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Perceived Ethnic Discrimination and Negative Emotional Reactivity to Minority Stress: Association with Cannabis Use Processes Among United States Hispanic/Latinx Adults

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ABSTRACT

Objective: Cannabis use has been increasing among the Hispanic/Latinx population in the United States (US). Little research has expressly focused on culturally relevant factors related to cannabis use processes and problems among this group. The present investigation sought to help bridge this gap and test the main and interactive effects of perceived ethnic discrimination and negative emotional reactivity to minority stress in terms of cannabis use processes, including perceived barriers for cannabis reduction, cannabis use problems, and cannabis use motives, among Hispanic/Latinx adults in the US. **Method:** Participants were recruited through Qualtrics Panels and included 521 adults who engaged in current (past month) cannabis use (M_{age} = 36.52 years, SD = 10.26; 55.1% male). **Results:** In adjusted models, for perceived barriers for cannabis reduction and cessation as well as cannabis use problems, both perceived ethnic discrimination and negative emotional reactivity to minority stress were independently associated with higher odds of endorsement. For cannabis use motives, negative emotional reactivity to minority stress was positively associated with enhancement, social, coping, and expansion motives, whereas perceived ethnic discrimination was a contributor to conformity motives; effects ranged from small to medium. No interactive effects emerged as statistically significant. **Conclusions:** The current findings suggest that among the U.S. Hispanic/Latinx population, screening and intervening upon perceived ethnic discrimination and negative emotional reactivity to minority stress may help mitigate challenges with the continued use of cannabis.

Key words: = Hispanic/Latinx; Tobacco; Ethnic Discrimination; Negative Emotionality; Cannabis; Cessation; Motives for use; Quitting

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The Hispanic/Latinx population represents one of the largest and fastest growing ethnic groups in the United States (US; U.S. Census Bureau, 2021). Presently, there are over 62 million Hispanic/Latinx persons in the US, reflecting almost 50% of the total population growth in the country from 2010 to 2020 (U.S. Census Bureau, 2021). Cannabis use rates have steadily increased across all racial/ethnic groups throughout the US (Montgomery et al., 2022). There is limited study of the prevalence of cannabis use among Hispanic/Latinx persons although the work that does exist suggesting increasing rates of use (Salas-Wright et al., 2019). The available research suggests that while past cannabis use does not often differ between racial/ethnic groups (e.g., 10% prevalence), there is differential prevalence of Cannabis Use Disorder (CUD; Wu et al., 2014). For instance, Hispanic/Latinx adults who use cannabis are at an increased likelihood of meeting criteria for past CUD (19.5%) relative to non-Hispanic/Latinx White (13.5%) but not Black (19.1%), Native American (24.6%), or Asian American (17.2%) adults (Wu et al., 2016). Historically, scientific literature focused on cannabis use and CUD among the Hispanic/Latinx population has received less attention relative to other racial/ethnic groups (e.g., Non-Hispanic/Latinx White, African American; Martin-Willett et al., 2022; Montgomery et al., 2022), even though cannabis has historical roots to medicinal use in certain subpopulations of the Hispanic/Latinx community (e.g., curanderismo in the Mexican folk tradition; Cavender et al., 2011; Padilla et al., 2001). Available work also suggests that cannabis is used for a variety of reasons among Hispanic/Latinx persons, including coping with life stress, anxiety, and depression, as well as recreational and medicinal use (Martin-Willett et al., 2022).

The experience of ethnic discrimination, or the unfair treatment based on one's ethnicity, is a common and pernicious life experience among Hispanic/Latinx people living in the U.S. (Cano et al., 2021a). There is empirical work suggesting that higher rates of ethnic discrimination among Hispanic/Latinx people evidences adverse effects on health and behavior (Cano et al., 2021b), as well as substance use (Andrade et al., 2021). However, only a limited number of investigations have focused on cannabis use in regard to this observed relationship (Bakhtiari et al., 2020; Montgomery et al., 2022; Pro et al., 2018; Walley et al., 2019). Available work provides evidence that parallels the larger literature on ethnic discrimination, such that exposure to ethnic discrimination increases the risk for cannabis use (Unger et al., 2016). Theoretical models and research focused on ethnic discrimination suggest that discrimination may fuel more frequent and ingrained patterns of cannabis use for negative reinforcement reasons. Due to ethnic discrimination being associated with higher levels of negative affect, individuals may be more prone to use cannabis to alleviate these aversive states (Araújo & Borrell, 2006; Cano et al., 2016). From a negative reinforcement/mood regulation perspective (Wycoff et al., 2018), individuals who identify as Hispanic/Latinx may encounter more discriminatory experiences, and these experiences may then contribute to more negative/unpleasant mood states. In an attempt to acutely alleviate/regulate these mood states, individuals may then turn to cannabis use. Past research not specific to the Hispanic/Latinx community has supported this negative reinforcement model as a primary reason as to why individuals choose to engage in cannabis use (Baker et al., 2004; Wycoff et al., 2018). Alternatively, and in a non-mutually exclusive manner, exposure to ethnic discrimination may increase the probability of cannabis use for acute positive-affect reasons (Leventhal et al., 2017). Overall, research in this domain among Hispanic/Latinx individuals is lacking, particularly as it relates to the effect of ethnic discrimination in regard to cannabis use processes that are theoretically associated with continued use due to additive stress (e.g., causing problems with relationships, medical problems, financial difficulties, legal problems). Past empirical research has indicated that prolonged cannabis use is associated with multiple problems in physical, social, and mental domains of life, such as higher rates of mood disorders/psychotic disorders, cardiovascular risk and respiratory illness, higher risk of motor vehicle crashes, and financial difficulties, among others (Connor et al., 2021; Karila et al., 2014). However, research investigating cannabis use problems among Hispanic/Latinx individuals is lacking, as well as the relationship between experiencing ethnic discrimination and cannabis use problems. This lack of research hinders efforts to understand the

