting or accepting health information that may be meaningful in their lives. Because TPB has been used successfully in behavioral studies, it is beneficial to use it as the framework for this study. This study will use TPB to investigate smoking as a behavior and as a method to understand a cannabis blunt smoker's decision to smoke. TPB defines how a person's communal setting can stimulate their connection or participation with drug use or their intent to carry out the use of drugs

(Glanz et al., 2015). The decision to smoke blunts is a perceived behavior goal, which encourages their skill to complete an intended behavior (Ajzen, 1991).

Nature of the Study

The research design included secondary data from NSDUH to understand how school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) influence cannabis blunt use among African American youth (12–17). The data set from the 2019 NSDUH (2020) offered current information on cannabis blunt use and African American youth in the United States. The research questions were applicable for this data set, and the data exist, are free, and there are principles to safeguard recognizable participant information (Yiannakoulias, 2011).

Literature Search Strategy

For the literature review, several databases were searched including MEDLINE, CINAHL, PubMed, Education Source, ERIC, Social Work, Academic Search Complete, and Google Scholar. The terms searched were *African Americans*, *adolescents*, *youth*, *blunts*, *marijuana*, *cannabis smoking*, and *school*. Sources searched were from 2016 to the present. Editorials, letters, case reports, news reports, commentary, newspaper articles, technical reports, and studies outside the United States were not included.

Literature Review

Age of Cannabis Blunt Use in the United States

Adolescent cannabis smoking via tobacco products such as blunts is a growing public health concern. Blunts are scraped-out cigars, little cigars, or cigarillos replaced with cannabis (Kong et al., 2018). According to the Monitoring the Future Survey,

50,000 eighth-, 10th-, and 12th-grade students in the United States reported the incidence of opioid use among adolescents at a notable decrease, while vaping and cannabis use are increasing (Jones et al., 2020). In addition, in 2019, among U.S. high-school students 36.8% indicating having ever used cannabis, discounting the past 30 days, and 21.7% indicated current use or use in the past 30 days (Jones et al., 2020). Cannabis is the second most used drug after alcohol (Kalen et al., 2021).

Cigar blunts are increasingly becoming a well-liked form of cannabis consumption among U.S. adolescents (Giovenco et al., 2017; Kim et al., 2021; Werts et al., 2021). Data obtained from the NSDUH reported 85.5% of youth ages 12 to 17 have used blunts in the last month, and 35.1% used blunts ever as their only tobacco product (Albert et al., 2020). Adolescents with the initial inception of cannabis use are vulnerable to substance misuse and health problems in the future (Gruber et al., 2012). The incidence of cannabis use has risen among adolescents in the past 13 years (Kerr et al., 2017). Thus, assessing patterns of cannabis use across gender, age, race/ethnicity, display a difference of developments. However, the developments show increased usage in age groups from the 1980s, 1990s, 2000s to the present day (Kerr et al., 2017).

Over the past decade, national policies concerning cannabis use have undergone noteworthy transformations. Currently, 33 of 50 states in the United States have legislation that generally supports the legalization of cannabis. Ten of the 33 states (and the District of Columbia) also have legal recreational cannabis use (Hall, 2015). Moreover, lawmakers, lobbyists, and constituents have argued that legislative transformations in the legalization of cannabis have added to the rise in recreational use.

More research is needed as it relates to rates of cannabis blunt smoking and adolescent age and gender.

Cannabis Blunts and African American Adolescents

The co-use of cigar and cannabis products has been observed as a common form of use. Cigar and cannabis co-use is centered on how a person first acquired how to smoke in their peer association (Albert et al., 2020; Antonolia et al., 2018) or a normative custom used in a person's social group and a particular social setting (Albert et al., 2020; Antonolia et al., 2018; Trapl & Gonzalez, 2017). Research has shown that routes of cannabis use are essential for users themselves and should be recognized as distinctive groups (Trapl & Gonzalez, 2017). Demographic characteristics among blunt users show that being African American was one of the most substantial projections of increased probability of use (Montgomery et al., 2019; Ramo et al., 2012).

Cannabis blunt use has been associated with African Americans, older teens, male youth, upper-grade level in school, low-grade point average, high absenteeism, poor school association, not living in a two-parent family, urban residence, and previous cigar-smoking practice (Antognolia et al., 2018; Eggers, 2017; Fairman, 2018; Giovenco et al., 2017; Grobman et al., 2021; King et al., 2019; Montgomery et al., 2019; Sinclair et al., 2012). Qualitative research reveals more sociocultural distinctions in blunt users than other cannabis or tobacco product users (Trapl & Gonzalez, 2017). For example, blunt users typically identify with hip-hop culture and report blunt use as supporting cannabis partaking exercises (Kelly, 2005; Trapl & Gonzalez, 2017). Additionally, well-known celebrities promote blunts, thereby attracting youth to follow by simulating those

behaviors (Kong et al., 2018). Consequently, cigar blunts have been known to be significantly established within African American communities, with substantial quantities of cannabis blunt use (e.g., 21–30 days) reported by nearly 40% of African American past month blunt users (Fariman, 2015).

National survey results reported past-month cannabis use at nearly 70% through blunts (Montgomery & Bagot, 2016; Montgomery et al., 2019). Historically, blunts became prevalent in the mid-1980s as an inexpensive means to use cannabis (Sifanek et al., 2005) and were primarily smoked by people of African ancestry (Montgomery et al., 2019). Blunt use is a unique route of consumption from joint use, the typical mode of cannabis ingestion (Montgomery et al., 2019; Sifanek et al., 2005) and has its procedures, customs, and subculture (Sifanek et al., 2005). Little cigarillos have been advertised mainly in African American communities by the tobacco industry (Giovenco et al., 2017; Montgomery et al., 2019). Advertisements include little cigarillos or cigar brands with punctured lines on the wrappers that can be easily unrolled to construct blunts (Kong et al., 2018; Sterling et al., 2016). Given the exclusive past context of cannabis blunt use in African American communities, more research is needed to examine the link between cannabis blunt use and school experiences among African American adolescents.

African American Adolescents and School Experience

Cannabis use is a multilayered concern that encompasses several levels within the person, family, school, peer, and community levels (King et al., 2019; Mander et al., 2011). Inside the school level, students who sense they are encouraged and guided by people who care, such as peers, classmates, teachers, and school staff, are less prone to

co-use tobacco and cannabis or other drugs (alcohol and tobacco; Voisin et al., 2018). Notably, a sense of connectedness to school can protect against adolescent blunt use (Catalano et al., 2004). Studies have found that school bonding or school connectedness is an essential foundation to adolescents' school achievement (Reyes et al., 2012; Voisin et al., 2018). School success essentially is not just for positive youth development but for lifelong achievement.

Subsequently, low school connectedness can produce elevated school dropout rates and lower rates of high-school graduation and college registration (Bryan et al., 2012; Voisin et al., 2018). Thus, adolescents who feel less connected to school might have lower attendance, lower school engagement, and less positive relationships with teachers. African American adolescents who undergo academic struggles and breakdowns are at increased exposure for substance use (Wright & Fitzpatrick, 2004). One hardy predictor for adolescent substance abuse is having peers engaged in substance use (Jessor et al., 1998). African American students who have friends, peers, or associates who use cannabis, cigars, or other drugs tend to partake in drugs also (King et al., 2019). However, students tend to misjudge how much other students or peers are engaged in substance use behaviors (Roditis et al., 2016). Social learning theory proposes that youths discover drugs and substance use by observing substance use and drug promotion in their immediate social environment (Bandura, 1969). Therefore, if drugs are being observed or marketed, youth are at risk for exposure to drug use, which may lessen their opinions about the possible danger of cannabis blunt use and increase affirmative expectations to start using (Kong et al., 2018; Reboussin et al., 2014).

Furthermore, early cannabis use influences academic achievement. Studies have revealed that cannabis affects memory, learning, thinking, information processing, and other essential skills vital to academic success (CDC, 2020; Lubman et al., 2015; Verweij et al., 2013). Hence, relative moderate use of cannabis may lead to decreased motivation to continue school. As a result, the effects of adolescent cannabis use have facilitated the increase of educational issues and early school dropouts (Verweij et al., 2013). Reboussin et al. (2007) observed African American middle-school students and found an evolving association between early childhood misconduct and subsequent substance use. Consequently, factors related to cannabis use among adolescents are complex and multifaceted. More research is needed to understand the school experiences of African American adolescents as it relates to cannabis blunt use.

Cannabis Blunt Smoking and Use of Other Drugs

Although literature regarding cannabis use among African Americans is increasing, limited research has been conducted to assess cannabis blunt use in this population. For example, some studies have proposed that cannabis use and tobacco co-use are related to an elevated health hazard from mentholated cigarette use (Azagba & Sharaf, 2014) and heavy alcohol use (Buu et al., 2015). However, cannabis use and tobacco co-use related to other drugs (alcohol or tobacco) is understudied among African American adolescents who have used cannabis blunts. The disproportionate number of adverse long-term effects of alcohol use among African American adolescents remains a crucial public health issue (Banks et al., 2017; Montgomery et al., 2019). For some, dual alcohol and tobacco or cannabis use begins during adolescence. Banks et al. (2017)

reported that African American adolescents are more likely than White adolescents to report dual alcohol and cannabis use compared to alcohol only. Further, evidence indicates that African American alcohol and cannabis users are more likely to experience co-occurring alcohol and cannabis use disorders (Pacek et al., 2012). More research is needed into alcohol and cannabis use among African Americans adolescents.

Albert et al. (2020) examined simultaneous use (cannabis use directly followed by tobacco use), substitution of smoking a cigarillo instead of a blunt, and the association with nicotine dependence among young cigarillo users. The authors found that co-use of tobacco and cannabis was associated with smoking more cigarillos per day and more blunts per week and greater nicotine dependence. Albert et al.'s (2020) study is impactful to this study because standing research on cannabis and tobacco co-use spotlights cigarette or tobacco use and substance use in the past 30 days, rather than examining the specific co-use behaviors of cigarillo and blunt users. The authors suggested increasing prevention by bringing awareness of the addictive harms of co-use and the diverse cannabis and tobacco co-use patterns. More tobacco prevention and treatment programs are needed specifically for cigarillo users (Albert et al., 2020). Furthermore, more research is needed to explain how these two substances, tobacco and cannabis, are co-used, the specific activities and behaviors associated with their co-use, and the effect these substances have on addiction and health outcomes.

Delnevo et al. (2015) explored recent growth in flavored cigar consumption using secondary data analysis from the NSDUH and Nielsen market scanner data. The authors found that the flavored cigar market share is mixed by packaging. For example, youth,

young adults, women, African Americans, cigarette smokers, cannabis blunt users, and daily cigar smokers are more likely to favor a low-cost single stick and two/three packs. Furthermore, flavoring disguises the roughness and nuisance of smoking, thus helping to introduce these products to young people more likely to adopt these cigarette substitutes (Manning et al., 2009). Delnevo et al.'s (2015) study highlights the need to observe merchandise qualities, promotion, marketing, and individual cigar use behaviors through population surveillance.

Montgomery et al. (2019) studied the trajectories of alcohol use and dependence and dual use of illicit drugs—mainly, via blunts and non-blunt cannabis use among African Americans. The authors used pooled data from the 2011–2014 NSDUH to examine the odds of alcohol dependence based on alcohol and cannabis typology compared to alcohol-only users among 11,124 African American adolescents (12–17) and young adults (18–25). Montgomery et al. found that youth who use alcohol and cannabis blunts had increased odds of having alcohol dependence. In addition, the authors found that young adults (18–25), men, and those with lower levels of education and income were more likely to be past-year alcohol and cannabis blunt users compared to alcohol only and alcohol and non-blunt users. Consequently, the authors underscored the combined health effects associated with dual use of alcohol and cannabis blunt use. Lastly, Montgomery et al. (2019) emphasized the need for more research on how and why there is a higher risk for substance use, specifically alcohol dependence, among African American drinkers who report cannabis blunt use.

Variables contributing to cannabis blunt use among adolescents are wide ranging and multifaceted. Moreover, African American people are more likely to face many obstacles that produce health disparities (Banks et al., 2017; Montgomery et al., 2019). Research shows that social inequalities might affect health behaviors and health status outcomes. Based on a review of the literature, older teens, men, higher grade level in school, low-grade point average, high absenteeism, low school connectedness, not living in a two-parent family, urban residence, and previous cigar-smoking practice have shown to be significantly associated with cannabis blunt use (Antognolia et al., 2018; Eggers, 2017; Fairman, 2018; Giovenco et al., 2017; Grobman et al., 2021; King et al., 2019; Montgomery et al., 2019; Sinclair et al., 2012). Likewise, it is unclear whether there is a relationship between school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) and blunt use among African American youth ages 12 to 17 in the United States or school experiences and blunt use while controlling for other drugs (e.g., alcohol or tobacco).

