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Home Disruption and Substance Use: The Moderated-Mediating Role of Family Conflict and Stress among Racial-Ethnic Minoritized College Students

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Abstract

The COVID-19 pandemic has disproportionately impacted first-generation college students who identify as racial-ethnic minorities (REM). Aside from the academic and health repercussions caused by COVID-19, little is known if home disruptions have increased substance use for REM college students. Specifically, increased home disruptions may directly relate to substance use and indirect relationships through increased family conflict and stress. Therefore, this master's thesis examined the direct relationships between home disruption and substance use. I also examined the relationships between home disruption and family conflict, as well as home disruption and stress. Further, I also investigated the relationships between family conflict and substance use, as well as stress and substance use during the COVID-19 pandemic. Finally, I also examined if family conflict and stress mediate the relationship between home disruption and substance use among racial-ethnic minoritized (REM) college students, in addition to determining whether first-generation student status moderates the relationship between home disruption and substance use.. Using the Spit for Science data set created by Virginia Commonwealth University (VCU), the variables of interest were analyzed using SPSS Version 27.0. Specifically, the mediation-moderation analyses, including syntax and data for probing and visualizing interactions, were generated in PROCESS Macro Version 3.4.1 in SPSS Version 27.0. We found that home disruption was significantly associated with both stress and family conflict. However, only stress was found to be associated with other substance use but not with alcohol or cannabis use. Additionally, we found that stress mediated the relationship between home disruption and other drug use.

Home Disruption and Substance Use: The Moderated-Mediating Role of Family Conflict and Stress among First-Generation Racial-Ethnic Minoritized College Students

Introduction

2020 and the years following have been undeniably solemn for many people living within the United States (U.S). This is particularly noticeable for racial-ethnic minoritized (REM) individuals with COVID-19 cases and deaths disproportionately affecting members of these communities (Boulware, 2020). The consequences of pandemic-related stressors, such as racism or financial concerns among REM college students, became evident during the COVID-19 pandemic (Harper, 2020). COVID-19 also disrupted the university curriculum and policy centered on improving the success of REM and marginalized student populations. For example, programs designed to improve peer support and cooperative learning were paused due to the inability to be transferred to an online interface (Kimble-Hill et al., 2020). Furthermore, the shift from attending campus regularly to being at a home setting also caused increased strain for REM college students due to new responsibilities at home (e.g., child care) or having to find work in "essential" businesses to support themselves financially (Walsh et al., 2021). REM college students, particularly those who identify as first-generation, also had a higher probability of living in places that were not as safe or free from physical and emotional violence, abuse, and substance use than other college student groups (Soria et al., 2020).

For many college students, the opportunity to live away from home offers a new sense of autonomy that drives them away from familial obligations. However, with stay-at-home orders, REM college students took on a parenting role in some households (Chin et al., 2022). A study conducted among community college students at a Hispanic Serving Institution (HSI) saw students not only helping their family pay rent with financial aid money but helping younger

siblings with technological trouble (Chin et al., 2022). Furthermore, Chin and colleagues (2022) also report that the increased family tension exacerbated chronic illnesses (e.g., skin conditions, multiple sclerosis) and mental health concerns. Family adversity and conflict have been implicated in numerous adverse consequences for individuals. For example, prolonged exposure to stress from family adversity has been associated with the impairment of health and development among people in various life stages, along with increasing the chances of substance use disorders during adolescence and adulthood (Herrenkohl et al., 2012; Herrenkohl et al., 2008).

Although studies are still being conducted to examine the magnitude of COVID-19 on the mental health of individuals in the U.S., substantial evidence suggests that the pandemic has increased stress levels among college students (Wang et al., 2020). A study conducted on 2031 college students uncovered that 71.26% of the participants reported a significant increase in stress during the pandemic, with 20.29% stating that the increase in stress was a result of living environments, such as returning home and working from home (Wang et al., 2020). Furthermore, the shift from in-person to online learning also increased concerns related to equity which is a problem facing many REM college students. For instance, REM college students are more likely to live in households that have limited internet access and also have limited access to quiet study areas (Basch, Covarrubias, & Wang, 2022). Due to how quickly the pandemic progressed, college institutions had limited time to train instructors on the holistic needs of their students (e.g., access to technology, internet; Basch et al., 2020)

Thus far, studies have shown that marginalized student populations are navigating heightened barriers related to academics, personal well-being, and home life during the pandemic as opposed to life before COVID-19 (Davis et al., 2021). However, to our knowledge, there have

not been investigations examining substance use among REM college students during the pandemic. Hence, the present study explores the impact of home disruption, stress, and family conflict on substance use among first-generation REM college students during COVID-19.

Literature Review

COVID-19 Impact on the REM Community

During the COVID-19 pandemic, it became apparent that vulnerable populations were the most affected by the health and economic repercussions caused by COVID-19. Tai and colleagues (2021) shared that members of the Black community accounted for 21.8% of COVID-19 cases in the U.S., and Hispanics accounted for 33.8% of cases. However, these groups constitute only 13% and 18% of the U.S. population. Furthermore, the effects of COVID-19 were further exacerbated by underlying health issues that unequally impact REM communities. Among the Black and Latine population, there is a high prevalence of comorbidities, including diabetes, hypertension, obesity, and coronary artery disease, and they are more likely to die prematurely from these causes when compared to Whites (Tai et al., 2021; Greenway et al., 2021). Scholars suggest that the persistent health and structural inequalities impacting Black and Latine communities, along with the compounding effects of the pandemic, will significantly reduce the overall life expectancy of individuals within these communities (Andrasfay & Goldman, 2021). Research also shows that individuals in the REM community have significantly higher uninsured rates when compared to the White community. Chronic illnesses compounded with a lack of affordable health insurance severely limit the quality of care REM individuals receive when contracting COVID-19 (Tai et al., 2021).

Like other crises, the COVID-19 pandemic also shed light on the economic inequalities impacting the REM community. While a large portion of the U.S. workforce had the opportunity

to work from home when stay-at-home orders went into effect, this privilege was not extended to all workers, many of whom come from historically marginalized backgrounds (Kantamneni, 2020). For example, essential industries such as grocery stores require "frontline workers" to continue working despite low wages and lacking personal protection equipment (Kantamneni, 2020; Kirby, 2020; Vavra, 2020). According to the Bureau of Labor Statistics (2022), these work sectors employ a high majority of Black, Asian, and Latine people. Since these populations historically have had lower wages and higher unemployment rates than Whites, the pandemic further contributed to the economic stress these populations were experiencing (Bureau of Labor Statistics, 2021; Vavra, 2020).

COVID-19 Impact on REM college students

Within the college student population, COVID-19 has required students to quickly adapt to their academic, housing, and social situations (Tasso et al., 2021; Molock & Parchem, 2021; Gopalan, Linden-Carmichael, & Lanza, 2022). As mitigation measures took place to limit the spread of the virus, many students experienced disruption within their academic and social environment. In accordance with previous research, social disruption in an academic setting can have adverse mental health and academic consequences for REM college students, particularly those with first-generation status (Gopalan et al., 2022).

For instance, among REM college students, the pandemic has caused numerous disruptions to their schooling, work, and living situations that can cause additional stressors related to academic progress, internship opportunities, and the ability to enter the workforce (Molock & Parchem, 2021). A qualitative study by Molock and Parchem (2021) captured the impact of the pandemic on REM college students and uncovered that many students reported several mental health challenges and experiences of racial discrimination. In particular, Asian

American students faced more frequent hate crimes and negative biases (e.g., Molock & Parchem, 2021), with some studies stating that 68% of Asian American young adults and their families experienced COVID-19-related discrimination, with approximately 15% of participants reporting verbal or physical assaults (Hahm et al., 2021). Compounded with the challenges of adapting to living in a world experiencing a pandemic and psychosocial stressors such as the killing of George Floyd during the summer of 2020, REM students are largely susceptible to both mental and physical ailments (Molock & Parchem, 2021).