role of ethnic discrimination in the maintenance of cannabis use and its sequelae among this marginalized population.

Beyond ethnic discrimination, recent work has suggested that negative emotional reactivity to ethnic minority status stressors can impact psychological adjustment and self-regulatory processes (Zvolensky et al., 2024). Negative emotional reactivity reflects variation in the degree of affective response to minority stress. Previous work suggests this construct is unidimensional as well as distinct from ethnic discrimination and other psychological constructs (e.g., subjective social status; Zvolensky et al., 2024). There is limited but growing empirical literature that indicates negative emotional reactivity to ethnic minority stress is associated with substance use behavior. For example, one investigation found that elevated negative emotional reactivity to ethnic stress among Hispanic/Latinx persons who smoke combustible cigarettes is related to more severe symptoms when trying to quit (Zvolensky et al., 2024). To date, no work has addressed the role of negative emotional reactivity to ethnic stress in terms of cannabis use in general or focused on the Hispanic/Latinx community specifically. Reactivity to stress has often been linked to substance use via a coping mechanism, including reducing negative mood states, withdrawal, abstinence-related distress, and life stress (Sinha, 2024). Other research has highlighted substance use engagement for the purposes of producing increases in positive affect (Stellern et al., 2023). For these reasons, an important next step would be to explore the role of negative emotional reactivity to ethnic minority stress cannabis use process, such as perceived barriers for reducing or quitting cannabis, motives for using cannabis, and severity of cannabis use problems.

Although somewhat speculative given the limited science on the topic, theoretically, perceived ethnic discrimination and negative emotional reactivity to ethnic minority stress may also interplay with one another to confer worse cannabis use and associated processes. Theoretically, minority stress models emphasize multi-dimensions of vulnerability for substance use (Lehavot & Simoni, 2011). Conceivably, Hispanic/Latinx persons experiencing higher degrees of ethnic discrimination and negative emotional reactivity to ethnic minority stress may be relatively more at risk for using cannabis due to the compounded risks inherent to these constructs. Thus, the combination of ethnic discrimination and negative emotional reactivity to ethnic minority stress may create a psychologically based synergistic effect, intensifying symptoms (e.g., anxiety, depression, stress) that may promote cannabis use for multiple types of motives and contribute to problems related to use and challenges in reducing or quitting.

The present investigation sought to test the main and interactive effects of perceived ethnic discrimination and negative emotional reactivity to minority stress in terms of cannabis use processes among Hispanic/Latinx adults in the U.S. It was hypothesized that in the context of one another, greater degrees of perceived ethnic discrimination and negative emotional reactivity to minority stress would be positively associated with perceived barriers for reducing or quitting cannabis, motives for using cannabis, and severity of cannabis use problems. Further, it was hypothesized that there would be an interaction between perceived ethnic discrimination and negative emotional reactivity, such that higher levels of these two constructs would be associated with greater levels of the studied cannabis criterion variables.

METHODS

Participants

Participants were recruited via Qualtrics Panels, an online data collection portal that can access potential participants across the U.S. through a myriad of recruitment channels. Participants can be recruited through email lists, retail stores, and referrals. Eligibility criteria for the study included endorsing current cannabis use (past month use), being between the ages of 18 and 65 years of age, self-identifying as Hispanic or Latino(a), and having access to a computer or mobile device. Exclusion criteria included an inability to complete required self-report surveys, lack of proficiency in English, and not providing informed consent. In the current study, all participants (N = 521) identified as Hispanic or Latino(a). Participants were on average 36.52 years of age (SD = 10.26) and 44.90% (n = 234) identified their sex assigned at birth as female.

Additionally, in terms of race, 5.2% (n = 27) identified as Alaska Native or American Indian, 1.7% (n = 9) identified as Asian, 11.7% (n = 61) identified as Black or African American, 0.8% (n = 4) identified as Native Hawaiian or other Pacific Islander, 60.3% (n = 314) identified as White, 8.6% (n = 45) identified as two or more races, and 17.5% (n = 91) identified as 'Other' racial group not previously mentioned. In terms of state residency, 161 (30.90%) participants resided in the Southern U.S. (Texas = 77, Florida = 38, Georgia = 13, North Carolina = 9, South Carolina = 7, Tennessee = 4, Alabama = 3, Arkansas = 3, Virgina = 3, Louisiana = 2, Kentucky = 1, Oklahoma = 1), 188 (36.08%) participants resided in the Western U.S. (California = 116, Arizona = 15, Nevada = 15, New Mexico = 13, Washington state = 11, Oregon = 7, Colorado = 5, Utah = 5, Idaho = 1), 105 (20.15%) participants resided in the Northeast U.S. (New York = 42, New Jersey = 20, Pennsylvania = 14, Maryland = 12, Connecticut = 7, Massachusetts = 7, Maine = 1, Rhode Island = 1, Vermont = 1), 66 (12.67%) participants resided in the Midwest (Illinois = 18, Ohio = 14, Indiana = 7, Michigan = 7, Wisconsin = 7, Minnesota = 5, Missouri = 3, Iowa = 2, Nebraska = 2, Kansas = 1), and 1 participant resided in the Pacific Islands (Alaska = 1). See Table 1 for socio-demographic descriptive characteristics of the sample.