Although rates of cannabis use among adolescents have steadily risen in the past decade (CDC 2018; Johnston et al., 2016; Reboussin et al., 2014; Substance Abuse and Mental Health Services Administration [SAMHSA], 2020), there are gaps in the professional literature that have not addressed factors related to African American adolescent cannabis blunt use. Continued research is needed to distinguish the factors related to cannabis blunt use. This current study contributes to the existing literature by using recent data from NSDUH in a national representative sample of African American adolescents.

A descriptive study would be appropriate to analyze the association between two or more variables that might or might not be present (Hahs-Vaughn & Lomax, 2020). Descriptive studies are crucial to analyzing the association between school experiences and cannabis blunt use among youth. The previous studies mentioned above involved quantitative research designs that successfully analyzed and assessed associations between variables. A quantitative design would be appropriate for this current study as possible associations would be explored between school experiences and cannabis blunt use among African American students. The current study aims to add to the growing and substantial body of cannabis and tobacco co-use research.

Definitions

The following key terms will be used in this study.

Adolescents/youth: Youth is the transition from dependence to independence, typically between 15 to 24 (United Nations, n.d.), but for this study, adolescents will be defined between 12-17.

Blunts: Cigars laced with cannabis (marijuana) inside. Sometimes people replace the tobacco from the cigar with cannabis (SAMHSA, 2018).

Cannabis: A broad term that describes the distinctive products from the Cannabis sativa plant, such as marijuana and cannabinoids (CDC, 2018).

School experiences: School experiences will be assessed through the following 12 items: (1) Have you attended any type of school at any time during the past 12 months? (1 = Yes, I attended school; 2 = No, I did not attend school); (2) Have you been home-schooled at any time during the past 12 months? (1 = Yes, I was home-schooled; 2 = No,

I was not home-schooled); (3) Which of the statements below best describes how you felt overall about going to school during the past 12 months? (1 = You liked going to school a lot; 2 = You kind of like going to school; 3 = You didn't like going to school very much; 4 = You hated going to school); (4) During the past 12 months, how often did you feel that the schoolwork you were assigned to do was meaningful and important? (1 = Always; 2 = Sometimes; 3 = Seldom; 4 = Never); (5) How important do you think the things you have learned in school during the past 12 months are going to be to you later in life? (1 = Very important; 2 = Somewhat important; 3 = Somewhat unimportant; 4 = Very unimportant); (6) How interesting do you think most of your courses at school during the past 12 months have been? (1 = Very interesting; 2 = Somewhat interesting; 3 = Somewhat boring; 4 = Very boring); (7) During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your schoolwork? (1 = Always; 2 = Sometimes; 3 = Seldom; 4 = Never); (8) What were your grades for the last semester or grading period you completed? (1 = An 'A+', 'A', or 'A-minus' average; 2 = A 'B+', 'B', or 'B-minus' average; 3 = A 'C+', 'C', or 'C-minus' average; 4 = A 'D', or less than a 'D', average; 5 = My school does not give these grades); (9) How many of the students in your grade at school would you say smoke cigarettes? (1 = None of them smoked cigarettes; 2 = A few of them smoked cigarettes; 3 = Most of them smoked cigarettes; 4 = All of them smoked cigarettes); (10) How many of the students in your grade at school would you say use marijuana or hashish? (1 = None of them used marijuana or hashish; 2 = A few of them used marijuana or hashish; 3 = Most of them used marijuana or hashish; 4 = All of them used marijuana or hashish); (11) How many

of the students in your grade at school would you say drink alcoholic beverages? (1 = None of them drink alcoholic beverages; 2 = A few of them drink alcoholic beverages; 3 = Most of them drink alcoholic beverages; 4 = All of them drink alcoholic beverages);

(12) How many of the students in your grade at school would you say get drunk at least once a week? (1 = None of them get drunk at least once a week; 2 = A few of them get drunk at least once a week; 3 = Most of them get drunk at least once a week; 4 = All of them get drunk at least once a week) (NSDUH, 2019).

Use of other drugs: will be assessed through the following six items: (1) How many of the students in your grade at school would you say smoke cigarettes? (1 = None of them smoked cigarettes; 2 = A few of them smoked cigarettes; 3 = Most of them smoked cigarettes; 4 = All of them smoked cigarettes); (2) How many of the students in your grade at school would you say use marijuana or hashish? (1 = None of them used marijuana or hashish; 2 = A few of them used marijuana or hashish; 3 = Most of them used marijuana or hashish; 4 = All of them used marijuana or hashish); (3) How many of the students in your grade at school would you say drink alcoholic beverages? (1 = None of them drink alcoholic beverages; 2 = A few of them drink alcoholic beverages; 3 = Most of them drink alcoholic beverages; 4 = All of them drink alcoholic beverages); (4) How many of the students in your grade at school would you say get drunk at least once a week? (1 = None of them get drunk at least once a week; 2 = A few of them get drunk at least once a week; 3 = Most of them get drunk at least once a week; (5) Have you ever smoked part or all of a cigar with marijuana in it? (0 = Yes, I have smoked part of or all of a cigar with marijuana in it; 1 = No, I have smoked part of or all of a cigar with

marijuana in it); (6) How old were you the first time you smoked part or all of a cigar with marijuana in it? (Age Range: 1-110) (NSDUH, 2019).

Assumptions

The assumptions for this study are that the information from the data set would help answer the research questions and provide transparency in understanding the role of school experiences in African American youth and blunt use. The data were collected and have been managed by SAMHSA's Center for Behavior Statistics and Quality. It is assumed that the information in the data set is thorough, and the data collection process did not breach ethical procedures. Lastly, it is assumed that the articles reviewed for this study were precisely explained.

Scope and Delimitations

Two criteria were used to govern the scope of this study: inclusion and exclusion. Participants were randomly selected from middle and high school, male and female, and varied socioeconomic backgrounds for inclusion. Race/ethnicity and age were restricted to 12- to 17-year-old African Americans. Participants had to provide parental or guardian consent to complete the survey. As for exclusion criteria, no youth below and above recommended age participated, and none were accepted without parental or guardian consent.

Limitations

Some of the limitations of this study include the use of secondary data and participant self-report. The data collected were not used to answer the research questions without involvement in the research design and instrument selection. For example, school

experiences may not provide information on reasons for obtaining certain substances from peers or obtaining specific grades in school. Another potential barrier is that the survey was self-report, which could result in answers that may be biased, and responses are dependent on participants' honesty and accuracy. Lastly, some adolescents might report their responses in a socially desirable manner.

Significance

This study is significant since cannabis blunt use disproportionately affects African American youth. Investigating school experiences could reduce blunt use among African American youth. The information provided from this study will address the gaps in the literature. It may assist in providing public health prevention specialists with information for developing culturally appropriate and age-specific interventions to meet the specific needs of African American youth. This study would add to the knowledge base about the risk factors associated with cannabis blunt use. Cannabis blunt use among youth contains a variety of health risks and damaging effects, including, smoking which causes damage to one's physical and mental health. Smoking typically occurs in conjunction with drinking alcohol or taking other drugs, which are illegal for teenagers, and addiction and dependency issues can arise, especially in impressionable young people (NIDA, 2020).

For the existing surveillance system, the NSDUH can help address the needs by providing vital health information on the US population. The conversation over the public health issue of cannabis blunt use continues in the public, the media, the substance use research community, and federal, state, and local policymakers. Therefore,

monitoring cannabis blunt use and attitudes toward use could help state and local policymakers plan and transfer resources to implement public health initiatives and programs to address cannabis blunt use. Moreover, public health practitioners are social change agents through research, advocacy, and policies to improve youth and, ultimately, the public's health.

The power of this study is that the research will inform the ultimate intervention program to contribute to a positive social change. This study's social change implications for health educators and public health interventionists may include collaborating with community organizations to develop substance use prevention interventions that prioritize African American youth and their needs. The intervention could consist of the support of family and friends and the use of social media to sustain accountability of drug-free environments. Health policies and public health campaigns addressing cannabis use will be essential to reduce adolescent cannabis blunt use, improving substance use health outcomes.

Summary

Blunts are a progressively prevalent way to smoke cannabis (Antognoli et al., 2018; Giovenco et al., 2017) and might be linked with the rise of tobacco and cannabis among adolescents (Fairman, 2015; Timberlake, 2009). Kong et al. (2017) reported that among US adolescents, 40% that ever used a cigarillo or little cigar use them to construct blunts. Interestingly, blunt users handle nicotine by touching the tobacco wrap (Kim et al., 2021). Additionally, they inhale significant carbon monoxide than non-blunt users who smoke cannabis wrapped in a rolling cigarette paper (Meier & Hatsukami, 2016).

Blunt users have also reported that the co-use of both products enhances, extends, or equalizes the effect of cannabis (Albert et al., 2020).

There is considerable research that shows cognitive and psychological impairments due to cannabis blunt use. According to the Youth Risk Behavior Survey (YRBS) data, high school students with a greater prevalence of unsafe behaviors were more likely to have poorer grades (Kann et al., 2018). Further, adolescents that reported having peers that participate in drug use were more likely to use cannabis. King et al. (2019) reported an association between cannabis use and academic achievement that shows low academic performance, negative attitudes toward school, and highly significant devaluation of school. However, there is still limited information on the role of school experiences of African American youth and cannabis blunt use. This quantitative research study will explore the association with school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) and cannabis blunt use.

Conclusion

Few studies associate blunts with alternative forms of cannabis use. Early results indicate from existing studies that blunt users are at an elevated danger for poor health effects compared to other cannabis users, such as joints or edibles (Fairman 2015; Montgomery & Oluwoye, 2016). Adolescents are confronting enormous demands daily to smoking cannabis. Moreover, the demands come from peer groups, tobacco marketers, or family members consuming either tobacco or cannabis products or co-using, which increases the pressure to begin smoking for adolescents (NIDA, 2020). Likewise,

adolescents spend a tremendous amount of time at school where they can potentially become compelled to smoke by peers, friends, or family members to fit in. On the other hand, adolescents may begin smoking as a coping method for mental health reasons such as depression, anxiety, or to deal with stressful situations (Ruybal & Crano, 2020). Thus, this study is needed to clarify the factors associated with cannabis blunt smoking among African American youth from 12 to-17 years of age.

The study of cannabis blunts and their relationship to smoking behavior, especially among youth, remains evolving and requires further investigation. Section 2 will provide a detailed description of the methodological approach for this study, including a detailed data analysis plan.

Section 2: Research Design and Data Collection

Introduction

Underage recreational cannabis use in the United States is a public health concern. Since the medicalization, decriminalization, and legalization of cannabis in many U.S. states, adolescents might mistakenly consider cannabis a harmless leisure drug for consumption (National Conference of State Legislatures [NCSL], 2020). Conversely, cannabis and tobacco co-use in teenagers contains various health risks and adverse effects, including affecting the adolescent brain and respiratory system (CDC, 2020). Using cannabis habitually before 25 years of age can have long-lasting, detrimental effects on brain development and can cause lung damage, addiction, and a litany of other health effects (CDC, 2020; NIDA, 2020). No other studies have examined school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) with a particular type of cannabis and tobacco co-use, blunts, among African American youth ages 12 to 17. Youth blunt smoking is a public health issue and needs immediate consideration.

This section discusses the central tenets of the study's research design and data collection process. The variables, the research questions, population selection and size, sampling and its procedure, a data analysis plan, primary research questions, and threats to validity are described.

Research Design and Rationale

Helmenstine (2016) described variables as a group of values in a research experiment or study where the dependent variables are the test's outcome based on

neighboring factors of influence. In this study, the independent variable was African American youth, and the dependent variables were school experiences (e.g., feelings about the lessons learned, grades, personal feelings about school, etc.) and cannabis blunt use. The covariates were age, gender, and the use of other drugs (alcohol and tobacco). Oppositely, independent variables are fixed variables that cannot be changed when tested and are not influenced by neighboring factors (Helmenstine, 2016). Multiple methods exist to control age, gender, or use of different drugs (alcohol and tobacco) in the multiple regression analysis models. For example, the analysis of covariance (ANCOVA) test evaluates whether the means of a dependent variable are equal across levels of categorical independent variables while statistically controlling for the effects of other continuous variables not of primary interest (Wickens & Keppel, 2004). The ANCOVA approach treats the covariates as stable variables such as age at the time of the data collection. Another variation of this approach is to use a stepwise analysis, including the control variables as potential predictors (Draper & Smith, 1998). Stepwise regression methods could help a researcher understand the possible predictors in the model.