In response to the pandemic, universities across the country switched to online courses and made additional accommodations for students (e.g., instruction time decreased; Copeland et al., 2021). Research conducted at the University of Vermont states that the transition to online learning and moving back to home residences may have mitigated the overall increase in stress in first-generation students. Notably, this same study also shares that uncertainty, isolation, and economic/health impacts may contribute to decreased mood and wellness among the students in the study (Copeland et al., 2021).

Substance Use among REM students

Substance use is an omnipresent public health issue due to its relations with numerous adverse mental and physical health outcomes such as mood disorders, addiction, and death (Egan et al., 2013). According to the Substance Abuse and Mental Health Services Administration (SAMHSA), alcohol and illicit drug use are more common among young adults than in any other age group (SAMHSA, 2019). Furthermore, evidence suggests that excessive drinking is more prominent among college students in comparison to non-college enrolled adults who are of similar age (Hayes et al., 2011; SAMHSA, 2018). Substance use has been implicated in numerous negative student outcomes, which include academic failure (Engs, Hanson, & Diebold,

1996), financial hardship (Rosen, Bailey, & Rosenheck, 2003), inhibited relationships (Newcomb, 1994), and compromised health outcomes (Wechsler et al., 2000). Scholars have hypothesized that a common factor contributing to students' substance use is their perception of substance use among their peers (Javier et al., 2013). Noticeably, the overestimation of peer substance use has been associated with individual substance use across different groups and populations, including college students and REM groups (LaBrie et al., 2010; Unger et al., 2000). Researchers have noted that possible motivations for problematic drinking behaviors among REM college students are related to conforming (LaBrie et al., 2011). A study by Straka and colleagues (2019) on college student motivation behaviors behind problematic drinking found that multiracial and Asian American students endorsed drinking as a method to fit in with social circles; however, Asian American students take on more protective behaviors towards drinking.

Prior studies have produced evidence showing different rates of substance use among college student ethnic groups. In a study conducted by McCabe and colleagues (2007) on 5,389 full-time undergraduate college students, the scholars uncovered that Black and Asian students had the lowest prevalence of drug use compared to Latine and White students. Within this study, the difference in substance use was minuscule between White and Latine students; however, Latine students had the highest rates of substance use and substance use-related problems compared to White, Black, and Asian students (McCabe et al., 2007).

Despite the vast literature exploring substance use among REM college students, most evidence involves students of color attending predominantly White institutions (Javier et al., 2013). Research exploring students of color's experiences in historically White institutions found that REM students experience significant rates of ethnic and racial microaggressions (Blume et

al., 2012). Ethnic and racial microaggressions are an additional source of stress for REM students due to students being put down or insulted because of their race and ethnicity (Sue et al., 2007). According to Blume and colleagues (2012), students of color who experience more microaggressions may have a greater risk for underage binge drinking and alcohol-related consequences. Conversely, there have been studies conducted among students that attend Hispanic-serving institutions (HSIs) and Historically Black Colleges and Universities (HBCUs) that show institutions such as these as possible moderators of substance use, specifically alcohol use (Vaughan et al., 2015; Hayes et al., 2009, Javier et al., 2013).

Evidence produced by Vaughan and colleagues (2015) suggests that the values in HSIs are intended to support Latine students, which can create a sense of belonging among students, reducing the risk of alcohol use. For Latine students attending non-HSIs, college norms in predominantly White institutions exhibit greater expectations for alcohol consumption among the college student population; hence HSIs provide a protective environment against alcohol use (Vaughan et al., 2015). Similarly, Black students attending a predominantly White university have a significantly higher chance of consuming alcohol, and binge drinking is significantly higher when compared to Black students attending HBCUs (Lewis, Likis-Werle, & Fulton, 2012; Hayes et al., 2009).

Home Disruption in Relation to Family Conflict and Stress

To limit the spread of COVID-19, mitigation strategies (e.g., stay-at-home orders, physical distancing) put in place by U.S public health officials caused various disruptions to the home environment for many people (Schmeer et al., 2021). Home disruption or instability has been conceptualized in various ways within the literature. A large portion of the research attributes housing disruption to the physical location an individual resides in, which can be

locations not suitable for human habitation or emergency housing shelters (Dickson-Gomez, McAuliffe, & Quinn, 2017). However, this posture limits other factors that contribute to housing disruption and risk for individuals, including relationships with whom people live, affordability, supportive mental health and substance use services, and perceived housing stability (Dickson-Gomez et al., 2017). One of the more apparent consequences for individuals experiencing home disruption is substance use (Cheng et al., 2014, Dickson-Gomez et al., 2017). Specifically, scholars have shared that disruption of home stability has been known to intensify alcohol and methamphetamine use among younger populations (Coady et al., 2007). A longitudinal study conducted among 536 individuals aged 14-26 found that 31% of the participants had increased drug use due to their negative living situation (Cheng et al., 2014). Research shows that a significant protective factor against alcohol and substance use was home stability (Roy et al., 2011), however, among REM and low-income households, stability and security are often elusive (Dickson-Gomez et al., 2017; Bratt, 2002). Despite the eviction moratoria established by local and state governments during COVID-19, a national survey conducted among 4,000 households found that REM households were more vulnerable to housing-related hardships than White households (Chun et al., 2020). Particularly, within low-income REM households, housing hardship disparities were more pronounced, especially among households with less liquid assets (Chun et al., 2020). Previous literature highlights that REM individuals are more likely to live in precarious housing situations, thus leaving them more prone to partake in alcohol and substance use during the pandemic (Chun et al., 2020; Jones & Grigsby-Toussaint, 2020; Dickson-Gomez et al., 2017).

Due to government policies and public health concerns, COVID-19 contributed to reduced access to support systems families, and individuals had outside their homes (Stark et al.,

2020). According to Family Stress Theory, normative and nonnormative events require families to adapt to normal functioning (Patterson, 2002). Family Stress Theory also posits that a family's ability to adapt to external and internal stressors depends on the number of resources (e.g., income, social support) and protective factors available (Patterson, 2002; Chaney, 2020). As stated by Boss (2002), strong home and family structures can experience pressure and disturbances that are severe and acute, to the point that the family and home system are incapacitated. The consensus within the literature puts the home environment as an integral component of the family's well-being (Bratt, 2002). A stable home environment provides psychosocial benefits, such as allowing individuals to acquire a positive sense of self and allowing an opportunity for empowerment (Bratt, 2002). Nevertheless, stressors that cause disruptions within the home can cause conflict within the family unit. Verdugo, Armenta, and Gonzalez-Lomeli (2011) investigated a family conflict that involved 200 Mexican housewives from three socioeconomic classes (low, middle, and low); the researchers found that negative habitability conditions, such as excessive noise, overcrowding, and lack of privacy contributed to family conflict. Additionally, the scholars noted that negative habitual conditions were mainly among the participants from lower socioeconomic brackets. Research has shown that financial stress is a major contributor to home instability (e.g., Frederick et al., 2014). Specifically, a family's financial well-being is affected by a crisis, and the ensuing stress can cause conflict within families (Pattavina, Socia, & Zuber, 2015). Uncertainty within households during the pandemic was an ever-present concern, especially within REM and low-income families. Due to the limited knowledge of how the virus spread, government policies, and public health guidelines brought instability to REM and low-income households due to disruptions in financial assistance and employment (Godinic, Obrenovic, & Khudaykulov, 2020). A study conducted among 644

families found that households that experienced higher material hardship levels and unpredictability experienced more family conflict during the pandemic (Liu et al., 2022). Furthermore, compared to White families, REM, and low-income families experienced significantly higher material hardship levels and predictability, which elevated their risk of experiencing family conflict.