Table 1. *Breakdown of Socio-Demographic Information (N = 521)*

Variable	***n*[*M*]**	**%[*SD*]**
Age	[36.52]	[10.26]
Biological Sex		
Male	287	55.1
Female	234	44.9
Annual income		
$0 - $4,999	30	5.8
$5,000 - $9,999	7	1.3
$10,000 - $14,999	23	4.4
$15,000 - $24,999	40	7.7
$25,000 - $34,999	63	12.1
$35,000 - $49,999	77	14.8
$50,000 - $74,999	144	27.6
>$75,000	137	26.3
Highest level of education		
Less than high school	5	1.0
Some high school	18	3.5
High school or high school equivalent	131	25.1
Some college	108	20.7
Associate's degree	67	12.9
Bachelor's degree	110	21.1
Master's degree	72	13.8
Doctoral degree	10	1.9
Nativity		
United States	452	86.8
Mexico	30	5.8
Cuba	12	2.3
Puerto Rico	8	1.5
Dominican Republic	5	1.0

Venezuela	4	0.8
Ecuador	2	0.4
Guatemala	2	0.4
Columbia	1	0.2
Peru	1	0.2
Central America (not specified)	1	0.2
South America/Latin America (not specified)	1	0.2
Spain	1	0.2
Nicaragua	1	0.2

Procedures

Potentially eligible participants with a Qualtrics Panels account were notified and sent basic information about the study. Participants who expressed interest in the study were directed to the study participation link and provided informed consent. After providing informed consent, participants completed a self-report survey on Qualtrics. The survey took approximately 60 minutes to complete. Each participant was compensated with credit through their Qualtrics Panels account. A total of 527 surveys were completed. Six surveys were removed due to inconsistent responses, resulting in a sample of 521 surveys. This study was approved by the Institutional Review Board at the sponsoring institution. Data was collected from June 2024 to August 2024.

Measures

Demographics questionnaire. Participants reported sex (0 = Male, 1 = Female), race, ethnicity, age, educational level (1 = Less than High School to 8 = Doctoral Degree), income (1 = $0 to 8 = >$75,000), and years residing in the US. Age, sex, education, income, average number of cigarettes smoked per day, and number of years in the U.S. were included as covariates.

Alcohol Use Disorders Identification (AUDIT). The AUDIT (Saunders et al., 1993) is a 10-item self-report measure that was developed to assess alcohol consumption, drinking behaviors, and severity of alcohol use problems. Items (e.g., "How often do you have a drink containing alcohol?") are rated on various scales that are anchored to each specific item and are summed for a total score (range = 0–40), where higher scores indicate greater drinking behavior and severity of alcohol related problems. The AUDIT total score can also be used to differentiate individuals without problems (< 7 for females and < 8 for males) from those with potential problems (≥ 7 for females and ≥ 8 for males) and identifies four 'zones' with increasing risk and intervention levels: zone 1 (below cut-off; 0–7), zone 2 (simple advice; 8–15), zone 3 (simple advice plus brief counseling and monitoring; 16–19), and zone 4 (referral to specialize for evaluation and treatment; 20–40; Babor et al., 2001; Higgins-Biddle & Babor, 2018). The AUDIT total score was used as a covariate for the severity of alcohol use problems in the current investigation and demonstrated excellent internal consistency (α = .92).

Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU). The DFAQ-CU (Cuttler & Spradlin, 2017) is a 33-item self-report measure of cannabis use, including primary mode of use, patterns of use, and amount of use. Lifetime cannabis use frequency (coded: 1 = 1-5 times, 2 = 6-10 times, 3 = 11-50 times, 4 = 51-100 times, 5 = 101-500 times, 6 = 501-1000 times, 7 = 1001-2000 times, 8 = 2001-5000 times, 9 = 5001-10,000 times, 10 = More than 10,000 times) was determined for the current sample and utilized in the current study as a covariate. The DFAQ-CU has demonstrated good reliability and predictive and discriminant validity (Cuttler & Spradlin, 2017).

Emotional Reactivity to Minority Stress (ERMS). The ERMS (Zvolensky et al., 2024) is a 15-item self-report measure designed to assess factors in negative emotional states experienced in response to minority-related racial and ethnic stressors. Participants rate the degree to which they agree with each item (e.g., "When I feel unsafe because of my race/ethnicity, I become fearful.") on a 5-point Likert scale ranging from 0 (none) to 4 (much/very much). Items are summed

for a total score, where higher scores indicate greater emotional reactivity to racial and ethnic minority stress. For the current study, the ERMS was utilized as a predictor variable in all models and demonstrated excellent internal consistency (α = .97).