A quantitative research design is used to test and examine relationships among variables in a study. The choice of a quantitative cross-sectional study design allows for a large sample size from the nationally representative database, NSDUH, which has data readily available. Likewise, the data set provides a wide array of information, allows for statistical analysis to analyze complex questions, and generalizes findings to the population (Creswell, 2009). In addition, a quantitative study design can assist in streamlining the complicated questions to a few controllable variables and connecting

them using the concepts of association or relationship and is helpful for testing theories or hypotheses (Creswell, 2009). This quantitative research design was aligned with the research questions, which offered an enhanced understanding in discovering whether there is a relationship between blunt use and school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) among African American youth, 12 to 17.

Methodology

Data Source

In the present study, I conducted secondary analysis of the 2019 NSDUH data. NSDUH is sponsored by SAMHSA and the U.S. Department of Health and Human Services. SAMHSA's Center for Behavior Statistics and Quality manages the study, which seeks to detect the overall prevalence and related variables to substance abuse in the United States.

Study Population

A national sample of African American students, Grades 7 to 12 ($n = 1,781$) in the United States completed the NSDUH survey. All participants were 12 years of age or older. Involvement in the study was nonmandatory. Students who did not want to participate or who had parents or guardians who did not want them to participate were excluded from the study. Participants self-reported themselves as African American.

Sampling Strategy

A representative sample of U.S. non-institutionalized citizens from the 2019 NSDUH data who self-identified as African American or Black, from 12 to 17 years of

age, were selected through a stratified and multistage area probability sampling process within each state and D.C. census tract. Within each state, sampling regions were selected, followed by census block groups within census tracts and area segments within census block groups. Lastly, dwelling units were selected within segments, and within each selected dwelling unit, up to two residents were selected for face-to-face survey interviews. Computer-assisted interviews were provided in participants' homes. NSDUH study methods support truthfulness and keep responses confidential; however, instances of underreporting and overreporting may occur.

Operationalization

The covariates include age, which will be trichotomized: 12–13 years, 14–15 years, and 16–17 years. Gender will be dichotomized into two categories: male or female. Covariate use of other drugs (alcohol or tobacco). Adolescent cannabis blunt use will be the dependent or response variable for each research question and is a dichotomous variable. Independent variables also include school experiences and will be measured on a scale. The statistical test for each research question will be multiple binary logistic regression.

School experiences will be a calculated subscale score. School experiences will be assessed through the following 12 items from NSDUH (2019):

1. Have you attended any type of school at any time during the past 12 months? (1 = Yes, I attended school; 2 = No, I did not attend school)
2. Have you been home-schooled at any time during the past 12 months? (1 = Yes, I was home-schooled; 2 = No, I was not home-schooled)

3. Which of the statements below best describes how you felt overall about going to school during the past 12 months? (1 = You liked going to school a lot; 2 = You kind of like going to school; 3 = You didn't like going to school very much; 4 = You hated going to school)
4. During the past 12 months, how often did you feel that the schoolwork you were assigned to do was meaningful and important? (1 = Always; 2 = Sometimes; 3 = Seldom; 4 = Never)
5. How important do you think the things you have learned in school during the past 12 months are going to be to you later in life? (1 = Very important; 2 = Somewhat important; 3 = Somewhat unimportant; 4 = Very unimportant)
6. How interesting do you think most of your courses at school during the past 12 months have been? (1 = Very interesting; 2 = Somewhat interesting; 3 = Somewhat boring; 4 = Very boring)
7. During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your schoolwork? (1 = Always; 2 = Sometimes; 3 = Seldom; 4 = Never)
8. What were your grades for the last semester or grading period you completed? (1 = An 'A+', 'A', or 'A-minus' average; 2 = A 'B+', 'B', or 'B-minus' average; 3 = A 'C+', 'C', or 'C-minus' average; 4 = A 'D', or less than a 'D', average; 5 = My school does not give these grades)
9. How many of the students in your grade at school would you say smoke cigarettes? (1 = None of them smoked cigarettes; 2 = A few of them smoked

cigarettes; 3 = Most of them smoked cigarettes; 4 = All of them smoked cigarettes)

10. How many of the students in your grade at school would you say use marijuana or hashish? (1 = None of them used marijuana or hashish; 2 = A few of them used marijuana or hashish; 3 = Most of them used marijuana or hashish; 4 = All of them used marijuana or hashish)
11. How many of the students in your grade at school would you say drink alcoholic beverages? (1 = None of them drink alcoholic beverages; 2 = A few of them drink alcoholic beverages; 3 = Most of them drink alcoholic beverages; 4 = All of them drink alcoholic beverages)
12. How many of the students in your grade at school would you say get drunk at least once a week? (1 = None of them get drunk at least once a week; 2 = A few of them get drunk at least once a week; 3 = Most of them get drunk at least once a week; 4 = All of them get drunk at least once a week)

The use of other drugs, such as alcohol and cigarettes, will be assessed through the following six items (NSDUH, 2019):

1. How many of the students in your grade at school would you say smoke cigarettes? (1 = None of them smoked cigarettes; 2 = A few of them smoked cigarettes; 3 = Most of them smoked cigarettes; 4 = All of them smoked cigarettes);
2. How many of the students in your grade at school would you say use marijuana or hashish? (1 = None of them used marijuana or hashish; 2 = A few of them used

- marijuana or hashish; 3 = Most of them used marijuana or hashish; 4 = All of them used marijuana or hashish)
3. How many of the students in your grade at school would you say drink alcoholic beverages? (1 = None of them drink alcoholic beverages; 2 = A few of them drink alcoholic beverages; 3 = Most of them drink alcoholic beverages; 4 = All of them drink alcoholic beverages)
 4. How many of the students in your grade at school would you say get drunk at least once a week? (1 = None of them get drunk at least once a week; 2 = A few of them get drunk at least once a week; 3 = Most of them get drunk at least once a week)
 5. Have you ever smoked part or all of a cigar with marijuana in it? (0 = Yes, I have smoked part of or all of a cigar with marijuana in it; 1 = No, I have smoked part of or all of a cigar with marijuana in it)
 6. How old were you the first time you smoked part or all of a cigar with marijuana in it? (Age Range: 1-110)

Power Analysis

To determine the number of participants in each group, the power of the relationship across variables must be calculated through a power analysis. Furthermore, the effect size and power should be constructed to determine the required number of subjects needed to discover an effect of a particular size (UCLA: Statistical Consulting Group, 2021). The first research question's primary statistical test will be multiple logistic regression; however, because the plan is to compare three groups (ages 12–13,

14–15, and 16–17), this requires a power analysis for a one-way ANOVA (see Table 1). The minimum sample size to compare three groups using G*Power (Faul et al., 2007) suggests 53 participants per group ($N = 159$). The sample size would be adequate. In the second research question, a priori power analysis was conducted using G*Power (Faul et al., 2007) based on the power analyses (see Table 2) under z tests using the statistical test for logistic regression. The model determined the minimum required sample size for a multiple binary logistic regression study, the desired probability level, the number of predictors in the model, the anticipated effect size, and the desired statistical power level. Given the desired statistical power of 80% for detecting a medium effect size with an alpha level of 0.05, the minimum sample size required was 786 for logistic regression. The sample size would be sufficient and would meet the minimum requirements for the statistical test.

Table 1*Power Analysis Output Research Question 1*

F tests - ANOVA:	Fixed effects, omnibus, one-way
Analysis:	A priori: Compute required sample size
Input: Effect size f	0.25
α err prob	0.05
Power (1- β err prob)	0.8
Number of groups	3
Output: Noncentrality parameter λ	9.9375
Critical F	3.0540042
Numerator df	2
Denominator df	156
Sample size group 1	53
Sample size group 2	53
Sample size group 3	53
Total sample size	159
Actual power	0.8048873

Table 2*Power Analysis Output Research Question 2*

z tests	Logistic regression
Options:	Large sample z-Test, Demidenko (2007) with variance correction
Analysis:	A priori: Compute required sample size
Input: Tail(s)	Two
Odds ratio	1.493827
Pr(Y=1 X=1) H0	0.45
α err prob	0.05
Power (1- β err prob)	0.8
R ² other X	0
X distribution	Binomial
X parm π	0.5
Output: Critical z	1.959964
Total sample size	786
Actual power	0.8002452

Data Analysis Plan

To examine the study hypothesis, IBM SPSS Statistical Software, version 28.0 will be used. Since the data is secondary data, slight data cleaning will be needed. The variables pertaining to the study will be utilized. However, the data will be coded for analytical intent. The research questions and analogous null and alternative hypotheses for this study are as demonstrated:

RQ1: Is there a significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender?

H_01 : There is no significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

H_{a1} : There is a significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

RQ2: Does the association between school experiences and cannabis blunt use among African American youth (12–17) differ based on the use of other drugs (alcohol and tobacco)?

H_02 : There is no association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

H_{a2}: There is an association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

The study used several statistical approaches. Descriptive statistics was used to describe the data, for example, frequency distributions, means, and percentages. Descriptive statistics compared baseline qualities of the variables to compare differences in means and proportions about the observed group (Simpson, 2015). Likewise, inferential statistics used the same data to make a generalization about the larger population (Laerd Statistics, 2018). According to the literature, where descriptive statistics are limited in so much, they allow one to make synopses about the population, inferential statistics allow one to generalize regarding the assets or boundaries of the population studied (Laerd Statistics, 2018).

In research question 1 (RQ1), the primary statistical test was multiple binary logistic regression. Additionally, the statistical test, ANOVA, was used to compare three groups (ages 12-13, 14-15, 16-17) and their school experiences. The outcome variable for both research questions is cannabis blunt use. Cannabis blunt use is dichotomous and school experiences are scale items. Chi-square analysis measured the differences in gender and blunt use and ANOVA measured the differences in age and school experiences. The contribution of each of the covariates (age, gender) was explained. Finally, multiple binary logistic regression was used to determine whether the variables differ by statistical significance, using the corresponding p-value, set at an alpha level of 0.05.

In research question 2 (RQ2), multiple binary logistic regression was used to predict study outcomes of whether the relationship between school experiences and blunt use differed when controlling for other drugs (alcohol and tobacco). The variables were examined individually and collectively. The results were described by the level of variability between and among groups, using degrees of freedom, and F and p-value estimations, set at an alpha level of 0.05. The output of the results was translated and visually exhibited using SPSS model summary tables.

Threats to Validity

The NSDUH offers current information on cannabis, mental health, and other health-related issues in the US (2020). This data set serves a valuable role in exploring behavioral health in adolescents since the data has already been collected and could potentially address the need for more localized data (Hughes et al., 2016). The NSDUH is also administered by a federal agency, Substance Abuse and Mental Health Services Administration (SAMHSA), that collects national and state data on tobacco, alcohol, and illicit drugs, and on mental health across the US, and there are national and ethical standards in place to protect identifiable data from participants (Shi & Johnson, 2014). Within each state, patterns of substance use, and attitudes might contrast rural and urban populations. Data on smaller geographic areas help provide awareness on cannabis use and attitudes about cannabis that help state and local public health authorities better understand and address the needs in the unique communities by tailoring appropriate public health initiatives and programs (Hughes et al., 2016).

The NSDUH is an ongoing data set maintained and managed through governmental organizations that uphold and respect scientific rigor. Moreover, several peer-reviewed published studies have used the NUSDUH data set for their ongoing research, which helps strengthen internal and external validity. Conversely, a potential threat to validity would be privacy, a significant concern in surveillance. However, there are protections to safeguard against personally identifiable information being exposed. Efforts to eliminate this issue ensure privacy during data collection and securely stored data (Walden University, 2018).

Ethical Procedures

The data for this study are de-identified to prevent the researcher from seeing or having any personal information regarding the participants. This study used secondary data and did not include any participant identifiable information. Furthermore, there were no direct involvement during the sample selection and data collection methods in this research. Results are reported in the aggregate and not on individual data. An application to the Walden Intuitional Review Board (IRB) for permission to analyze data and conduct this study was submitted and approved.