Scholars have also acknowledged that the home environment is a key factor in determining the mental health of individuals (Evans, Well, & Moch, 2003). For instance, home overcrowding has been associated with psychological distress (Krieger & Higgins, 2002), and noisy home environments can contribute to higher levels of anxiety among individuals (Suglia, Duarte, & Sandel, 2011). More importantly, instability within the home can cause individuals to feel that they do not have control over their lives, which impacts their overall stress levels (Kang, 2021). Contributing factors associated with the home environment that are known to increase stress levels among individuals include but are not limited to fear of eviction, inability to contact property management, lack of repairs, frequent moving, and affordability (Suglia, Chambers, Sandel, 2015). Within the REM community, food insecurity is a major factor that impacts the home's stability. Studies have shown that food insecurity is prevalent among low-income REM households, particularly within immigrant households (Coleman et al., 2016; Chilton et al., 2009). Despite public assistance programs to limit food insecurity, immigrants are less likely to seek help from government agencies due to stigmatization and discrimination, which further inhibits their ability to overcome distress (Huang & King, 2018). To illustrate, a mixed-methods study conducted with 84 Latine adults found that Latina mothers faced the brunt of the financial stress caused by the pandemic (Blanco et al., 2021). Latina mothers faced not only greater utility bills but also the burden of being unable to provide regular nutrition for their children, thus

greatly increasing the risk for home instability and chronic stress (Hamelin, Habicht, & Beaudry, 1999; Bassuk et al., 1997).

Among REM households and families, COVID-19 has had numerous negative implications that have altered the family structure. For instance, among Black families with elderly members living within the household, the virus has limited the opportunity for elderly Black Americans to confide with people they trust and love to reduce the chances of contracting COVID-19 (Chaney, 2020). This was particularly true among elderly Blacks who live in nursing homes or receive care in hospitals (Mack et al., 2020). As school closures started, families experienced home disruption as parents were now responsible for hosting their children's education at home (Blanco et al., 2021). A mixed-methods study conducted with 84 Latine adults found that Latina mothers sustained the burden when children were required to conduct schooling from home (Blanco et al., 2021). Aside from the increase in household and childcare responsibilities, Latina mothers also experienced financial disruption, which impacted the ability of children to have access to regular nutrition due to the decrease in household income. Based on the Household Pulse Survey conducted from April 2020 to March 2021, during seven days, over one-fifth of children in Black and Latine households are living in a home where they are not eating enough, which is three times higher than White children (Keith-Jennings, Nchako, & Llobrera, 2021). However, among the various ethnic-racial groups, Black households were likelier to report that they could not afford food during the pandemic (Morales, Morales, & Beltran, 2021).

Due to the virulent nature of COVID-19, many households endured what scholars call *family clustering*. As Van Buren and colleagues (2021) stated, *family clustering* is a situation in which multiple members of a household contract COVID-19 concurrently. Research has

identified that REM households are more at risk of experiencing family clustering (e.g., Van Buren et al., 2021) since many of these households are multigenerational (Ghosh et al., 2021; Van Buren et al., 2021). According to Selden and Berdahl (2020), the average household size for Blacks and Latines was 3.1 and 3.8, compared to 2.8 people in White households. Furthermore, members of the REM community were also more likely to hold jobs that exposed them to the virus, creating a COVID-19 risk for all household members (Kantamneni, 2020; Kirby, 2020; Vavra, 2020; Selden & Berdahl, 2020).

A study conducted in New York City during the earlier stages of the pandemic found that areas within the city with a higher proportion of multigenerational households were associated with increased rates of severe COVID-19 cases (Ghosh et al., 2021). A potential factor that led to increased virus transmission within these households is a common attribute that many REM families share. Among REM families, many family members take on a communal approach to raising, living, and caring for one another (Van Buren et al., 2021). Hence, this led to COVID-19 ravaging many REM families due to the significant increase in infection stemming from living and caring for infected loved ones.

Family Conflict and Stress on Substance Use

A consistent risk factor contributing to substance and alcohol use behaviors in adolescence, and adulthood is family conflict (Elam et al., 2016). Much literature has investigated the link between family conflict and substance and alcohol use. For example, a longitudinal study across three years found that family conflict was a significant factor in alcohol consumption among adolescents (Bray et al., 2001). Bray and colleagues (2001) also found that adolescents experiencing family conflict increase their alcohol consumption as they age, with the highest alcohol use seen among Mexican-American adolescents. Concerning substance use,

scholars have noted that increased levels of family conflict during adolescence predicted participation in substance use classes in adulthood (Herrenkohl et al., 2012) and increased the likelihood of relapse for individuals with substance use disorder (SUD; Kabisa et al., 2021).

Despite the growing literature examining the impact of family conflict on substance and alcohol use, sparse studies examine this phenomenon within REM communities, specifically whether a family conflict is a salient risk factor across all REM subgroups (Savage & Mezuk, 2014). Savage and Mezuk (2014) uncovered that Latines and Asian Americans experiencing family conflict had a more significant chance of developing alcohol use disorder (AUD) and SUD. Further, Latine and Asian Americans who immigrated to the U.S. during childhood were more likely to experience family conflict, increasing their risk for AUD and SUD. A possible explanation for this disparity between child immigrants and U.S born individuals is that child immigrants find conflict with family more distressing, particularly for individuals who have parents raised in another culture (Savage & Mezuk, 2014; Strada & Donohue, 2006). When experiencing family conflict, these individuals may experience greater feelings of isolation that can trigger the misuse of alcohol and substances (Savage and Mezuk, 2014). Family conflict has also been shown to be a consistent risk factor for substance and alcohol use across other REM groups. A study by Jackson and Lecroy (2009) found that family conflict was a significant predictor for substance use among Black and Indigenous individuals, with Indigenous individuals who experience family conflict being more at risk of substance use and showing an increase in the number of substances they are using.

Like family conflict, stress has been connected to and is a known risk factor for substance use within the literature (Tavolacci et al., 2013; Stowell, Lewis, & Brooks, 2019; Cerbone & Larison, 2000). Although coping is a mechanism to navigate stress, coping strategies can weaken

over time as individuals experience prolonged stress (Tavolacci et al., 2013). Scholars have hypothesized that the relationship between stress and substance use involvement can start during early life. For example, research has linked stress during early development to brain changes that leave individuals vulnerable to substance use in later life (Duffing et al., 2014). Stress experienced early on in development, compounded with stress experienced during adolescence, has been shown to significantly increase the risk of substance use for this age group, which increases the risk of SUD during adulthood (Duffing et al., 2014). Although substance use during adolescence does not translate to adult substance use in every case, individuals who start using substances early and heavily significantly increase the risk for later substance use related problems (Chaplin, Niehaus, & Goncalves, 2018).

Family Conflict: A Potential Mediator

Ideally, family relationships are sources of support and security for individuals. Although family relationships may exhibit these positive characteristics, some families are marked by frequent conflicts that can be intense and destructive (Flora & Segrin, 2014, p. 91). According to scholars, family conflict may cause erosion of the parental ability to nurture the well-being of their children over time (Hethering, Cox, & Cox, 1979). Moreover, parents involved in a conflict are more likely to neglect their children due to their frustration or manipulate them to gain the upper hand over their spouse (Mechanic & Hansell, 1989). Based on longitudinal results produced by Mechanic and Hansell (1989), family conflict impacted various dimensions of well-being among the adolescents in their study. For example, Latine adolescents who reported family conflict expressed significantly higher depression, anxiety, and physical symptoms (Mechanic & Hansell, 1989).

An individual's adolescence is a pinnacle life stage concerning learning and consolidation of health habits that define one's future lifestyle (Jimenez-Iglesias et al., 2013). Specifically, adolescence is a moment in which the avoidance or change of unhealthy habits is conceivable, such as substance use can be mitigated as individuals transition into young adulthood (Agrawal et al., 2008). A core indicator of adolescent substance use is the family environment (e.g., Scheer & Unger, 1998), particularly family conflict, which significantly correlated with alcohol, cannabis, and tobacco (Scheer, Borden, & Donnermeyer, 2000). Based on the premise of Family Systems Theory, the relationships, and interactions between family members are among the most powerful and essential components influencing an adolescent's life (Vakalahi, 2001). According to Hall (1987), parent-child conflict is often provoked by parental resentment due to a child's effort to become independent (e.g., moving away from home). Thus, children turn to substance use as a coping mechanism for parental resentment, which perpetuates a cycle of substance use to cope with parental resentment and a lower self-concept due to parental resentment (Vakalahi, 2001; Hall, 1987).