Perceived Barriers for Cannabis Reduction and Cessation Scale (PBCRCS). The PBCRCS (Zvolensky et al., in preparation) is a 19-item measure developed by the research team that assesses respondents' perceived barriers for cannabis cessation (e.g., "feeling in less control of you moods," "Miss the companionship of using marijuana," "Fear of failing to quit successfully"). The measure was informed by previous work on tobacco cessation (Macnee & Talsma, 1995), but the content of items was oriented toward cannabis use reduction and cessation. Respondents were asked to report on the level of agreement they had with each statement (0 = Not a barrier/not applicable to 3 = Large barrier). The PBCRCS maintains a single-factor structure (Zvolensky et al., 2018) and good construct validity. Internal consistency for the PBCRCS in the present study was excellent (α = .95), and the PBCRCS was utilized as a criterion variable. See supplementary materials for the full scale.

Marijuana Motives Measure (MMM). The MMM (Simons et al., 1998) is a 25-item questionnaire that assesses five primary motives for cannabis use, including enhancement of mood (e.g., "because it's exciting"), coping with negative affect or stressors (e.g., "to forget my worries"), social enhancement (e.g., "it helps me enjoy a party"), social conformity (e.g., "to fit in with the group I like"), and expansion of experiential awareness (e.g., "to know myself better"). The sum of the means from the 5 subscales represents a total score. Items are rated on a 5-point Likert-type scale (1 = Never/Almost Never to 5 = Always/Almost Always). The MMM subscales were used in the current study as criterion variables (α range = .85 - .90).

Marijuana Problems Scale (MPS). The MPS (Stephens et al., 2000) is a well-established 19-item self-report measure of negative social, occupational, physical, and personal consequences associated with cannabis use in the past 90 days. Items are rated on a 3-point Likert scale (0 = No problem to 2 = Serious problem). Scores can be calculated as either the total number of problems present (0 – 19) or a total score of the severity of problems present (0 – 38). As in past work (Buckner & Schmidt, 2008), internal consistency was excellent in the current sample (α = .96). For the current study, the severity of problems score was utilized as a criterion variable.

Analytic Strategy

Data analyses were completed using IBM SPSS Statistics (Version 29). First, bivariate correlations among the measures were examined. Additionally, three-step hierarchical multiple regression analyses were conducted for perceived barriers for cannabis cessation, cannabis motives, and cannabis problems. In the first step, covariates of age, sex, educational level, income, number of years in the US, severity of alcohol use problems, cannabis use frequency, and average number of cigarettes smoked per day were entered. In the second step, predictor variables of emotional reactivity to minority stress and perceived ethnic discrimination were mean centered and then entered. In the third step, an interaction term of emotional reactivity to minority stress and perceived ethnic discrimination was entered. To correct for multiple comparisons, an alpha level of .007 was used to determine statistical significance. Data was first examined for outliers/influence, normality, etc. (e.g., linearity). To test for multicollinearity, variance inflation factor (VIF) scores were calculated for each covariate/predictor, where VIF scores > 5 indicated potential multicollinearity (Kim, 2019). Squared semi-partial correlations (sr^2) were used as indices of effect size (interpreted as .01 = small, .09 = moderate, and .25 = large; Cohen, 1988).

RESULTS

Participant Characteristics

A breakdown of socio-demographic information is presented in Table 1. Of note, participants were on average 36.52 years of age (*SD* = 10.26) and 55.1% (*n* = 287) identified as male. In terms of cannabis use and other substances, participants on average reported using cannabis 3-4 times a week and were 20.43 (*SD* = 8.88) years of age when first trying cannabis. In terms of primary method endorsed

for ingesting cannabis, 28.0% (n = 146) identified this as joints, 26.9% (n = 140) identified blunts, 16.3% (n = 85) identified vaporizers, 12.3% (n = 64) identified edibles, 9.8% (n = 51) identified hand pipes, 4.6% (n = 24) identified bongs, 1.7% (n = 9) identified hookah, and 0.4% identified other methods. Regarding polysubstance use, 41.1% (n = 214) reported currently smoking tobacco cigarettes, with 31.7% (n = 165) smoking tobacco cigarettes daily. In terms of alcohol consumption, 23% (n = 120) reported not drinking alcohol, 24% (n = 125) reported drinking monthly or less, 18.8% (n = 98) reported drinking 2-4 times a month, 23.8% (n = 124) reported drinking 2-3 times a week, and 10.4% (n = 54) reported drinking 4 or more times a week.

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate correlations are presented in Table 2. See Table 3 for the regression results. There were no problems related to outliers/influence, normality, etc. VIF scores at all steps in all models did not exceed 5. Of note, negative emotional reactivity to minority stress positively correlated with perceived barriers for cannabis reduction and cessation (r = .42), cannabis coping motives (r = .34), cannabis social motives subscale (r = .32), cannabis motives-conformity subscale (r = .35), and cannabis use problems (r = .44). Moreover, perceived ethnic discrimination positively correlated with perceived barriers for cannabis reduction and cessation (r = .40), cannabis motives-social subscale (r = .31), cannabis motives-conformity subscale (r = .44), and cannabis problems (r = .51).