Summary

Cannabis blunt use among African American youth is of concern. According to Jackson et al. (2016), cannabis is the most used recreational drug in the US. Its use in adolescence is linked to declines in intellectual functioning, brain development, heart and lung health, and academic achievement. At this age, adolescents often feel invincible and do not quite understand the full ramifications of their actions. Moreover, peer pressure

and family dynamics do not help the situation. Therefore, research is currently needed to establish whether the relationship between school experiences and cannabis blunt use among African American students exists to fill the specific gaps present in the professional literature. This section has outlined the data source, study population, sampling strategy, data analysis plan, and application to this research study.

The potential social change for this study was a better understanding of how school experiences and blunt use among African American adolescents is related and could lead to the development of interventions that target cannabis blunt smoking in this demographic. Previous studies have found that African Americans have a greater rate for alcohol and cannabis co-use compared to alcohol use only (Banks et al., 2017; Montgomery et al., 2019), which is significant to follow and to discover if and how cannabis blunt use and other drugs (alcohol or tobacco) might influence the association between cannabis blunt use among African American adolescents and school experiences. In section 3 of this proposal, a detailed description of data collection was provided for the secondary data set, including the report of descriptive statistics, reported statistical analysis using tables to demonstrate results, and a summary of the answers to the research questions for this study.

Section 3: Presentation of the Results and Findings

Introduction

The purpose of this study was to research the relationship of school experiences and cannabis blunt use among African American youth ages 12–17. Two research questions directed this study. Using secondary data, the research questions were prepared to determine the relationship of blunt smoking in African American youth (12–17) and school experiences by calculating a subscale score based on NSDUH items using the corresponding p value, set at an alpha level of 0.05. The research questions were addressed based on the study variables in the data set. The covariates were age and gender. In this section, I discuss the results of the data analysis in relation to the research questions and whether to reject the null hypothesis for each research question. The specific research questions and hypotheses that guided the study were:

RQ1: Is there a significant relationship between school experiences (independent/predictor variable) and cannabis blunt use (dependent/outcome variable) among African American youth (12–17) when controlling for age and gender?

H_01 : There is no significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

H_{a1} : There is a significant relationship between school experiences and cannabis blunt use among African American youth (12–17) when controlling for age and gender.

RQ2: Does the association between school experiences and cannabis blunt use among African American youth (12–17) differ based on the use of other drugs (alcohol and tobacco)?

H_02 : There is no association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

H_{a2} : There is an association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol and tobacco).

Data Collection of Secondary Data Set

The study was reviewed by the Walden University Institutional Review Board (IRB) as a secondary deidentified data analysis for the 2019 NSDUH. Approximately 70,000 individuals, ages 12 and older, were randomly chosen from all 50 states and the District of Columbia to partake in the survey during January to December 2019. Over 70% of adolescents interviewed, from 12 to 17 years of age, responded to the NSDUH in 2019. Participants completed the survey through a computer-assisted interview method and were aware of the voluntary and confidential nature of all answers. After the data were downloaded from the NSDUH website, a review of the data dictionary led to locating and selecting the proper variables to study. The process for data cleaning were employed to decipher the data for investigative use.

Descriptive Statistics for Covariates

The research questions were examined using the information provided in the 2019 NSDUH data set. The sample included 1,781 respondents. The results contain descriptive statistics for the independent variable (school experiences, e.g., feelings about the lessons learned, grades in school, personal feelings about school, perceptions of alcohol use and other drugs from other students), the dependent variable was cannabis blunt use among African American youth ages 12–17, controlling for age and gender.

Independent Variables

School experiences were the independent variables for both research questions. Most students conveyed positive school experiences. However, 19.9% reported they hated/did not like going to school, 21.5% never/seldom felt the school work they were assigned was meaningful and important, 18.9% thought that things learned in school would be very unimportant/somewhat unimportant in the future, 24.5% thought that most of the courses were very boring/somewhat boring, 18.5% never/seldom had a teacher tell them they did a good job with school work, and 29.1% received C's, D's, or F's last semester. Lastly, 5.4% of students reported being home schooled, and 7% said they did not attend any type of school (e.g., elementary, middle, junior high, or high school) during the past 12 months.

Table 3*School Experiences and African American Students*

School experiences	<i>n</i>	(%)
Have you attended any type of school at any time during the past 12 months?		
Yes, I attended school	1,618	93%
No, I did not attend school	121	7%
Have you been home-schooled at any time during the past 12 months?		
Yes, I was home-schooled	7	5.40%
No, I was not home-schooled	122	94.60%
How have you felt overall about going to school during the past 12 months?		
Liked it a lot/Kind of liked it	1,300	80.10%
Hated it/Did not like it	323	19.90%
During the past 12 months, how often did you feel that the school work you were assigned to do was meaningful and important?		
Always/Sometimes	1,271	78.50%
Never/Seldom	349	21.50%
How important do you think the things you have learned in school during the past 12 months are going to be to you later in life?		
Very important/Somewhat important	1,315	81.10%
Very unimportant/Somewhat unimportant	306	18.90%
How interesting do you think most of your courses at school during the past 12 months have been?		
Very interesting/Somewhat interesting	1,223	75.50%
Very boring/Somewhat boring	397	24.50%
During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your school work?		
Always/Sometimes	1,322	81.50%
Never/Seldom	300	18.50%
What were your grades for the last semester or grading period you completed?		
A's/B's	1,084	70.90%
C's/D's/F's	445	29.10%

Note. N = 1,781; percentages refer to valid percentages; missing values excluded

RQ2 concerned the use of other drugs. In the data, 12.4% reported that all/most students in their grade smoke cigarettes, 36.9% reported that all/most students in their grade use marijuana, 26.4% reported that all/most students in their grade drink alcoholic beverages, and 12.2% reported that all/most students in their grade get drunk at least once a week.

Table 4

Use of Other Drugs and African American Students

Other drugs	<i>n</i>	(%)
How many of the students in your grade at school would you say smoke cigarettes?		
None/A few	1,370	87.60%
All/Most	194	12.40%
How many students in your grade at school would you say use marijuana?		
None/A few	983	63.10%
All/Most	576	36.90%
How many students in your grade at school would you say drink alcoholic beverages?		
None/A few	1,139	73.60%
All/Most	408	26.40%
How many students in your grade at school would you say get drunk at least once a week?		
None/A few	1,335	87.80%
All/Most	185	12.20%

Note. N = 1,781; percentages refer to valid percentages; missing values excluded

Dependent Variable

The dependent variable cannabis blunts for RQ1 and RQ2 is listed in Table 5. The data were reported by African American students and the information indicates if a student has ever smoked part or all of a cigar with marijuana in it. A total of 1,766 students ages 12 to 17, who were African American, responded with a yes or a no.

Overall, 14.9% ($n = 229$) of African American male and female students ages 12–17 reported that they had ever smoked part or all of a cigar with marijuana in it. Concerning cannabis blunt use based on age and gender, 5.1% of 12- to 13-year-olds reported smoking a cigar with marijuana or cannabis in it, 11.3% of 14- to 15-year-olds, and 30.5% of 16- to 17-year-olds reported smoking cigars with marijuana or cannabis in it. African American male youth 16- to 17-year-olds were more likely to have ever smoked a cigar with marijuana in it than female students or students ages 14 to 15 years and 12 to 13 years.

Table 5

Descriptive Statistics – Cannabis Blunts

	Age	Male	Female	Total
Have you ever smoked part or all of a cigar with marijuana in it?				
Yes	12–13	14	14	28
	14–15	32	27	59
	16–17	73	69	142
	Total			229
No	12–13	274	276	550
	14–15	255	267	522
	16–17	228	237	465
	Total			1,537

Note. $N = 1,766$; missing values excluded

Covariates

The age and gender covariates are depicted in Table 6. Participants for this study included 1,781 African American youth ages 12 to 17. Of this national sample, 49.6% were African American male youth ($n = 884$), and 50.1% were African American female youth ($n = 897$). The age categories for this survey were trichotomized with 32.7% ($n = 582$) of African American youth 12 to 13 years old, 33.1% ($n = 589$) of African American

youth 14 to 15 years old, and 34.3% ($n = 610$) of African American youth 16 to 17 years old.

Table 6

Descriptive Statistics for Covariates – Age and Gender

Age	Male	Female	Frequency	Percent
12–13	289	293	582	8
14–15	293	296	589	8.1
16–17	302	308	610	8.4
Total	884	897	1781	24.5

Note. N = 1,781; missing values excluded

Inferential Statistics for Primary Variables

In the following section, I explain the inferences and conclusions regarding the research variables and questions. The results contain inferential statistics for the dependent variable (blunt use), the independent variables (school experiences), and covariates (age and gender).

To determine the relationship between school experiences and cannabis blunt use among African American youth (12–17), the following test offered understanding into the relationship. Multiple binary logistic regression analysis was used to determine if there is a relationship between school experiences and cannabis blunt use controlling for age and gender. The total model was significant ($p = .000$) and accounted for 7.6% to 14.1% of the variance. The model was a good fit. (Hosmer and Lemeshow, chi-square = 15.309, $df = 8$, $p < .053$). The associated statistical test in Table 7 demonstrates the regression model. All school experiences were above the test significance, which was above the alpha level of 0.05. Therefore, I accept the null hypothesis that there is no significant relationship between school experiences and cannabis blunt use. The predictor variable or

independent variable, school experiences, in the multiple binary logistic regression analysis was found to not contribute to the model.

The covariate, gender, in the logistic regression analysis was found to not contribute to the model. However, the covariate, age, was significant to the final model. The unstandardized beta weight for the constant; $B = (5.567)$, $SE = .433$, $Wald = 165.615$, $p < .001$. The unstandardized Beta weight for the covariate, age; $B = (-.914)$, $SE = .116$, $Wald = 62.265$, $p < .001$. The estimated odds ratio favored a decrease for every age group by 40% [$Exp (B) = 0.401$, 95% CI (0.319, 0.503)] the likelihood of not smoking a cigar with marijuana in it.

Table 7

Final Model Multiple Binary Logistic Regression School Experiences and Blunt Use, Controlling for Age and Gender

Variables in the equation		B	SE	Wald.	df	Sig.	95% C.I. for EXP(B)		
							Exp(B)	Lower	Upper
Step 1a	Gender(1)	-0.026	0.164	0.025	1	0.874	0.974	0.707	1.343
	Age	-0.914	0.116	62.265	1	.000	0.401	0.319	0.503
	Which of the statements below best describes how you felt about going to school during the past 12 months?	-0.199	0.116	2.950	1	0.086	0.819	0.652	1.029
	During the past 12 months, how often did you feel that the schoolwork you were assigned to do was meaningful and important?	-0.105	0.113	0.869	1	0.351	0.900	0.721	1.123
	How important do you think the things you have learned in school during the past 12 months are going to be to you later in life?	-0.144	0.110	1.733	1	0.188	0.866	0.698	1.073
	How interesting do you think most of your courses at school during the past 12 months have been?	-0.143	0.12	1.410	1	0.235	0.867	0.684	1.098
	During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your schoolwork?	0.083	0.1	0.678	1	0.410	1.087	0.892	1.324
	What were your grades for the last semester or grading period you completed?	-0.24	0.1	5.799	1	0.016	0.786	0.647	0.956
	Constant	5.567	0.43	165.615	1	0	261.63		

Note. N = 1,625; missing values were excluded; $p < .001$

Multiple binary logistic regression was computed to determine whether there was an association between school experiences and cannabis blunt use among African American youth (12-17) based on the use of other drugs (alcohol, tobacco cigarettes, and marijuana). The related statistical test in Table 8 demonstrates the regression model. The total model was significant ($p = <.001$) and accounted for 12.6% to 23.0% of the variance. The model was a good fit. (Hosmer and Lemeshow, chi-square = 16.957, $df = 8$, $p < .031$). The statistical test was below the alpha level of .05, which was significant when students were asked how many of the students in your grade at school would you say use marijuana or hashish. Therefore, RQ2 result is to accept the alternative hypothesis (H_a) that there is an association between school experiences and cannabis blunt use based on the use of other drugs. All other predictor variables or independent variables did not contribute to the final binary logistic regression model. The unstandardized Beta weight for the Constant; $B = (5.369)$, $SE = .427$, $Wald = 158,331$, $p < .001$. The unstandardized Beta weight for the predictor or independent variable for those students that thought many students were using marijuana or hashish; $B = (-1.224)$, $SE = .133$, $Wald = 85.004$, $p < .001$. The estimated odds ratio favored an increase for students who thought many students were using marijuana or hashish by 29% [$Exp(B) = 0.294$, 95% CI (0.227, 0.381)] the likelihood of those same students smoking a cigar with marijuana in it.