In 2008, the Adverse Childhood Experiences (ACE) Study was collaboratively conducted by the CDC and Kaiser Family Foundation (KFF) to investigate the link between childhood stressors and adult health (Audage & Middlebrooks, 2008). Using a sample of 17,000 adults, the researchers found that adverse experiences such as home conflict, household mental illness, parental separation, and household substance use were common circumstances among many participants. Audage and Middlebrooks (2008) noted that the number of short- and long-term health and behavior ramifications of ACE was directly correlated with the number of adverse experiences a person has in adulthood. Some of the outcomes of ACE include alcoholism, illicit drug use, smoking, and mental illness (e.g., depression) during late adolescence and adulthood.

Concerning the COVID-19 pandemic, school, and business closures caused by stay-at-home orders led many individuals to conduct their studies and work within their living units. Consequently, family life began being governed by a unique set of strong external boundaries that limit the choice with whom you have close contact and whom you can exclude (Lebow, 2020). For families going through successful family transitions, such as young adults leaving home to establish their identities, this has been drastically reversed, bringing myriad problematic possibilities (Lebow, 2020).

As a result of the pandemic, national abuse hotlines (e.g., The Childhelp National Child Abuse Hotline) have received a significant increase in the total number of inquiries due to family conflict during stay-at-home orders (Ortiz et al., 2021). According to research, there was a 13.75% increase in the total number of inquiries in 2020 compared to 2019 (Ortiz et al., 2021). Through thematic analysis, Sinko and colleagues (2021) investigated calls to hotlines that revealed graphic and detailed instances of family conflict and violence. For instance, one caller shared, "My mom and dad are fighting a lot, and it's starting to scare me. My dad threw a pot at her yesterday, and it almost hit me" (Sinko et al., 2021). The confinement measures imposed due to COVID-19 have created a unique situation for individuals experiencing family conflict. People are faced with the dire situation of losing social support sources outside of the home and escalating conflict within the home, in addition to possible reliance upon family members who may also be the root of conflict (Kofman & Garfin, 2020).

Stress: A Potential Mediator

Stress is widely used in various social, academic, and employment settings. As conceptualized by Lazarus and Folkman (1984), *stress* is a process involving perception, interpretation, response, and adaptation to harmful, threatening, or challenging events. Some

major theories and models postulate that acute and chronic stress plays a vital role in a person's willingness to partake in substance use (Shiffman, 1982). For instance, a premise of the stress-coping model of addiction suggests that the use of substances reduces negative affect and increases positive affect, therefore reinforcing a maladaptive coping strategy that is substance use (Shiffman, 1982; Sinha, 2000). Although various stressful life situations can impact substance use among individuals, one common risk factor among the population is known as Early Life Stress (ELS; Green et al., 2010; Kirsch & Lippard, 2022).

According to research, an estimated 53% of adults have experienced ELS before age 18 (e.g., Green et al., 2010), which is a known stressor that contributes to the development of substance use disorders (SUDs; Kirsch et al., 2020). Furthermore, scholars have implicated ELS as a factor in each part of the addiction cycle, which includes compulsive drug seeking and use, loss of control over limiting intake, and the emergence of negative emotional states (Kirsch et al., 2020). An exploratory study on 407 Black men seeking treatment for substance dependence uncovered that the odds ratio of developing alcohol, cocaine, or heroin dependence after ELS ranged from 3.2 to 4.2 (Ducci et al., 2009). Similarly, studies conducted on various Native American tribes contributed to ELS as a significant predictor of alcohol dependence in adulthood in both men and women (Robin et al., 1997; Koss et al., 2003).

Among people who consumed alcohol or recreational drugs before the COVID-19 pandemic, there has been a significant increase in the consumption of substances in the U.S. (Taylor et al., 2021). Scholars have correlated the increase in substance use during the pandemic as a result of the distress people have been experiencing, specifically, substances (e.g., cannabis, cocaine, alcohol) that have been used as a coping mechanism for pandemic-related stress (Rodriguez, Litt, & Stewart, 2020). While there are various explanations for the increase in

substance use during the pandemic, the Self-Medication Hypothesis is a plausible explanation for this ongoing issue. According to Khantzian (1997), the Self-Medication Hypothesis posits that people use substances of choice to alleviate psychological suffering. Thus, substances such as alcohol, cannabis, and cocaine are used to cope with perceived threats and distress (Khantzian; Rodriguez et al., 2020).

Ongoing research has indicated that pandemics may activate a behavioral immune system (BIS), associated with increased monitoring for potential infection and behaviors associated with avoiding illnesses (Schaller & Park, 2011). As stated by McKay (2020), the COVID-19 Stress Scale (e.g., Taylor et al., 2020) is related to BIS activation, and the factors within the scale are linked with increased risk for substance use. For example, a subscale within the COVID-19 Stress Scale measures COVID-compulsive checking and reassurance, which is associated with obsessive-compulsive disorder and linked to higher rates of alcohol use (McKay, 2020; Taylor et al., 2020; Markarian et al., 2010). Uniquely, COVID-19 has provoked emotional responses among people that differentiate symptomology from other psychopathological disorders. Taylor and colleagues (2020) call this COVID Stress Syndrome, characterized by interconnected symptoms that include fear of the virus, socioeconomic concerns, xenophobia, traumatic stress, and compulsive checking and reassurance seeking. Nonetheless, components of COVID Stress Syndrome appear to play a part in the increase in substance use among the general population (McKay, 2020).

Regarding the REM community, during the pandemic, increased or newly initiated substance use was higher for some racial and ethnic minoritized groups, particularly among Latine respondents (McKnight-Eily et al., 2021). Furthermore, Latine adults reported higher stress levels and worry about not having enough food or stable housing compared to White

adults (McKnight-Eily et al., 2021). Among Black and multiracial college students, perceived stress levels were at their highest during July 2020 (Hoyt et al., 2021). A possible link to higher levels of stress among these students was the disproportionate health and economic effects of the pandemic on the REM community, coupled with the stressors related to the Black Lives Matter movement against police violence during the Summer of 2020 (Hoyt et al., 2021)

First-Generation Student Status: A Potential Moderator

First-generation college students experience some of the same challenges that non-first-generation students face. However, these challenges are amplified due to inexperience in academic preparation, lack of family support, and cultural barriers (House, Neal, & Kolb, 2019). In comparison to non-first-generation students, first-generation students also have less support, information, confidence, and money when they first enter the college environment (Gloria & Castellanos, 2012). First-generation college students are also more likely to identify with REM identities, are children of immigrants, and come from economically disadvantaged backgrounds (Jenkins et al., 2013; Bennett, McCarty, & Carter, 2015).

A common challenge that many first-generation college students face is the lack of familial support due to the family's sense of betrayal and abandonment as students immerse themselves in college life (House et al., 2019). According to Covarrubia, Romero, and Trivelli (2015), many first-generation college students experience guilt the further they go into college due to having more educational success than their parents and siblings. Consequently, this results in higher depressive symptoms, low self-esteem, and the minimization of academic success (Covarrubia et al., 2015). In addition to the guilt brought on by pursuing higher education, first-generation college students must overcome barriers related to staying committed and supporting family members back home (Covarrubias et al., 2019).

When the COVID-19 pandemic forced college campuses to move to online learning, the challenges REM first-generation students faced exacerbated this shift in the learning environment. Particularly, REM first-generation students were forced to return to home environments where families were unaware of the demands of being college students (Barber et al., 2021). A study conducted with 423 REM first-generation students found that the students' living situation during the pandemic not only impacted their academic performance, but they also faced financial insecurity due to REM families' greater likelihood of experiencing financial burden during COVID-19 (Barber et al., 2021). Consequently, many REM first-generation students faced food insecurity during the stay-at-home orders.

Research before the pandemic has highlighted how disruption of the home environment impacts first-generation college students. For many first-generation college students, a coping strategy that comes into play is the belief that they need to be two different people to separate academic and home life (Bryan & Simmons, 2009; Rendon, 1992); however, this becomes challenging when issues start impacting their home when they are not present. Moreno (2021) conducted a qualitative study with Latine first-generation students and found that some students felt helpless being physically away from family and knowing that their support was needed in their home. Some of the challenges the participants shared included having incarcerated family members, unemployed family members due to illness, parents at the brink of foreclosure, a father who was partially paralyzed, and a mother who had to take care of four younger siblings.