Hierarchical Regression Analysis and Moderating Effects

Negative emotional reactivity to minority stress was positively associated with all criterion variables except for cannabis use motives of conformity (p = .054). Specifically, negative emotional reactivity to minority stress was positively associated with perceived barriers for cannabis reduction and cessation (b = 0.27, p <.001,), enhancement (b = 0.01, p <.001), social (b = 0.01, p <.001), coping (b = 0.02, p <.001), and expansion (b = 0.01, p = .004) motives, as well as cannabis use problems (b = 0.11, p <.001). Perceived ethnic discrimination was only positively associated with perceived barriers for cannabis reduction and cessation (b = 2.21, p = .007), conformity motives (b = 0.27, p <.001), and cannabis use problems (b = 2.23, p <.001). These associations were statistically significant after controlling for multiple theoretically relevant covariates. There were no statistically significant interactions in any model

Table 2. *Descriptive Statistics and Bivariate Correlations Between Study Variables (N = 521)*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age[a]	--																
2. Sex[a]	-.02	--															
3. Education[a]	.14**	-.15**	--														
4. Income[a]	.12**	-.23**	.54**	--													
5. Years in the US[a]	.86**	-.003	.02	.06	--												
6. Alcohol Use Problems[a]	-.08	-.16**	.20**	.14**	-.10*	--											
7. Cannabis Use Frequency[a]	.13**	-.09*	-.14**	-.08	.16**	-.001	--										
8. Cigarettes Smoked Per Day[a]	.16**	-.07	.09*	.08	.14**	.13**	.03	--									
9. Emotional Reactivity to Minority Stress[b]	-.13**	-.07	.12**	.06	-.10*	.23**	-.05	.07	--								
10. Perceived Ethic Discrimination[b]	-.14**	-.16**	.14**	.01	-.14**	.38**	-.06	.08	.67**	--							
11. Perceived Barriers to Cannabis Reduction and Cessation[c]	-.12**	-.07	.07	.05	-.15**	.27**	.03	.03	.42**	.40**	--						
12. Cannabis Motives Enhancement[c]	-.07	-.11*	<.01	.03	-.03	.17**	.28**	.08	.22**	.15**	.34**	--					
13. Cannabis Motives Social[c]	-.13**	-.13**	.09*	.07	-.10*	.25**	.14**	.09*	.32**	.31**	.46**	.74**	--				
14. Cannabis Motives Coping[c]	-.17**	-.06	-.001	-.01	-.13**	.18**	.15**	.10*	.34**	.29**	.51**	.65**	.69**	--			
15. Cannabis Motives Conformity[c]	-.16**	-.11*	.22**	.10*	-.19**	.40**	-.12**	.07	.35**	.44**	.55**	.32**	.57**	.40**	--		
16. Cannabis Motives Expansion[c]	-.20**	-.16**	.10*	.08	-.19**	.23**	.13**	.08	.29**	.29**	.48**	.66**	.65**	.66**	.48**	--	
17. Cannabis Use Problems[c]	-.13**	-.16**	.22**	.09*	-.15**	.44**	-.03	.05	.44**	.51**	.54**	.21**	.34**	.33**	.52**	.34**	--
Mean/n	36.52	234	4.69	6.05	34.77	8.00	6.39	2.96	21.55	2.26	25.19	3.57	3.20	3.43	2.42	3.15	8.99
SD/%	10.26	44.90%	1.60	1.95	11.20	9.16	2.32	7.02	16.85	1.08	15.73	1.01	1.08	1.04	1.21	1.14	9.71

Note. $^{**}p < .01$, $^{*}p < .05$. [a] Covariate; [b] Predictor variable; [c] Criterion; Sex % listed as females (Coded: 0 = Male, 1 = Female); Education (1 = Less than High School to 8 = Grad School or more); Income (1 = $0 to $4,999 to 8 = >$75,000); Severity of Alcohol Use Problems = Alcohol Use Disorders Identification Test total score (Higgins-Biddle & Babor, 2018; Saunders et al., 1993); Cannabis Use Frequency = Number of times cannabis used in lifetime (1 = 1-5 times, 2 = 6-10 times, 3 = 11-50 times, 4 = 51-100 times, 5 = 101-500 times, 6 = 501-1000 times, 7 = 1001-2000 times, 8 = 2001-5000 times, 9 = 5001-10,000 times, 10 = More than 10,000 times; Cuttler & Spradlin, 2017); Emotional Reactivity to Minority Stress = Emotional Reactivity to Minority Stress total score (Zvolensky et al., 2024); Perceived Ethnic Discrimination = Perceived Ethnic Discrimination Questionnaire lifetime exposure total score (Brondolo et al., 2005); Perceived Barriers to Cannabis Reduction and Cessation = Perceived barriers to cannabis reduction and cessation scale total score (Zvolensky et al., in preparation); Cannabis Motives Enhancement, Coping, Social, Conformity, and Expansion = Marijuana Motives Measure subscales (Simons et al., 1998); Cannabis Use Problems = Marijuana Problems Scale (Stephens et al., 2000).