Table 8

Final Model Multiple Binary Logistic Regression School Experiences and Blunt Use Based on Use of Other drugs

Variables in the equation		B	SE	Wald.	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	Which of the statements below best describes how you felt about going to school during the past 12 months?	-0.145	0.119	1.481	1	0.224	0.865	0.685	1.093
	During the past 12 months, how often did you feel that the schoolwork you were assigned to do was meaningful and important?	-0.125	0.121	1.072	1	0.301	0.883	0.697	1.118
	How important do you think the things you have learned in school during the past 12 months are going to be to you later in life?	-0.088	0.117	0.564	1	0.453	0.916	0.728	1.152
	How interesting do you think most of your courses at school during the past 12 months have been?	-0.006	0.128	0.002	1	0.964	0.994	0.774	1.277
	During the past 12 months, how often did your teachers at school let you know when you were doing a good job with your schoolwork?	0.078	0.105	0.548	1	0.459	1.081	0.88	1.328
	What were your grades for the last semester or grading period you completed?	-0.137	0.103	1.761	1	0.184	0.872	0.712	1.068
	How many of the students in your grade at school would you say smoke cigarettes?	0.286	0.128	4.943	1	0.026	1.331	1.034	1.712
	How many of the students in your grade at school would you say use marijuana or hashish?	-1.224	0.133	85.004	1	<.001	0.294	0.227	0.381
	How many of the students in your grade at school would you say drink alcoholic beverages?	-0.145	0.143	1.038	1	0.308	0.865	0.654	1.144
	How many of the students in your grade at school would you say get drunk at least once a week?	0.107	0.14	0.581	1	0.446	1.113	0.845	1.466
	Constant	5.369	0.427	158.33	1	<.001	214.65		

Note. N = 1,625; missing values were excluded; $p < .001$

Summary

The current study questions attempted to analyze the relationship of school experiences and cannabis blunt use among African American youth from ages 12-17 years. There were two research questions that guided this study. Using secondary data from the 2019 National Survey on Drug Use and Health (NSDUH), school experiences such as how students felt about school, the importance of the things they learned at school, teacher encouragement, and their grades were predictor variables to determine if there was an outcome for potential cannabis blunt use. The sample size included 1,781 respondents that participated in the 2019 NSDUH. Qualifying questions or selection criteria questions such as, (1) Have you attended any type of school at any time during the past 12 months? And (2) Have you been home-schooled at any time during the past 12 months? Was not included in the final model since it was determined that those cases would not apply if they were not in the traditional school environment.

Data contained in the 2019 NSDUH data set was used to conduct the descriptive and inferential analyses. The International Business Machines Corporation (IBM) Statistical Package for Social Science (SPSS) software standard version 28.0 was used to conduct the statistical analyses.

For RQ1, the primary statistical test was multiple binary logistic regression to describe the relationship between school experiences (independent/predictor variable) and cannabis blunt use (dependent/outcome variable) of African American youth (12-17) when controlling for age and gender. However, a deviation to the data analysis plan, chi-square and ANOVA was not appropriate due to the format in the data. All school

experiences were above the test significance, which was above the alpha level of 0.05. Therefore, I accepted the null hypothesis and there was no significant relationship between school experiences and cannabis blunt use. The covariate, gender, in the final statistical analysis was found to not contribute to the model. However, the covariate, age, was significant to the final model. The estimated odds ratio favored a decrease for every age group by 40% [Exp (B) = 0.401, 95% CI (0.319, 0.503)] the likelihood of not smoking a cigar with marijuana in it.

For RQ2, multiple binary logistic regression was computed to determine whether there was an association between school experiences and cannabis blunt use among African American youth (12-17) based on the use of other drugs (alcohol, tobacco cigarettes, and marijuana). The associated p value of .000 was below the alpha level of .05 when students were asked how many of the students in your grade at school would you say use marijuana or hashish. There was a statistical relationship observed. Thus, RQ2 result was to accept the alternative hypothesis (H_a) that there was an association between school experiences and cannabis blunt use based on the use of other drugs. The estimated odds ratio favored an increase for students who thought many students were using marijuana or hashish by 29% [Exp (B) = 0.294, 95% CI (0.227, 0.381)] the likelihood of those same students smoking a cigar with marijuana in it.

All variables that were significant in the univariate analyses were retained for the final multiple binary logistic regression model. The final model significantly predicted cannabis blunt use among older youth, 16-17 years old, male, and students that thought all/most students in their grade used marijuana. The results and output tables for this

research study deliver findings on the relationship between school experiences and cannabis blunt use among African American students. Chapter 3 reported the results of the research questions. In the next chapter, the interpretation of the study findings will be given. Furthermore, the application for professional practice and implications for social change will be considered.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

Cannabis use in adolescents is an alarming public health issue. According to the Monitoring the Future Survey of 2019, the number of adolescents who used cannabis increased from 7.5% to 14% in high-school seniors in 2018 to 2019 (National Institute on Drug Abuse [NIDA], 2020). Nearly 4% of adolescents reported using cannabis blunts in the past 30 days; the highest rate was among African American (5.4%) adolescents, followed by Hispanic adolescents (4.3%), and White adolescents (3.8%; Montgomery et al., 2018). Furthermore, cannabis blunt use is seen as a less habit-forming drug and more organic than cigarettes (Sinclair et al., 2012).

Multiple considerations have been mentioned for the explanation for cannabis blunt use among adolescents, including social acceptability compared to other substances (e.g., tobacco cigarettes) and low danger perceptions (Roditis et al., 2016). However, adolescents do not often share a common definition on what is considered a blunt, i.e., cannabis and/or tobacco use, or neither (Cohn et al., 2016; Montgomery et al., 2018). Thus, there is a clear need to define cannabis blunt use to adolescents and researchers to obtain precise health information. In this research, I focused on whether there is a relationship between school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school) and cannabis blunt use among African American students, ages 12 to 17. There is a need to further explore the information about the predictors of cannabis blunt use in African American students.

The approach for this study was a retrospective and quantitative analysis utilizing the 2019 NSDUH. The variables used to determine any statistical associations were school experiences (e.g., feelings about the lessons learned while at school, grades in school, and personal feelings about school, etc.) and cannabis blunt use among African American students ages 12 to 17. Results from RQ1 found no significant relationship between school experiences and cannabis blunt use of African American youth (12–17) when controlling for age and gender. However, there was a statistical relationship observed in RQ2. RQ2 asked whether there was an association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol, tobacco cigarettes, and marijuana). The associated *p* value of .000 showed to be below the alpha level of .05, for when students were asked how many of the students in their grade at school would they say use marijuana or hashish. The final model predicted cannabis blunt use among older youth, 16–17 years, male youths, and students that thought all/most students in their grade used marijuana.

Interpretation of the Findings

The outcomes of the study are similar to other studies on school experiences and cannabis blunt use among African American youth ages 12–17. While there are few studies in which researchers have studied the effect of school experiences with cannabis blunt use among youth, there are study commonalities with several former studies on the predictors of cannabis blunt smoking and the use of other drugs (e.g., alcohol or non-blunt marijuana use). Peer perceptions of cannabis use and demographic data on school experiences are worth highlighting and observing.

For RQ1, the results showed no relationship between school experiences (independent/predictor variable) and cannabis blunt use (dependent/outcome variable) among African American youth (12–17) when controlling for age and gender. The results showed that the associated p value of .000 did not reach significance, which was above the alpha level of .05. Therefore, I accepted the null hypothesis that there was no significant relationship between school experiences and cannabis blunt use. The independent or predictor variable, school experiences, in the multiple binary logistic regression analysis was found to not contribute to the model. Additionally, the covariate, gender, in the final statistical analysis was found to not contribute to the model. However, the covariate age was significant to the final model.

According to previous studies, the occurrence of cannabis blunt use is elevated among older adolescents and young adults when combining use with other drugs and cannabis use alone (Cohn et al., 2016; Montgomery et al., 2019). However, no studies have looked at school experiences as a potential factor for cannabis blunt use among African American students ages 12–17. This study adds to the literature by demonstrating that older African American students have increased odds to using cannabis blunts. In fact, great percentages of cannabis blunt use among African Americans have been reported among survey respondents of marijuana users and cigarette smokers particularly concerning with age and recent cannabis blunt use (Cohn et al., 2016; Kann et al., 2018; Montgomery et al., 2019). Further, as students age, they interact with more individuals who have potential to use cannabis and have future opportunities for easier access. More

opportunities for access have the potential for escalation of cannabis use (Vidourek et al., 2017).

For RQ2, multiple binary logistic regression was computed to determine whether there was an association between school experiences and cannabis blunt use among African American youth (12–17) based on the use of other drugs (alcohol, tobacco cigarettes, and marijuana). The associated *p* value of .000 was below the alpha level of .05 when students were asked how many of the students in their grade at school would they say use marijuana or hashish. There was a statistical relationship observed. All other predictor variables or independent variables did not contribute to the final multiple binary logistic regression model. The estimated odds ratio favored an increase for students who thought many students were using marijuana or hashish by 29% the likelihood of those same students smoking a cigar with marijuana in it.

The findings are consistent with the current literature that youth who believe that all or most students in their grade are using cannabis are more likely to use themselves. Students might feel compelled to use cannabis if others in their social group are using too. Moreover, youth who use cannabis are more likely than youth who do not use cannabis to believe their friends or peers use cannabis too (Roditis et al., 2016). According to the literature, African American students who think their friends use cannabis are at an elevated risk for cannabis use (King et al., 2019; Roditis et al., 2016; Vidourek et al., 2017). Overall, youth who know or are in contact with peers who use alcohol, cannabis, and other drugs are at risk for potential substance use (King et al., 2019).

The final model significantly predicted cannabis blunt use among older youth, 16–17-year-old students who thought all/most students in their grade used marijuana. Overall, this study highlights the combined health effects associated with the dual use of cigars and cannabis rolled up to form a blunt, a specific process for cannabis use. The evidence from this study provides support that school-based drug prevention programs are needed and could inform and develop targeted prevention and interventions, especially for African American youth.

Interpretation of the Alignment of the Theory of Planned Behavior

The TPB model was used because it can provide an explanation of human decision making through a predictive outline. In this study, the model was valuable to assess cannabis blunt smoking in the school environment because youth spend a significant amount of time at school. The health and functioning of youth in the context of the school environment has not been abundantly studied as it pertains to cannabis blunt smoking, specifically for African American youth (12–17). The TPB proposes that behavioral execution relies on both the intention and ability or behavioral control (Ajzen, 1991). Additionally, TPB differentiates between the three types of beliefs, behavioral, normative, and control. Consequently, the central element to TPB is behavioral intent. Behavioral intentions are prompted by attitude about a behavior, which will have the expected outcome and the subjective appraisal of the risks and benefits of that outcome.

Behavioral Level

At the behavioral level, the motivational characteristics impact a specific behavior. For instance, a youth's parents, guardians, or family members could be

instrumental in determining their beliefs and thoughts or attitudes about drug use, particularly with cannabis blunt smoking (Jessor et al., 1998). At the behavioral level of TPB, the stronger the intention to perform the behavior, the more likely the behavior will be performed. Parents and guardians who monitor and support their children with well-defined directives will help to deter negative behaviors (King et al., 2015). However, despite the impact of the home environment, the effect of the family over health behaviors decreases as youth reach adulthood and become progressively open to messages from their peers and the media (Jessor et al., 1998). To prevent addiction to or dependency on drugs in later stages of life, researchers have increasingly called for health promotion interventions that target early adolescents in the school and family environment (Kimmel, 2018).

Normative Level

At the normative level, subjective norms suggest the notion of whether most people approve or disapprove of the behavior. Subjective norms are social pressures, and this involves both perceived expectations of others and how much the person places significance in those opinions. The normative beliefs are the social norms which are operating as the authority on the person's social network of peers who are fortifying the smoking of cannabis blunts, the behavioral intention (Glanz et al., 2015). In addition, these norms relate to the attitudinal effects on the individual that lack knowledge and awareness of cannabis blunt smoking and feel a lower level of perceived power to stop the drug from controlling their social life. Thus, the socialization aspect of the drug is a

powerful influence to engage an individual in their motivation and intention to comply with the practice.