Literature examining the relationship between home disruptions, alcohol, and substance among REM first-generation college students is sparse. Nevertheless, there have been studies that have investigated alcohol and substance use among REM first-generation college students. A study conducted by Czyzewska and McKenzie (2016) examined binge drinking behaviors

among REM first-generation college students and found that non-White first-generation students engaged in higher rates of binge drinking behaviors when compared to non-first-generation students. Specifically, the rate of binge drinking was higher among male-identifying students compared to non-White first-generation female-identifying students, who showed no generational difference in drinking (Czyzewska & McKenzie, 2016). Furthermore, since first-generation college students also tend to live off campus and work a significant amount of hours per week, this can contribute to binge drinking behaviors (Miller, Danner, & Staten, 2008) and the amount of drinks consumed in a sitting (Butler, Dodge, & Faurote, 2010). However, due to first-generation students being more likely to live with parents off campus, scholars have noted that this is a possible protective factor against substance use (Cacciola & Nevid, 2014; Simons-Morton et. al., 2016; White et al., 2006).

Purpose of Study

The COVID-19 pandemic has further uncovered and amplified the disparities affecting people of color within the United States. Specifically, the pandemic has put a taxing demand on REM college students by further exposing them to stressors related to home disruption. Home disruption is a cause of concern for a population with significantly higher rates of substance use than other non-college adults from the same age group (Hayes et al., 2011; SAMHSA, 2018). Thus, this study seeks to understand the relationship between home disruption occurring in spring 2020 (T1) and substance use in spring 2021 (T3) among REM college students during the COVID-19 pandemic. Using data from the Spit for Science study (e.g., Dick et al., 2014), we plan to explore the direct connection between T1 home disruption, T3 alcohol use, and T3 substance use, and indirect relationships through increased family conflict and stress in fall 2020 (T2).

While prior research has drawn connections between various risk factors and substance use in the college student population (Javier et al., 2013; LaBrie et al., 2010; Unger et al., 2000), there is a lack of literature examining substance use within the REM college student population during the pandemic. COVID-19 has caused significant disruptions within households; however, there is a need to understand whether home disruption is linked to family conflict and stress among REM college students. Although previous literature has linked family conflict (e.g., Audage & Middlebrooks, 2008) and stress (e.g., Shiffman, 1982; Sinha, 2000) to substance use among adults, the pandemic has presented novel psychosocial challenges not seen before in previous studies. Hence, it is necessary to determine whether family conflict and stress during COVID-19 contribute to substance use among REM college students.

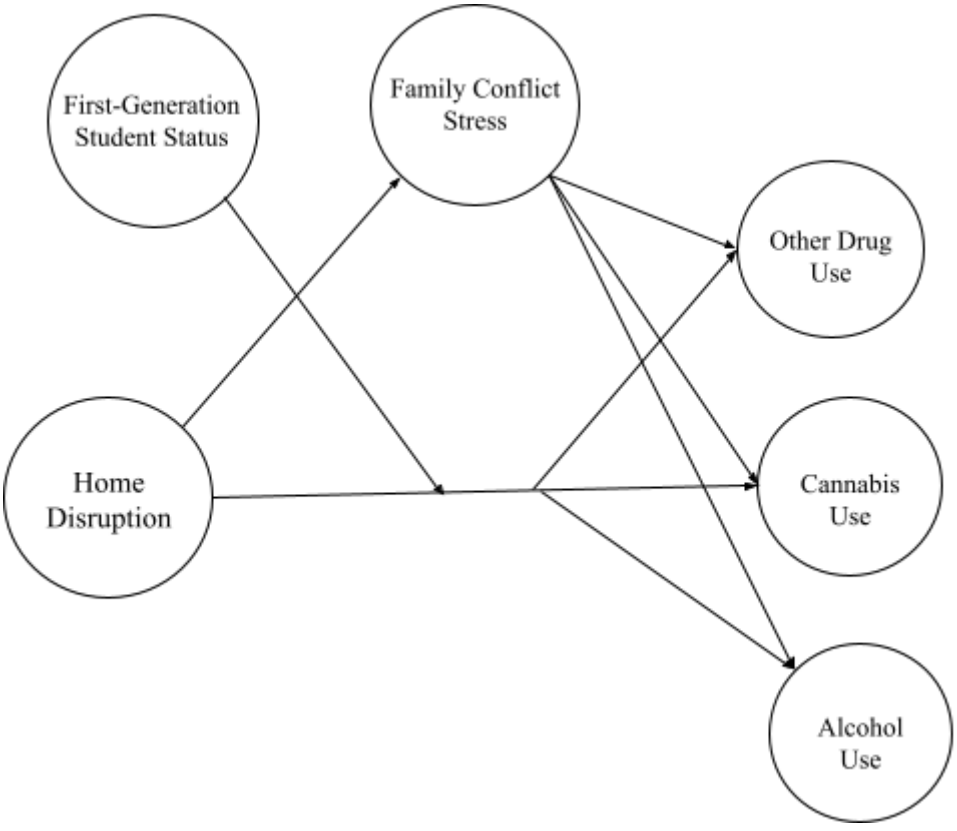
The current study seeks to illuminate whether pandemic-related home disruption leads to substance use among REM college students. Furthermore, we will also determine whether home disruption leads to family conflict and stress and whether family conflict and stress mediate the relationship between home disruption and substance use. The questions that supersede these aims are:

1. Is there a significant relationship between T1 home disruption, T3 alcohol, and T3 substance use among REM college students?
2. Is there a significant relationship between T1 home disruption, T2 family conflict, and T2 stress among REM college students?
3. Is there a significant relationship between T2 family conflict, T2 stress, T3 alcohol, and T3 substance use among REM college students?
4. Do T2 family conflict and T2 stress mediate the relationship between home T1 disruption, T3 alcohol, and T3 substance use?

5. Does first-generation college student status moderate the relationship between T1 home disruption, T3 alcohol, T3, and substance use?

We hypothesize that there will be a significant relationship between home disruption, alcohol, and substance use among REM college students, such that an increase in home disruption will lead to an increase in alcohol and substance use (H1). We also hypothesize an association between home disruption, family conflict, and stress, so an increase in home disruption will lead to increased family conflict and stress among the target population (H2). Further, we also speculate a significant relationship between family conflict, stress, alcohol, and substance use, with an increase in family conflict and stress will lead to an increase in alcohol and substance use among REM college students (H3). Lastly, we hypothesize that family conflict and stress will mediate the relationship between home disruption, alcohol, and substance use (H4). Lastly, we hypothesize that first-generation student status will moderate the relationship between home disruption, alcohol, and substance use (H5). A model of these hypotheses is shown in Figure 1.

Figure 1: Conceptual Model for Moderated Mediation



Method:

Procedure:

The data used for this study was collected as part of an ongoing, extensive longitudinal study called Spit for Science (Dick et al., 2014). Spit for Science captures multiple college student cohorts' genetic and environmental experiences at a mid-Atlantic public university. Before their arrival, all eligible incoming first-year students over 18 received an email notification inviting them to complete an online survey in the fall and follow-up surveys each consecutive spring semester. Upon completing the survey, students were instructed to go to an on-campus site to collect a $10 payment and provide a saliva DNA sample, which provided an additional $10 payment.

All student data were collected and managed using REDCap, an electronic data capture tool that allows collaborative access to data to researchers across various departments and institutions (Harris et al., 2009). Third-year students were invited to partake in surveys about their COVID-19 pandemic experiences in Spring 2020 and their ongoing experiences as the pandemic progressed. Respectively, the Institutional Review Board approved this component for this study, along with students receiving $10 for each completed survey.