Table 3. *Hierarchical Regression of Hispanic*/Latinx *Cannabis Use in interaction with Perceived Barriers to Cannabis Cessation, Marijuana Motives Subscales: Enhancement, Social, Coping, Conformity, and Expansion, and Marijuana Problems (N = 521)*

Perceived Barriers for Cannabis Reduction Cessation	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.01	0.13	-0.07	.943	-0.26	0.24	<.001	
Sex	-0.58	1.39	-0.42	.678	-3.31	2.15	<.001	
Education	0.20	0.52	0.39	.695	-0.81	1.21	<.001	
Income	0.14	0.41	0.33	.740	-0.67	0.94	<.001	
Years in the US	-0.18	0.12	-1.57	.116	-0.41	0.05	.004	
Severity of Alcohol Use Problems	0.42	0.08	5.53	<.001	0.27	0.57	.054	
Cannabis Use Frequency	0.36	0.30	1.22	.223	-0.22	0.94	.003	
Cigarettes Smoked Per Day	0.03	0.10	0.30	.767	-0.16	0.22	<.001	.09
Step 2								
Emotional Reactivity to Minority Stress	0.27	0.05	5.41	<.001	0.17	0.36	.044	
Perceived Ethnic Discrimination	2.21	0.81	2.71	.007	0.61	3.81	.011	.14
Step 3								
Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	-0.01	0.04	-0.16	.876	-0.08	0.07	<.001	< .001
Cannabis Motives – Enhancement	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.02	0.01	-1.98	.048	-0.03	.0001	.006	
Sex	-0.10	0.09	-1.18	.240	-0.28	0.07	.002	
Education	0.01	0.03	0.18	.857	-0.06	0.07	<.001	
Income	0.01	0.03	0.44	.657	-0.04	0.06	<.001	
Years in the US	0.01	0.01	0.78	.435	-0.01	0.02	.001	
Severity of Alcohol Use Problems	0.02	0.01	3.23	.001	0.01	0.03	.018	
Cannabis Use Frequency	0.13	0.02	6.74	<.001	0.09	0.16	.078	
Cigarettes Smoked Per Day	0.01	0.01	1.56	.119	-0.002	0.02	.004	.13
Step 2								
Emotional Reactivity to Minority Stress	0.01	0.003	3.89	<.001	0.01	0.02	.025	
Perceived Ethnic Discrimination	-0.04	0.06	-0.77	.440	-0.15	0.07	.001	.03
Step 3								

Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	-0.002	0.002	-0.64	.523	-0.01	0.003	.001	.001
Cannabis Motives – Social	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.02	0.01	-2.47	.014	-0.04	-0.004	.010	
Sex	-0.14	0.09	-1.51	.131	-0.33	0.04	.004	
Education	0.05	0.04	1.39	.166	-0.02	0.12	.003	
Income	0.01	0.03	0.36	.720	-0.04	0.06	<.001	
Years in the US	0.01	0.01	0.64	.524	-0.01	0.02	.001	
Severity of Alcohol Use Problems	0.02	0.01	4.78	<.001	0.01	0.03	.040	
Cannabis Use Frequency	0.08	0.02	3.80	<.001	0.04	0.12	.025	
Cigarettes Smoked Per Day	0.01	0.01	1.63	.105	-0.002	0.02	.004	.12
Step 2								
Emotional Reactivity to Minority Stress	0.01	0.003	3.67	<.001	0.01	0.02	.022	
Perceived Ethnic Discrimination	0.10	0.06	1.68	.095	-0.02	0.21	.004	.07
Step 3								
Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	<0.01	0.003	-0.18	.861	-0.01	0.01	<.001	< .001
Cannabis Motives – Coping	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.03	0.01	-2.96	.003	-0.04	-0.01	.015	
Sex	-0.04	0.09	-0.41	.682	-0.22	0.14	<.001	
Education	0.01	0.03	0.40	.687	-0.05	0.08	<.001	
Income	-0.01	0.03	-0.17	.866	-0.06	0.05	<.001	
Years in the US	0.01	0.01	0.61	.544	-0.01	0.02	.001	
Severity of Alcohol Use Problems	0.02	0.01	3.23	.001	0.01	0.03	.018	
Cannabis Use Frequency	0.08	0.02	4.01	<.001	0.04	0.12	.028	
Cigarettes Smoked Per Day	0.02	0.01	2.55	.011	0.004	0.03	.011	.10
Step 2								
Emotional Reactivity to Minority Stress	0.02	0.003	4.60	<.001	0.01	0.02	.034	
Perceived Ethnic Discrimination	0.08	0.06	1.43	.154	-0.03	0.19	.003	.09
Step 3								

Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	-0.02	0.003	-0.99	.323	-0.01	0.002	.002	.002
Cannabis Motives – Conformity	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.01	0.01	-0.79	.428	-0.03	0.01	<.001	
Sex	-0.11	0.10	-1.12	.265	-0.31	0.08	.002	
Education	0.12	0.04	3.13	.002	0.04	0.19	.015	
Income	-0.02	0.03	-0.65	.514	-0.08	0.04	.001	
Years in the US	-0.01	0.01	-1.28	.202	-0.03	0.01	.003	
Severity of Alcohol Use Problems	0.05	0.01	8.56	<.001	0.04	0.06	.112	
Cannabis Use Frequency	-0.04	0.02	-1.98	.048	-0.08	<0.01	.006	
Cigarettes Smoked Per Day	0.01	0.01	0.99	.321	-0.01	0.02	.002	.22
Step 2								
Emotional Reactivity to Minority Stress	0.01	0.004	1.93	.054	<.01	0.01	.005	
Perceived Ethnic Discrimination	0.27	0.06	4.58	<.001	0.16	0.39	.029	.08
Step 3								
Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	0.004	0.003	1.58	0.12	-0.001	0.01	.003	.003
Cannabis Motives – Expansion	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.02	0.01	-2.38	.018	-0.04	-0.004	.010	
Sex	-0.22	0.10	-2.25	.025	-0.41	-0.03	.008	
Education	0.06	0.04	1.64	.102	-0.01	0.13	.004	
Income	0.01	0.03	0.43	.668	-0.04	0.07	<.001	
Years in the US	-0.01	0.01	-0.64	.521	-0.02	0.01	<.001	
Severity of Alcohol Use Problems	0.02	0.01	3.79	<.001	0.01	0.03	.024	
Cannabis Use Frequency	0.08	0.02	3.93	<.001	0.04	0.12	.026	
Cigarettes Smoked Per Day	0.01	0.01	1.94	.053	<0.01	0.03	.006	.14
Step 2								
Emotional Reactivity to Minority Stress	0.01	0.004	2.89	.004	0.003	0.02	.013	
Perceived Ethnic Discrimination	0.11	0.06	1.84	.067	-0.01	0.23	.005	.05
Step 3								

Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	-0.003	0.003	-0.92	.357	-0.01	0.003	.001	.001
Cannabis Use Problems	***B***	***SE***	***t***	***p***	**95% Bootstrapped CI**		***sr²***	***R²/R²*Change**
Step 1								
Age	-0.05	0.07	-0.69	.491	-0.19	0.09	.001	
Sex	-1.57	0.79	-1.99	.047	-3.11	-0.02	.006	
Education	1.09	0.29	3.73	<.001	0.51	1.66	.021	
Income	-0.32	0.23	-1.37	.171	-0.77	0.14	.003	
Years in the US	-0.06	0.07	-0.89	.373	-0.19	0.07	.001	
Severity of Alcohol Use Problems	0.42	0.04	9.73	<.001	0.33	0.50	.141	
Cannabis Use Frequency	-0.01	0.17	-0.07	.944	-0.34	0.32	<.001	
Cigarettes Smoked Per Day	-0.003	0.06	-0.05	.957	-0.11	0.11	<.001	.24
Step 2								
Emotional Reactivity to Minority Stress	0.11	0.03	3.93	<.001	0.05	0.16	.019	
Perceived Ethnic Discrimination	2.23	0.46	4.90	<.001	1.33	3.12	.030	.13
Step 3								
Emotional Reactivity to Minority Stress x Perceived Ethnic Discrimination	0.02	0.20	0.84	.400	-0.02	0.06	.001	.001

Note. Sex (Coded: 0 = Male, 1 = Female); Education (1 = Less than High School to 8 = Grad School or more); Income (1 = $0 to $4,999 to 8 = >$75,000); Severity of Alcohol Use Problems = Alcohol Use Disorders Identification Test total score (Higgins-Biddle & Babor, 2018; Saunders et al., 1993); Cannabis Use Frequency = Number of times cannabis used in lifetime (1 = 1-5 times, 2 = 6-10 times, 3 = 11-50 times, 4 = 51-100 times, 5 = 101-500 times, 6 = 501-1000 times, 7 = 1001-2000 times, 8 = 2001-5000 times, 9 = 5001-10,000 times, 10 = More than 10,000 times; Cuttler & Spradlin, 2017); Emotional Reactivity to Minority Stress = Emotional Reactivity to Minority Stress total score (Zvolensky et al., 2024); Perceived Ethnic Discrimination = Perceived Ethnic Discrimination Questionnaire lifetime exposure total score (Brondolo et al., 2005); Both Emotional Reactivity to Minority Stress and Perceived Ethnic Discrimination were mean centered prior to analysis; Perceived Barriers to Cannabis Reduction and Cessation = Perceived barriers to cannabis reduction and cessation scale total score (Zvolensky et al., in preparation); Cannabis Motives Enhancement, Coping, Social, Conformity, and Expansion = Marijuana Motives Measure subscales (Simons et al., 1998); Cannabis Use Problems = Marijuana Problems Scale (Stephens et al., 2000).

DISCUSSION

The present investigation explored the singular and interactive effects of perceived ethnic discrimination and negative emotional reactivity to minority stress in terms of cannabis use processes among Hispanic/Latinx adults in the U.S. This work is important given the rising rates and negative effects of cannabis use among the Hispanic/Latinx population (Salas-Wright et al., 2019). Results were partially consistent with the prediction. Negative emotional reactivity to minority stress and perceived ethnic discrimination explained unique variance in terms of perceived barriers for cannabis reduction and cessation and cannabis use problems after accounting for theoretically relevant covariates. For cannabis use motives, negative emotional reactivity to minority stress offered statistically significant effects for all motives except for conformity, whereas perceived ethnic discrimination was the only predictor that contributed to conformity motives. The size of the observed effects ranged from small to medium across the analyses.