Control

Perceived behavioral control is how a person feels about performing the behavior of interest. For youth, reacting to stressors are what prompt smoking cannabis blunts as the coping mechanism for what they are experiencing within their social environment. Moreover, perceived behavioral control varies across situational context and actions, which results in a person having varying perceptions of behavioral control depending on the situation. Therefore, youth that increase their risk-taking behaviors because of their desire to relieve themselves of identity-related stressors is present in the problem of cannabis blunt smoking (Malmberg et al., 2012). Furthermore, youth are at higher risk for anxiety-related stressors due to the overall lack of development to cope with challenges within their social environment (Malmberg et al., 2012).

Study Limitations

Limitations to this study are as follows. First, the sample was delimited to African American students in grade 7 through 12. Therefore, results cannot be generalized to other populations. Secondly, the study utilized self-reported data that are dependent on participants' truthful and accurate responses. Thirdly, some students might have responded in socially pleasing ways, which may bias results. Lastly, causal relationships could not be established since data were cross-sectional in nature.

Study Recommendations

Despite the noted limitations, this study provides an ongoing investigation to the knowledge on the analyses of school experiences in African American youth ages 12 to 17 years old and cannabis blunt smoking. Additionally, the study expands the knowledge on the school environment and youth risk taking behaviors. The need for health promotion programming in historically disenfranchised and vulnerable communities is vital, through education and awareness. Moreover, it is important to have health promotion interventions that will address the issues and challenges and provide a solution that is culturally relevant and competent. The goal of the health promotion program would be to reduce cannabis use rates among African American youth populations. Future studies would need to expand research on reasons for cannabis use and overall perceptions on cannabis in a wider demographic, amongst 18-21-year-olds and other racial/ethnic groups. More research is needed to comprehend cultural explanations and perceived social norms among African American youth and cannabis use.

Implications to Professional Practice

Teenagers spend more time in school than any other indoor environment outside their home. The health and performance of children in the context of the school environment, needs to be further explored. Various papers have mentioned individual (e.g., coping style, non-risk perceptions) (Trapl et al., 2018; Montgomery et al., 2019) and environmental (e.g., neighborhood, environment, or social-media) (Roditis et al., 2016; Vidourek et al., 2017; Kong et al., 2018) influences that encourage the level of risk for harmful substance abuse-related effects among African Americans. Moreover,

teenagers are facing daily pressures to begin smoking. Anxiety-related behaviors and exclusion from peers may prompt teenagers to smoke cannabis as a coping mechanism for stressors in their daily social environment (Glanz, Rimer, & Viswanath, 2015; Ajzen, 1991). Although cannabis blunts are an alternative to conventional cigarette smoking, it contains nicotine as well as cannabis, and the effects may last longer and the mental highs are higher (Marianai et al., 2011; Sifaneck et al., 2005). The effect of cannabis blunts on the youth brain, their outward physical health, their academic achievements, and the effect to others around them with secondhand smoke, create an energetic call to action for parents/guardians, and school administrators for a positive social change (CDC, 2019).

Prevention and treatment interventions are needed to address the adverse health effects of cannabis blunts and other drugs among African American adolescents. A health education and awareness intervention would help parents/guardians, youth, and school administrators, and promote positive social change. Specifically, a school-based cannabis use prevention program, in addition to those dealing with other drugs, is a way to teach youth how to maintain a healthy lifestyle and deter from drug and substance use (Rural Health Information Hub, 2020; Kropski, Keckley & Jensen 2008). Moreover, a health education program that educates students on the hazards of smoking cannabis and nicotine. A health education program that instructs school staff to identify cannabis and nicotine use at school, such as smells and signs to look out for in youth. Particularly, youth attitude and behavior or providing information and communication to parents about these tobacco products and their exclusion at school.

Furthermore, there is evidence of low frequency of tobacco use in adolescents who attend and participate in after-school programs when health education is not the focus during the school-day curriculum (Boys and Girls Clubs of America, 2017; Eisenberg & Hutton, 2015). By implanting educational material in valid engaging learning events in after-school programs, health education programs can present positive significant and appealing alternatives than additional schooling after school (Shernoff & Vandell, 2008; Walker et al., 2005). For instance, programs might reflect on reforming after-school homework sessions to include arts and academic enrichment activities that are relevant to the population being served. Such as adding a physical activity dimension that has youth standing up and engaging with the environment and others in a positive and interesting way. Consequently, positive activities are what young people need to develop their character and life skills to improve academic achievement and meet their life goals (Shernoff & Vandell, 2008).

After-school programs provide another opening for bringing health education that is pertinent to tobacco and cannabis prevention intervention in schools. In fact, over 10 million students in grades K-12 attend an after-school program and 19.4 million have stated they would attend an after-school program if available in their area (Afterschool Alliance, 2014). Health educators are skilled professionals that present information to target populations on health topics including the health benefits or risks they encounter and offer tools to build competency and encourage behavior change for the appropriate audience and settings (Rural Health Information Hub, 2023). Likewise, healthier youth learn lifelong skills, and in a time where this knowledge might not be offered in health

education during the school day since attention is geared on academic subjects, the after-school environment is a unique and crucial time for youth (Nabors et al., 2015).

Ultimately, the potential health outcomes offset the cost of the intervention since the interventions are free to acquire and they are from an approved evidence-based source, and implementing these interventions will improve population health outcomes (Bhattacharya, 2013).

Conclusion

Public health educators and interventionists should be kept up-to date on effective messaging for health promotion and prevention. The early years of health research focused on clinical care settings and not considering the individual's life, culture, or environment. Therefore, research was simply not integrating the whole person rather treating their illness and then in later years the shift began to promote health education (Roundtable on Health Literacy, Board on Population Health, & Institute of Medicine, 2014). Health education is health decision making based on one's understanding of basic health information and making appropriate decisions pertaining to their health. Public health educators and interventionists help people to realize the significance of taking control of their own health and health decision matters. For example, youth targeted entertainment education (EE) messages via television or Internet videos were reported to have higher refusal efficacy in rural youth receiving urban curriculum on substance use (Shin, Miller-Day, Hecht, & Krieger, 2018). EE is a resource for health professionals and through narratives one could transmit appropriate health messages.

Moreover, health messages could employ a story consisting of a plot, character, setting, and keep the audience engaged and entertained during the narrative. Prevention stories which focus on healthy eating habits, regular exercise, adolescent substance refusal, or self-care, for instance, help to promote awareness, knowledge, and encourage healthy behavior change relevant to literacy and social marketing (Shin, Miller-Day, Hecht, & Krieger, 2018). Consequently, a health promotion intervention with youth should consider youth culture's worldview of immortality (Reyna & Farley, 2006). Equally, youth tend to have high-risk taking behaviors due to their eternal worldview of themselves (Reyna & Farley, 2006). Ultimately, it is fundamental to reframe the message to fit the context of the youth population being served.

Similarly, not everyone receives informational messages on health in the same way. For example, some people are verbal learners while others require visual cues and imagery to understand a message (Parker & Thorson, 2009). The challenge would be to communicate a message that reaches a broad audience and is understood in various forms of communication (e.g., web-based trainings, scenario-based, knowledge checks, video clips). Subsequently, a successful health prevention intervention would utilize communication technologies that help people make informed decisions about their own health and tailor the messaging to fit the skills and abilities of the youth population the intervention would be conducted on. This study suggests the need for effective prevention and intervention programs that address African American youth school experiences and cannabis blunt smoking. Recommendations were made to support school

professionals, the community, and parents/guardians in protecting youth from risky behaviors, and the discussion of future research aims.

References

- Afterschool Alliance. (2014). Afterschool essentials: Research and polling.
<https://afterschoolalliance.org/aa3pm/national.html>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261. <https://doi.org/10.1037/h0076477>
- Albert, E. L., Ishler, K. J., Perovsek, R., Trapl, E. S., & Flocke, S. A. (2020). Tobacco and marijuana co-use behaviors among cigarillo users. *Tobacco Regulatory Science*, 6(5), 306–317. <https://doi.org/10.18001/TRS.6.5.1>
- Antognoli, E., Koopman Gonzalez, S., Trapl, E., Cavallo, D., Lim, R., Lavanty, B., & Flocke, S. (2018). The social context of adolescent co-use of cigarillos and marijuana blunts. *Substance Use & Misuse*, 53(4), 654–661.
<https://doi.org/10.1080/10826084.2017.1355388>
- Audrain-McGovern, J., Rodriguez, D., Alexander, E., Pianin, S., & Sterling, K. L. (2019). Association between adolescent blunt use and the uptake of cigars. *JAMA Network Open*, 2(12), e1917001.
<https://doi.org/10.1001/jamanetworkopen.2019.17001>
- Azagba, S., & Sharaf, M. F. (2014). Binge drinking and marijuana use among menthol and non-menthol adolescent smokers: Findings from the youth smoking survey. *Addictive Behaviors*, 39(3), 740–743.

<https://doi.org/10.1016/j.addbeh.2013.12.005>

Bahji, A., & Stephenson, C. (2019). International perspectives on the implications of cannabis legalization: A systematic review & thematic analysis. *International Journal of Environmental Research and Public Health*, *16*(17), 3095.

<https://doi.org/10.3390/ijerph16173095>

Bandura, A. (1969). Social-learning theory of identificatory processes. In D. A. Goslin (Ed.), *Handbook of socialization theory and research* (pp. 213–262). Rand McNally & Company.

Banks, D. E., Rowe, A. T., Mpofu, P., & Zapolski, T. (2017). Trends in typologies of concurrent alcohol, marijuana, and cigarette use among U.S. adolescents: An ecological examination by sex and race/ethnicity. *Drug and Alcohol Dependence*, *179*, 71–77. <https://doi.org/10.1016/j.drugalcdep.2017.06.026>

Bhattacharya, D. (2013). *Public health policy: Issues, theories, and advocacy*. Jossey-Bass.

Boys and Girls Clubs of America. (2017). *Measuring the impact of Boys and Girls Clubs: 2016 national outcomes report*.

Buu, A., Dabrowska, A., Heinze, J. E., Hsieh, H. F., & Zimmerman, M. A. (2015). Gender differences in the developmental trajectories of multiple substance use and the effect of nicotine and marijuana use on heavy drinking in a high-risk sample. *Addictive Behaviors*, *50*, 6–12.

<https://doi.org/10.1016/j.addbeh.2015.06.015>

Bryan, J., Moore-Thomas, C., Gaenzle, S., Kim, J., Lin, C. H., & Na, G. (2012). The

effects of school bonding on high school seniors' academic achievement. *Journal of Counseling & Development*, 90(4), 467–480. <https://doi.org/10.1002/j.1556-6676.2012.00058.x>

- Catalano, R. F., Haggerty, K. P., Oesterle, S., Fleming, C. B., & Hawkins, J. D. (2004). The importance of bonding to school for healthy development: Findings from the social development research group. *Journal of School Health*, 74(7), 252–261. <https://doi.org/10.1111/j.1746-1561.2004.tb08281.x>
- Cavazos-Rehg, P., Krauss, M., Grucza, R., & Bierut, L. (2014). Characterizing the followers and tweets of a marijuana-focused Twitter handle. *Journal of Medical Internet Research*, 16(6), e157. <https://doi.org/10.2196/jmir.3247>
- Chen-Sankey, J. C., Choi, K., Kirchner, T. R., Feldman, R. H., Butler, J., 3rd, & Mead, E. L. (2019). Flavored cigar smoking among African American young adult dual users: An ecological momentary assessment. *Drug and Alcohol Dependence*, 196, 79–85. <https://doi.org/10.1016/j.drugalcdep.2018.12.020>
- Chen-Sankey, J. C., Mead-Morse, E. L., Le, D., Rose, S. W., Quisenberry, A. J., Delnevo, C. D., & Choi, K. (2021). Cigar-smoking patterns by race/ethnicity and cigar type: a nationally representative survey among U.S. adults. *American Journal of Preventive Medicine*, 60(1), 87–94. <https://doi.org/10.1016/j.amepre.2020.07.005>
- Center for Behavioral Health Statistics and Quality. (2015). Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health (HHS Publication No. SMA 15-4927, NSDUH Series H-50). Substance Abuse