Participants:

Due to this study's primary focus on REM college students, all individuals who self-identified as White (n = 357) were excluded from the data. Our study included 533 students ($Mage$ = 19.93, SD = .34) who self-identified as American Indian/Native Alaskan (n = 1), Native Hawaiian/other Pacific Islander (n = 9), Black (n = 164), Asian (n = 204), Hispanic/Latine (n = 86), and of more than one race (n = 68). Of 533 participants, a majority of participants identified as cisgender women (n = 325 or 61%), in addition to 63 participants identifying as cisgender

men, three identifying as genderqueer, and three answered “questioning” as their gender identity. Notably, 26% of participants did not disclose their gender identity or did not answer this question.

Measures:

T1 Home Disruption. The Epidemic-Pandemic Impacts Inventory (EPII; Grasso et al., 2020) was utilized to measure the students' family experiences during the Spring of 2020 at the onset of COVID-19. Within the brief 20-item version of the EPII, students were asked, “Since the onset of the coronavirus/COVID-19 crisis, what has changed for you or your family?”. To capture home disruption, this current study used items that indicated disruptions within their home. Five items were utilized to capture this construct, which included: “Family or friends had to move into your home.” “Had to spend a lot more time taking care of a family member.” “Had to move or relocate.” “Became homeless.” and “Separated from family or close friends.” Participants were then asked to respond 0 = *No* or 1 = *Yes*, and items were summed. Participants with higher scores indicate that they experienced greater home disruptions during the pandemic. Cronbach’s alpha for the present study was .43.

T2 Stress. Stress was measured by utilizing a single item from the Coronavirus Health Impact Survey (CRISIS; Nikolaidis et al., 2020). Students were asked how the pandemic impacted their stress levels (i.e., How has the coronavirus crisis changed your stress levels or mental health?). The students responded by answering 1=*Worsened them significantly*, 2 = *Worsened them moderately*, 3 = *No change*, 4 = *Improved them moderately*, and 5 = *Improved them significantly.* This item was then reversed coded so that highest response became the lowest (e.g., 5 = 1 or 4 =2).

T2 Family Conflict. Five items from the Epidemic-Pandemic Impacts Inventory (EPII; Grasso et al., 2020) were used to measure family conflict. Participants were asked to share their experiences with family conflict with other adults in the home, their spouse, or partner, and ranged from verbal arguments to physical conflict. Items within this measure include, "Increase in physical conflict with other adult(s) in the current place of residence," “Increase in verbal arguments or conflict with a partner or spouse," “Increase in physical conflict with a partner or spouse,” and “Increase in verbal arguments or conflict with other adult(s) in the current place of residence.” Students responded by answering 1 = *Yes* or 0 = *No*. Scores were then summed, with higher scores indicating more family conflict. Cronbach’s alpha for this measure was .35.

T3 Substance Use. Substance use was measured using two items from the Cannabis Use Disorders Identification Test-Revised (CUDIT-R; Adamson et al., 2020). The two items used from the CUDIT-R measured frequency of cannabis use (i.e., “Since the onset of the coronavirus/COVID-19 crisis, how often do you use cannabis?) and frequency of drug use other than cannabis and alcohol (i.e., Since the onset of the coronavirus/COVID-19 crisis, how often do you use drugs other than alcohol or cannabis?). For both questions, students were given the following options as a response: 1 = *Never*, 2 = *Monthly or less*, 3 = *2 to 4 times a month*, 4 = *2 to 3 times a week*, and 5 = *4 or more times a week*. Both items were analyzed separately to determine whether they captured students’ behaviors in relation to substance use.

T3 Alcohol Use. To measure the frequency and amount of alcohol consumed by students, two items from the Alcohol Use Disorder Identification Test (AUDIT; Bohn et al., 1995) were used. The first question was related to the frequency students drink (i.e., How often do you have a drink containing alcohol?). This was followed by a question that determined the amount of drinks students have at a given time (i.e., How many drinks containing alcohol do you have on a

typical day when you are drinking?"). Calculations based on these questions also provided information on the number of grams of ethanol students consumed (Salvatore et al., 2016).

First-Generation Student Status. First-generation student status was measured using a single item from the Coronavirus Health Impact Survey (CRISIS; Nikolaidis et al., 2020). Participants were asked to respond to the question, "Are you a first-generation college student?", followed by answer 1 = *Yes* or 0 = *No.* This measure was included in the analyses as the moderating variable.

Covariates. In addition to T1 home disruption, REM college students' self-reported ethnic-identity was included as a covariate. Additionally, we also include T1 alcohol, cannabis, and other drug use as covariates.

Data Analytic Plan

Before conducting hypothesis testing, preliminary analyses were administered to assess the data quality. An examination checking for univariate and multivariate outliers will ensure that no standardized scores are greater than 3.29 and that all observations are within the acceptable range for Mahalanobis distance. Furthermore, skewness and kurtosis were also assessed to confirm that the data falls within a normal distribution. For skewness and kurtosis scores outside the appropriate range of +/- 2 (George & Mallery, 2010), square root transformations were conducted to transform these scores to address the data distribution. The data was also visually inspected using histograms to ensure linearity. Once the data met the necessary assumptions needed for primary data analysis, hypothesis testing was conducted.

To investigate this study's research questions and analyze the hypotheses, descriptive statistics for target variables (Table 1) and Pearson correlations (Table 2) for target variables were first administered. The target variables were also examined for multicollinearity after

conducting Pearson correlations analysis. Next, a moderation mediation longitudinal model was conducted in PROCESS macro for SPSS (e.g., Model 5; Hayes, 2013) to determine the moderating role of first-generation status and the mediating role of family conflict and stress on the relationship between home disruption and substance use. We handled missing data by using the expectation-maximization algorithm (Mu & Zhou, 2011).

Results

Preliminary Analysis

The correlations, means, and standard deviations of the target variables in the current study are located in Tables 1 and 2. Descriptive statistics revealed that a significant amount of data was missing from the mediating and outcome variables. We addressed this missing data by utilizing the expectation-maximization algorithm to estimate the parameters of probabilistic models (Mu & Zhou, 2011). We found that T2 family conflict and T2 stress, along with T3 alcohol, cannabis, and other drug use, were slightly above the acceptable range of +/- 2 for skewness and kurtosis. We addressed skewness and kurtosis by utilizing square root transformations (Box & Cox, 1964). We also conducted bivariate Pearson correlations that revealed significant associations between T1 home disruption and both T2 family conflict (r = .29, p < .001) and T2 stress (r = .12, p = .005). T1 home disruption also had a minimal correlation with T3 other substance use (r = .09, p = .03). However, T1 home disruption had no significant association with both T3 alcohol use (r = -.03, p = .49) and T3 cannabis use (r = .013, p = .77). Regarding the mediating variables, T2 stress was significantly correlated with T3 other drug use (r = .35, p < .001), although no association was found with T3 alcohol use (r = -.07, p = .102) or T3 cannabis use (r = -. 013, p = .77). Furthermore, T2 family conflict was slightly associated with T3 other drug use (r = .09, p = .05); however, it had no significant correlation

with T3 alcohol use (r = -.02, p = .70) or T3 cannabis use (r = -.007, p = .87). The moderating variable, first-generation student status, had a significant association with stress (r = -.207, p < .001). Moreover, there was no significant relationship between first-generation student status, T1 home disruption (r = .05, p = .24), T2 family conflict (r = .002, p = .97), T3 other drug use (r = -.07, p = .10), T3 cannabis use (r = -.03, p = .77), or T3 alcohol use (r = .102, p = .052). Regarding the covariate substance use variables, T1 other drug use had significant associations with T3 alcohol use (r = .1, p = .02) and T1 cannabis use (r = .35, p < .001), however it did not have significant relationships with any other target variables. Additionally, we also found no significant relationships with T1 cannabis and alcohol use with any other variables.

Main Analyses

Our hypotheses were tested by utilizing Model 5 on PROCESS macro, where we included T1 home disruption predicting T3 alcohol, cannabis, and other drug use. Further, T2 family conflict and stress were included as mediators, in addition to first-generation college student status acting as a moderator between T1 home disruption and T3 alcohol, cannabis, and other drug use. We also included ethnicity and T1 alcohol, cannabis, and other drug use as covariates within the model (e.g., T1 cannabis use predicting T3 cannabis use). Due to PROCESS macro only allowing for one outcome variable to be analyzed at a time, we conducted three separate analyses.