The clinical significance of the overall results include the unique variance accounted for by the predictors compared to the covariates (Abelson, 1985). Notably, perceived ethnic discrimination and negative emotional reactivity to minority stress were positively related at the bivariate level, but shared only 44% of variance. Thus, in the context of one another, there was empirical evidence of unique explanatory power for these factors for several cannabis use processes linked to the maintenance of this substance use behavior. This further demonstrates that while both predictors may appear similar in nature, they can be considered distinct constructs predicting unique variance independent of one another. Future research could be usefully oriented on the mechanisms underlying the observed relations. It may be that higher degrees of negative emotional reactivity to minority stress and perceived ethnic discrimination, elicit greater emotion dysregulation, which in turn, is related to cannabis use for reasons such as coping and conformity; a process that would involve more ingrained patterns of use and perhaps more challenges in reducing or quitting (Weiss et al., 2022). If supported in future research, culturally tailored interventions specifically aiming to increase and enhance emotion regulation skills, within the context of increased negative emotional reactivity to minority stress, could prove to help reduce cannabis use and problems among the Hispanic/Latinx population. In contrast, higher levels of negative emotional reactivity to minority stress may invoke the tendency to use cannabis to amplify positive affect states and experiences, including social, enhancement, and expansion motives. This perspective would be in line with reward sensitivity models of cannabis use (Pacheco-Colón et al., 2018).

There was no evidence of a synergistic effect for perceived ethnic discrimination and negative emotional reactivity to minority stress for any of the studied cannabis variables. It is possible that the individual effects of these stressors were already substantial enough that their interaction did not yield an additive or multiplicative impact. Future research is needed to isolate whether these factors interact with other sociocultural constructs (e.g., acculturative stress; Yockey et al., 2020) among the Hispanic/Latinx population who use cannabis.

There are potential clinical implications to the observed findings. Regular cannabis use among the Hispanic/Latinx and other populations frequently elicits life impairment and a decreased quality of life (National Academies of Sciences et al., 2017; Wu et al., 2014), prompting many persons to be motivated to reduce or quit using this substance (Chauchard et al., 2013). The current research findings suggest that among the Hispanic/Latinx population who use cannabis, perceived ethnic discrimination and negative emotional reactivity to minority stress may represent important constructs associated with a myriad of cannabis-related constructs (e.g., motives for use, problems associated with use, barriers for quitting/reducing use). For this reason, there could be value in briefly screening the Hispanic/Latinx population for cannabis use in primary and urgent care settings and potentially referring those at risk to relevant health professionals, who can consider these culturally salient constructs to help provide better coping mechanism for minority stress. Further, there may be utility in developing cannabis interventions for the Hispanic/Latinx population that provide psychoeducation about the relevance of these factors for the motivational bases of use, challenges in quitting, and severity of cannabis

use problems. This kind of intervention work could also develop strategies, including cognitive and behavioral methods, that can help to decrease these forms of minority stress to facilitate change in cannabis use behavior. Additionally, providing tailored services that are in-line with Hispanic/Latinx values, offering services in the language that is primarily spoken from the client, and bolstering more community-focused treatments could help decrease these forms of minority stress induced cannabis use behavior.

There are several study limitations. First, due to the cross-sectional research methodology, directional and causal inferences cannot be made. Building from this initial research on an understudied cannabis-using population, future work could utilize prospective methods that could help isolate the dynamic interplay between the studied constructs. Second, we utilized self-report methods. Given that a mono-method assessment approach can inflate method variance (Kline et al., 2000), research could enlist a multi-method protocol in future efforts to study cannabis use among the Hispanic/Latinx population. Third, the sample consisted of individuals who engaged in current cannabis use, by design, to help ensure a generalizable sample of individuals who use cannabis. However, the studied sample did not all have clinical cannabis use problems (e.g., CUD). It may be fruitful for research to extend the present work to Hispanic/Latinx persons who use cannabis and are engaged in treatment for cannabis use problems. Fourth, the present sample was comprised of persons who speak English, as a tactic to ensure comprehensive understanding of the self-report measures. We unfortunately do not know how many participants were excluded because of language proficiency. Nonetheless, because language can influence health outcomes among the Hispanic/Latinx population (Lozano et al., 2025), testing the generalizability of the findings to polylingual and Spanish-speaking individuals would be advisable. Finally, we modeled two theoretically relevant constructs in relation to cannabis use processes. Although this is an important first step in an area of study with limited research, there could be utility in exploring other candidates in multi-risk models for cannabis use (e.g., acculturative stress; Zamboanga et al., 2009).

Overall, the present investigation evaluated two relevant factors among Hispanic/Latinx adults who use cannabis in the U.S. Results indicated that perceived ethnic discrimination and negative emotional reactivity to minority stress were related to specific cannabis use processes. The current findings suggest that among the Hispanic/Latinx population, screening for perceived ethnic discrimination and negative emotional reactivity to minority stress and intervening to help individuals cope with these stressors may help mitigate challenges with the continued use of cannabis.

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