- and Mental Health Services Administration. <http://www.samhsa.gov/data/>
- Centers for Disease Control and Prevention. (2020). Marijuana: How can it affect your health? <https://www.cdc.gov/marijuana/health-effects.html>
- Centers for Disease Control and Prevention. (2018). Marijuana and public health. <https://www.cdc.gov/marijuana/nas/index.html>
- Child Mind Institute. (2021). Parents' guide to substance use and mental health. Retrieved from <https://childmind.org/guide/parents-guide-to-co-occurring-substance-use-and-mental-health-disorders/>
- Cohn, A., Johnson, A., Ehlke, S., & Villanti, A. C. (2016). Characterizing substance use and mental health profiles of cigar, blunt, and non-blunt marijuana users from the National Survey of Drug Use and Health. *Drug and Alcohol Dependence*, 160, 105-111. <https://doi.org/10.1016/j.drugalcdep.2015.12.017>
- Corey, C. G., Dube, S. R., Ambrose, B. K., King, B. A., Apelberg, B. J., & Husten, C. G. (2014). Cigar smoking among US students: reported use after adding brands to survey items. *American Journal of Preventive Medicine*, 47(2), S28-S35. <https://doi.org/10.1016/j.amepre.2014.05.004>
- Creswell, J. (2009). Research design: Qualitative, quantitative and mixed methods approach, 3rd edition. SAGA Publications.
- Delnevo, C. D., Giovenco, D. P., Ambrose, B. K., Corey, C. G., & Conway, K. P. (2015). Preference for flavoured cigar brands among youth, young adults and adults in the USA. *Tobacco Control*, 24(4), 389–394. <https://doi.org/10.1136/tobaccocontrol-2013-051408>

- Draper, N. R., & Smith, H. (1998). *Applied regression analysis* (Vol. 326). John Wiley & Sons.
- Eggers, M. E., Lee, Y. O., Jackson, K., Wiley, J. L., Porter, L., & Nonnemaker, J. M. (2017). Youth use of electronic vapor products and blunts for administering cannabis. *Addictive Behaviors*, 70, 79-82.
<https://doi.org/10.1016/j.addbeh.2017.02.020>
- Eisenberg, D., & Hutton, D. (2016). Estimating the Return on Investment for Boys & Girls Clubs. Ann Arbor, Mich.: Institute for Social Research and School of Public Health at University of Michigan). Collective annual operating cost and lifetime estimates have been updated using. http://www.clevelandkids.org/wp-content/uploads/2016/03/Estimating-the-Return-on-Investment-for-Boys-Girls-Clubs_Univ-of-MI-20....pdf
- Fairman B. J. (2015). Cannabis problem experiences among users of the tobacco-cannabis combination known as blunts. *Drug and Alcohol Dependence*, 150, 77–84. <https://doi.org/10.1016/j.drugalcdep.2015.02.014>
- Fairman, B. J., & Anthony, J. C. (2018). Does Starting to Smoke Cigars Trigger Onset of Cannabis Blunt Smoking? *Nicotine & Tobacco Research*, 20(3), 355–361.
<https://doi.org/10.1093/ntr/ntx015>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.
<https://doi.org/10.3758/BF03193146>

- Giovenco, D. P., Miller Lo, E. J., Lewis, M. J., & Delnevo, C. D. (2017). "They're pretty much made for blunts": Product features that facilitate marijuana use among young adult cigarillo users in the United States. *Nicotine & Tobacco Research*, 19(11), 1359-1364. <https://doi.org/10.1093/ntr/ntw182>
- Glanz, K., Rimer, B.K., & Viswanath, K. (Eds). (2015). Health behavior: Theory, research, and practice (5th ed.). Jossey-Bass
- Golub, A., Johnson, B. D., & Dunlap, E. (2005). The growth in marijuana use among American youths during the 1990s and the extent of blunt smoking. *Journal of Ethnicity in Substance Abuse*, 4(3-4), 1–21.
https://doi.org/10.1300/J233v04n03_01
- Grobman, B., Wu, R., Jackson, A., Bold, K. W., Morean, M. E., Camenga, D. R., & Kong, G. (2021). First tobacco product tried among adolescents based on race/ethnicity and socioeconomic status. *Addictive Behaviors*, 113, 106666.
<https://doi.org/10.1016/j.addbeh.2020.106666>
- Gruber, S. A., Dahlgren, M. K., Sagar, K. A., Gönenc, A., & Killgore, W. D. (2012). Age of onset of marijuana use impacts inhibitory processing. *Neuroscience Letters*, 511(2), 89–94. <https://doi.org/10.1016/j.neulet.2012.01.039>
- Hahs-Vaughn, D. L., & Lomax, R. G. (2020). An introduction to statistical concepts. Routledge.
- Hall, W. (2015). What has research over the past two decades revealed about the adverse health effects of recreational cannabis use? *Addiction*, 110(1), 19-35.
[doi:10.1111/add.12703](https://doi.org/10.1111/add.12703)

- Helmenstine, T. (2016). What Is the difference between independent and dependent variables? <http://chemistry.about.com/od/chemistryterminology/a/What-Is-The-Difference-Between-Independent-And-Dependent-Variables.htm>
- Hughes, A., Lipari, R.N., & Williams, M.R. (2016). Marijuana use and perceived risk of harm from marijuana use varies within and across states. The CBHSQ Report: July 26, 2016. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.
- Jackson, N.J., Irons, D., Tuvblad, C., Jacono, W.G., McGue, M., Raine, A. & Baker, L.A. (2016). Impact of adolescent marijuana use on intelligence: Results from two longitudinal twin studies. *PNAS*, *133*(5). <https://doi.org/10.1073/pnas.1516648113>
- Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Risk and protection in successful outcomes among disadvantaged adolescents. *Applied Developmental Science*, *2*(4), 194-208. https://doi.org/10.1207/s1532480xads0204_3
- Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2016). *Monitoring the Future national survey results on drug use, 1975-2015: Overview, key findings on adolescent drug use*. Institute for Social Research.
- Jones, C. M., Clayton, H. B., Deputy, N. P., Roehler, D. R., Ko, J. Y., Esser, M. B., Brookmeyer, K. A., & Hertz, M. F. (2020). Prescription opioid misuse and use of alcohol and other substances among high school students - youth risk behavior survey, United States, 2019. *MMWR Supplements*, *69*(1), 38-46. <https://doi.org/10.15585/mmwr.su6901a5>
- Kalan, M. E., Jebai, R., Bursac, Z., Popova, L., Gautam, P., Li, W., & Taleb, Z. B.

- (2021). Trends and factors related to blunt use in middle and high school students, 2010–2020. *Pediatrics*, 148(1), e2020028159. <https://doi.org/10.1542/peds.2020-028159>
- Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., ... & Ethier, K. A. (2018). Youth risk behavior surveillance—United States, 2017. *MMWR Surveillance Summaries*, 67(8), 1. <https://doi.org/10.15585/mmwr.ss6708a1>
- Kelly, B. C. (2005). Bongs and blunts: Notes from a suburban marijuana subculture. *Journal of Ethnicity in Substance Abuse*, 4(3-4), 81–97. https://doi.org/10.1300/J233v04n03_04
- Kerr, W. C., Lui, C., & Ye, Y. (2018). Trends and age, period and cohort effects for marijuana use prevalence in the 1984-2015 US National Alcohol Surveys. *Addiction*, 113(3), 473–481. <https://doi.org/10.1111/add.14031>
- Kim, S., Murali, A., Allem, J. P., Unger, J. B., Boley Cruz, T., & Smiley, S. L. (2021). Instagram posts related to backwoods cigarillo blunts: Content analysis. *JMIR Public Health and Surveillance*, 7(2), e22946. <https://doi.org/10.2196/22946>
- Kimmel, H. L. (2018, April). Marijuana research at the National Institute on Drug Abuse. In 2019 Institute of Cannabis Research Conference. Colorado State University-Pueblo. Library.
- King, K. A., Vidourek, R. A., & Yockey, R. A. (2019). Does the association of school experiences and marijuana use differ based on age of African American high school students? *Journal of Substance Use*, 24(5), 550-555.

<https://doi.org/10.1080/14659891.2019.1620887>

Kogan, S. M., Cho, J., Brody, G. H., & Beach, S. R. (2017). Pathways linking marijuana use to substance use problems among emerging adults: A prospective analysis of young Black men. *Addictive Behaviors*, *72*, 86-92.

<https://doi.org/10.1016/j.addbeh.2017.03.027>

Kong, G., Cavallo, D. A., Goldberg, A., LaVallee, H., & Krishnan-Sarin, S. (2018). Blunt Use among Adolescents and Young Adults: Informing Cigar Regulations.

Tobacco Regulatory Science, *4*(5), 50–60. <https://doi.org/10.18001/TRS.4.5.5>

Kroon, E., Kuhns, L., Hoch, E., & Cousijn, J. (2020). Heavy cannabis use, dependence and the brain: a clinical perspective. *Addiction*, *115*(3), 559-572.

[doi:10.1111/add.14776](https://doi.org/10.1111/add.14776)

Kropski, J.A., Keckley, P.H., & Jensen, G.L. (2008). School-based obesity prevention programs: An evidence-based review. *Obesity*, *16*(5), 1009-1018.

<https://doi.org/10.1038/oby.2008.29>

Laerd Statistics. (2018). Descriptive and inferential statistics. Retrieved April 9, 2022.

<https://statistics.laerd.com/statistical-guides/descriptive-inferential-statistics-faqs.php>

Lipperman-Kreda, S., Lee, J. P., Morrison, C., & Freisthler, B. (2014). Availability of tobacco products associated with use of marijuana cigars (blunts). *Drug and Alcohol Dependence*, *134*, 337–342.

<https://doi.org/10.1016/j.drugalcdep.2013.10.022>

Lubman, D. I., Cheetham, A., & Yücel, M. (2015). Cannabis and adolescent brain

development. *Pharmacology & Therapeutics*, 148, 1-16.

<https://doi.org/10.1016/j.pharmthera.2014.11.009>

Malmberg, M., Overbeek, G., Vermulst, A. A., Monshouwer, K., Vollebergh, W. A., & Engels, R. C. (2012). The theory of planned behavior: Precursors of marijuana use in early adolescence? *Drug and Alcohol Dependence*, 123(1-3), 22-28.

<https://doi.org/10.1016/j.drugalcdep.2011.10.011>

Mandara, J., Rogers, S. Y., & Zinbarg, R. E. (2011). The effects of family structure on African American adolescents' marijuana use. *Journal of Marriage and Family*, 73(3), 557-569. <https://doi.org/10.1111/j.1741-3737.2011.00832.x>

Manning, K. C., Kelly, K. J., & Comello, M. L. (2009). Flavoured cigarettes, sensation seeking and adolescents' perceptions of cigarette brands. *Tobacco Control*, 18(6), 459-465. doi: 10.1136/tc.2009.029454

Mariani, J. J., Brooks, D., Haney, M., & Levin, F. R. (2011). Quantification and comparison of marijuana smoking practices: blunts, joints, and pipes. *Drug and Alcohol Dependence*, 113(2-3), 249–251.

<https://doi.org/10.1016/j.drugalcdep.2010.08.008>

Mayer, M. E., Kong, G., Barrington-Trimis, J. L., McConnell, R., Leventhal, A. M., & Krishnan-Sarin, S. (2020). Blunt and Non-Blunt Cannabis Use and Risk of Subsequent Combustible Tobacco Product Use Among Adolescents. *Nicotine & Tobacco Research*, 22(8), 1409–1413. <https://doi.org/10.1093/ntr/ntz225>

Meier, E., & Hatsukami, D. K. (2016). A review of the additive health risk of cannabis and tobacco co-use. *Drug and Alcohol Dependence*, 166, 6-12.