Main *analysis with other drugs as the outcome*

The first analysis we conducted had T3 other drug use as the outcome variable (Table 3). Our results found that T1 home disruption significantly predicted increased T2 stress (β = 2.28, t = 2.54, p = .012), and also contributed to increased T2 family conflict (β = .12, t = 7.02, p < .001). However, T1 home disruption did not directly predict T3 other drug use (β = .001, t = .24,

p = .81). We also determined that T2 family conflict was not associated with T3 other drug use (β = .01, t = .89, p =.37). Further, T2 stress was found to be a significant predictor of T3 other drug use (β = .09, t = 8.71, p < .001). The indirect effect of T1 home disruption on T3 other drug use through T2 stress was also significant (β = .006, 95% Cl [.0014, .0117]), signifying a mediation effect. The analyses also indicated no indirect effect of T1 home disruption on T3 other drug use through T2 family conflict (β = .001, 95% Cl [-.0019, .0054]). Concerning first-generation college student status being a moderator, we found no significant interaction of home disruption and first-generation student status predicting other drug use (β = -.01, t = 1.02, p = .31); thus first-generation college student status had no moderating effect .

Main analysis with cannabis as the outcome

The following analysis examined T3 cannabis use as the outcome variable (Table 4). Similar to the first analysis, we found that T1 home disruption had a significant relationship with both T2 stress (β = .08, t = 2.91, p = .003) and T2 family conflict (β = .12, t = 7.06, p < .001). There was also no direct effect of T1 home disruption on T3 cannabis use (β = -.0002, t = -.04, p = .97). We also determine that neither T2 stress (β = -.0002, 95% Cl [-.0017, .0013]) or T2 family conflict (β =-.0005, 95% Cl [-.0036, .0024]) mediated the relationship between home disruption and cannabis use. There was also no significant interaction between the moderating variable first-generation student status and home disruption (β = .0038, t = .36, p = .72)

Main analysis with alcohol consumption as the outcome

The third and final analysis had T3 alcohol consumption as the outcome variable (Table 5). We found significant relationships between T1 home disruption, T2 stress (β = .08, t = 2.87, p = .004), and T2 family conflict (β = .13, t = 3.07, p < .001). T1 home disruption also did not have a relationship with T3 alcohol consumption (β = -.007, t = -1.39, p = .16). Similar to our second

analysis, we found that both T2 stress (β = -.0006, 95% Cl [-.0021, .0006]) and T2 family conflict (β =.000, 95% Cl [-.0027, .0027]) did act as mediators within this model. First-generation student status and home disruption also had no significant interaction, determining that there was no moderating effect of first-generation status (β = .009, t = 1.66, p = .09).

Discussion

The COVID-19 pandemic has made a lasting impact on the lives of many U.S. college students. Particularly for students of REM backgrounds, COVID-19 has exacerbated inequities that these students already face in academia (Lederer et al., 2021). REM college students have disproportionately been impacted by stressors such as disruption of the home environment, finances, and perceived stress related to navigating their environment during the pandemic (Garris & Fleck, 2022). Additionally, family conflict has also been on the rise as a result of the pandemic (Lyons & Brewer, 2021), along with an increase in substance use among the emerging adult population (Horigian, 2020). Thus, this highlights the importance of investigating psychosocial factors impacting the REM college student population. This study fills the gaps in the literature by examining the impact of home disruption in the spring of 2020 (T1) on substance and alcohol use in the spring of 2021 (T3) during the COVID-19 pandemic. Further, we also examined the mediating role of family conflict and stress during the fall of 2020 (T2), along with the moderating role of first-generation college student status.

The finding of this study supported some of our hypotheses. First, our findings indicated that T1 home disruption was directly associated with T2 stress and family conflict, such that higher levels of home disruption led to more stress and family conflict among REM college students. However, T1 home disruption did not impact T3 alcohol, cannabis, or other drug use.

Regarding the mediating variables, we found that higher T2 stress levels led to more other drug use but not cannabis or alcohol use. Family conflict, however, did not have any association with alcohol, cannabis, and other drug use. Additionally, we only found that home disruption indirectly impacted other drug use through stress, but not family conflict. This was the only indirect effect found within our study. Unfortunately, we did find any moderating effects from first-generation college student status.

Findings suggest that disruption of the home environment has a crucial impact on the family environment and stress levels of individuals. These findings align with research that has examined the impact of COVID-19 on the home environment and families. The lockdown measures that occurred at the onset of the pandemic increased vulnerability and risk for the home environment (Luttik et al., 2020). Families who were not accustomed to being closely confined and spending long periods together were forced to do so by the virus. Consequently, this led to distress among many families and individuals (Luttik et al., 2020). It has also been well-documented that during the pandemic, rates of family conflict and violence increased due to pandemic-related stressors (Beland et al., 2020). For example, working from home and or being led off have been shown to increase family conflict during the pandemic (Beland et al., 2020). However, there has been sparse literature investigating how racial/ethnic minoritized individuals, specifically college students, have been impacted by home disruptions and the consequences that followed. This study highlights the experience of REM college students who have experienced pandemic-related home disruptions.

Our findings also indicated increased home disruption led to heightened stress and other drug use. According to scholars, predictable home routines and environments may be protective against significant challenges individuals face (Glynn et al, 2021). Studies examining children

and adolescents found that family routines within the home held proactive influences among youth (Prime, Wade, & Browne, 2020). Concerning the pandemic, researchers have found that individuals with an income of less than $50,000 a year and who are self-isolating experienced more stress (Bates et al., 2021). For many college students, the pandemic caused greater disruption to their home and academic environment, which consequently led to greater levels of stress (Charles et al., 2021). Given that college students experience disproportionate rates of mental health concerns (Auerbach et al., 2016) and substance use (Schulenberg et al., 2020), this population was at heightened risk for substance misuse during the pandemic. Although our findings did not specify specific substances REM college students were using, according to Schulenber and colleagues (2020), college students were more likely to use cocaine, amphetamines (e.g., Adderall, Ritalin), and flavored nicotine products (e.g., vapes, e-cigarettes) when compared to non-college students of the same age. However, our study did not support the literature that shows alcohol and cannabis use is significantly higher among college students (Schulenberg et al., 2020).

Concerning moderation, results showed that being a first-generation college student had no significant interaction between home disruption, alcohol, cannabis, and other substance use. Although these findings do not support our initial hypothesis, it still provides vital information to the experiences of REM first-generation college students during the pandemic. Our findings coincide with previous research examining substance and alcohol use among first-generation college students. Given that most first-generation college students identify with REM identities, research has shown that REM college students tend to drink less than their White counterparts (Antin et al., 2013). Furthermore, for first-generation college students that decide to live on campus, DiGuiseppi and colleagues (2020) share that first-generation students are more likely to

ask to live in substance-free dormitories and also perceive more disapproval for binge drinking from their parents and peers. These findings suggest that identifying as a first-generation college student may serve as a protective factor against alcohol and substance use.

Implications and Future Directions

In response to these findings, clinicians and mental health professionals engaging in work with racial-ethnic minoritized emerging adults and college students are urged to continue examining how the COVID-19 pandemic has impacted the home life of REM college students. Furthermore, it also brings awareness to how pandemic-related home disruptions have contributed to substance use other than cannabis and alcohol among this population of college students. Considering that alternative nicotine products (e.g., e-cigarettes and flavored tobacco) are on the rise in this population, it would be important for clinicians to be aware of what substances students are using. University counseling centers should also be aware of the stigma associated with receiving mental health services for many REM college students. Particularly, when mental health issues involve the home environment and family relationships. A possible strategy that clinicians and university administrators could implement would be interventions aimed at improving help-seeking behaviors and other methods of support within the university community.

University policies can also consider how they can expand mental health services to underserved REM college student populations. For example, the University System of Georgia allocated a significant amount of funds to expand mental health and support services for college students in the university system (Ezarik, 2020). With this expansion, college students in the Georgia University system could receive online psychiatric services, counseling services, 24/7 crisis support, and services related to overall well-being. Universities can also use the findings of

this study to justify increasing online questionnaires, such as eCheckUp, which provides online substance use screening to further reach the REM college student population (Salimi et al., 2021).