<https://doi.org/10.1016/j.drugalcdep.2016.07.013>

Montgomery, L., Clark, V. L. P., Twitty, D., Budney, A. J., Prochaska, J. J., & Winhusen, T. (2020). Is it “loud” enough? A qualitative investigation of blunt use among African American young adults. *Journal of Ethnicity in Substance Abuse*, 21(2), 747–761. <https://doi.org/10.1080/15332640.2020.1801548>

Montgomery, L., Zapolski, T., Banks, D. E., & Floyd, A. (2019). Puff, puff, drink: The association between blunt and alcohol use among African American adolescents and young adults. *The American Journal of Orthopsychiatry*, 89(5), 609–615. <https://doi.org/10.1037/ort0000400>

Montgomery, L., Heidelberg, K., & Robinson, C. (2018). Characterizing Blunt Use Among Twitter Users: Racial/Ethnic Differences in Use Patterns and Characteristics. *Substance Use & Misuse*, 53(3), 501–507. <https://doi.org/10.1080/10826084.2017.1341926>

Montgomery, L., McClure, E. A., Tomko, R. L., Sonne, S. C., Winhusen, T., Terry, G. E., Grossman, J. T., & Gray, K. M. (2019). Blunts versus joints: Cannabis use characteristics and consequences among treatment-seeking adults. *Drug and Alcohol Dependence*, 198, 105–111. <https://doi.org/10.1016/j.drugalcdep.2019.01.041>

Montgomery, L., & Oluwoye, O. (2016). The truth about marijuana is all rolled up in a blunt: prevalence and predictors of blunt use among young African–American adults. *Journal of Substance Use*, 21(4), 374–380. <https://doi.org/10.3109/14659891.2015.1037365>

Nabors, L., Burbage, M., Woodson, K. D., & Swoboda, C. (2015). Implementation of an after-school obesity prevention program: helping young children toward improved health. *Issues in Comprehensive Pediatric Nursing*, 38(1), 22-38.
<https://doi.org/10.3109/01460862.2014.973081>

National Conference of State Legislatures [NCSL]. (2020). State medical marijuana laws.
<https://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx>

National Institute on Drug Abuse [NIDA]. (2020). 2019 Monitoring the future survey raises worries about teen marijuana vaping. <https://www.drugabuse.gov/about-nida/noras-blog/2019/12/2019-monitoring-future-survey-raises-worries-about-teen-marijuana-vaping>.

National Institute on Drug Abuse [NIDA]. (2020). Marijuana Research Report. Is marijuana addictive. <https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-addictive>

National Institute on Drug Abuse [NIDA]. (2019). Marijuana Drug Facts. How do people use marijuana? <https://www.drugabuse.gov/publications/drugfacts/marijuana>

Pacek, L. R., Malcolm, R. J., & Martins, S. S. (2012). Race/ethnicity differences between alcohol, marijuana, and co-occurring alcohol and marijuana use disorders and their association with public health and social problems using a national sample. *The American Journal on Addictions*, 21(5), 435–444.
<https://doi.org/10.1111/j.1521-0391.2012.00249.x>

Parker, J.C., & Thorson, E. (Eds.). (2009). Health communication in the new media landscape. Springer Publishing Company.

- Partnership for Drug-Free Schools. (2021). Ways marijuana is used: A guide for parents. Retrieved from <https://drugfree.org/article/ways-marijuana-used-parents-guide/>
- Ramo, D. E., Liu, H., & Prochaska, J. J. (2012). Tobacco and marijuana use among adolescents and young adults: a systematic review of their co-use. *Clinical Psychology Review, 32*(2), 105–121. <https://doi.org/10.1016/j.cpr.2011.12.002>
- Reboussin, B. A., Green, K. M., Milam, A. J., Furr-Holden, C. D., & Ialongo, N. S. (2014). Neighborhood environment and urban African American marijuana use during high school. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 91*(6), 1189–1201. <https://doi.org/10.1007/s11524-014-9909-0>
- Reboussin, B. A., Hubbard, S., & Ialongo, N. S. (2007). Marijuana use patterns among African-American middle-school students: a longitudinal latent class regression analysis. *Drug and Alcohol Dependence, 90*(1), 12–24. <https://doi.org/10.1016/j.drugalcdep.2007.02.006>
- Resnick, E. A., & Siegel, M. (2013). Marketing public health: Strategies to promote social change (3rd ed.). Jones and Bartlett Learning.
- Reyes, M. R., Brackett, M. A., Rivers, S. E., Elbertson, N. A., & Salovey, P. (2012). The interaction effects of program training, dosage, and implementation quality on targeted student outcomes for the RULER approach to social and emotional learning. *School Psychology Review, 41*(1), 82-99. <https://doi.org/10.1080/02796015.2012.12087377>
- Reyna, V. F., & Farley, F. (2006). Risk and rationality in adolescent decision making: Implications for theory, practice, and public policy. *Psychological Science in the*

Public Interest, 7(1), 1-44. <https://doi.org/10.1111/j.1529-1006.2006.00026.x>

Roditis, M. L., Delucchi, K., Chang, A., & Halpern-Felsher, B. (2016). Perceptions of social norms and exposure to pro-marijuana messages are associated with adolescent marijuana use. *Preventive Medicine*, 93, 171-176.

<https://doi.org/10.1016/j.ypmed.2016.10.013>

Roundtable on Health Literacy, Board on Population Health and Public Health Practice, Institute of Medicine [IOM]. (2014). Implications of health literacy for public health: Workshop summary. Washington (DC): National Academies Press (US).

<https://www.ncbi.nlm.nih.gov/books/NBK242436/doi:10.17226/18756>

Rural Health Information Hub (RHIfhub). (2023). Health education.

<https://www.ruralhealthinfo.org/toolkits/health-promotion/2/strategies/health-education#:~:text=Health%20education%20presents%20information%20to,Courses>

Rural Health Information Hub (RHIfhub). (2020). School-based tobacco prevention and cessation programs.

<https://www.ruralhealthinfo.org/toolkits/tobacco/2/schools/prevention-cessation>

Ruybal, A. L., & Crano, W. D. (2020). Parental influences on adolescent major depressive symptoms and marijuana use. *International Journal of Mental Health and Addiction*, 1-13. <https://doi.org/10.1007/s11469-019-00194-y>

Salmanzadeh, H., Ahmadi-Soleimani, S. M., Pachenari, N., Azadi, M., Halliwell, R. F., Rubino, T., & Azizi, H. (2020). Adolescent drug exposure: A review of evidence for the development of persistent changes in brain function. *Brain Research*

Bulletin, 156, 105-117. <https://doi.org/10.1016/j.brainresbull.2020.01.007>

Schauer, G. L., Rosenberry, Z. R., & Peters, E. N. (2017). Marijuana and tobacco co-administration in blunts, spliffs, and mulled cigarettes: A systematic literature review. *Addictive Behaviors*, 64, 200-211.

<https://doi.org/10.1016/j.addbeh.2016.09.001>

Shernoff, D. J., & Schmidt, J. A. (2008). Further evidence of an engagement–achievement paradox among US high school students. *Journal of Youth and Adolescence*, 37, 564-580. <https://doi.org/10.1007/s10964-007-9241-z>

Shi, L. & Johnson, J.A. (2014). Novick & Morrow’s public health administration:

Principles for population-based management (3rd ed). Jones & Bartlett.

Shin, Y., Miller-Day, M., Hecht, M. L., & Krieger, J. L. (2018). Entertainment-Education videos as a persuasive tool in the substance use prevention intervention “keepin’ it REAL”. *Health Communication*, 33(7), 896–906.

[doi:10.1080/10410236.2017.1321163](https://doi.org/10.1080/10410236.2017.1321163)

Sifaneck, S. J., Johnson, B. D., & Dunlap, E. (2005). Cigars-for-blunts: Marketing of flavored tobacco products to youth and minorities. *Journal of Ethnicity and Substance Abuse*, 4(3-4), 23-42. https://doi.org/10.1300/J233v04n03_02

Simpson S. H. (2015). Creating a data analysis plan: What to consider when choosing statistics for a study. *The Canadian Journal of Hospital Pharmacy*, 68(4), 311–317. <https://doi.org/10.4212/cjhp.v68i4.1471>

Sinclair, C. F., Foushee, H. R., Pevear, J. S., 3rd, Scarinci, I. C., & Carroll, W. R. (2012). Patterns of blunt use among rural young adult African-American men. *American*

Journal of Preventive Medicine, 42(1), 61–64.

<https://doi.org/10.1016/j.amepre.2011.08.023>

Soller, B., & Lee, J. P. (2010). Drug-intake methods and social identity: The use of marijuana in blunts among Southeast Asian adolescents and emerging adults.

Journal of Adolescent Research, 25(6), 783-806.

<https://doi.org/10.1177/0743558410376828>

Sterling, K. L., Fryer, C. S., & Fagan, P. (2016). The most natural tobacco used: a qualitative investigation of young adult smokers' risk perceptions of flavored little cigars and cigarillos. *Nicotine & Tobacco Research*, 18(5), 827-833.

<https://doi.org/10.1093/ntr/ntv151>

Sterling, K. L., Fryer, C. S., Pagano, I., & Fagan, P. (2016). Little cigars and cigarillos use among young adult cigarette smokers in the United States: Understanding risk of concomitant use subtypes. *Nicotine & Tobacco Research*, 18(12), 2234–2242.

<https://doi.org/10.1093/ntr/ntw170>

Sweeney, M. M., Rass, O., DiClemente, C., Schacht, R. L., Vo, H. T., Fishman, M. J., ... & Johnson, M. W. (2018). Working memory training for adolescents with cannabis use disorders: a randomized controlled trial. *Journal of Child & Adolescent Substance Abuse*, 27(4), 211-226.

<https://doi.org/10.1080/1067828X.2018.1451793>

Timberlake, D. S. (2013). The changing demographic of blunt smokers across birth cohorts. *Drug and Alcohol Dependence*, 130(1-3), 129-134.

<https://doi.org/10.1016/j.drugalcdep.2012.10.022>

- Trapl, E., & Koopman Gonzalez, S. J. (2017). Adolescent marijuana use and co-occurrence with tobacco use: Implications for tobacco regulation. *Journal of Applied Research on Children*, 8(2), 4. <https://doi.org/10.58464/2155-5834.1336>
- Trapl, E. S., & Koopman Gonzalez, S. J. (2018). Attitudes and risk perceptions toward smoking among adolescents who modify cigar products. *Ethnicity & Disease*, 28(3), 135–144. <https://doi.org/10.18865/ed.28.3.135>
- UCLA: Statistical Consulting Group. (2021). Introduction to power analysis. Retrieved April 9, 2022. <https://stats.oarc.ucla.edu/other/mult-pkg/seminars/intro-power/>
- U.S. Department of Health & Human Services Substance Abuse & Mental Health [SAMHSA]. (2020). National survey on drug use and health (NSDUH). <https://www.datafiles.samhsa.gov/sites/default/files/field-uploads-protected/studies/NSDUH-2018/NSDUH-2018-datasets/NSDUH-2018-DS0001/NSDUH-2018-DS0001-info/NSDUH-2018-DS0001-info-codebook.pdf>
- United Nation. (n.d.) Definition of youth. <https://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf>
- Verweij, K. J., Huizink, A. C., Agrawal, A., Martin, N. G., & Lynskey, M. T. (2013). Is the relationship between early-onset cannabis use and educational attainment causal or due to common liability? *Drug and Alcohol Dependence*, 133(2), 580–586. <https://doi.org/10.1016/j.drugalcdep.2013.07.034>
- Vidourek, R. A., King, K. A., & Montgomery, L. (2017). Psychosocial determinants of marijuana use among African American youth. *Journal of Ethnicity in Substance Abuse*, 16(1), 43 <https://doi.org/10.1080/15332640.2015.1084256>

Voisin, D. R., Kim, D. H., & Hong, J. S. (2018). A closer look at school bonding among African American adolescents in low-income communities: A latent class analysis. *Journal of Health Psychology, 23*(11), 1424-1437.

<https://doi.org/10.1177/1359105316658970>

Walden University Center for Research Quality. (2018). Research ethics & compliance: Research ethics approval checklist. Retrieved from Walden University Center for Research Quality. (2018). Research ethics & compliance: Research ethics approval checklist.

https://drive.google.com/file/d/18IvIxV_bRW74BDpnZK8InNm4u8QIAM4G/view

Werts, M., Urata, J., Watkins, S. L., & Chaffee, B. W. (2021). Flavored Cannabis Product Use Among Adolescents in California. *Preventing Chronic Disease, 18*, E54.

<https://doi.org/10.5888/pcd18.210026>

Wickens, T. D., & Keppel, G. (2004). Design and analysis: A researcher's handbook. Pearson Prentice-Hall.

Wright, D. R., & Fitzpatrick, K. M. (2004). Psychosocial correlates of substance use behaviors among African American youth. *Adolescence, 39*(156), 653.

<https://www.proquest.com/scholarly-journals/psychosocial-correlates-substance-use-behaviors/docview/195935875/se-2>

Yiannakoulias, N. (2011). Understanding identifiability in secondary health data. *Canadian Journal of Public Health, 102*(4), 291-293.

<https://doi.org/10.1007/BF03404>