Although we had first-generation college student status as a moderating variable, future research should also further highlight the experiences of REM first-generation by allowing them to share their lived experience via qualitative research. Integrating both quantitative and qualitative research, it could provide a more holistic view of the experience of REM first-generation students. To highlight, according to the Student Experience in the Research University (SERU) Consortium Survey, first-generation students were more likely than continuing students to experience the negative impacts of the pandemic (Soria et al., 2020). For example, with students moving back home due to campus closure, first-generation students of color may experience stressors related to home-school values conflict due to navigating the demands of school and family (Vasquez-Salgado, Greenfield, & Burgos-Cienfuegos, 2014). Consequently, this conflict can lead to students heightened family tension (Vasquez-Salgado et al., 2014). As the U.S. becomes more diverse, it would also be advantageous for future research to recruit a more diverse sample that represents the U.S. college student population to better capture the experiences of different racial/ethnic and gender groups. Lastly, future scholarship would also benefit by including measures that allow participants to specify which substances individuals are using.

Limitations and Strengths

The current study has numerous limitations that provide direction for future scholarship. One of the more obvious limitations of the study is regarding some of the measures utilized. For example, we assessed stress with a 1-item measure that might not fully capture the stress

experienced by REM college students during the pandemic. Although this 1-item measure specifically states that students report how COVID-19 impacted their stress levels, it does differentiate on how students or where students experience stress (i.e., home environment, academic stress). Additionally, individuals might also have different conceptualizations of stress, which may be captured by a multiple-item measure. Substance use was also only measured by two items, one of which specified that students report other drug use other than cannabis and alcohol. There were also limitations regarding the sample of students utilized for the study. More than half of the participants in the study self-identified as cis-gender women, which limited the diversity of different gender identities in the sample. Similarly, there was also one participant in the study who identified as Indigenous and a limited number of students who identified as Native Hawaiian/Pacific Islander (n = 9). We also had a limited number of students who identified as first-generation students within the sample, which may have impacted the insignificant findings for moderation.

Despite these limitations, the study also had notable strengths. This captured the experiences of REM college students from the start of the pandemic until they graduated in the Spring of 2021. This provided the opportunity to conduct a longitudinal study on the target variables to see if pandemic-related home disruptions at the beginning of COVID-19 impacted substance use in the future. Additionally, the study also included a sufficient number of participants (n = 533) who identified with racial-ethnic minoritized identities.

Conclusion

During the COVID-19 pandemic, college students had to navigate through numerous psychosocial stressors as a result of the virus. Specifically, among racial-ethnic minoritized students, the impact of the virus has had a significant effect on the lives of this underserved

population of students. Our study highlights the importance of continuing to research how the pandemic has affected various aspects of REM college students' lives. Despite the limitations of our study, our investigation includes strengths that examined various processes REM college students faced during the pandemic. First, we examined how home disruption impacted family conflict and stress over the course of COVID-19. We then analyzed how home disruption, family conflict, and stress contributed to alcohol and substance use. Although we found some insignificant findings within our study, such as first-generation college student status not moderating the relationship between our predictor and outcome variables, it does not take away from the necessity to continue to research the experiences of first-generation racial-ethnic minoritized students during the pandemic. Our findings do highlight that COVID-19 did cause home disruption, stress, family conflict, and other drug use among racial-ethnic minoritized students, thus it provides a guiding point for future scholarship in this area.

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Appendix: Tables

Table 1.
Descriptive Statistics for Study Variables

Variables	M (SD)	Median	Min	Max	Skewness	Kurtosis
Home Disruption	1.33 (1.19)	1	0	5	.59	-.54
Family Conflict	.28 (.50)	0	0	2	1.40	1.91
Stress	3.76 (.74)	3.78	1	5	-.78	1.92
Cannabis Use	.82 (.47)	.77	.45	1	-.31	.47
Other Drug Use	.82 (.19)	.87	.20	1	-1.29	.43
Alcohol Use	1.21 (.11)	1.21	1.01	1.65	-.14	1.86
First-Generation Student	.32 (.47)	0	0	1	.76	-1.43

Note: Transformed Variables; Skewness and Kurtosis were fixed
Cannabis and Other Drug Use was recorded in the data cleaning.

Table 2.
Correlations, Means, and Standard Deviations

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1.	Home Disruption	-									
2.	Family Conflict	.29**	-								
3.	Stress	.12**	.11*	-							
4.	Cannabis Use	.013	- .01	-.01	-						
5.	Other Drug Use	.09**	.09*	.36**	.36**	-					
6.	Alcohol Use	- .03	-.02	-.07	-.07	-.26**	-				
7.	First-Generation Student	.05	.002	-.21**	-.03	-.07	.05	-			
8.	T1 Cannabis Use	.04	.05	-.006	.06	.08	.84	.73	-		
9.	T1 Other Drug Use	-.07	-.06	.01	.07	.06	.10*	-.06	.34**	-	
10.	T1 Alcohol Use	-.04	.08	-.04	.02	-.06	-.02	.01	.03	-.07	-
	Mean	1.33	.28	3.76	.82	.84	1.21	.28	1.89	1.16	5.44
	SD	1.19	.50	.74	.14	.19	.11	.50	1.47	.61	3.33

Note: * p < .05. **p < .01
SD = Standard Deviation
T1 = Spring 2021 Covariate

Table 3.

Mediation Model of T1 Home Disruption on T3 Other Drug Use Through T2 Stress and T2 Family Conflict with First-Generation Student Status as a Moderator

	β	SE	t	p	95% Confidence Interval
Home Disruption	.001	.01	.24	.81	(-.01, .02)
Stress	.09	.01	8.71	.001	(.08, .12)
Family Conflict	.01	.02	.89	.37	(-.02, .04)
FGS	-.01	.02	-.62	.53	(-.04, .02)
Home Disruption * FGS	.01	.01	1.02	.30	(-.02, .04)
Indirect Effect of Home Disruption through Stress	.006	.003	-	-	(.0014, .0117)
Indirect Effect of Home Disruption through Family Conflict	.002	.002	-	-	(-.002, .005)

Note: Controlled for Ethnicity and T1 Other Drug Use

FGS = First Generation Student Status

Table 4.

Mediation Model of T1 Home Disruption on T3 Cannabis Use Through T2 Stress and T2 Family Conflict with First-Generation Student Status as a Moderator

	β	SE	t	p	95% Confidence Interval
Home Disruption	-.0002	.007	-.04	.97	(-.01, .01)
Stress	-.002	.01	-.32	.75	(-.02, .01)
Family Conflict	-.004	.01	-.34	.74	(-.03, .02)
FGS	-.01	.01	-.57	.57	(-.03, .02)
Home Disruption * FGS	.004	.01	.36	.72	(-.02, .02)
Indirect Effect of Home Disruption through Stress	-.0002	.001	-	-	(-.002, .001)
Indirect Effect of Home Disruption through Family Conflict	-.001	.002	-	-	(-.004, .003)

Note: Controlled for Ethnicity and T1 Cannabis Use

FGS = First-Generation Student Status

Table 5.

Mediation Model of T1 Home Disruption on T3 Alcohol Use Through T2 Stress and T2 Family Conflict with First-Generation Student Status as a Moderator

	β	SE	t	p	95% Confidence Interval
Home Disruption	-.001	.01	-1.39	.16	(-.02, .003)
Stress	-.01	.01	-1.19	.23	(-.02, .01)
Family Conflict	-.0003	.009	-.03	.98	(-.02, .02)
FGS	.01	.01	.87	.39	(-.01, .03)
Home Disruption * FGS	.01	.01	1.66	.09	(-.003, .03)
Indirect Effect of Home Disruption through Stress	-.0006	.0007	-	-	(-.002, .0005)
Indirect Effect of Home Disruption through Family Conflict	.0000	.001	-	-	(-.003, .003)

Note: Controlled for Ethnicity and T1 Alcohol Use

FGS = First-Generation Student Status